



COMMISSION DECISION (EU) 2025/429

of 30 April 2024

on the measure State aid SA.58207 (2021/N) which Czechia is planning to implement to support the construction and operation of a new nuclear power plant at the Dukovany site

(notified under document C(2024) 2858)

(Only the English text is authentic)

(Text with EEA relevance)

THE EUROPEAN COMMISSION,

Having regard to the Treaty on the Functioning of the European Union, and in particular the first subparagraph of Article 108(2) thereof,

Having regard to the Agreement on the European Economic Area, and in particular Article 62(1)(a) thereof,

Having called on interested parties to submit their comments pursuant to the provision(s) ⁽¹⁾ cited above and having regard to their comments,

Whereas:

1. PROCEDURE

- (1) By letter dated 15 March 2022, Czechia notified the Commission of the measure supporting the construction and operation of a new nuclear power plant ('NPP') at the Dukovany site (the 'Project'). It provided the Commission with further information by letter dated 5 May 2022, following the Commission's request for information of 21 April 2022.
- (2) By letter dated 30 June 2022, the Commission informed Czechia that it had decided to initiate the procedure laid down in Article 108(2) of the Treaty on the Functioning of the European Union in respect of the measure (the 'Opening Decision'). The Opening Decision was published in the *Official Journal of the European Union*. The Commission called on interested parties to submit their comments.
- (3) Czechia sent its comments on the Opening Decision on 31 August 2022.
- (4) The Commission received comments from third parties. It forwarded them to Czechia, which was given the opportunity to react; its comments were received by letter dated 21 October 2022.
- (5) Further information was submitted by Czechia on 30 January 2023, 16 March 2023, 4 April 2023, 11 April 2023, 24 April 2023, 9 June 2023, 21 June 2023, 3 July 2023, 14 July 2023, 2 August 2023, 8 September 2023, 14 September 2023, 22 September 2023, 6 October 2023, 9 October 2023, 18 October 2023, 19 October 2023, 22 October 2023, 25 October 2023, 8 November 2023, 20 November 2023, 16 December 2023, 10 January 2024, 26 January 2024, 1 February 2024, 7 February 2024, 9 February 2024, 12 February 2024, 21 February 2024, 23 February 2024, 26 February 2024, 1 March 2024, 7 March 2024, 8 March 2024, 11 March 2024, 19 March 2024, 20 March 2024, 21 March 2024, and 15 April 2024.
- (6) On 26 January 2024, the Czech authorities exceptionally agreed to waive their rights deriving from Article 342 TFEU, in conjunction with Article 3 of Regulation 1/1958 and to have this Decision adopted and notified in English.

⁽¹⁾ OJ C 299, 5.8.2022, p. 5.

2. DESCRIPTION OF THE CONTEXT

2.1. Electricity generation in Czechia

- (7) As explained in Section 2.1 of the Opening Decision, Czechia's energy mix is currently dominated by lignite and nuclear-based electricity generation. The following table shows the evolution of the electricity generation capacity and gross electricity generation in Czechia between 2000 and 2022.

Table 1

Evolution of electricity generation capacity in gigawatts (GW) and gross electricity generation in terawatt hours ('TWh') in Czechia, 2000-2022

	2000	2005	2010	2015	2018	2019	2020	2021	2022
Installed Electricity Capacity (GW)	15,3	17,4	20,1	21,9	22,3	22,0	21,4	20,9	20,8
Combustible Fuels	11,5	11,5	12,0	13,0	13,3	13,0	12,4	11,9	11,8
Nuclear	1,8	3,8	3,9	4,3	4,3	4,3	4,3	4,3	4,3
Hydro	2,1	2,2	2,2	2,3	2,3	2,3	2,3	2,3	2,3
Wind	0,0	0,0	0,2	0,3	0,3	0,3	0,3	0,3	0,3
Solar	0,0	0,0	1,7	2,1	2,1	2,1	2,1	2,1	2,1
Geothermal	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
Tide, Wawe, Ocean	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
	2000	2005	2010	2015	2018	2019	2020	2021	2022
Gross Electricity Generation, by Fuel (TWh)	75,3	82,6	85,8	83,8	87,9	86,9	81,4	84,9	84,5
Solid Fossil Fuels, Peat & Products, Oil Shale	52,8	49,5	46,9	41,1	41,2	37,3	31,0	38,6	41,0
Oil and Petroleum Products	0,4	0,3	0,2	0,1	0,1	0,1	0,0	0,0	0,0
Natural gas	3,9	4,2	4,2	5,0	6,1	7,9	6,6	9,2	6,4
Nuclear	13,6	24,7	28,0	26,8	29,9	30,2	30,0	30,7	31,0
Renewables and Biofuels	2,8	3,8	6,5	10,7	10,5	11,2	13,7	6,4	6,0
Wastes non-Res	0,0	0,0	0,0	0,0	0,1	0,1	0,1	0,1	0,1

Source: Czech authorities.

- (8) In its updated 2023 draft National Energy and Climate Plan ('NECP') ⁽²⁾, Czechia confirmed its commitment to decarbonise its electricity system and phase out the use of coal for energy and heat generation by 2033.
- (9) According to the updated draft NECP, by 2030, photovoltaic and onshore wind power plants will play a significant role in the decarbonization of the electricity supply. Czechia considers that, despite their expected considerable expansion, intermittent renewable energy sources ('RES') will not be able to decarbonise the Czech energy system on their own, as they would not be able to cover the expected supply gap. The Czech authorities explained that in Czechia, these intermittent sources have relatively limited capacity factors of 11 % for photovoltaic and 22 % for onshore wind energy. Furthermore, limited potential for wind energy development has been evidenced in Czechia due to low public acceptance and high-density populated areas. Additionally, Czechia also does not have offshore wind or large-scale hydroelectrical power potential which further limits the options for significant large-scale renewable generating capacities.
- (10) Czechia does not consider natural gas to be a suitable replacement for coal and lignite due to its high emission factor (499 tonnes CO₂e/GWh v 29 from nuclear or 85 from solar within one lifecycle) and gas import dependency. Gas dependency is generally higher during the winter as the RES are not producing enough electricity during that period, and heating increases natural gas demand. Furthermore, in view of the current geopolitical situation and its impact on gas supply to the European Union in particular from Russia, the Czech authorities aim to reduce dependency on gas imports.

⁽²⁾ Available at: https://commission.europa.eu/publications/czech-draft-updated-necp-2021-2030_en.

- (11) In October 2019, the Czech transmission system operator ČEPS presented a resource adequacy outlook ⁽³⁾, presenting two scenarios – Scenario A: a baseline scenario which assumes electricity will be produced in modernised lignite power plants (Pruněřov II, Tušimice, Mělník I and Ledvice PP) and Scenario B: a low-carbon scenario assuming that all lignite power plants besides Ledvice PP will be phased out. Both scenarios lead to adequacy issues.
- (12) Another more recent study also done by ČEPS ⁽⁴⁾, shows problems with generation adequacy starting from 2030 due to lignite retirements and necessitating rising imports to levels exceeding 20 % to cover Czech demand. Issues with electricity shortages occur through all scenarios starting from 2035 and are particularly acute in scenarios in which a complete coal phase-out occurs either in 2033 (the central scenario which ČEPS considers most likely) or in 2030 (the decarbonisation scenario). This outlook (based on an assumption of a maximum net import level of 20 TWh due to technical and safety limitations and including the new nuclear unit in its assumptions post-2035) stresses that the LOLE ⁽⁵⁾ levels would remain unsatisfactory. Calculations performed for the central scenario show that already in 2030 there is insufficient generation capacity to cover consumption.
- (13) The studies presented by the Czech authorities take into account the expected cross-border flows between Czechia and its neighbouring countries. The Czech electricity system is well connected with the systems in neighbouring Member States and that connection capacity is planned to further increase in the future ⁽⁶⁾. The Czech day-ahead electricity market is connected by Multi-Regional Coupling ⁽⁷⁾ based on the implicit allocation of cross-border capacity on the basis of net transmission capacity. In June 2022, the Core ⁽⁸⁾ Flow-Based Market Coupling project ⁽⁹⁾ went live and Czechia has fully integrated its electricity day-ahead and intraday markets, achieving the target model of the electricity market in the European Union as defined in the Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management ⁽¹⁰⁾.

⁽³⁾ Hodnocení zdrojové přiměřenosti ES ČR do roku 2040 (MAF CZ), 2019. For more information please see: https://www.mpo.cz/assets/cz/energetika/elektroenergetika/2021/2/Hodnoceni-zdrojove-primerenosti-ES-CR-_2019__1.pdf.

⁽⁴⁾ Hodnocení zdrojové přiměřenosti ES ČR do roku 2040 (MAF CZ), 2022. For more information please see: <https://www.mpo.cz/assets/cz/energetika/elektroenergetika/2023/5/Hodnoceni-zdrojove-primerenosti-elektrizacni-soustavy-CR-2022.pdf>.

⁽⁵⁾ LOLE means 'Loss of Load Expectation' and represents the number of hours per annum in which, over the long-term, it is statistically expected that supply will not meet demand.

⁽⁶⁾ The Czech authorities explained that the interconnection of the Czech and neighbouring electricity systems has been historically very strong and that they expect that the exchange of electricity will increase further due the transformation of the energy sector. The current market interconnection capacities for Czechia are: CZ00-AT00: 900 MW, AT00-CZ00: 900 MW, CZ00-DE00: 2 800 MW, DE00-CZ00: 2 600 MW, CZ00-PLI0: 800 MW, PLE0-CZ00: 800 MW, CZ00-SK00: 2 000 MW, SK00-CZ00: 1 200 MW. To strengthen the energy security with neighbouring countries, several investments to increase existing capacities are planned. Notably, the interconnector modernization between Germany and Czechia is scheduled for 2027-2028 and will result in an increase in the market import capacity of 500 MW in both directions (i.e. CZ00-DE00: 3 300 MW and DE00-CZ00: 3 100 MW). A new interconnector between Czechia and Slovakia (Otrokovice-Ladce) is envisioned after 2035 and the resulting net market capacity increase should be approximately 500 MW in both directions. For more details, see the Czech National Development Plan 2023-2032, available at: <https://www.ceps.cz/en/transmission-system-development>. The Czech authorities submit that the Czechia is the only country in the Central European region which fulfils the minimum 70 % margin available for cross-zonal trade criterion (set out in Art. 16(8) of Electricity Regulation (EU) 2019/943).

⁽⁷⁾ Multi-Regional Coupling connects the electricity markets of 19 countries, accounting for about 85 % of European power consumption.

⁽⁸⁾ A capacity calculation region is a geographic area where the tasks of capacity calculation are coordinated by Transmission System Operators. The Core capacity calculation region consists of the bidding zone borders between Austria, Belgium, Croatia, Czechia, France, Germany, Hungary, Luxembourg, the Netherlands, Poland, Romania, Slovakia and Slovenia. The Core region is a region set up by ACER in its 2019 Decision: https://www.acer.europa.eu/sites/default/files/documents/Individual%20Decisions/ACER%20Decision%202002-2019%20on%20CORE%20CCM_0.pdf.

⁽⁹⁾ The Core Flow-Based Market Coupling project aims to develop and implement the daily operation of a Flow-Based day-ahead market coupling in the Core Region.

⁽¹⁰⁾ OJ L 197, 25.7.2015, p. 24.

- (14) Currently, Czechia is a net exporter of electricity to countries in Central and Eastern Europe, but according to ČEPS, this will not last in the future. According to the 2019 adequacy outlook, in 2025, exports will be reduced to 5,4 TWh with a total balance of 1,8 TWh in favour of Czechia. The balance would turn negative in 2030, with imports of 8,2 TWh of electricity and a total negative balance of 5,4 TWh in the baseline scenario. Under the 2030 low carbon scenario, the total negative balance would be 9,2 TWh.
- (15) While electricity production is expected to decline, consumption is expected to increase slightly from currently around 67 TWh to around 77,5 TWh in 2040, despite energy efficiency measures under the Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 amending Directive 2012/27/EU on energy efficiency. The 2022 adequacy outlook of ČEPS assumes a measurable rise in electricity demand in the next 15 years in all projected scenarios, with the central scenario showing a 46 % increase to 98 TWh annually compared to the current level of around 67 TWh. Czechia also expect higher electricity demand in part as a result of switching from gas-fired heating to use of heat pumps as well as general substitution of gas by electricity in industry.
- (16) Although Czechia is well connected with surrounding countries, electricity flows vary considerably at different times of the year. The 2019 adequacy outlook has pointed out that in the Central European region (Core region for the calculation of transmission capacities), periods of electricity shortage in the system are expected to occur in several countries at the same time because of similar climatic conditions, coal phase out plans and supply shortages⁽¹¹⁾. The Czech authorities consider that the decline in industrial production resulting from the expected shortage of electricity would result in weakening economic growth and the competitiveness of the Czech economy, which may also lead to major shortfalls on the revenue side of public budgets. Any power outages or its longer-term shortage can thus have a significant impact on the social stability of the country with all the associated negative consequences.
- (17) According to the above-mentioned studies, nuclear energy emerges as a more secure option for future decarbonised energy investments in Czechia. The Czech authorities explained that the decision to invest in new nuclear capacities was based on its decarbonisation goals, as well as on the results of the 2019 adequacy outlook, which was a key input for quantifying the need for new investments in nuclear energy. The Czech Government plans an expansion of around 4 GW of new nuclear capacity (including the notified investment) between 2036 and 2050.

2.2. Objectives and background

- (18) The Czech authorities envisage maintaining or increasing the role of nuclear energy in their power generation, contributing to decarbonisation of their energy mix, job creation and industrial competitiveness, as well as addressing the security of supply concerns described above. The Project is part of a wider programme to support low carbon generation sources, aiming at nuclear power generation accounting for approximately 50 % of the overall electricity generation capacity in Czechia. Indeed, the National Action Plan for the Development of Nuclear Energy⁽¹²⁾ in Czechia, approved in June 2015, already elaborated on the strengthening of the role of nuclear power.

⁽¹¹⁾ Electricity shortage will affect Poland, Slovakia, Austria, Hungary, Belgium, but also e.g. Italy, Serbia and Lithuania, which are part of the CORE region, according to the modelling results.

⁽¹²⁾ National Action Plan for the Development of the Nuclear Energy Sector in the Czech Republic, Date: 22 May 2015, https://www.mpo.cz/assets/en/energy/electricity/nuclear-energy/2017/10/National-Action-Plan-for-the-Development-of-the-Nuclear-_2015_.pdf.

- (19) There are currently six nuclear power units operating in Czechia, in Temelín⁽¹³⁾ and Dukovany⁽¹⁴⁾. According to Czechia, the existing four units at the Dukovany site are expected to shut down between 2045 and 2047, under the condition that the State Office for Nuclear Safety approves the existing nuclear power plant's safety requirements every 10 years over the asset life. The Czech authorities submit that there is currently no specific commitment to operate them beyond this period.
- (20) The draft updated NECP⁽¹⁵⁾ for Czechia sets energy diversification targets for the share of individual fuels in (i) total primary energy sources (excluding electricity); and (ii) in electricity generation. The Czech authorities explained that the share of nuclear energy for 2022 was respectively 15 % and 37 %, while the target level for 2040 was set at 25–33 % in primary energy sources (excluding electricity) and at 46–58 % for electricity generation.
- (21) An increase in the share of nuclear energy and renewable sources to replace fossil fuels is considered essential in the NECP for achieving the long-term commitments to reduce greenhouse gas emissions. Czechia has committed to become climate neutral by 2050. To achieve that objective, the structure of the Czech energy market and the sources of electricity generation will need to change significantly. High-carbon fossil electricity generating plants will need to be phased out, in parallel to the decommissioning of aging nuclear power generation capacity.
- (22) According to Czechia, Czechia will develop into a net importer of electricity by 2030 and not investing in new nuclear capacities would exacerbate Czechia's dependence on electricity imports. Czechia states that the Project will play a crucial role in ensuring energy security and the reliability of electricity supply, as an essential condition for transforming the generation mix to achieve carbon neutrality in Czechia. Czechia also states that lignite and coal power plants supplying electricity on the market are currently in the process of being decommissioned, with the envisaged result of having an import-oriented electricity sector as of 2025 onwards.
- (23) Considering the scale of replacement capacity needs and the national decarbonisation and security of supply objectives, given the reliance of the Czech economy and industrial base on power resources, Czechia has concluded that substantial new nuclear replacement capacities are needed. The Czech authorities stress that investments in low-carbon nuclear energy sources together with RES and other net-zero energy technologies, will contribute to the attainment of EU's sustainability and environmental protection goals⁽¹⁶⁾.
- (24) Czechia further explained that the Project will also directly contribute to the objectives of REPowerEU as it will reduce dependence on imported fossil fuels which are subject to price fluctuations and geopolitical risks, as well as strengthen energy security⁽¹⁷⁾.

2.3. Alternative options for securing a low-carbon energy mix

- (25) The Czech authorities have examined several options for securing a low-carbon energy mix, namely investments in RES, gas power generation, increase in imports, demand response and nuclear power. Further details on the alternatives considered are presented in the Opening Decision, recitals 19 to 21.

⁽¹³⁾ The two existing units at the Temelín site with pressurized water reactors VVER-1000/320 were commissioned in 2002 and 2003, with a lifetime expectancy of 60 years. Together, they have an installed capacity of 2,18 GW.

⁽¹⁴⁾ The four existing units at the Dukovany site with pressurized water reactors VVER-440/213 were commissioned between 1985 and 1987, with an initial lifetime expectancy of 30 years which was further extended by 20 years. Together, they have an installed capacity of 2,04 GW.

⁽¹⁵⁾ See recital 8 and footnote 2 above.

⁽¹⁶⁾ Commission Communication, Securing our future: Europe's 2040 climate target and path to climate neutrality by 2050 building a sustainable, just and prosperous society, 6 February 2024, COM(2024) 63 final.

⁽¹⁷⁾ Commission Communication, REPowerEU Plan, 18 May 2022, COM(2022) 230 final.

- (26) Because of the geographical specificities and difficulties to develop large scale renewable projects in Czechia, nuclear has emerged as a favoured option for the Czech authorities ⁽¹⁸⁾ who see the long lifetime, low CO₂ emissions, high utilisation factor of the capacity, high fuel concentration and its stable, reliable and predictable operation as major advantages. The two nuclear power plants in Dukovany and Temelín are well connected to industrial and research and innovation sites. For those reasons, the development of nuclear energy has been identified as a strategic objective, which adds to the other objectives of Czechia for addressing energy security and sustainability (increasing the share of RES, phasing out of lignite power plants etc.).

2.4. Alternative options on financing mechanisms for nuclear energy

- (27) On 1 October 2021, Czechia adopted the Act on Measures for the Transition of Czechia to a Low-carbon Energy Sector ⁽¹⁹⁾ ('Low-carbon Act' or 'LCA'). The LCA sets the framework for the construction and operation after 2030 of nuclear power plants above 100 megawatt ('MW') in Czechia, including the Project ⁽²⁰⁾.
- (28) Further details on the alternatives considered are presented in the Opening Decision, recitals 24 to 31.

3. DETAILED DESCRIPTION OF THE MEASURES

3.1. Modifications of the measures by Czechia following the Opening Decision

- (29) In response to the doubts the Commission raised in its Opening Decision (see Section 3.1.3 below), Czechia modified certain elements of the initially planned measures.
- (30) Most notably, those changes concern:
- The duration of the electricity Purchase Contract ('PC'), which was reduced from 60 years to 40 years (see recitals 83-85);
 - The formula for calculating the remuneration of the beneficiary under the PC, which was modified in order to introduce further financial incentives for efficient operating and maintenance planning behaviour (see recitals 83-106);
 - The justification for the target rate of Return on Equity ('RoE'), where Czechia removed the nuclear risk premium/Stand Alone Major Risk Premium ('SMRP') (see recitals 120-140);
 - The gain-share mechanism, where a slightly higher sharing factor post PC was introduced to reflect increased risks notably from the shorter PC period (see recitals 161-169);
 - The introduction of conditions for the trading of electricity produced by the NPP over its lifetime (see recitals 112-118);
 - Updated estimates for the construction and operating costs of the NPP to reflect market developments (see Section 3.6.6).

⁽¹⁸⁾ The Czech authorities explain the importance of renewable sources for Czechia's decarbonization efforts but also acknowledge their limitations in the development of large-scale generating capacities in Czechia (see recital 9 above). Additionally, Czechia considered other alternatives (such as, imports to address the generation deficit or natural gas-fired generation), which were presented in the Opening Decision (see recitals 19-21). Based on the above, Czechia decided that a combination of nuclear and renewable resources has lower system costs and thus represents a cost-effective decarbonization route.

⁽¹⁹⁾ The Czech authorities explain that the LCA was preceded by an extensive consultation process in 2020 and 2021, showing wide support from the public (63-65 % long-term) as well as wide political support.

⁽²⁰⁾ The present Decision does not cover possible State aid for other projects pursuant to the LCA: it concerns exclusively the support to the Project.

(31) The above changes are set out in detail in the remainder of Section 3 of this Decision.

3.2. The beneficiaries

3.2.1. ČEZ and EDU II

(32) ČEZ is the only nuclear plant operator in Czechia. It is a public company listed on the Prague and Warsaw Stock Exchanges and the parent company of the ČEZ Group operating in several European countries (notably Czechia, Germany, Poland, Slovakia, France, Italy, the Netherlands and Austria). The ČEZ Group is primarily active in electricity generation, trading, distribution, as well as the sale of electricity and heat. The ČEZ Group is also active to a lesser extent in commodity trading, gas distribution and supply, mining and energy services ⁽²¹⁾. The majority shareholder of ČEZ is Czechia with 69,78 % and the shareholder rights are exercised by the Ministry of Finance.

(33) The direct beneficiary of the measure is Elektrárna Dukovany II a. s. ('EDU II'), a fully owned subsidiary of ČEZ created for the purpose of constructing and operating the new nuclear power plant at the Dukovany site. EDU II will be the beneficiary of the PC concluded with the special purpose vehicle ('SPV') ⁽²²⁾ and of the repayable financial assistance ('RFA') ⁽²³⁾. EDU II and ČEZ also benefit from investment protection under the Change of Law or Policy Protection mechanism.

(34) Czechia explained that the Project will be overseen by two boards (the Strategic Project Steering Committee Board and the Project Steering Committee Board) and an executive leadership team with experience in nuclear and conventional power plants.

— The Strategic Project Steering Committee Board ⁽²⁴⁾ (including representation from ČEZ) is the highest project body within ČEZ Group. It is chaired by the ČEZ Chief Executive Officer (CEO) and consists of members of the ČEZ Board of Directors and other key ČEZ and EDU II managers, such as the EDU II Chief Executive Officer and the Project Director.

— The Project Steering Committee Board is responsible for project management jointly by ČEZ and EDU II. It is chaired by the CEO of EDU II and consists of members of ČEZ and EDU II who are in charge of standalone parts of the Project. Members of the ČEZ Board are entitled to attend the meetings of this board on regular basis.

(35) While ČEZ is the Project sponsor in charge of performing the strategic control and oversight for the Project, EDU II is a separate entity which will perform all the management functions under the effective control and oversight by ČEZ. The Czech authorities submit that ČEZ and EDU II will be governed independently from each other for the following reasons.

⁽²¹⁾ ČEZ Group, 2022 Annual Financial Report, p. 2, available at: <https://www.cez.cz/en/investors/financial-reports/annual-reports>.

⁽²²⁾ For explanations, see recital 40 below.

⁽²³⁾ For details, see recitals 170-180 below.

⁽²⁴⁾ The main responsibilities of the Strategic Project Steering Committee Board are to approve the Project plan and its regular updates and the criteria for continuation and completion of the Project; to appoint the members of the Project Steering Committee Board and to issue directives for implementation by the Project Steering Committee Board; to decide on any issues escalated from the Project Steering Committee Board; to approve the transition of the Project from one stage to the next and define the acceptance criteria for fulfilment Project; to assess the Project's safety conditions; to assess significant security risks and any significant security incidents of the Project and consequently impose measures for their mitigation and/or resolution; to approve the final evaluation of the Project after the Final Acceptance Certificate is issued at the end of the warranty period.

- (36) First, Czechia sets out that there will be clear legal and financial separation between EDU II and ČEZ. The governance structure ⁽²⁵⁾ will ensure EDU II's independence from ČEZ and effectively eliminate the incentives for ČEZ to unduly interfere in EDU II's day-to-day operation.
- (37) Second, the terms of the purchase contract will aim to safeguard the State's interest for securing supplies and ensure penalty mechanisms in case of breach of contractual obligations by EDU II. In any event, the State could, through its ownership in ČEZ ⁽²⁶⁾, also ensure that the full operation of the power plant by EDU II is not hindered.
- (38) Third, Czechia explains that there is a strong economic incentive for EDU II to operate efficiently in the electricity market as secured by the PC remuneration formula. Any activity aiming at reducing EDU II revenues would be against the company's economic interest.
- (39) Fourth, Czechia explains that the Project is of critical importance to the ČEZ Group's generation portfolio and financial results, especially after the coal exit and Dukovany I retirement (which is currently expected to occur between 2045 and 2047, see recital 19). According to the business plan prepared by ČEZ (see recital 76 below), the ČEZ Group estimates EDU II's average annual EBITDA over the lifetime of the Project to be approximately EUR [200 to 500] million in real 2020 terms, which, all else being equal, represents an increase of approximately [10 to 20] % to current Group EBITDA if fully consolidated. As such, the magnitude of the Project, particularly relative to ČEZ's existing generation portfolio and balance sheet, means that it will have material implications for the ČEZ Group overall.

3.2.2. The SPV

- (40) The PC (see Section 3.6) for the offtake of the electricity produced by the NPP is planned as a contract between the State and EDU II, the main beneficiary of the Project. The Term Sheet of the PC signed between the State and EDU II stipulates that the State will be entitled to assign/delegate certain rights and obligations arising from the PC (or a specific portion thereof) to a 100 % state-owned legal entity holding a licence for trading with electricity under the Energy Act ('the SPV'), which would become a party to this agreement following the assignment/delegation.
- (41) If the electricity prices are above the PC Strike Price (explained in recitals 94 to 106), the SPV will not require any additional resources from the State. However, if the PC Strike Price is above the market prices of electricity, the State will need to finance the price difference through State resources, namely through the State budget and/or through consumption levies, in line with the PC Remuneration Formula (explained in recitals 88 to 93 below). Article 8 of the LCA leaves the option for the State to use either or both financial mechanisms. The Czech authorities explained that it would likely be a combination of both State budget and specific levies.
- (42) Article 8 of the LCA sets the rules allowing the SPV to establish a charge that the transmission and distribution system operators can collect from electricity consumers and pay back to the SPV. The national energy regulator (the Energy Regulatory Office) would determine the method and timing of accounting and disbursing the levy to cover the relevant costs. The Czech authorities also confirmed that should a levy be used and the proceeds from the levy

⁽²⁵⁾ The governance structure of ČEZ and EDU II can be consulted respectively on the following websites: <https://www.cez.cz/en/cez-group/cez/governing-bodies-of-cez> and <https://www.cez.cz/cs/o-cez/skupina-cez/vyznamne-spolecnosti-skupiny-cez/elektrarna-dukovany-ii/informace-o-spolecnosti>. The Czech authorities explained that EDU II is a separate business entity which is independently managed by its Board of Directors and overseen by the Supervisory Board. Specifically, the EDU II Board of Directors are obliged to act in accordance with due managerial care and in the interest of the company. Further mechanisms to ensure EDU II's independence include the clearly defined rights and obligations set out in contractual terms concluded between ČEZ and EDU II, a ban on the transfer of EDU II's shares, and a ban on the transfer of EDU II's property to the ČEZ Group.

⁽²⁶⁾ The shareholder structure of ČEZ can be consulted on the following website: <https://www.cez.cz/en/investors/shares/structure-of-shareholders>.

not be sufficient to cover the costs of the SPV, the remainder of costs would be covered from the State budget. On the other hand, in case the levy, if any, were to generate revenues above the costs, this excess would accrue to the benefit of the State budget. The Czech authorities submitted that any costs of the SPV would be compensated under the measure to the extent that they occur on market terms only ⁽²⁷⁾. Furthermore, public procurement legislation will also ensure that the SPV will be acting on market terms.

- (43) Measure 1 effectively channels the cash flows through the SPV (see Section 3.6). The SPV will therefore assume the losses and receive revenues from selling to the market the electricity produced by EDU II. In favourable market conditions, the SPV will therefore retain the gains from the activity of electricity sales. The Czech authorities explained that these revenues will be eventually fed into the State budget (or be used to finance support for renewable investments, reducing the respective levy) since the SPV will be fully owned and controlled by Czechia. The Czech authorities explained that no direct distribution of revenues to electricity customers is foreseen under the measure.
- (44) The SPV will hold an electricity trading licence under the Czech Energy Act, enabling it to place EDU II's output on the wholesale electricity markets. It is envisaged to be primarily a balancing responsible party ('BRP') vis-à-vis the Czech market operator, OTE.
- (45) The Czech authorities explained that the objective of that structure is to lower the risk of potential market distortions due to concentration of market power within the ČEZ Group.
- (46) The Czech authorities envisage that the SPV will set up its own trading desk and operations in house. However, they indicated that, if the SPV considers it more appropriate and cost effective in view of the chosen trading approach, it may hold a competitive, transparent, non-discriminatory tender open to all suitable parties to outsource its selected functions. This could include acting as a BRP or the trading function in the future, where there is a sufficient number of qualified potential counterparties in the relevant market. However, in no circumstances can the SPV's trading of electricity be outsourced to the ČEZ Group or to entities that form part of the ČEZ Group.
- (47) Thus, the SPV will either sell the electricity on the wholesale market using its own trading desk or externalise its operation by contracting with a third party, who will then undertake to sell the electricity on the market on its behalf. The SPV may also conclude bilateral contracts for the sale of electricity or hedging contracts with individual customers in addition to selling on the day ahead and intraday (spot) markets.
- (48) Czechia explained that the SPV is expected to be set up not earlier than 2030, but not later than 12 months before the commissioning of the new nuclear power plant, to avoid unnecessary costs considering uncertainties in connection with the market and regulatory environment after 2030. According to Czechia, the SPV will be established in accordance with the applicable national and European Union law, i.e. ensuring in particular the principles of independence, competence and transparency. According to the LCA, the SPV is envisaged to be a 100 % State-owned entity holding a licence for electricity trading ⁽²⁸⁾.
- (49) The SPV will not be part of a vertically integrated group controlled by ČEZ. The corporate structure of the SPV will be construed under Act. No 90/2012 Coll. on Commercial Companies and Cooperatives (Business Corporations Act), including rules of managerial duty of care by the members of the SPV's bodies. The SPV's supervisory board will be set up to ensure the principles of competence and transparency. Furthermore, an independent auditing committee will be set up to supervise all accounting and audit activities of the SPV.

⁽²⁷⁾ The Czech authorities explained that market terms for the SPV's operating costs will be ensured by comparison with benchmark costs of other traders operating in the same market. Such costs would be regularly supervised and audited. The operating costs of the SPV would be covered by market revenues above the Strike Price, if any. Otherwise, they would be covered by the State.

⁽²⁸⁾ Section 6(1) of the LCA reads: The Ministry shall authorise a 100 % state-owned legal entity holding a license for trading with electricity under the Energy Act (hereinafter referred to as the 'Authorised Entity') to perform the obligations arising from the offtake contract and the obligations related thereto under this Act.

3.2.3. *The selection of the beneficiary*

- (50) The Czech authorities explained that the choice of the current Project model and of ČEZ as Project promoter was the result of a detailed assessment by the Government, but was not preceded by a tender, a selection process, or a public call for expression of interest.
- (51) In June 2017, the Standing Committee for Nuclear Energy drafted and discussed a report ⁽²⁹⁾, which summarised the analysis undertaken, and the assessment of various investor models (including consortiums of private companies) and financing models considered for the Project. The report detailed three options. The first option was a private investor consortium with three sub-options: (i) an investor consortium completely excluding participation from the Czech State or ČEZ Group; (ii) an investor consortium with a minority stake held by ČEZ Group; and (iii) an investor consortium with a minority stake held by the State. This first option was not selected because of the low control the State could exercise on the Project completion. The second option was to realise the Project fully by a separate State-owned entity to be entrusted with the construction and operation of new nuclear power plant. While that option was considered as offering sufficient security, it was rejected because of the high impact on the budget and the lack of sufficient technical knowledge.
- (52) The third option where ČEZ was the Project promoter ⁽³⁰⁾ was considered by the Czech authorities as optimal since it provided the necessary State control (in particular through the SPV set up) and took advantage of ČEZ's experience with the construction and operation of nuclear power plants. According to the Czech authorities, ČEZ is the most suitable entity to act as the developer and investor for the Project in part due to the majority ownership interest held by Czechia represented by the Ministry of Finance in the company, which provides the Czech Government with comfort regarding national security aspects and availability of funds for the required equity capital. That option was approved following the Government Resolution No 485 of 8 July 2019.
- (53) The Czech authorities explained that ČEZ has extensive experience in the market as a credible and capable nuclear power plant developer and operator in Czechia and is very familiar with the legislative and regulatory framework, including licencing procedures. As one of the ten largest energy companies in Europe, the ČEZ Group has experience also in nuclear research, planning, construction and maintenance of energy facilities and the processing of energy by-products. Thus, the Czech authorities explained that ČEZ has highly qualified staff experienced not only in nuclear energy, but also in public procurement and negotiations, which should be an asset for the Project realisation.
- (54) According to the Czech authorities, the availability of suitable sites for the construction of a nuclear power plant and the economic rationality of such construction constitute other important aspects of the Project. Czechia has limited suitable geological, geographical, and technical conditions for the construction of a new nuclear power plant as regards the stability of the subsoil, availability of water and the possibility of transmission of the produced power. The Czech authorities considered that the best conditions, verified by more than 30 years of operation of the existing units, were in Dukovany.
- (55) The Czech authorities detailed the preparatory efforts undertaken by ČEZ thus far. Specifically, ČEZ has acquired ownership of the proposed site for the NPP, a process initiated in April 2008 and finalised in 2021. Additionally, ČEZ has conducted feasibility studies with the aim of expediting the Project's development timeline and reducing associated costs. These actions were undertaken to alleviate the projected capacity gap and ensure the security of the

⁽²⁹⁾ Analýza vhodného investorského modelu pro výstavbu nového jaderného zdroje a návrh možných modelů financování pro zajištění návratnosti investic (Standing Committee for Nuclear Energy, Analysis of a suitable investor model for the construction of a new nuclear power plant and proposal of possible financing models to ensure a return on investment, June 2017).

⁽³⁰⁾ That model was further assessed in a complementary report in 2018: Analýza vybraných investorských modelů výstavby nových jaderných zdrojů a způsobu jejich financování. That report took into account expected unit production costs of electricity for different ownership variants, a detailed SWOT analysis of each variant, how each variant best meets the objectives of the State Energy Policy and the National Action Plan for Nuclear Energy; and the fiscal impact of each model. The report also included a risk assessment.

system's supply needs. Furthermore, Czechia emphasised that alternative projects with longer development horizons would not adequately address immediate supply concerns. The Czech authorities explained that in case a different project promoter was to pursue a suitable site for an NPP in Czechia, significant delays of up to 14 years beyond the Project's timeline were estimated, accompanied by heightened risks and costs. The Czech authorities finally explained that in the event of a different project promoter, additional costs of approximately EUR [200 to 700] million would likely be incurred, covering the value of the NPP site, licensing, development activities, and synergies with existing NPP infrastructure.

- (56) ČEZ and EDU II already have a number of essential licences and approvals for the realisation of the Project, such as an Environmental Impact assessment and siting permission according to Atomic Act and State Authorisation for a new nuclear power plant. The process for obtaining building licence and planning permission, required under national rules, is also progressing.
- (57) The Czech authorities explained that the country's economy is largely exposed to threats from external sources concerning the provision of energy. The public ownership of the majority of ČEZ shares was an important aspect in the selection, especially from the perspective of ensuring the safeguarding of Czechia's national security interests.
- (58) By expanding the nuclear generation capacity in the ČEZ Group's portfolio to replace the future decommissioning of some of the existing generation capabilities, the Project forms a central part of ČEZ's medium to long-term business strategy.
- (59) Finally, Czechia contended that there was no other viable alternative than ČEZ for the Project, without this having any bearing on any future similar projects.

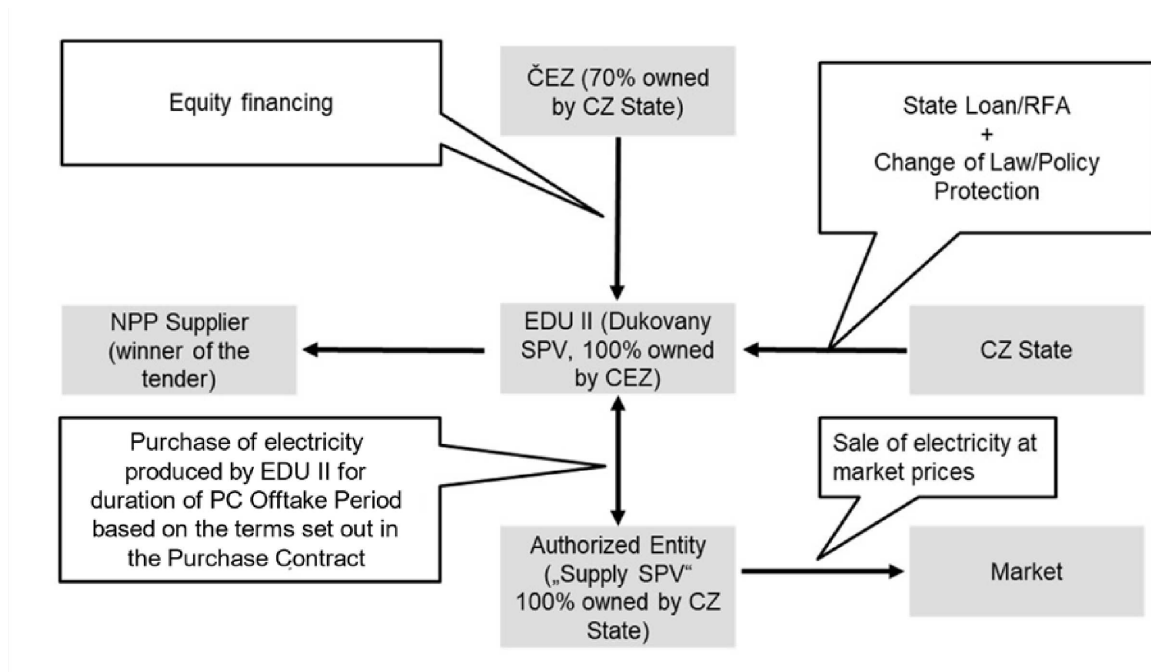
3.3. General description of the Project

- (60) The Project consists in the construction and operation of a new nuclear power plant at the Dukovany site, Czechia, with a capacity of up to 1 200 MW.
- (61) The LCA, which creates a broad framework for support for nuclear investment, does not fall under the scope of the present Decision as the LCA constitutes a generally applicable law distinct from the State support measures specifically designed and envisaged for the Project.
- (62) The State support consists of a package of three measures:
- (63) Measure 1: an electricity Purchase Contract ('PC' or 'offtake contract') between the main beneficiary – EDU II, a wholly owned subsidiary of ČEZ and the State represented by the Ministry of Industry and Trade (the 'Ministry'). The electricity will be sold to an undertaking functioning as a SPV to be incorporated at a later stage, owned and managed directly by the State (see Section 3.6);
- (64) Measure 2: a State loan (repayable financial assistance; 'RFA') at a subsidised interest rate, covering, in principle, 100 % of the construction costs (see Section 3.7);
- (65) Measure 3: a Change of Law or Policy Protection mechanism for ČEZ as the investor (also sometimes referred to as the 'Investor'; see Section 3.8).

(66) The beneficiaries (see Section 3.2) and the structure of the Project are presented in the following figure:

Figure 1

Dukovany Project structure



Source: Czech authorities.

(67) The Project is divided in five stages:

- Stage 1: Preparation and supplier selection [2020-2025]
- Stage 2: Preliminary works [2025-2029]
- Stage 3: Construction and commissioning [2030-2036]
- Stage 4: Warranty period [2036-2038]
- Stage 5a: Operations [2038-2096]
- Stage 5b: Decommissioning [2096-2116].

(68) The newly-built nuclear power plant is expected to be commissioned in 2036 for trial operations, while commercial operations are planned to commence in 2038. The plant will have an operating lifetime of 60 years is planned to be decommissioned in 2096.

(69) The Czech authorities explained that a First Implementing Contract concluded between Czechia, ČEZ and EDU II regulates stage 1 of the Project, i.e. until selection of the engineering, procurement and construction (‘EPC’) contractor. This contract serves, among other things, the fundamental security interests of Czechia during the implementation of the Project and ensures Czechia’s access to information on the Project as well as the implementation of security requirements for the selection procedures. That step is expected to be completed in 2025. For stages 2 and 3 of the Project (i.e. preliminary works, construction and commissioning) the First Implementing Contract provides that on or before 31 December 2024 the Second Implementing Contract or PC shall be signed and shall replace the First Implementing Contract. The contractual setup thereafter includes the PC, an Investor Agreement and a decision of the State to provide the RFA.

- (70) Czechia submits that due to the essential national security interest of the project, the State had to include conditions in the contractual framework, ensuring it has sufficient control on the Project. Those conditions are set out in the First Implementing Contract, including on confidential information sharing and State security matters. Within that contract, the parties consider that national security interests constitute a valid reason for a derogation from the national public procurement rules based on Section 29(a) of Act No 134/2016 on Public Procurement ⁽³¹⁾ for the selection of a contracting party for the construction of the power plant.
- (71) ČEZ and EDU II discussed the tender organisation outside the Public Procurement Act regime with the national Office for the Protection of Competition and obtained a positive opinion on 15 June 2020 before proceeding with the call for tenders ⁽³²⁾.
- (72) The EPC supplier will be responsible for the engineering, construction and commissioning of the Project. Following the State decision to exclude applicants from States that were not party to the Agreement on Government Procurement ⁽³³⁾, at the time of launching the procurement process there were three possible technology choices:
- AP1000 design by Westinghouse Electric Company LLC (USA);
 - APR1000+ design by Korea Hydro & Nuclear Power (South Korea); and
 - EPR 1200 design by EdF (France).
- (73) The call for tenders for the selection of the EPC contractor was launched by ČEZ, via its subsidiary EDU II, in March 2022, and initial bids by the three pre-selected suppliers were received in November of the same year. After extending the deadline for the submission of final bids twice, the three pre-selected potential suppliers provided updated bids on 31 October 2023. Czechia explained that, under the terms of the tender process, the respective bids were required to include binding offers for the construction of the 5th unit in Dukovany, which is the subject matter of the Project and the basis for this Decision, and non-binding offers for 3 additional units, of which one would be at the Dukovany site and two would be at the Temelín site.
- (74) On 31 January 2024, the Czech Government decided ⁽³⁴⁾ to expand the scope of the EPC tender by tasking EDU II to request binding bids for up to four nuclear reactors (including the Project), with the aim to secure the option to proceed with the execution of these additional units at some point in the future, when and if the Czech State decides to do so. Czechia explained that neither the investor/operator nor the financing model for these additional units have been determined at the time of adoption of this Decision. The Czech Government tasked the Minister of Industry and Trade and the Minister of Finance to submit to the Government, by 31 December 2024, a proposal for the financing of the additional three new nuclear units at the Dukovany and Temelín sites. State support for the construction of these three additional units, if any, falls outside the scope of this Decision.
- (75) The Czech authorities commit that, in the event that State aid is deemed necessary for the three additional nuclear units besides the 5th reactor at the Dukovany site, Czechia will accordingly notify the aid to the European Commission and wait for the Commission's approval prior to implementation.

⁽³¹⁾ <https://www.zakonyprolidi.cz/cs/2016-134#>.

⁽³²⁾ See Office for the Protection of Competition, § 29(1) letter a) of Act No 134/2016 Coll., on public procurement, 15 June 2020, available at: <https://uohs.gov.cz/cs/legislativa/verejne-zakazky.html>. On 23 January 2024, the Office for the Protection of Competition confirmed that this applies also under the changes to the tender process introduced to request binding bids for 4 reactors.

⁽³³⁾ World Trade Organization, Agreement on Government Procurement as amended on 30 March 2012 ('GPA 2012'), https://www.wto.org/english/tratop_e/gproc_e/gp_gpa_e.htm.

⁽³⁴⁾ See Government Resolution No 74 dated 31 January 2024.

3.4. Preparatory works for the Project

- (76) In view of the need for new nuclear capacity, ČEZ approved an initial business plan in 2010 for adding up to 1 200 MW capacity to the Dukovany site by 2036. A feasibility study for the expansion of the current nuclear capabilities at the Dukovany site was completed in the same year. An initial business plan prepared by ČEZ was submitted to the Commission in June 2021 and an updated version was provided on 25 October 2023.
- (77) ČEZ started acquiring the land necessary for the Project already in April 2008. As of February 2024, EDU II owned the land necessary for the Project and all bidders (of the EPC tender) were informed about the available space.
- (78) The Project had to undergo an Environmental Impact Assessment ('EIA') to identify, describe and comprehensively assess the foreseeable impact on the environment and public health. The process began in early 2016 and included international consultations and public discussions in 2018. The EIA was followed by a positive independent assessment and the Ministry of Environment issued a positive binding statement on the Project's EIA in August 2019 ⁽³⁵⁾, a necessary step to start the Project's permitting.
- (79) In March 2020, ČEZ and EDU II started the process to assess the site for a nuclear installation in terms of nuclear safety, radiation protection, technical safety, radiation situation, monitoring, radiation extraordinary event management and security during the lifetime of a nuclear installation. EDU II obtained a licence for the siting of the nuclear installation in March 2021, which is the first licence required for a new nuclear unit. Czechia states that all the key licences and permits needed to facilitate the timely progress of the Project were obtained.

3.5. Technical characteristics

- (80) The Project targets the construction of a III+ generation pressurised water reactor ('PWR'). A range between 850 MW to 1 200 MW is considered as offering sufficient technical solutions for the selection of the technology provider. The Czech authorities explain that the technology and delivery partners for the Project would be selected via a competitive and transparent tender process.
- (81) The Czech authorities also explained that the Project will meet the technical screening criteria set out in point 4.27 of the delegated act adopted pursuant to the Taxonomy Regulation ⁽³⁶⁾. On 11 January 2023, Czechia adopted Government Resolution No 24/2023 ⁽³⁷⁾ which sets out Czechia's obligation to meet the technical screening criteria in connection with radioactive waste management stemming from the Taxonomy Regulation. Specifically, this Resolution requires compliance with points 4.26, 4.27 and 4.28 of Annex I to the Taxonomy Regulation, including with the requirements to have a documented plan with detailed steps in order to have a disposal facility for high level radioactive waste in operation by 2050, and the use of accident tolerant fuel from 2025. According to that Resolution, the Minister of Industry and Trade has to submit to the Czech Government by 31 December 2024 a proposal for the update of the National Policy of Radioactive Waste and Spent Fuel Management, including the deadline for the selection of the final site and backup sites for the future deep disposal facility.
- (82) Moreover, the Czech authorities explain that in compliance with the Taxonomy Regulation there will be resources available at the end of the estimated useful lifetime of the nuclear power plant corresponding to the estimated cost of radioactive waste management and decommissioning as demonstrated by the inclusion of decommissioning and nuclear waste treatment costs in the Financial Model of the Project (see Section 3.6.6).

⁽³⁵⁾ https://portal.cenia.cz/eiasea/detail/EIA_MZP469?lang=en.

⁽³⁶⁾ See Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities (OJ L 188, 15.7.2022, p. 1).

⁽³⁷⁾ See Government Resolution No 24/2023 of 11 January 2023, available at <https://www.odok.cz/portal/zvlady/jednani-detail/2023-01-11/>.

3.6. Measure 1: Purchase contract (the PC)

3.6.1. Main elements of the PC

- (83) The first measure consists of the PC between the State as off-taker and EDU II as supplier, providing revenue support during the first 40 years of operation of the nuclear power plant. The beneficiary is EDU II, a fully owned subsidiary of the ČEZ Group (see Section 3.2), and the counterparty of the contract will be the SPV fully owned by the Czech State (see Section 3.2.2).
- (84) Czechia had initially notified a contract duration of 60 years, at a fixed price estimated between 50 and 60 EUR/MWh, incentivising the power plant to maximise output.
- (85) To address the doubts raised by the Commission in the Opening Decision, Czechia replaced the measure described in recital 84 above by the PC with a remuneration formula, which Czechia considers to have effects similar to a two-way Contract for Difference ('CfD') ⁽³⁸⁾ which, in addition to a revenue guarantee, includes an upward limitation of the market revenues of the beneficiary. Czechia explained that the modified support measure will provide appropriate incentives for EDU II to operate and participate efficiently in the electricity markets by optimising its output in response to market signals within the technical constraints of the plant.
- (86) According to the draft terms of the PC, the SPV will offtake all power generated and exported to the grid by EDU II (the 'Output Volume') for a duration of 40 years (the 'Offtake Period') from the beginning of operation ⁽³⁹⁾. EDU II will be obliged to sell its entire Output Volume during the PC Offtake Period exclusively to the SPV and will receive payments based on the PC 'Remuneration Formula' (see recital 88 below).
- (87) All dispatch rights are with EDU II. If the SPV fails to offtake the Output Volume or any part thereof, then EDU II will in this exceptional circumstance sell the electricity as a price taker on the spot market. Czechia submits that the aim is to ensure the ability to continue producing electricity until the situation is resolved. The reasons can be legal (loss of authorization to trade), financial (insolvency, inability to fulfil obligations, non-fulfilment of the financial conditions of settlement of deviations) or technical (loss of SPV's access to markets). In these circumstances, the power plant is still running, and the electricity needs to be brought to the market. The SPV will pay to EDU II compensation to cover any shortfall compared to the revenues that EDU II would have achieved if the SPV had complied with its offtake obligation. Czechia committed that in this case, EDU II will sell all produced electricity on the spot market (exchange-based day ahead or intraday market) as a price taker (thus without setting a minimum price for electricity). The Czech authorities submitted that in this situation EDU II can neither select any specific buyer (as the sale happens on an anonymous exchange) nor determine the price or the conditions of sale (as standard products are sold at the marginal price on the exchange). Czech authorities submit that in such a case, the Ministry as the entity responsible for designating the SPV will carry out necessary steps to restore SPV's ability to fulfil its offtake obligations. In accordance with the Low-carbon Energy Act, the SPV or the Ministry will inform the NRA on any such event.

⁽³⁸⁾ A 'two-way contract for difference' means a contract signed between a power generating facility operator and a counterpart, usually a public entity, that provides both minimum remuneration protection and a limit to excess remuneration; the contract is designed to preserve incentives for the generating facility to operate and participate efficiently in the electricity markets.

⁽³⁹⁾ According to the Czech authorities, the PC Offtake Period (i.e. the period during which the power purchase obligation of the SPV applies) starts from the earlier of (i) the Start Date, i.e. the day when the NPP exports first electricity into the grid and EDU II has notified the State/SPV that it wishes the Start Date to occur subject to deadlines to be defined in the PC; and (ii) the Longstop Date, i.e. the day following the last day of the Target Commissioning Window which runs for five years starting on the Target Commissioning Date. The Target Commissioning Date will be extended to account for any delays caused by events constituting Legitimate Grounds. The Czech authorities explained that any delay in the commencement of the commercial operation beyond the Target Commissioning Window, which is defined as a 5-year period starting on the Target Commissioning Date, effectively shortens the duration of the PC.

- (88) The PC Remuneration Formula calculates the amounts to be paid by the SPV to EDU II or vice versa. The formula consists of two components, (1) an *ex post* settlement; and (2) the market exposure. It is designed based on the following baseline formula:

$$R = \underbrace{(f - p') * k}_{\text{settlement term}} + \underbrace{\sum_h q_h * p_h}_{\text{market exposure}}$$

including certain adjustments applicable to the *ex post* settlement term, depending on market circumstances and the plant's operational cost. Specifically, the PC Remuneration Formula is defined as:

$$\text{If } p' > c : R = \max [(f - p') * k; (\alpha * c - p') * q] + \sum_h q_h * p_h \quad \text{If } p' \leq c : R = (f - c) * k + \sum_h q_h * p_h$$

Where:

- (R) is the remuneration.
- (p_h) is the Market Price defined as the hourly day-ahead market price on PXE ⁽⁴⁰⁾.
- (q_h) is EDU II's Output Volume in a given hour.
- (q) is EDU II's Output Volume summed over the Settlement Period (the period on which the Market Reference Price is defined, i.e. one year).
- (f) is the Strike Price (see Section 3.6.2).
- (p') is the Market Reference Price defined as the *ex post* simple average of Market Prices (p_h) over the year ending with the date on which the Market Reference Price is calculated.
- (k) is the Reference Quantity defined *ex ante* as the assumed output volume over the Settlement Period.
- (c) is the Operational Variable Cost of the power plant.
- (α) Alpha is defined as the quotient of Strike Price and Operational Cost ($\alpha = f/c$). Alpha is set at the time when the *ex post* settlement payable to EDU II is calculated based on the applicable values of (c) and (f).

- (89) The Czech authorities explained that the first term of the baseline formula, i.e. the *ex post* settlement will provide revenue stability for the beneficiary irrespective of average market conditions, while at the same time ensuring the State against overcompensation ⁽⁴¹⁾. The *ex post* settlement will be calculated for the Settlement Period (the period during which the Market Reference Price is defined, i.e. one year) based on actual values for the Market Reference Price, Alpha and other applicable parameters, and will be payable two months after the end of each Settlement Period. The general principle of the baseline formula is that when the market reference price (p') is lower than the Strike Price (f), the power plant will receive the difference between the Strike Price (f) and the market reference price (p') for the reference quantity (k); conversely, when the market reference price (p') is higher than the Strike Price (f), the power plant will be obliged to pay back the difference for the reference quantity (k).
- (90) Compared to the baseline formula, the PC Remuneration Formula includes certain adjustments to the *ex post* settlement term, depending on market circumstances (p) and the plant's unit operational variable cost (c), as defined in recital 88. Specifically, when the market reference price (p') is higher than the operational variable cost of the power plant (c) over the settlement period, the *ex post* settlement term will be adjusted so as to limit the clawback, intending to provide a safeguard against operational losses in case of unplanned outages when prices are high. For

⁽⁴⁰⁾ Power Exchange Central Europe is an energy exchange specialising in the energy markets of the Central and Southeastern Europe. For more details see: PXE – Power Exchange Central Europe, a.s.

⁽⁴¹⁾ Overcompensation is also addressed through the gainshare mechanism (see section 3.6.7).

instance, if the reference market price is above operational variable costs (c) and above the Strike Price (f), EDU II will pay back the difference between the market reference price (p) and the Strike Price (f) for the lower of reference quantity (k) and output volume (q). When the market reference price (p) is at or lower than the operational variable cost of the power plant (c), the value of the *ex post* settlement will be capped at the difference between the Strike Price (f) and operational variable costs (c) times reference quantity (k), intending to provide a safeguard against excessive remuneration when prices are low.

- (91) The second term of the baseline formula, i.e. the market exposure, is intended to provide incentives for EDU II to optimise its operation throughout the year based on hourly day-ahead Market Price (p_h) signals. At the end of each month, EDU II will receive respective payments from the SPV based on the sum of its actual hourly Output Volume multiplied with the actual Market Prices in each hour of that month, i.e. $\sum q_h * p_h$.
- (92) Under the PC, EDU II is free to decide its output and is not obliged to maintain a predetermined minimum level of output. All electricity produced by EDU II will be purchased by the SPV who will sell it on the market, based on a selling strategy that will comply with certain commitments (see Section 3.6.4). Any deviation between the price realised on the market by the SPV and the Market Price paid to EDU II is born by the SPV.
- (93) Czechia submitted that the PC will be concluded at a later stage, after the selection of the EPC contractor and delivery partners. The PC will be concluded and signed in line with the EPC contract terms. The SPV will be established later and before the commissioning of the new built power plant, as a contractual counterparty set out in the PC.

3.6.2. Strike Price setting for the PC

- (94) The Czech authorities explained that the PC will determine the initial Strike Price calculated on the basis of the financial model ('Financial Model') submitted by Czechia⁽⁴²⁾ such as to allow the Investor to earn a target return on equity ('Allowed Equity internal rate of return' ('IRR' or 'RoE')) of [9 to 11] % nominal, post-tax, pre-commercial financing over the expected operational lifetime of the Project (including decommissioning costs). The value of the Strike Price based on the assumptions of the Financial Model submitted to the Commission on 15 March 2024 is [65 to 80] EUR/MWh⁽⁴³⁾, and the value of the reference quantity is [75 to 100] % of net capacity. The value of the Strike Price can change very significantly depending on the various input parameters as described below in this sub-section. If, for instance, the expected construction costs after conclusion of the EPC contract were to be significantly higher than under the initial assumptions, this would in so far as the cost increase is due to Legitimate Grounds (explained in recital 104 below), result in a significant increase to the Strike Price. Czechia has provided a total of 35 different scenarios to the Commission, representing different possible assumptions on the development of costs and revenues and resulting in initial Strike Prices ranging from [50 to 80] EUR/MWh (in scenario 35, based on high market price assumptions of [100 to 200] EUR/MWh) to [100 to 125] EUR/MWh (in scenario 30, based on an increase of construction cost to EUR [17 to 18] bn).
- (95) The Financial Model will use as inputs assumptions including on the market price expectations, EDU II's availability, load following⁽⁴⁴⁾ expectations, expected construction costs, operating costs and decommissioning costs and other relevant assumptions such as on capital expenditure and financing (including the State loan, see Section 3.7), as well as the initial reference quantity for the PC Remuneration Formula. Section 3.6.6 details these assumptions.

⁽⁴²⁾ See recital 124 below.

⁽⁴³⁾ This value is in real terms, in 2020 prices. The Czech authorities estimate that the equivalent value in real terms, in 2025 prices will be EUR [50 to 100] EUR/MWh.

⁽⁴⁴⁾ Load following, in this context, refers to the adjustment of the power output of the NPP to optimise production in reaction to electricity prices which fluctuate throughout the day. For more information, see recital 187.

- (96) The Financial Model allows to forecast the output volume and calculate the free cash flow in each year from the signing of the PC until the end of decommissioning. The Strike Price (which affects the power plant's expected revenues through the *ex post* settlement term) is calculated in the Financial Model as the value which produces a net present value of cashflows equal to zero at the Allowed Equity IRR.
- (97) Most costs items and other inputs (including market price forecasts) to the model will be subject to inflation indexation. The PC Strike Price will also be subject to inflation indexation. A defined index or a basket of indices will be applied to all relevant cost items and other inputs in the model. Some cost items will not be indexed as these are determined through legislation or the RFA (e.g. RFA interest, decommissioning costs, nuclear account fulfilment, minimum case reserves). Market price forecasts will be indexed based on CZ CPI ⁽⁴⁵⁾. For both construction and operations costs, a basket of published indices will be used to determine the indexation. This basket is based on a weighting of four indices the Czechia, namely PPI ⁽⁴⁶⁾, CZ CPI, EU PPI ⁽⁴⁷⁾, and CZ wages ⁽⁴⁸⁾ as follows:
- (a) Construction costs will be indexed in the following manner: CZ PPI ([30 – 50] %), CZ CPI ([0 – 10] %), EU PPI ([30 – 50] %), CZ wages ([10 – 30] %).
 - (b) Operations costs will be indexed in the following manner: CZ PPI ([30 – 50] %), CZ CPI ([10 – 30] %), EU PPI ([0 – 10] %), CZ wages ([30 – 50] %).
- (98) The indexation mechanism for the Strike Price will be based on the above indices and weightings depending on whether the Project is in the construction or operations phase (i.e. the Strike Price will be adjusted by the construction basket of indices during construction and by the operation basket of indices during operation). The PC will provide for an indexation mechanism (with relevant index and application method) pursuant to which the previously applicable Strike Price will be escalated on an annual basis. The inflation assumption used for the indexation mechanism will be updated as part of the overcompensation reviews occurring every five years, see Section 3.6.7.
- (99) By way of example, based on an assumed inflation rate of 2 %, this means that in nominal terms, a Strike Price of EUR [60 to 80]/MWh in 2020 would (without taking into account eventual changes to input parameters during regular reviews) result in a nominal Strike Price of EUR [90 to 110]/MWh in 2036, EUR [130 to 170]/MWh in 2056 and EUR [200 to 250]/MWh in 2076. The Czech authorities submit that this approach aims at intergenerational fairness, to avoid excessively high strike prices at the beginning of the operation and (given general inflation) excessively low strike prices towards the end of the PC period. They argue that while input values for the calculation of the Strike Price take account of inflation as well, this does not result in double indexation, as without separate indexation of the Strike Price, the starting Strike Price would need to be considerably higher. Based on the above example, they submit that the alternative non-indexed Strike Price in the base case would be EUR [100 to 150]/MWh over the duration of the PC.
- (100) Other costs are indexed as follows: the development and construction costs use the construction index set out above. Operating and decommissioning costs use the operation cost index set out above.
- (101) The Strike Price and the reference quantity will be fixed based on the parameters available after signing the EPC contract, notably as regards the construction cost, and revisited only during (1) the periodic review of the parameters in the PC Remuneration Formula (see recital 102); and (2) when Strike Price adjustments as agreed in the PC take place (see recital 104).

⁽⁴⁵⁾ The CZ CPI correspond to an increase in average annual Consumer Price Index in the Czech Republic as published by the Czech Statistical Office, see https://www.czso.cz/csu/czso/inflation_rate.

⁽⁴⁶⁾ The CZ PPI correspond to the total industrial producer price index in the Czech Republic as published by the Czech Statistical Office (industry-total), see https://www.czso.cz/csu/czso/ipc_ts.

⁽⁴⁷⁾ The EU PPI correspond to the industrial producer price index in the European Union (Producer prices in industry, total) as published by the Eurostat, see https://ec.europa.eu/eurostat/databrowser/view/teii010/default/table?lang=en&category=t_sts.t_sts_ind.t_sts_ind_pric.

⁽⁴⁸⁾ The index wages in the industry CZ correspond to an annual percentage change of the average gross wage in the industry as published by the Czech Statistical Office (average wage industry, total), see https://www.czso.cz/csu/czso/pmz_ts.

- (102) First, the periodic review of the parameters in the PC Remuneration Formula will take place once every 5 years with the first review planned before the operations commence or upon either contractual party's written request. The review will update (up- or downward, as appropriate) the values of certain parameters in the PC Remuneration Formula, i.e. (c), (k), (f), and (a), and some of assumptions in the Financial Model, for example regarding operating expenses ('OPEX'), inflation indices or load following assumptions. The Strike Price and the reference quantity will be recalculated in the Financial Model using the updated assumptions to achieve the Allowed Equity IRR for the Investor. The review will be overseen by an independent third party, expected to be Czech Energy Regulatory Office.
- (103) The draft contractual documents provided by Czechia also envisage the possibility of a revision of the definitions of the parameters used in the remuneration formula. However, any changes in those definitions must be notified to the Commission before implementation.
- (104) Second, the Strike Price adjustments according to the PC can take place in case of an event which leads to a CAPEX/OPEX increase or loss of Project revenues or another adverse impact on the Project, referred to as 'Legitimate Ground' in the PC. The PC will include an exhaustive list of Legitimate Grounds⁽⁴⁹⁾. If a Legitimate Ground occurs, the values of certain parameters in the PC Remuneration Formula, i.e. (c), (k), (f), and (a) and the input parameters to the Financial Model will be reviewed and updated to mitigate the effects of the Legitimate Ground for EDU II. These adjustments to the Strike Price are designed to allow EDU II to achieve at most the same Allowed Equity IRR that would have been achieved if the relevant Legitimate Ground had not occurred. This means that where other changes occurred which do not constitute Legitimate Grounds, and these other changes have resulted in a reduced IRR, the effects of the Legitimate Grounds do not allow for compensation of the effects of non-Legitimate Grounds and the equity IRR to be targeted is below the Allowed Equity IRR of [9 to 11] %.
- (105) In the case of Legitimate Grounds, instead of a Strike Price adjustment, EDU II and the State may agree that EDU II will receive compensation in the form of a lump sum payment (or of several instalments) payable within an agreed period of time from the occurrence of the relevant Legitimate Ground.
- (106) The Czech authorities further explained that Legitimate Grounds apply provided that the adverse effects cannot be overcome by EDU II exercising 'Due Care'.

3.6.3. *Financing of the purchase contract and use of revenues from the offtake contract*

- (107) As set out in Article 9 of the LCA, the financing of the support for nuclear energy will be covered by the Ministry from funds that are created by: (i) the revenues from electricity sales of the SPV; (ii) a levy⁽⁵⁰⁾ charged by the network operators to final electricity consumers, similar to the existing financing of RES; and (iii) contributions from the State budget.
- (108) Czechia argues that the choice between utilising taxpayers or consumers for any charges or rebates is a question of policy and should remain at the State's discretion. The Czech authorities explained that they intend using all the revenue streams described in Article 9 LCA. The funds earmarked for financing measures for a transition to the low-carbon energy sector will be kept by the Ministry or by the SPV separately in special accounts at banks based in Czechia.

⁽⁴⁹⁾ Based on the Term Sheet for the PC, the following events are considered as Legitimate Grounds: RFA financing cost changes or unilateral revocations or changes to the RFA, Delayed Final Investment Decision, Change in the Law, Breach of Obligations by the State or State Entities, Security Requirements, Requirements of Authorities, Natural disasters or similar events, Events beyond the control of EDU II, Infrastructure and grid issues.

⁽⁵⁰⁾ The possible levy and possible exemptions thereof are outside the scope of this procedure.

- (109) The Czech authorities confirmed that should a levy charged by the network operators not be sufficient to cover a deficit between the funds raised from the levy and the revenues from electricity sales of the SPV, contributions from the Czech State budget would be used to cover the deficit in line with Articles 9(1)(d) and 9(9) of the LCA. Should there be to the contrary any excess remaining after covering the costs of the measure, this excess would enter the State budget.
- (110) The Czech authorities further explained that while a levy may contribute to the financing of the measures, the financing would not depend on such a levy and the State budget would cover potential deficits where needed. Specifically, Czechia committed that the State will intervene to cover any shortfall between the funds raised from the potential levy and the intended level of support under the Project.
- (111) As regards potential SPV revenues from the *ex post* settlement payments, in line with the Act No 367/2021 on Measures for the Transition of the Czech Republic to Low-Carbon Energy, they will be used (i) primarily to finance the settlement payments to the beneficiary in the future; (ii) secondarily to finance renewable energy sources according to the Act No 165/2012 Coll., on Promoted Energy Sources (on a non-discriminatory basis by lowering the amount to be financed via regulated component of the electricity price) or returned to the State budget.

3.6.4. The power trading commitments

- (112) Czechia has committed to ensure that at least 70 % of EDU II's total electricity output will be sold on the day-ahead, intraday and futures markets over the entire lifetime of the NPP. This commitment therefore applies to the SPV during the entire period of the PC and to the beneficiary EDU II thereafter, as well as to any entity the SPV or EDU II may delegate their trading activities to (any reference to the SPV/EDU II in this Section 3.6.4 comprises any entity to which the trading activities have been delegated).
- (113) As a matter of principle, the SPV/EDU II⁽⁵¹⁾ will trade on the day-ahead and intraday markets on the short-term exchange organised by the Czech electricity market operator (OTE) and the futures markets on the Czech Power Exchange (PXE) and only exceptionally and subject to the prior agreement of the Commission's services, on other exchanges.
- (114) The SPV/EDU II will sell the rest of EDU II's total electricity output (i.e. at most 30 %) on objective, transparent and non-discriminatory terms by way of auctions. The set of rules and/or framework for these auctions must be reviewed and approved in advance by the Czech energy regulator in line with the regulator's duties and competencies according to the Czech Energy Act. The SPV/EDU II must notify any auction to the Czech energy regulator no later than one day before its public announcement.
- (115) Czechia commits to ensure that the nuclear power auctions will be open, clear, transparent, and non-discriminatory, based on objective criteria, defined *ex ante* and minimising the risk of strategic bidding. The auctions shall be conducted on a widely available platform to ensure accessibility, while eliminating geographic barriers, and enabling broad participation from a diverse range of market players. The platform shall be designed in a manner that simplifies the auction process and enhances usability for all participants while ensuring the confidentiality and integrity of auction data. The platform shall comply with relevant regulatory requirements and standards governing electricity markets, including rules for market design, operation, transparency, and fair competition. Participation in auctions shall be equally available to all licensed and registered traders on the same terms. No restrictions shall be

⁽⁵¹⁾ During the PC period, the SPV, or an entity outside of ČEZ Group to which the SPV delegated this activity, will be responsible for selling the output. Exceptionally, if the SPV fails to offtake the Output Volume or any part thereof, then EDU II will sell the electricity as a price taker on the spot market (see recital 83). After the PC period, EDU II or an entity it delegates trading activity to will directly be responsible for selling the output. The power trading commitments apply to any of the two entities selling electricity produced by the NPP over its expected lifetime, as well as to any entities they may delegate their trading activities to.

imposed on the final use of electricity sold via auctions. The criteria for the auctions shall be published sufficiently far in advance of the deadline for submitting bids, the expected number of bidders should be sufficient to enable effective competition and the volume of electricity sold in the auction will represent a binding constraint. *Ex post* adjustments to the bidding process outcome shall be avoided. The Czech energy regulator will monitor the auction process and supervise adherence to the approved auction rules. It will also report any non-compliance to the European Commission.

- (116) Czechia explained that the envisaged parameters of the future nuclear power auctions will include estimated lot sizes of 1-10 MW, contract durations of one year, one-quarter of a year, or shorter term. Auctions will be organised as pay-as-bid, with a predefined minimum price that will be announced not earlier than one- to two days before bid closure. Further, the frequency of the auctions shall be set on quarterly to annual basis with transparent rules of announcement period of 30 days before the start of the auction. Finally, the duration of the auctions will not exceed a period of seven calendar days with the results being announced within the following week. This applies both to auctions during the PC period and in the post PC period.
- (117) In exceptional circumstances, the SPV/EDU II may deviate from the trading rules described above. Thus, if the churn factor⁽⁵²⁾ for the exchange on which the SPV/EDU II is obliged to sell at least 70 % of the total electricity output of EDU II falls below 40 % ('the threshold') for a period of 30 consecutive days, the SPV/EDU II will have the right to sell up to 50 % of the total electricity output of EDU II through auctions which comply with the conditions specified in this section for a period of 30 days, which starts on the thirty first day after the Czech energy regulator established that the churn factor fell below the threshold. For the avoidance of doubt, in these circumstances, Czechia commits that at least 50 % of the total electricity output of EDU II will be sold on the exchanges in accordance with recital 113.
- (118) Czechia will inform the Commission services without undue delay when the churn factor falls below the threshold and when the SPV/EDU II intends to sell up to 50 % of the total power output of EDU II through auctions.
- (119) In case that the SPV make use of the exception to sell up to 50 % of the total power output of EDU II through auctions in a calendar year, the Czech Republic shall submit an annual monitoring report to the Commission concerning this exception, detailing reasons for the exception and duration thereof.

3.6.5. Rate of return

- (120) Czechia had initially notified⁽⁵³⁾ a target equity IRR (or Allowed Equity IRR) of [9 to 11] %⁽⁵⁴⁾, justified by a capital asset pricing model (CAPM) estimate for the required RoE of [...] % to [...] %. This was based on contemporaneous market and peers data and included a nuclear construction and operations premium to incorporate risks specifically related to an NPP.
- (121) In the Opening Decision⁽⁵⁵⁾, the Commission expressed doubts on whether the assumptions used to estimate the required RoE correctly reflected the risk exposure of the investor. In particular, the Commission had doubts regarding the nuclear construction and operations premium, given the reduced risk exposure of the beneficiary.
- (122) To address the doubts raised by the Commission in the Opening Decision, Czechia provided several submissions and updated the RoE on the basis of:
- (a) the latest market data: as a result of this, Czechia updated the Risk Free Rate, Market Risk Premium and beta assumptions; and

⁽⁵²⁾ The churn factor is a measure of market liquidity and is defined as the overall volume traded through the market expressed as a multiple of physical consumption.

⁽⁵³⁾ Opening Decision, recital 67.

⁽⁵⁴⁾ Opening Decision, recital 71.

⁽⁵⁵⁾ Opening Decision recitals 207 and 208.

- (b) the risk exposure of the Project: to recognise the revenue protection and other government support measures assumed in the contractual and commercial structure of the Project, the standalone major projects premium (previously referred to as nuclear construction and operations premium) of 3 % to 3,5 % was removed from Czechia's RoE calculation.

- (123) Czechia contends that the modified RoE, or target Equity, of [9 to 11] % over the Project's lifetime will provide appropriate remuneration to EDU II's shareholders.
- (124) Czechia submitted numerous documents to support its view. Furthermore, the Czech Government also submitted a Financial Model. The last version of this model was submitted to the Commission on 15 March 2024.
- (125) The Opening Decision provides an assessment of Czechia's position on each key issue as reflected in its submissions up to the date of the Opening Decision ⁽⁵⁶⁾. The remainder of this section provides an overview of Czechia's position on the key issues raised following the publication of the Opening Decision, with regards to the estimation of the RoE, Cost of Debt and WACC, as well as the equity and project IRR.

3.6.5.1. Return to equity holders

- (126) The Financial Model described in Section 3.6.2 aims at estimating the PC Strike Price necessary to achieve the target RoE of [9 to 11] %.
- (127) The Czech authorities explained that they assessed the required RoE in line with accepted market practices. In particular, Czechia ran a so-called bottom-up analysis based on the CAPM and benchmarked it by looking at other projects and investments with similar risk profiles.
- (128) The standard CAPM formula is the following:

$$R_e = R_f + \beta \cdot (R_m - R_f)$$

Where:

- (1) R_f is the risk-free rate, i.e. the return expected from investing in riskless assets;
 - (2) R_m is the expected return of the market, which includes a so-called country risk premium (CRP), to reflect the riskiness of investing in a particular country;
 - (3) $(R_m - R_f)$ is the market risk premium (MRP); and
 - (4) β (or levered beta) is a measure of the idiosyncratic, non-diversifiable risk of the Project ⁽⁵⁷⁾.
- (129) The Czech authorities estimated that the market RoE for a project similar to Dukovany, falls within the range of [...] % to [...] %, with the inclusion of a standalone major risk premium ('SMRP') ⁽⁵⁸⁾ and within [...] % to [...] %, excluding such premium. These figures and their underlying assumptions are shown in Table 2 and explained below.

⁽⁵⁶⁾ Opening Decision, section 4.4.2.5.

⁽⁵⁷⁾ See Czechia submission dated 1 March 2024. The Czech Authorities explain that they used the Harris-Pringle approach to estimate the levered beta. Under this approach, the interest tax shield (i.e. the tax reduction resulting from allowable deduction from taxable income) is not used in the leverage adjustments to beta. The Harris-Pringle formula is the following: $\beta_L = \beta_U + \frac{D}{E}(\beta_U - \beta_D)$, where β_L is the beta levered, β_U is the beta unlevered, β_D is the debt beta, D is the Debt and E is the Equity. Czechia further states that this approach corresponds to the Financial Model, where all the cash flows which are discounted at the cost of capital are post tax and include any tax shields.

⁽⁵⁸⁾ This premium is the 'nuclear construction and operations premium' described in the Opening Decision, renamed by Czechia 'standalone major risk premium' or 'SMRP'.

Table 2

Czechia's RoE estimation

Cost of Equity	Contemporaneous RfR		Long-term historical averages RfR	
	Low	High	Low	High
RfR	[...] %	[...] %	[...] %	[...] %
MRP	[...] %	[...] %	[...] %	[...] %
Beta un-levered	[...]	[...]	[...]	[...]
Gearing	[...] %	[...] %	[...] %	[...] %
RoE	[...] %	[...] %	[...] %	[...] %
Debt beta	[...]	[...]	[...]	[...]
RoE – with debt beta	[...] %	[...] %	[...] %	[...] %
SMRP	3,0 %	3,5 %	3,0 %	3,5 %
RoE – with SMRP	[...] %	[...] %	[...] %	[...] %

Source: Czech authorities.

- (130) For the RfR ⁽⁵⁹⁾, the Czech authorities used 2-year and 20-year averages of Euro and German 30Y Government bonds, as well as European AAA 10+Y corporate bonds ⁽⁶⁰⁾. Czechia states that they have considered contemporaneous and long-term average data to ensure robustness of the analysis as it gives an indication of what the RfR is for both short-term and long-term perspectives ⁽⁶¹⁾. As a result of this choice, the Czech authorities have devised two scenarios, one which considers contemporaneous data and the other which considers longer-term averages of RfR. Czechia further states that having selected Euro and German bonds to proxy the RfR, adjustments need to be made to translate this RfR into an RfR for the Czech Republic, i.e. a premium needs to be added ⁽⁶²⁾. This premium is set equal to the Czech two-year average country risk premium ⁽⁶³⁾. This analysis provides an RfR in the range of [2 to 5] %.

⁽⁵⁹⁾ See Czechia submission dated 1 March 2024 and 26 February 2024.

⁽⁶⁰⁾ For AAA Euro bond, the 10Y is the bond with the longest maturity.

⁽⁶¹⁾ Czechia explains that while short-term averages provide a more accurate reflection of prevailing market conditions and investor sentiment, given the volatility observed in government bond data, simply basing the risk-free rate on volatile spot data may not be prudent for very long-lasting infrastructure projects, such as an NPP. Taking a longer-term average tempers the associated volatility of the data and can provide a more balanced view and allows for the event of markets correcting (like for example, mean reversion). Czechia submission dated 9 January 2024.

⁽⁶²⁾ The Czech regulator's approach for setting the RfR is based on a basket of government bonds issued by the Czech Republic with an average residual maturity of 10 years. These bonds are denominated in Czech koruna. However, as the financials of the EDU II project are all based in euros, the RfR was based on European government and highly rated corporate bonds.

⁽⁶³⁾ See Czechia Financial Model and Czechia submission dated 9 January 2024, showing a premium of 0,6 %. Damodaran (July 2023), <https://pages.stern.nyu.edu/~adamodar/pc/datasets/ctrypremJuly23.xlsx>.

- (131) For the MRP, Czechia assume a range from [5 to 7] %⁽⁶⁴⁾. The [...] % is the average of Damodaran's CDS-based approach ([...] %) and credit rating-based approach ([...] %)⁽⁶⁵⁾. The [...] % is the average of: (a) prof. Damodaran's [...] % figure; and (b) prof. Fernandez most recent survey of MRP, published in June 2022, which indicates an average and median MRP of [...] % and [...] % respectively⁽⁶⁶⁾.
- (132) For the beta estimate⁽⁶⁷⁾, Czechia considered the betas of a comparator set of companies. For this set, Czechia considered a number of European listed energy utility companies, refining the list to primarily consider betas for companies with nuclear energy operations in their portfolios⁽⁶⁸⁾. This analysis results in an unlevered beta of [...] %⁽⁶⁹⁾. Czechia explains that, although these are the most suitable companies to benchmark EDU II, they only provide an indicative estimate of the beta for a pure play nuclear project and that this range of betas is conservative. In particular, Czechia explains that many of these listed comparators undertake several other business activities apart from nuclear operations. As such, Czechia further states that given that some of the data reflects the risk associated with regulated transmission and distribution assets (rather than the pure risk of a nuclear power plant), the data needs to be interpreted with an element of judgment. For this reason, Czechia argues that it is likely that the beta for a nuclear power plant in the Czech Republic is closer to the top end of the range of the betas of the comparator firms⁽⁷⁰⁾.
- (133) For the debt beta⁽⁷¹⁾ estimate, Czechia has considered it appropriate to assume a zero as well as a non-zero estimate of [...] %⁽⁷²⁾, as adopted in recent regulatory determinations in the water and energy sectors in the UK⁽⁷³⁾. The target RoE of [9 to 11] % was derived based on the debt beta of [...].

⁽⁶⁴⁾ See Czechia submission dated 1 March 2024 and 26 February 2024.

⁽⁶⁵⁾ These figures are from the July 2023 global equity risk premium database developed by Prof. A. Damodaran ('Damodaran') of New York University (<https://pages.stern.nyu.edu/~adamodar/pc/datasets/ctryprem/july23.xlsx>). For this, Damodaran uses the implied equity risk premium of the S&P 500. Once the mature market premium is defined (5 % in this dataset), Damodaran estimates the default spread, or country risk premium, of the country in question. The market risk premium for the Czech Republic is given by the sum of the long-term country equity risk premium (5 %) and the Czech country risk premium (of 0,3 % and 0,9 %). The Czech country risk premium is estimated by following two methodologies. The first methodology, which gives a premium of 0,3 %, is based on the CDS (or Credit Default Swap) spread between Germany (0,22 %, on tab '10-year CDS Spreads' of the abovementioned excel file) and the Czech Republic (0,45 %, on tab '10-year CDS Spreads' of the abovementioned excel file), which is then multiplied by a 1,4 multiplier, as shown in Damodaran's dataset. The second methodology, which gives a premium of 0,9 %, is based on the credit rating of the Czech Republic of Aa3, which results in a spread of 0,64 %, which is then multiplied by the 1,4 multiplier, as above.

⁽⁶⁶⁾ Database developed by Prof. P. Fernandez ('Fernandez') of the IESE Business School of the University of Navarra. This database is the result of a survey conducted by Fernandez et al regarding the risk-free rate and market risk premium used in 2023 for 80 countries (see Fernandez et al (2023), 'Survey: Market Risk Premium and Risk-Free Rate used for 95 80 countries in 2023, 2Survey: Market Risk Premium and Risk-Free Rate used for 80 countries in 2023 by Pablo Fernandez, Diego García de la Garza, Javier Fernandez Acin: SSRNhttps://papers.ssrn.com/sol3/papers.cfm?abstract_id=4407839).

⁽⁶⁷⁾ See Czechia submission dated 1 March 2024.

⁽⁶⁸⁾ The companies considered are: RWE, ČEZ, Fortum, EDF, Engie, Iberdrola, Uniper, Centrica, Nuclearelectrica. See Czechia submission dated 27 February 2024.

⁽⁶⁹⁾ Czechia explain that their analysis follows the Modigliani and Miller approach, which uses the prescribed benchmarking universe to derive an estimate for EDU II's unlevered (asset) beta. This is then re-gearred to arrive at the corresponding estimate for the levered (equity) beta (based on a zero-debt beta assumption). To estimate the unlevered beta, Czechia have focused on two-year, and five-year weekly estimates to conduct their analysis. In particular, the beta has been calculated using the Damodaran approach, which consists in selecting the betas for peer companies for 2-year weekly prices (with a weight of 66,7 %) and 5-year weekly prices (with a weight of 33,3 %). See https://pages.stern.nyu.edu/~adamodar/New_Home_Page/datafile/variable.htm. See Czechia submission dated 27 February 2024.

⁽⁷⁰⁾ Czechia submission on RoE dated 10 January 2024.

⁽⁷¹⁾ The asset beta can be split into equity beta, the exposure of shareholders to systematic risk, and debt beta, the exposure of bondholders to systematic risk. In calculating the asset beta, debt and equity betas are weighted by the proportion of debt and equity within the capital structure.

⁽⁷²⁾ See Czechia submission dated 9 January 2024.

⁽⁷³⁾ Czechia's source is the UK regulated water utilities sector, where a debt beta of 0,15 to 0,05 is used (see final price review methodology by the water sector regulator, Ofwat, December 2022, https://www.ofwat.gov.uk/wp-content/uploads/2022/12/PR24_final_methodology_Appendix_11_Allowed_return.pdf).

- (134) For the gearing estimate ⁽⁷⁴⁾, Czechia uses a figure of [...] %. This reflects the simple average gearing over the NPP's lifetime and the Project's target gearing ⁽⁷⁵⁾. Czechia notes that this assumption is conservative in as much as, first, the capital structure of the Project foresees 98 % of debt and, second, because the 'effective gearing' of the Project is in the range of 67-78 % ⁽⁷⁶⁾.
- (135) For the SMRP, Czechia argued that NPPs are standalone major projects with certain unique characteristics and risks as compared to other power generation projects, which needs to be considered through the inclusion of an SMRP in the CAPM-derived RoE. The Czech authorities' estimate of 3-3,5 % would account for these risks not captured by the beta estimates of diversified energy utilities ⁽⁷⁷⁾. However, given the significant risk mitigation measures introduced in the proposed financial and contractual structure, including the long-term strike price protection, the SMRP has not been included in the target RoE.
- (136) From the above assumptions, Czechia derives an estimated range for the target RoE of [...] to [...], excluding the SMRP. Czechia submits that the target RoE has been defined as the lower end of the range for the following reasons: it is closer to the benchmarks range mid-point (see paragraph 137) and the Project has a robust risk profile due to the revenue protection and other mitigants included in the commercial structure.
- (137) In order to benchmark its analysis, Czechia compares the Project's target rate of return of [9 to 11] % to that of proxies including other nuclear projects, major commercial infrastructure projects, Czech regulated utilities and UK YieldCos. These results are shown in the table below ⁽⁷⁸⁾.

⁽⁷⁴⁾ In this context, gearing is defined as debt over capital, where capital is the sum of debt and equity.

⁽⁷⁵⁾ See Czechia submission dated 21 March 2024.

⁽⁷⁶⁾ In its submission dated 9 January 2024, Czechia explains that under EDU II's financing structure the Project's gearing level varies over time. It has a gearing above 90 % during construction which decreases throughout the project lifetime as the RFA is repaid. Czechia further explains that the implication of EDU II's time-varied gearing is that, under the standard CAPM framework, required return on equity needs to be positively correlated to gearing as equity investors tend to require higher return when gearing increases. As a result, the CAPM framework would expect RoE to be time-varied to reflect this relative dynamic between equity return and effective gearing. Czechia then states that given that the current Financial Model mechanic assumes a constant annual RoE over the project lifetime, this is not consistent to how RoE should be priced given the time-varied nature of EDU II's annual gearing. To address this, a constant 'effective' annual gearing level would need to be calibrated to ensure that (1) the evolution of equity risk exposure over EDU II's project lifetime is accurately priced; and (2) a constant annual RoE is used in the CAPM framework consistent with current Financial Model's mechanic. Therefore, a simple average of the gearing over time does not truly reflect the level of risk the Project is exposed to, and concurrently the level of equity return that would be required by investors. For example, given the same level of simple annual average gearing, the equity risk exposure for the Project, which has higher gearing during construction phase, would be greater than during the operational phase which has a lower gearing. This is because construction phase carries materially higher risk for equity investors than operations. In light of this, Czechia submitted the three alternative approaches as a proxy to the effective gearing that feeds into the RoE estimation. These alternative approaches were detailed in Czechia's 9 January 2024 submission as well as in Czechia's 8 November 2023 submission.

⁽⁷⁷⁾ See Czechia submission dated 9 January 2024.

⁽⁷⁸⁾ See Czechia submission dated 9 January 2024.

Table 3

Czechia's benchmarks ⁽⁷⁹⁾

Comparator	Leverage (%)	Levered RoE (%)
Nuclear Generation Projects		
Hinkley Point C ⁽¹⁾	n,a,	11,0 - 11,5
Paks II ⁽²⁾	40,0 - 50,0	10,9 - 12,5
Major Commercial Infrastructure Projects		
German hard coal ⁽³⁾	60,0	11,0
German CCGT ⁽³⁾	60,0	10,0
Offshore wind ⁽⁴⁾		7,0 - 9,0
Czech Regulatory Price Controls ⁽⁵⁾		
Electricity Distribution and Transmission (2021-2025)	48,9	7,9
Gas Distribution and Transmission (2021-2025)	48,9	7,8
UK YieldCos ⁽⁶⁾	34,0 - 65,0	7,2 - 11,0

⁽¹⁾ See Commission Decision of 8.10.2014 on the aid measure SA.34947 (2013/C) (ex 2013/N) which the United Kingdom is planning to implement for Support to the Hinkley Point C Nuclear Power Station.

⁽²⁾ See Commission Decision of 6.3.2017 on the aid measure SA.38454 (2015/C) (ex 2015/N) which Hungary is planning to implement for supporting the development of two new nuclear reactors at Paks II nuclear power station.

⁽³⁾ Fraunhofer ISE (2021), 'Levelized cost of electricity renewable energy technologies', <https://www.ise.fraunhofer.de/en/publications/studies/cost-of-electricity.html>.

⁽⁴⁾ World Forum Offshore Wind (2022), Financing Offshore Wind, WFO_FinancingOffshoreWind_2022.pdf (wfo-global.org).

⁽⁵⁾ ERÚ (2020), page 154 (<https://www.eru.cz/en/price-control-principles-2021-2025-regulatory-period-electricity-and-gas-industries-and-market>). ERÚ (2020), page 154 (<https://www.eru.cz/en/price-control-principles-2021-2025-regulatory-period-electricity-and-gas-industries-and-market>).

⁽⁶⁾ Czechia reports that YieldCos are an asset class of publicly traded companies that are focused on operational renewable energy assets. Six companies considered from June 2022 to June 2023, of which two had published reports in 2023 and indicated the corresponding leverage and levered RoE values. The lower bound leverage was taken from portfolio performance, with the upper bound referring to the maximum allowed within their investment policy: TRIG Leverage: <https://www.trig-ltd.com/wp-content/uploads/2023/08/TRIG-H1-2023-Interim-Results-Presentation.pdf>; TRIG Levered RoE: <https://www.trig-ltd.com/wp-content/uploads/2023/02/TRIG-2022-Annual-Report.pdf>; UKW Leverage and Levered RoE: https://www.greencoat-ukwind.com/~media/Files/G/GreenCoat-UKWind/documents/Results/2911%20Greencoat%20Interim%20Report_CL.pdf.

Source: Czech authorities, submission dated 9 January 2024.

- (138) Czechia states that the findings from this comparison indicate that the RoE estimates for the proposed NPP plant at Dukovany are consistent with those of other NPPs, and energy infrastructure projects. Czechia further states that the EDU II RoE would be expected to be higher than those of the other recent nuclear power plants, inter alia, given the higher leverage of EDU II. Adjusting regulated returns for energy utilities in the Czech Republic by taking into account the differences in the risk return trade off (i.e. by adding the SMRP of 3-3,5 %) will result in a comparable return ⁽⁸⁰⁾.

⁽⁷⁹⁾ Czechia further notes that the results broadly agree with the risk analysis with nuclear projects lying at the upper end of the risk spectrum and correspondingly exhibiting high level of returns; the nuclear comparators overlap with estimated RoE range; Czech regulatory price controls exhibit relatively stable returns over 2021-2025 control periods. This is one of the lowest benchmark comparators and agrees with the 'Low' risk categorisation from the risk analysis exercise. Further, two of the comparator German electricity generation projects (Hard Coal and CCGT) have equity return levels that are in line and slightly lower than the nuclear generation projects, primarily due to significantly lower construction and operation risk. See Czechia submission dated 9 January 2024.

⁽⁸⁰⁾ Czechia's submission dated 9 January 2024.

- (139) The Czech authorities conclude that the target equity IRR of [9 to 11] % is appropriate given the market risk and associated mitigations. Czechia further state that the target [9 to 11] % RoE is a reflection of the proposed financial structure for the Project, with EDU II bearing responsibility for pre-construction activities, with the construction financed by the State loan, and a 40-year offtake contract ⁽⁸¹⁾.
- (140) The Czech authorities further explain that by applying a realistic scenario of 10 % cost-overrun caused by Non-Legitimate Grounds, the equity IRR would fall to [...] %.

3.6.5.2. Cost of Debt

- (141) Czechia explains that the cost of the RFA during the construction and the warranty period is 0 % p.a., while during commercial operations the cost of RFA will equal costs of State debt financing plus 1 % but not less than 2 % p.a. Czechia further explains that in light of recent movements in State borrowing costs as well as inflation, the cost of debt equals 3,5 % during operations ⁽⁸²⁾. Czechia calculates that the overall Cost of Debt ('CoD') for the Project is equal to [2 to 4] % ⁽⁸³⁾.

3.6.5.3. Overall rate of return

- (142) Czechia relied on the following 'vanilla' WACC formula ⁽⁸⁴⁾.

$$WACC = CoE \times \left(1 - \frac{D}{D + E}\right) + CoD \times \left(\frac{D}{D + E}\right)$$

Where:

- (1) CoE is the Cost of Equity, or Return on Equity of **[9 to 11]** %, discussed in Section 3.6.5.1;
- (2) CoD is the Cost of Debt of [2 to 4] %, discussed in Section 3.6.5.2; and
- (3) $\left(\frac{D}{D + E}\right)$ is the gearing ratio of the Project of [...] %, discussed in Section 3.6.5.1.

⁽⁸¹⁾ Czechia's submission dated 9 January 2024.

⁽⁸²⁾ Czechia explains that the 3,5 % cost of debt was estimated using recent data on the Czech Republic government bond yield curve. Using a linear approximation between 20Y and 50Y quotes available, the relevant 30Y rate is 4,04 % in Czech koruna. As the Czech government does not have any long-term bonds in EUR a relevant EUR rate was estimated using price quotes on the CZK/EUR forward FX rates to calculate the fixed interest rate. Based on this analysis, the relevant fixed rate in EUR is c. 2,5 %. Adding the abovementioned margin of 1 % results in an estimated cost of debt of 3,5. See Czechia submission dated 1 March 2024 and 7 March 2024.

⁽⁸³⁾ See Czechia submission dated 7 March 2024. Post PC, Czechia explains that the project could raise commercial debt from 2081 to 2095 in the amount of EUR 304 million, or 3 % of the RFA, to reflect the expectation that the investor would seek to refinance the project upon the expiry of the PC to manage their portfolio of assets more efficiently. The commercial debt is expected to be drawn down post the PC period at a cost of 5,5 %. This figure was estimated using the cost of debt for the RFA (i.e. 3,5 %) as a benchmark. Given the full market price exposure towards the end of the project's lifetime a 2 % margin was added to the 3,5 % to estimate the cost of commercial debt at that stage. Also see Czechia's Financial Model.

⁽⁸⁴⁾ See Czechia submission date 13 October 2023 and 1 March 2024.

- (143) This formula results in a WACC of [4.5 to 7] %. Czechia explains that no tax shielding effect is accounted for in their WACC formula because all tax effects are recognised in the Financial Model and captured in the cash flows used for calculating the Financial Model ratios ⁽⁸⁵⁾. However, if the tax shielding effect were to be included, and their effective tax rate of 21 % were used, the WACC would be [4 to 7] % ⁽⁸⁶⁾.

3.6.6. *Revenues and costs of the Project*

- (144) As explained in Section 3.6.2, the Financial Model submitted by Czechia is based on several assumptions regarding market price expectations, the plant's availability, construction costs, operating costs and decommissioning costs and other relevant assumptions such as regarding capital expenditure and financing of the Project.
- (145) The revenues of the power plant are calculated taking into account market price forecasts and assuming a constrained load-following operation, whereby the power plant adjusts its power output, within certain technical limitations, taking into account the hourly spot market prices, in line with the financial incentives provided by the remuneration formula described in recital 88.
- (146) The Czech authorities explained that the plant's load following ability will be limited by technical constraints, which will partly depend on the selected technology. In the modelling of the dispatch of the plant in reaction to market prices, Czechia assumed that the plant will, at a minimum, meet the European utility requirements for light-water reactor nuclear power plants ⁽⁸⁷⁾. Should the technical capabilities of the plant exceed those minimum requirements, this will be reflected in the revenue assumptions used to calculate the Strike Price following the conclusion of the EPC contract. Such increased flexibility would allow for better optimisation of load following and thereby have a downward effect on the Strike Price.
- (147) For the central market price estimations, Czechia relied on ČEZ's commercial assumptions for the evolution of average yearly electricity market prices in the Czech Republic between 2035 and 2050. For the period 2051-2096, to cover the entire expected operating lifetime of the plant, the Czech authorities assume market prices to gradually decline at a constant rate of [...] % per annum, to reflect the expectation that market prices will tend to fall in the longer term due to increased RES in the system. Without inflation adjustments, the central market price assumption starts from EUR [...] per MWh in 2036, decreasing to EUR [...] per MWh by 2050, and gradually declining to EUR [...] per MWh in 2076, and EUR [...] per MWh in 2096.
- (148) The Czech authorities have presented price sensitivity analyses within the Financial Model, with the help of further scenarios assuming constant yearly average market price expectations ranging from EUR – 10 per MWh to EUR 150 per MWh. In the scenarios with market prices at EUR – 10 per MWh, EUR 10 per MWh and EUR 20 per MWh, they expect the plant to shut down after the PC expires. Over the range of all price sensitivity scenarios, the Czech authorities estimate the Strike Price range necessary to achieve the target return on equity of [9 to 11] % over the Project's lifetime to be between EUR [50 to 80] per MWh and EUR [75 to 90] per MWh. Assuming a fixed Strike Price of EUR [65 to 80]/MWh (real 2020), the expected equity IRR under the different sensitivity calculations would be of [...] % pre-gainshare during contract length, [...] % pre-gainshare during project length and [...] % post-gainshare at market prices of EUR 150/MWh, [...] % both pre-and post-gainshare at EUR 40/MWh, [...] % both pre- and post-gainshare at EUR 20/MWh, and [...] % both pre- and post-gainshare at EUR 10/MWh as well as at minus 10 EUR/MWh.

⁽⁸⁵⁾ Czechia explains that this approach is different from the corporate finance approach where the valuation is performed over the free cash flow to firm and the tax shield adjustment in WACC (whereby the CoD is multiplied by a (1-t) factor, where the t is the tax rate) is required to capture the financial structure implication on taxes, which are not directly reflected in the model. Therefore, this adjustment is not applicable for the project finance model used in this case. See Czechia submission dated 21 February 2024.

⁽⁸⁶⁾ Czechia submission dated 1 March 2024 and Czechia's Financial Model.

⁽⁸⁷⁾ Available for members on <https://europeanutilityrequirements.eu/>.

- (149) As explained in recital 145, Czechia developed an annual revenue model which calculates the revenue of the power plant for each hour of operation based on estimated hourly market prices and assuming output optimisation in response to market price signals, while also accounting for planned and unplanned maintenance. Hourly price curves were established based on 2035 in-year price volatility as per ČEZ's central price scenario which was applied to the annual price projections over the asset life. Then, for each hourly price curve, the plant's revenue is calculated using the remuneration formula described in Section 3.6.1 assuming that output is optimised to respond to market signals within the technical capability of the NPP.
- (150) Czechia estimated the impact on the plant's profitability by assuming a load following operation as described above, compared to a scenario of non-load following operation where output is maintained at an average annual availability of [75 to 100] % of plant capacity. With load following, the Czech authorities estimate the power plant to operate at an average availability of [70 to 90] % of plant capacity (resulting from an expected reduction of output to 75 % in periods where market prices p are below costs c), achieving on average 101,24 % of the revenues and 96,59 % of the costs that the power plant would have achieved without load following over the Project lifetime. The Czech authorities stress that the result of the analysis is heavily driven by the profile of the assumed market prices which are hypothetical in nature, and they can only be considered as theoretical indicators of the plant's performance.
- (151) The remuneration formula described in recital 88 provides EDU II revenue stability irrespective of the average market condition during the PC period (2038-2078).
- (152) Since at the time of adoption of this Decision the result of the EPC tender outcome is not known, Czechia submitted indicative cost estimates based on benchmarking and publicly available information from the design development and operation of existing plants. Czechia recognises that the reliability of cost predictions is limited as there are no directly comparable recent precedent projects in Czechia and the design work is not yet sufficiently detailed. However, Czechia submits that it expects that the competitive tender for the EPC contractor should achieve the most economically advantageous solution that should minimise costs.
- (153) Under the base case scenario, the overall capital expenditures, i.e. costs for construction ('overnight cost'), are estimated at EUR [...] /kW, which corresponds to EUR [...] billion in real 2020 prices (and EUR [...] billion in nominal prices).
- (154) Czechia further submits that, given the complexity and the technical specificities of nuclear power plants, it is not unusual to observe much higher construction cost than initially foreseen. Czechia provided that, in a worst-case scenario of costs overruns similar to those incurred on NPPs in Vogtle (USA) and Hinkley Point C (UK), the overnight costs of the Project could reach EUR [14 000 to 15 000] per kW, or EUR [17 to 18] billion (real in 2023 prices).
- (155) The operational variable costs estimates include fuel costs, waste management fees paid to the State, operations and maintenance costs excluding fuel costs, and an ongoing provisioning requirement for decommissioning expenditures. In total, the Czech authorities estimate the operational variable costs at approximately EUR [10 to 15] /MWh (with estimates for fuel procurement costs of EUR [...] /MWh, for decommissioning & waste management costs of EUR [...] /MWh and for variable operation and maintenance costs of EUR [...] /MWh). The operational variable costs are used as input variable (c) in the PC remuneration formula and to estimate the load following operation based on hourly spot market prices.
- (156) Total operating costs in the Financial Model cover also ongoing lifecycle costs of EUR [...] /MWh, which according to the Czech authorities are costs for the replacement and major refurbishment of components in the power plant, but not including lifetime extension costs. Further, the operating costs in the Financial Model cover fixed operating costs of EUR [10 to 20] /MWh, which according to the Czech authorities include wages and salaries, purchased services, insurance and taxes, fees, inspections and review expenses, decommissioning allowances, and miscellaneous costs.

- (157) To reflect the cost impact of load following, the Czech authorities have added operational costs of EUR [...] /MWh. According to the Czech authorities, the additional costs related to load-following in nuclear power plants are encompassing increased operational complexity, maintenance, and fuel efficiency concerns, while they are driven by factors such as the specific design of the nuclear plant, its age, the regulatory environment it operates within, and its operational practices. The current assumption of EUR [...] /MWh represents an initial view and will be reviewed post EPC tender and as part of the periodic reviews.
- (158) After the conclusion of the EPC tender, Czechia will update certain costs assumptions described above (see Annex). Specifically, the overnight costs, operational variable costs (fuel costs, operation and maintenance costs, decommissioning & waste management costs), lifecycle costs, fixed operating costs, load following costs, and availability assumptions will be updated and used in the Financial Model for calculating the initial Strike Price.
- (159) During the periodic reviews, certain assumptions can be updated (i.e. adjusted up- or downwards), including the inflation assumptions, operational variable costs, lifecycle costs, fixed operating costs, load following costs and load following profitability estimates (see Annex). The review will be overseen by an independent third party, expected to be the Czech Energy Regulatory Office.
- (160) Further, certain assumptions can be updated due to Legitimate Grounds, as described in Section 3.8.

3.6.7. *Overcompensation control*

- (161) As explained in the Opening Decision, the Czech authorities initially proposed an overcompensation control mechanism consisting in an equity gain-share with the threshold set at the level of the target RoE of [9 to 11] %, and a sharing factor of 50:50.
- (162) Following the changes proposed to measure 1, in particular considering the reduction of the duration of the PC from 60 to 40 years which, in Czechia's view exposes the beneficiary to market prices risk during the last 20 years of lifetime of the asset, the Czech authorities submit that a slightly modified equity gain share would be appropriate, as it would reflect more accurately the higher market price risk exposure of the beneficiary post PC. Therefore, the equity gain-share will provide that:
- (a) Any gains above the level of RoE of [9 to 11] % (nominal, post-tax, pre commercial financing) will be shared on a 50:50 basis between the beneficiary and the SPV, over a period of 40 years which starts on the date of the commissioning of the NPP.
 - (b) Any gains above the level of RoE of [9 to 11] % (nominal, post-tax, pre commercial financing) will be shared on a 60:40 basis between the beneficiary and the SPV, over a period of 20 years which immediately follows the 40 years period referred to above.
- (163) Czechia explained that the Project's actual returns will be assessed at 5-year intervals over the course of the Project's operational lifetime to test whether excess gains have been incurred. This assessment will be (i) first conducted after the end of the financial year in which the licence obtained for the operation of the NPP comes into force or, if earlier, after the end of the financial year immediately preceding the expiration of 5 years from the start of the delivery of electricity from the NPP into the grid (the 'Initial Overcompensation Review'); and (ii) thereafter in 5-year intervals (a 'Subsequent Overcompensation Review') until the Project ceases commercial operations.
- (164) The assessment will be based on the most recent version of the Financial Model updated in accordance as of the end of the financial year preceding the assessment (the 'Assessment Date') with actual revenue and cost figures.

- (165) The assessment will test whether the actual equity returns (the 'Actual Equity IRR') exceeds a threshold of equity IRR (the 'Overcompensation Equity IRR Threshold'). The Actual Equity IRR will be the rate of return achieved at the Strike Price and market revenues and other Remuneration Formula parameters applicable at the Assessment Date. The determination of the Actual Equity IRR will reflect the Project's actual performance since the Project's inception up to the point in time of the respective assessment. It will not take into consideration forecasted cash flows to the end of operations. The Overcompensation Equity IRR Threshold has been set *ex ante* at a value of [9 to 11] % for the duration of the Project's operational life (i.e. both during and post the PC Offtake period).
- (166) If the Actual Equity IRR exceeds the Overcompensation Equity IRR Threshold, Equity Overcompensation is deemed to have taken place (an 'Equity Overcompensation Event'). In the case of an Equity Overcompensation Event, a lump-sum, cash amount (an 'Equity Overcompensation Amount') will be paid back to the State and to ČEZ. Any Equity Overcompensation Amount will be paid only directly following an Overcompensation Review, and not in the year in which any Equity Overcompensation has been incurred.
- (167) If an Equity Overcompensation Event is deemed to have occurred, the Equity Compensation Amount will be calculated as follows:
- (168) The first step entails quantifying that amount of cash equal to the difference between the Actual Equity IRR and the Overcompensation Equity IRR, taking into account the timing of the cash flows and excluding any Equity Compensation Amounts previously paid to the State.
- (169) The second step entails multiplying this amount by the sharing ratio to determine the payment, which is sent to the beneficiary with the balance being paid to the State. Czechia further confirmed that the overcompensation adjustments may take the form of a lump sum payment or an adjustment of the Strike Price of the PC.

3.7. Measure 2: State loan (the RFA)

- (170) Czechia intends to provide a State loan, the RFA, to finance Stage 2 (project development) and Stage 3 (construction). Czechia submits that the expected capital expenditure for Stages 2 and 3 under the Base Case Scenario is EUR [...] billion (nominal, in 2020 prices). That said, Czechia also provided scenarios based on higher capital expenditure. Based on precedent nuclear projects with the highest cost of completion (i.e. Vogtle and HPC), the capital expenditure for Stages 2 and 3 has been estimated at EUR [17 to 18] billion (in real 2023 values). The exact loan amount will be defined based on the outcome of the tender and signature of the EPC contract in order to finance the development of the Project.
- (171) Czechia submits that granting a loan has the following advantages compared to granting a State guarantee on a market-based loan. *First*, the RFA eliminates the risk of there being no commercial market to secure financing for the Project. *Second*, the RFA offers a more timely solution to arrange the overall financing package vis-à-vis a commercial lending facility. *Third*, the RFA would entail lower cost of debt in view of the direct lending from the State as well as lower fees in connection with arranging and committing financing over the entire construction period. The Czech authorities further explained that with the large quantum of debt and the risk averse approach of the market towards nuclear projects, the higher cost of potential market-based lending would result in a higher Strike Price in the PC. Moreover, the Czech authorities indicated that the State has more flexibility in deciding on the financing final amount in comparison with market-based lenders and this flexibility is required given that the EPC has not yet been concluded.

- (172) The RFA is expected to cover 100 % of the costs involved during Stages 2 and 3 (see recital 67). The RFA will be secured by assets of EDU II and there will be no recourse to ČEZ or a guarantee by ČEZ for the RFA. The beneficiary will pay an interest rate of 0 % during the construction phase of the Project ⁽⁸⁸⁾. The annual interest rate thereafter will correspond to the costs of State debt as determined by the Ministry of Finance as a percentage rate for the given year and increased by 1 percentage point, but no less than 2 % p.a. ⁽⁸⁹⁾. The RFA will be finalised once the tendering process for the EPC contract is finalised.
- (173) The RFA will be available for drawdown from the date on which the PC, the Investor Agreement and the RFA enter into effect. Drawdown will occur on a periodic basis (for example, annually) in line with EDU II's updated budget.
- (174) The RFA will be amortised based on specific Project milestones, phases, and anticipated changes over 30 years. The RFA amortization will start with the granting of the licence in accordance with the Atomic Law Act. Until that moment, a debt service reserve solely for RFA amortisation and payment of interest (the 'Debt Service Reserve') will be created in the period until the start of the amortisation and thereafter kept by EDU II during the amortization period and used solely for RFA amortisation and payment of interest in case of cash shortfall. If not used during the amortisation period, the Debt Service Reserve shall be used up for the last instalments and interest payments.
- (175) In case EDU II notifies the State that the Project requires suspension of RFA amortisation in order to prevent the Financial Default ⁽⁹⁰⁾ and that EDU II has used up the Debt Service Reserve and that ČEZ is not in breach of its Equity Commitment obligations ⁽⁹¹⁾ (a 'Suspension Notice'), the RFA amortisation and payment of interest will be suspended for such period as required to prevent the Financial Default.
- (176) Voluntary prepayment of the RFA and/or refinancing will be permitted under the terms of the RFA.
- (177) In the case of change of control over EDU II, EDU II will be obliged to repay the loan amount plus interest within the period specified in the RFA decision unless all shares in EDU II are acquired by the Czech State.
- (178) EDU II will be entitled to distribute dividends from the beginning of the PC in accordance with agreed parameters and subject to prior payment of any mature RFA repayment instalments. EDU II will also be permitted to pay free cash to ČEZ through other channels (such as, through payments under shareholder debt or through intercompany debt provided by EDU II to ČEZ).
- (179) Until the RFA is fully repaid by EDU II (including any due interests), no distribution or payments can be made by EDU II to ČEZ or to any member of the ČEZ Group, with the exception of payments for the remuneration of intra-group supplies or services required for EDU II and/or for the operation and maintenance of the NPP. However, to the extent specified in the RFA, if EDU II participates in any ČEZ Group cash pooling, the preceding sentence will not prohibit or restrict any payments by or to EDU II in connection with such cash pooling.
- (180) Finally, if cost overruns were to occur, it cannot be excluded that the repayment of the RFA may in part call for refinancing via private market-based loans. Under this scenario, the repayment of the investment cost would no longer be directly linked to the RFA period.

⁽⁸⁸⁾ This interest rate will apply until the granting of the licence for the operation of the NPP. See Section 9, sub-section (f) and Section 4(2) of the Atomic Law Act (the operation of nuclear installation).

⁽⁸⁹⁾ This interest rate will apply after the granting of the licence for the operation of the NPP by the beneficiary. See Section 9, sub-section (f) and Section 4(2) of the Atomic Law Act (the operation of nuclear installation).

⁽⁹⁰⁾ The term 'Financial Default' is defined in paragraph 6 of the Investor Agreement Termsheet.

⁽⁹¹⁾ According to the Investor Agreement Termsheet, ČEZ's Equity Commitment obligations concerns its obligation to provide agreed Contingent equity financing for the Project of up to a total cap of EUR 1,95 billion.

3.8. **Measure 3: Change of Law or Policy Protection mechanism**

- (181) The third measure for supporting the Project is a cost recovery protection for ČEZ in case Czechia decides to change its national policy on nuclear energy or not to grant measures 1 or 2, or in case of occurrence of Legitimate Grounds ('Change of Law or Policy Protection mechanism') ⁽⁹²⁾.
- (182) The Change of Law or Policy Protection mechanism consists in a put option ⁽⁹³⁾ for ČEZ or a call option ⁽⁹⁴⁾ for the State in case certain circumstances occur. This measure is set out in a contract between the Czech authorities and ČEZ and EDU II together with ČEZ's obligation to provide equity financing for the Project.
- (183) Until the signature of the Investor Agreement, the First Implementing Contract sets out the framework for cooperation on the Project, including the Change of Law or Policy Protection mechanism for the first Stage of the Project. Specifically, the First Implementing Contract fixes the procedures and modalities for renegotiation of the terms of the contract in case of Legitimate Grounds and on the sale of shares to the State for Legitimate Grounds during Stage 1 of the Project. The First Implementing Contract details the modalities of the share purchase arrangements in view of guaranteeing that the operation is neutral to both parties (e.g. by ensuring that the purchase price value corresponds to the funds invested in EDU II, that there are no revenue transfers from EDU II to ČEZ, etc.).
- (184) The Czech authorities explain that the purchase price for the sale of all shares to the State until the end of Stage 1 is fixed at CZK 4 509 591 000 with a possible additional fee due to Legitimate Grounds not exceeding CZK 200 000 000 corresponding to the overall amount of capital contributions which ČEZ will provide. In a separate agreement, the parties have fixed the conditions under which those amounts will include an economic return of investment and the conditions under which they will not. As a general rule, if the Project is shut on Legitimate Grounds, a return of investment will also be due to ČEZ.
- (185) Furthermore, the Czech authorities explain that the Change of Law or Policy Protection mechanism will guarantee the protection of EDU II in relation to events beyond its control (e.g. in case of 'Legitimate Grounds' ⁽⁹⁵⁾), as stipulated in the PC (see recital 104). Specifically, in case of Legitimate Grounds preventing or delaying the performance of EDU II, EDU II's legal obligations, the latter will be excused for such non-performance or delay in the performance of its obligations. Similarly, if a Legitimate Ground leads to delays in the execution of the Project, the Target Commissioning Date will be extended on a day for day basis. Finally, EDU II will be entitled to monetary compensation in case of occurrence of a Legitimate Ground.
- (186) The Czech authorities explain that the objective of this measure is to minimise the amount of aid needed when determining the Strike Price by creating an acceptable framework of risk allocation. The impact of this measure is to limit the risk for the investor and at the same time to reduce the investment return range. The aim is to protect EDU II from certain risks (see Annex to the Opening Decision). At the same time, EDU II will bear the risk of Project cost overruns for reasons other than Legitimate Grounds. The Czech authorities have provided an overview

⁽⁹²⁾ See recital 104 above for a definition of Legitimate Grounds.

⁽⁹³⁾ The 'Put Option' concerns the right of ČEZ to sell to the State all shares in EDU II upon occurrence of certain events.

⁽⁹⁴⁾ The 'Call Option' concerns the right of the Czech State to buy from ČEZ all shares in EDU II upon occurrence of certain events.

⁽⁹⁵⁾ 'Legitimate Grounds' stands for the events and circumstances which will be specified in the PC (and are already anchored in the First Implementation Contract), which are related to changes to RFA conditions, delayed final investment decision by the Czech Government, adoption, change or cancellation of any Project related applicable law or regulation, breach of specified obligations by the State or State Entities enabling the Project and infrastructure and grid issues, requirements of the State related to national security interests and related implications, etc.

of changes which would be accepted as Legitimate Grounds. Those include changes to inputs for the Strike Price calculation depending on the results of the EPC tender (as regards capital costs, duration of construction periods, availability periods ⁽⁹⁶⁾, operating, maintenance, fuel and lifecycle costs ⁽⁹⁷⁾ and capacity as well as technical capabilities of the plant) or of the finalization of the RFA (the interest rate, loan amount and payment terms determined under the RFA (see recital 172 as well as the assumptions on commercial loans based on the RFA amount and conditions). In this respect, the Czech authorities confirm that the Financial Model is based on the legal minimum flexibility required of the plant, and that any increase in flexibility would result in more efficient load following assumptions, thereby decreasing the Strike Price.

- (187) They also include changes during the lifetime of the Project which, in so far as they are based on Legitimate Grounds, will be updated in the regular reviews of the PC conditions, including operating costs and investment cost changes (both increases and decreases) and changes to legislation such as decommissioning parameters and taxation rates. The Czech authorities recognise that making use (or not) of the technical flexibility of the plant to optimise production output in view of changing market prices (load following) is not a legitimate ground to justify additional cost increases beyond the general update of operating costs that occurs in the regular 5-yearly review (see Section 3.6.7). Technical limitations to load follow were thus excluded from the list of legitimate grounds. The Change of Law or Policy Protection mechanism aims at ensuring the overall acceptability of the Project for the investor and for the State.

3.9. Legal basis and transparency

- (188) The national legal basis for this measure is the Act on Measures for the Transition of Czechia to Low-Carbon Energy and on Amendment of Act No 165/2012 ⁽⁹⁸⁾.
- (189) The Czech authorities explained that the aid will also be governed by Act No 218/2000 Sb., Act on Budgetary Rules and Amendment of Some Relating Acts (Budgetary Rules), as amended, as well as the various contracts and agreements with the beneficiary, as described below.
- (190) The Master Agreement on Cooperation on the construction of a new nuclear sources in the Czech Republic signed between the Ministry, ČEZ and EDU II on 28 July 2020 established a general framework for the initiation and subsequent development of cooperation between the parties on the Project for the construction of new nuclear sources at the Dukovany site. It does not contain any specific legally binding obligations of the parties. The Project is made conditional in the Master Agreement on prior State aid approval.
- (191) The First Implementing Contract between the Ministry, ČEZ and EDU II contains legally binding arrangements concerning the rights and obligations of the parties for the first Stage of the Project, i.e. until the selection of the EPC contractor. It was signed on 28 July 2020 and subsequently amended on 24 December 2022, 20 December 2023 and 30 January 2024.
- (192) On 26 January 2024, the Czech authorities provided copies of:
- (a) The draft term sheet of the PC which sets out that rights and obligations of the parties in relation to the Project and will replace, when signed, the Master Agreement and the First Implementing Contract. Specifically, the contract will set out the conditions for the power purchase obligation of the Czech State (including as regards the calculation of the SP and its adjustments and the terms of the gain-share obligation), the State's obligation to establish the SPV, EDU II's obligation to develop, build and operated the NPP, as well as the applicable terms in case of change of ownership.

⁽⁹⁶⁾ The availability target of [75 to 100] % is set as a basis for remuneration. However, differences in availability schedules according to the selected technology can have an impact on the Financial Model.

⁽⁹⁷⁾ Lifecycle costs cover the replacement and major refurbishment of components in the NPP. The successful EPC bid will detail the expected schedule of replacement and major refurbishment. These costs do not include lifetime extension costs.

⁽⁹⁸⁾ The Act was last amended in 2023 and is available at: <https://www.zakonyprolidi.cz/cs/2012-165>.

- (b) The draft term sheet of the Investor Agreement between the Czech State, ČEZ and EDU II setting out the obligations concerning ČEZ's equity financing for the Project, transferring of shares to third parties, as well as the details of the Call and Put Options.
 - (c) The draft term sheet of the Repayable Financial Assistance to be granted by a decision of the Ministry of Industry and Trade.
- (193) The Czech authorities declare that the terms of the above contracts will be finalised once the procurement procedure for the selection of the EPC contractor is closed and the investment and operating costs of the Project, as well as its technical characteristics, are confirmed. For the same reason, certain inputs for the Financial Model which will be used to recalculate the Strike Price of the PC will be updated to reflect the terms of the EPC contract (see Annex).
- (194) The Czech authorities further declare that the rest of the terms and conditions of the contractual documents listed in recital 191 above as well as the final financing documents will contain standard clauses that any investor would seek and could reasonably expect to find agreement on for a similar project. If the respective final contractual documents improve contractual conditions shifting the balance of risks, rate of return expectations, or cost coverage relating to the Project and its related infrastructure to the benefit of the beneficiaries, or otherwise contain further elements which are liable to constitute State aid, the Czech authorities commit to notify them to the European Commission prior to implementation.
- (195) The Czech authorities explained that the information on the Project will be published on the Ministry website <https://www.mpo.cz/cz/energetika/>.

3.10. Financing structure of the Project

- (196) The total funding requirement of the Project under the Initial case has been estimated at EUR [...] billion (in real terms, 2020 prices) or EUR [...] billion in nominal terms, and which will be financed via EUR 0.18 billion initial equity from ČEZ in Stage 1, and by a EUR [9,8 to 10,8] billion State loan, the RFA, in Stages 2 and 3.
- (197) An additional EUR 1,77 billion committed contingent equity will be provided by ČEZ to finance any potential cost overruns not caused by Legitimate Grounds. The details on the approach for financing of any cost overrun will be agreed by ČEZ and the State. The total maximum equity commitment from ČEZ for the Project in the development and construction phase will be EUR 1,95 billion.
- (198) The Czech authorities explain that the overruns cap is the result of the commercial negotiation between parties and the result of effective and optimal risk allocation for the Project. They consider that the Project could not be realised with an open-ended financial commitment.
- (199) As mentioned in Section 3.6.6, the Czech authorities anticipate the construction costs of the Project to be EUR [...] /kW (overnight, thus without interest during the construction period, at 2020 price level) and assume the operating costs to be around EUR [25 to 50]/MWh (at 2020 price level) comprising fuel, O&M, lifecycle renewal costs and decommission and waste management costs. In an alternative scenario ⁽⁹⁹⁾, the Czech authorities estimate the construction costs for the Project, not related to overruns caused by Legitimate grounds, to be 10 % higher.
- (200) As set out in recital 154, the Czech authorities explained that in a worst case scenario of cost overruns similar to those incurred in Vogtle and Hinkley Point C, the overnight costs of the Project could reach EUR [17 to 18] billion (real in 2023 prices), or EUR [...] billion in nominal terms. In such a case, if the cost overruns are entirely triggered by Legitimate Grounds, the amount of the RFA would reach EUR [...] billion in nominal terms.

⁽⁹⁹⁾ The 'realistic case' is ČEZ terminology for an alternative scenario that assumes a + 10 % increase in overnight costs for the Project, with the costs classified as non-legitimate.

- (201) The cost estimates are indicative at this stage and have been developed based on precedents. The actual costs will be determined by the outcome of the EPC tender and the technology selected.

3.11. Cumulation

- (202) The measure cannot be cumulated with other aid received to cover the same costs to be incurred under the Project.

3.12. Transparency

- (203) The Czech authorities submitted that all the relevant information concerning the measure will be published on a national website ⁽¹⁰⁰⁾, as well as on the Commission's transparency register.

3.13. Grounds for initiating the procedure

- (204) The Commission adopted the Opening Decision on 30 June 2022. The Commission came to the preliminary view that the measures constitute State aid and raised doubts concerning the compatibility of the measures with the internal market under Article 107(3)(c) TFEU. Specifically, in the Opening Decision the Commission raised doubts in connection with the appropriateness, the proportionality of the aid, and with potential distortions of competition and trade.
- (205) As regards the doubts on appropriateness in the Opening Decision, the Commission inquired whether the combination of the fixed price off-take contract initially proposed together with the RFA and the Change of Law or Policy Protection mechanism was an appropriate instrument to provide aid, especially when compared to other instruments which were deemed appropriate for past nuclear investments. The Commission expressed its doubts as to whether a higher degree of risk to the beneficiary would not have been more appropriate. Specifically, the Commission noted in the Opening Decision that by insulating the beneficiary from important market risks, certain incentives for competitive behaviour may have been hampered and considered that the three measures (i.e. the Change of Law provision, offtake contract and RFA) together reduce market risk considerably. In light of the above, the Commission held that it was unclear whether the balance proposed by Czechia in using the three measures was the right one, and whether alternative instruments or an alteration of the proposed instruments to ensure a higher degree of exposure to market risk might be required ⁽¹⁰¹⁾.
- (206) Concerning the Project's proportionality, the Commission raised in the Opening Decision doubts whether the duration of the off-take contract of 60 years was limited to the minimum necessary to ensure the Project goes ahead. In particular, the Commission noted that the duration exceeds significantly the repayment period of the financial assistance (30 years post commercial operation date in this case), as well as the duration of support accepted in previous cases ⁽¹⁰²⁾. The Commission further noted that while long-term contracts are a common requirement to enable large long-term investments, the contract duration does not necessarily always cover the entire economic lifetime of a project.
- (207) Moreover, in the Opening Decision the Commission further expressed doubts whether the assumptions used to estimate the required return correctly reflect the risk exposure of the investor. In particular, the Commission expressed doubts regarding the nuclear construction and operations premium that was added in the CAPM estimation, given the reduced risk exposure of the beneficiary due to the three aid measures as well as the possibilities for an adjustment of the PPA price. Following this, the Commission questioned whether the required

⁽¹⁰⁰⁾ Available at: <https://mpo.cz/cz/energetika/novy-jaderny-zdroj/rozvoj-novych-jadernych-zdroju/>.

⁽¹⁰¹⁾ See Opening Decision, recitals 191-193.

⁽¹⁰²⁾ *Ibid.*, recitals 197-198. Specifically, the offtake contract for Hinkley Point C was concluded for 35 years, while the RFA repayment period in PAKS II was only 21 years and the measure was not accompanied by any other form of operating aid.

RoE correctly reflects the risks borne by the beneficiary and that it corresponds to a reasonable return for an investor in such an activity, since the offtake contract transfers both price and market risks to the SPV and hence, to the State ⁽¹⁰³⁾.

(208) Additionally, in the Opening Decision the Commission raised doubts as to whether the equity gain share mechanism proposed by Czechia would sufficiently prevent overcompensation, in particular since it includes a sharing factor of 50:50 between the State and EDU II ⁽¹⁰⁴⁾.

(209) Furthermore, the Commission noted with respect to ČEZ as the Project promoter that having an open selection process for the Project promoter might have been able to lead to reducing the support necessary for the realisation of the Project ⁽¹⁰⁵⁾.

(210) With regard to doubts in connection with possible negative effects on trade and competition, the Commission questioned the selection of ČEZ as the beneficiary of the Project and the fact that ČEZ was chosen without a tender or selection process, and possibly without actual consideration of other potential operators. Following this, the Commission raised the question of why ČEZ would be the most efficient operator, why no tender or other selection mechanism was conducted, and on what technical or economic grounds ČEZ was selected. The selection of ČEZ raises doubts regarding a potential distortion of the market structure in view of ČEZ's strong position in the Czech electricity market ⁽¹⁰⁶⁾.

(211) Moreover, the Commission indicated that the possibilities for price manipulation and withholding capacity by ČEZ cannot be fully excluded. For example, in periods when the market prices are higher than the fixed PPA price, it was not excluded that the ČEZ Group could have an economic incentive to reduce EDU II's output, such that other ČEZ units would be able to sell more energy at the higher market prices. The Commission took the view that a possible market manipulation could not be ruled out in particular because of ČEZ's current strong market position with respect to electricity generation capacity as well as the actual generation in Czechia. In light of the above, the Commission raised doubts on whether ČEZ or EDU II would have the incentives or the ability to manipulate the market ⁽¹⁰⁷⁾.

(212) The Commission, finally, raised doubts as to the role of the SPV on the market. In particular, the Commission noted that since the SPV can balance its losses by funds from the State it was unclear whether the SPV would have sufficient incentives to act as a profit-maximising private entity, unless that role is indeed taken up by a separate undertaking, which is driven by profit maximisation strategy, selected through an open tender that does not result in a re-integration of the SPV trading activities with ČEZ. In addition, the Commission held there is a risk that aid to the SPV might spill over to large electricity consumers. That risk may be further aggravated by the fact that the SPV will be controlled by the State. Since it is not yet entirely clear how the SPV will sell the electricity, or to whom, it could not be excluded that the SPV might conclude bilateral contracts at advantageous conditions with industrial consumers ⁽¹⁰⁸⁾. Finally, the Commission indicated that a market distortion could possibly occur because it is uncertain whether the SPV-PPA structure could prevent market signals from reaching the power plant operator ⁽¹⁰⁹⁾.

⁽¹⁰³⁾ *Ibid.*, recitals 207-208.

⁽¹⁰⁴⁾ *Ibid.*, recital 205.

⁽¹⁰⁵⁾ *Ibid.*, recital 209.

⁽¹⁰⁶⁾ *Ibid.*, recital 215.

⁽¹⁰⁷⁾ *Ibid.*, recitals 217-218.

⁽¹⁰⁸⁾ *Ibid.*, recitals 221-223.

⁽¹⁰⁹⁾ *Ibid.*, recital 224.

4. THE POSITION OF THE CZECH GOVERNMENT

- (213) Czechia sent its response to the Opening Decision on 30 August 2022. Czechia's submission provided several analyses in response to the Commission's doubts raised in the Opening Decision with regards to the appropriateness, the proportionality and the effect on trade and competition of the measure.
- (214) It should be noted that Czechia's response to the Opening Decision discusses the State aid support measures as described in the Opening Decision. The current support measures, which include changes compared to the initially planned measures which were introduced to address doubts raised by the Commission in its Opening Decision, are set out in detail in Section 3 of this Decision.
- (215) The arguments put forward by Czechia are outlined in more detail below.

4.1. Czechia's position on the appropriateness of the aid

- (216) In its response to the Opening Decision, Czechia argued that in the current uncertain and fast-changing market conditions, all three measures of the Project are called for to address the market failures associated with nuclear power development (i.e. scale of the capital requirement, longevity of exposure to market pricing signals which are themselves distorted by interventions, and longevity of exposure to political decisions), as recognised by the Commission in the Opening Decision ⁽¹¹⁰⁾. According to Czechia, separate but interlinked State interventions are required to tackle the above-mentioned market failures.
- (217) First, in the absence of financing under market conditions by private sources due to the significant scale of investments and other risks associated with the development of nuclear projects, the important scale of the capital requirement risk would be mitigated by the RFA.
- (218) Second, the longevity of exposure to market pricing signals risk exposes the Project to high revenue risk against significant fixed costs resulting a very high operational gearing, for which private investors do not have the appetite. This risk would be addressed by the long-term price protection offered under the terms of the PC ⁽¹¹¹⁾.
- (219) Third, the longevity of exposure to political decisions risk, which is present at all the phases of the Project (namely, from the development until the decommissioning), would be tackled by the Change of Law or Policy Protection mechanism, including the 'Legitimate Grounds' protection set out in the PC.
- (220) In support of the above, the Czech authorities provided a list of nuclear projects which were abandoned as the result of one or more of the above-mentioned market failures relating to the development of nuclear power production projects. ⁽¹¹²⁾
- (221) The Czech authorities further explained that in addition to those principal market failures, the current market conditions have significantly increased the risks for new nuclear project promoters. These include (i) the ongoing technology shift towards, for example, renewables and hydrogen, which may result in crowding-out nuclear technology by sources with minimal marginal cost of production; (ii) the macroeconomic landscape, which was

⁽¹¹⁰⁾ *Ibid.*, recitals 182 to 184.

⁽¹¹¹⁾ In the Opening Decision, the term power purchase agreement ('PPA') was used to describe the off-take contract. During the formal investigation, Czechia updated this term in its contracts and opted for the term PC. For the sake of consistency, this Decision uses the updated term which correctly reflects the current measure.

⁽¹¹²⁾ First, the Czech authorities indicated several examples of projects being abandoned as the result of the significant scale of capital requirements market failure. Specifically, they identified Horizon in the UK, Belene in Bulgaria and Virgil C. Summer project in the USA. Second, the Czech authorities argued that Temelín II (Units 3 and 4) project in Czechia was abandoned partially because of the absence of State support mechanism mitigating market price volatility risks. Third, Czechia explained that new nuclear projects are exposed to political changes across the projects' lifetime and such changes can negatively impact the viability and financeability of projects. Czech authorities mentioned the Olkiluoto 4 and Hanhikivi 1 projects in Finland which were abandoned as the result of policy decisions.

experiencing inflationary pressures as well as changes in interest rates and foreign currency exchange rates, among others; (iii) the volatility in commodities' market prices, which results in volatility in electricity prices, and 'black swan' type events – such as the Russian aggression against Ukraine which led to market and supply-chain disruptions.

- (222) Moreover, the Czech authorities presented counterfactual scenarios according to which if any of the three support measures of the Project were to be removed, the principal risks described above would remain unmitigated, thus undermining the Project's viability and resulting in unacceptable risk for the Project promoter and ultimately delivery failure.
- (223) In the first counterfactual scenario, the Czech authorities explained that the RFA provides the capital required for the construction of the new nuclear unit and mitigates the risk of market failure arising from the very significant scale of the capital requirement and the high degree of construction risk. In the absence of the RFA, the Czech authorities argue that the Project promoter would not be able to source capital via commercial debt markets for the construction phase due to the above-mentioned risks, leading to project failure. Moreover, Czechia claims that if capital could at all be raised on commercial debt markets, it would be highly likely that access to this private finance would require a significantly higher cost of debt in comparison to the measure proposed by the State; ultimately, resulting in higher levels of State aid support. Notably, to achieve the same level of equity return, a higher PC Strike Price would be required.
- (224) In the second counterfactual scenario, the Czech authorities indicated that the PC acts as a key mitigating factor to the very significant scale of capital requirement and the longevity of exposure to market price volatility. In Czechia's view, if the PC were to be removed there would be no interest by investors to rely on market-based returns throughout the Project's lifetime and full exposure to the risk of fuel cost/OPEX outstripping electricity prices, cashflow volatility and additional hedging costs during operation would further discourage investors.
- (225) Finally, in the third counterfactual scenario, Czech authorities explained that legal, policy and regulatory changes are beyond the control of nuclear project developers and such changes constitute significant risk for new nuclear projects in view of their longevity and the diverging views on the role of nuclear technology. Absent the Change of Law or Policy Protection mechanism, the Czech authorities argue that the Project promoter would likely withdraw from the Project leading to delayed commissioning timelines and/or project delivery failure.
- (226) During the formal investigation, Czechia decided to amend the measure with a view to injecting more market risk into the Project by replacing the fixed price remuneration of the PC ⁽¹¹³⁾ with an updated remuneration formula which reflects market conditions and responds to market signals. For the detailed description of the remuneration formula, see recitals 83-106 above.

4.2. **Czechia's position on the proportionality of the aid**

4.2.1. *Duration of the support*

- (227) In response to the Commission's doubts concerning the duration of the PC raised in the Opening Decision, the Czech authorities, first, argued that the PC needs to be commensurate with the current risk investment environment. Specifically, the Czech authorities explained that the investor landscape for the development of nuclear power has undergone significant changes as the result of soaring risks resulting from global supply chain shortages, inflationary pressure, volatile foreign exchange markets and deterioration of the geopolitical environment in Europe (such as, the Russian aggression against Ukraine). Energy markets are susceptible to such

⁽¹¹³⁾ See Opening Decision, recitals 60-65.

geopolitical risks which recently resulted in high volatility of energy prices. Nuclear investors are particularly impacted by these changes due to the longevity of the projects and the significant capital required in the beginning of projects' lifetime. In light of the above, Czechia argues that the proposed 60 years PC tenor corresponds to the current risk environment and any reduction in the tenor length would translate in higher investor risk exposure and accordingly a higher ROE. According to the Czech authorities, this would translate to a higher PC Strike Price, undermining the Project's objective to supply affordable electricity.

- (228) Second, the Czech authorities explained that the longer the duration of the offtake contract the lower the PC Strike Price and the lower the risk of electricity becoming more expensive. Czechia claimed that a PC with a duration shorter than 60 years would expose the Project to amplified risks. Such risks would include that the Project promoter would need to command a significantly higher PC Strike Price to build greater working capital reserves as well as make greater contributions to the decommissioning reserve ⁽¹¹⁴⁾ over a shorter period in order to manage risks in adverse market conditions (such as, volatility in market prices) following the expiry of the offtake contract. At the same time, the Czech authorities highlighted the importance of stable and affordable electricity prices for consumers which would be achieved by a power PC with a long tenor. Finally, Czechia claimed that a PC tenor extending beyond the 30-year RFA repayment period would be necessary to ensure that the Project is not jeopardised by heightened risks and the PC Strike Price remains reasonable and stable in the long term.
- (229) Third, the Czech authorities argued that the spreading of operational support across the entire lifetime of the NPP prevents the risk of windfall gains for the beneficiary. Specifically, Czechia explained that overcompensation mechanism together with the mechanism of adjusting the PC Strike Price in regular intervals to ensure proportionate remuneration ensure that the risk of windfall profits is minimised. The Czech authorities further mentioned that the 60-year duration of the PC would also limit any windfall profits that might occur after the expiry of the offtake contract in cases of a shorter tenor.
- (230) Fourth, Czechia explained that the spreading of support across the NPP lifetime minimises the specific price impact and reduces the risk of unfair intergenerational economic transfers. In particular, the Czech authorities indicated that PC are an important tool to protect consumers from volatile market developments. Additionally, a PC duration for the Project that matches the NPP's lifetime would provide greater supply and price stability to energy consumers unlike an offtake contract with a shorter duration which would expose the Project promoter and energy consumers to price and supply uncertainty. In cases of a PC duration shorter than 60 years, there would be a heightened risk of unfair intergenerational economic transfers which could result from price or supply uncertainty. Moreover, Czechia mentioned that operational support throughout the NPP's lifetime is common in many RES cases. Such an approach reduces the risk of investments as it provides a guaranteed level of returns for investors.
- (231) Fifth, the Czech authorities further argued that a PC long tenor would reinforce confidence that the NPP will continue operations throughout its lifetime and would promote Czech energy security. Specifically, the Czech authorities explained that a long PC duration would provide a market signal indicating the State's commitment to low-carbon energy security in the long term. This confidence could translate in lower costs for the Project.

⁽¹¹⁴⁾ See Section 51(2) of the Atomic Act, available at: https://sujb.gov.cz/fileadmin/sujb/docs/legislativa/zakony/Act_263_2016_web.pdf.

- (232) Sixth, finally, Czechia claims that the measures (including the proposed duration of the PC) allow for the maximum viable allocation of risk to the Project developer and contractor that those parties can bear. Under the proposed support package, the Czech authorities mentioned that important risks rest with the Project promoter (such as, delays, cost overruns, supply chain issues, plant performance and outages as well as changes not covered by the Legitimate grounds). Thus, in Czechia's view, the proposed measures constitute proportionate aid which is set at the minimum amount that does not go beyond what is necessary.
- (233) In the course of the formal investigation, Czechia decided to shorten the duration of the PC from 60 years to 40 years (see recitals 83-85 above).

4.2.2. Risk of overcompensation

- (234) In response to the Commission's doubts with regards to the risk of overcompensation raised in the Opening Decision, the Czech authorities claimed that the proposed overcompensation mechanism is sufficient to prevent overcompensation. The proposed overcompensation mechanism consists of three main tools which offer strong protection: namely, (i) the gain-share mechanism that, in Czechia's view, goes beyond and is more stringent than the equivalent provisions in previously approved nuclear projects; (ii) the EPC tender process which will contribute to calibrating the PC price ⁽¹¹⁵⁾; and (iii) the insulation from energy markets through the PC structure which prevents EDU II from obtaining overcompensation as a result of substantial changes in the long-term energy price.
- (235) With regards to the first measure, the Czech authorities mentioned that the proposed mechanism measures the Project's performance across its lifetime and ensures all overperformance is covered by its scope. Notably, all returns achieved above the negotiated EDU II initial case return are subject to a 50 % sharing factor. The Czech authorities further stressed that the proposed gain-share mechanism encourages EDU II to make greater returns and offers the possibility to the State to receive gain-share receipts in case of the Project's overperformance.
- (236) Moreover, the Czech authorities claimed that the proposed gain-share mechanism is premised on the Hinkley Point C mechanism which was approved by the Commission. However, they argue that the Project's gain-share mechanism provides greater sharing between the State and the operator at a lower equity return in comparison with Hinkley Point C. Specifically, the Project's gain-share mechanism has a significantly lower threshold for sharing than Hinkley Point C ⁽¹¹⁶⁾. In addition, the Hinkley Point C gain-share mechanism is activated only when the project IRR (WACC) exceeds 11,4 % (Base Case WACC of 9,02 %), while the Project's gain-share mechanism would be activated at a much lower economic return for the Project (Base Case WACC of 3,7 %). Further, the Project's gain-share mechanism has a higher initial sharing factor than Hinkley Point C (50 % vis-à-vis 30 %).

Figure 2

EDU II vs the Hinkley Point C gain-share mechanisms [...]

Source: Czech authorities.

- (237) With regards to the second measure, the Czech authorities argue that the EPC tender embeds a competitive market-based mechanism into the process for setting assumptions. This mechanism ensures that any potential upside captured in the long-term assumptions is minimised as the result of the outcome of the tender process. In a similar

⁽¹¹⁵⁾ According to Czechia, this would occur based on assumptions revised through the market EPC tender process which embeds the latest market thinking into any long-term assumptions used.

⁽¹¹⁶⁾ Czechia argues that while in Hinkley Point C returns need to increase by 26,7 % above the initial IRR return (9,02 %) before there is any sharing, the Project's gain-share mechanism applies to any overcompensation above the initial IRR return.

vein, in Czechia's view, the EPC tender process would ensure that any overcompensation from potential undue contingency in the underlying assumptions is limited. Czechia further argues that the tender process in the Project diverges from the selection procedure in Hinkley Point C where the project promoter had more tools to drive overcompensation ⁽¹¹⁷⁾.

- (238) With regards to the third measure, the Czech authorities explained that the proposed PC structure cuts the link between the Project promoter and exposure to market prices and thus removes the possibility for the promoter to receive overcompensation as the result of market changes (either structural or price-related). Such a risk could in theory occur after the end of the PC duration and according to Czechia this is an additional reason in favour of a longer PPA of 60 years which matches the NPP's lifetime. Based on the proposed PC structure, EDU II could only earn overcompensation in cases of overperformance in terms of capacity production.
- (239) Furthermore, the Czech authorities explained that the ability for the Project promoter to earn some limited upside above the target ROE has desirable incentive effects and will incentivise EDU II to engage in market economic behaviour. Czechia designed and negotiated the support for the Project with the objective to transfer the maximum bearable risk to EDU II, on the one hand, and to maintain incentives to incentivise the right economic behaviour of EDU II and ČEZ, on the other. The incentives included in the proposed structure enable EDU II to effectively manage risks, innovate, secure efficiencies and deliver the Project within the arranged terms. Finally, Czechia argues that additional overcompensation mechanisms to limit potential upside would increase the net risk position for EDU II and thus might not be aligned with the current minimum aid position. Specifically, the Czech authorities mentioned that the proposed gain-share mechanism protects against overcompensation by reducing the potential for upsides and this is reflected in the current ROE and the PC Strike Price agreed between Czechia and the Project promoter. Any additional measure to decrease further potential upside may result in higher risk exposure for the Project promoter and resultingly possibly a higher ROE and PC Strike Price.
- (240) During the formal investigation, Czechia revised the PC formula for the remuneration of ČEZ (see recitals 83-106 above) to reflect market risks and updated the gain-share mechanism (see recitals 161-169 above) to prevent overcompensation.

4.2.3. *RoE calculated at the minimum required*

- (241) The Czech authorities explained that the proposed range for RoE has been assessed considering the risks faced by EDU II compared to other major energy infrastructure projects. Specifically, project risks were assessed under six categories: namely, development, construction, operation, revenue, financing, and regulatory. The comparators are split into three sections: namely, (i) nuclear generation projects (EDU II, HPC and Paks II); (ii) major commercial infrastructure projects (conventional power plant projects and offshore wind); and (iii) Czech regulatory price controls. The qualitative risk assessment carried out by Czechia finds that the nuclear generation projects are considered 'High' risk, while the other categories are considered 'Medium' and 'Low' risk. The table below summarises the risk benchmarking analysis across all risk factors and comparator projects considered under six risk categories.

⁽¹¹⁷⁾ Specifically, the Czech authorities argued that in the Hinkley Point C case the project promoter was also the technology provider delivering a large part of the equipment and engineering, which was provided through more than 180 direct contracts. Given the project developer is also a prominent figure in the technology supply chain, Czechia argues that it processes greater control and ability to drive overcompensation the underlying assumptions and transfer costs.

Table 4

Summary risk assessment across all risk factors and comparator projects

Project	Development	Construction	Operational	Revenue	Financing	Regulatory	Overall
EDU II	High	High	High	Medium (40-year PPA)	Medium	Medium	High
				Low (60-year PPA)			
HPC	High	High	High	Low	High	Medium	High
Paks II	High	High	High	Medium	Medium	Medium	High
Conventional power plant projects (IPPs)	Medium	Medium	Low	High	Medium	Low	Medium

Project	Development	Construction	Operational	Revenue	Financing	Regulatory	Overall
Offshore wind	Medium	Medium	Low	Low	Low	Low	Low
Czech regulated distribution	Low	Low	Low	Low	Low	Medium	Low

Source: Czech authorities.

- (242) According to Czechia, the typical returns for those comparator projects seem to correspond to the underlying risks. For nuclear generation projects, the returns range between 9-12,5 % (for Hinkley Point C, 11-11,5 % (leveraged), 9,02 % (unleveraged) and for Paks II, 10,9-12,5 %). For conventional power plant projects, the leveraged returns are between 10-11 %, while for offshore wind range between 7-9 %. Finally, for Czech regulated electricity and gas distribution the returns range between 7,76-7,94 %.
- (243) Furthermore, the Czech authorities explained that a detailed analysis based on market variables was used to calculate the required RoE range for EDU II. This analysis indicated a RoE range between [...]-%, which is aligned with the qualitative comparative risk assessment and the returns for the benchmarked projects. Specifically, market variables from the Czech and European finance markets were used to estimate CAPM parameters including the Risk-free Rate, Equity Risk Premium, and Beta values. Additionally, a nuclear premium has to be included in comparison with conventional energy or regulated networks in view of the increased risk for nuclear projects. That is because nuclear projects have material construction and operation risk and the track record and practical difficulties of implementing nuclear projects on time and within budget demonstrates this, in Czechia's view. Czechia submits that given the protections afforded by the Project, a premium of 3-3,5 % is appropriate and has been included in the bottom up CAPM calculation.
- (244) In addition, the Czech authorities mentioned that the proposed support mechanisms are designed to transfer the maximum risk to EDU II while being sufficient to address the principal market failures.
- (245) During the formal investigation, Czechia proposed an updated ROE as described in Section 3 (see recitals 84-99 above).

4.3. Czechia's position on the selection of ČEZ

(246) In its response to the Opening Decision, the Czech authorities explained that alternative solutions for the role of the Project promoter had been considered and ČEZ was selected as the preferred option (recitals 147-148). Prior to the selection of ČEZ as the Project promoter, detailed analyses of three options under consideration (namely, (i) the private investor consortium; (ii) the majority of the project owned and operated by the Czech State; and (iii) an option where ČEZ was the Project promoter), were conducted (see recital 51 above). Czechia chose the third option.

(247) The Czech authorities further explained that ČEZ is the most suitable choice as a Project promoter in view of its ability and incentives to deliver the Project, as well as security of energy supply considerations, national security interests, and technological neutrality. Specifically:

- ČEZ as the Project promoter is uniquely placed to deliver this Project because of its extensive experience in the market as a credible NPP developer and operator in Europe and as an existing generator in Czechia. Additionally, ČEZ Group is one of the ten largest energy companies in Europe, both in terms of installed capacity and number of customers. In addition, ČEZ will provide up to EUR 1,95 bn equity investment in EDU II and this will create a strong incentive for ČEZ to successfully deliver EDU II.
- In view of Czechia's carbon-neutrality targets by 2050, security of supply considerations played an important role in the selection of the investor model for the Project. ČEZ is fully committed to deliver the Project within a timeframe that protects Czechia's security of supply and has so far taken all the necessary action in this direction (e.g. acquired the site, obtained necessary planning approvals and permits).
- ČEZ, as a publicly listed and Czech State majority-owned company with an important footprint in the Czech energy market, ensures that Czechia's national security interests are protected – especially in an environment where Czechia's economy is largely exposed to external threats to the supply of energy resources.
- Finally, while ČEZ has been selected as the Project promoter, the nuclear technology provider will be procured through a competitive tender process. The EPC supplier will be responsible for the construction and commissioning of the Project and will therefore have a significant responsibility for ensuring the project is delivered successfully.

(248) Moreover, the Czech authorities explained that the selection of ČEZ creates significant efficiencies, avoids additional costs, and does not require a separate site development. Thus, this selection creates significant Project delivery timing advantage which could not be replicable by alternative structures.

(249) The Czech authorities further explained all the preparatory works ČEZ has undertaken so far. ČEZ Group is the owner of the proposed site for the NPP (EDU II). The acquisition process for the land required for the construction site started in April 2008 and was concluded in 2021 (recital 77). In addition, ČEZ undertook feasibility studies with the aim to reduce the time and the cost for Czechia in the development of the Project.

(250) Additionally, as of early 2021 ČEZ has obtained all the key licences and permits needed to progress the Project in line with the Project plan (such as, the licence for the siting of the nuclear installation and the EIA (recitals 78-79). The licence for the siting of the nuclear installation typically requires 6-7 years and the EIA acquisition between 3-5 years.

- (251) Furthermore, the Czech authorities explained that ČEZ as a nuclear power plant owner and operator has in-depth knowledge and understanding of the regulatory requirements, including licensing requirements, for a new NPP and the legislation in Czechia (recital 149). In addition, ČEZ and EDU II are members of several international organisations including, World Association of Nuclear Operators ('WANO')⁽¹¹⁸⁾, European Harmonised Requirements for New Nuclear Power Plants ('EUR')⁽¹¹⁹⁾, Electric Power Research Institute ('EPRI')⁽¹²⁰⁾, World Nuclear Association ('WNA')⁽¹²¹⁾ and Nuclear Generation II & III Alliance ('NUGENIA')⁽¹²²⁾, and as such have access to standards and processes which are recognised and encouraged by regulators worldwide to promote continuous improvement.
- (252) The Czech authorities further underscored the key role of the Project in Czechia's security of electricity supply in the future, especially in light of the decommissioning of coal-fired plants. Specifically, the Czech authorities explained that a shorter development horizon for the Project will contribute to addressing the forecasted capacity gap⁽¹²³⁾. Developing a different project at a different site with significantly longer time horizon would not address the system's security of supply immediate needs.
- (253) Moreover, Czechia explained for the sake of the argument that if any alternative project promoter were to procure a potentially suitable site for a nuclear power plant in the territory of Czechia this would lead to significant delays for the realization of the project in comparison with ČEZ. Specifically, in this alternative scenario the Czech authorities estimate delays of up to 14 years (vis-à-vis the Project) without reassurances that the site characterisation or planning steps that have been successful for EDU II would not face any issues, thus increasing the risks and costs for the development of the project. In any event, the Czech authorities claim that there is no evidence in Europe of technology-neutral, nuclear experienced operator developing NPP outside their own country.
- (254) In the event that a project promoter other than ČEZ were to develop the Project, Czechia estimates that additional costs of at least approximately EUR [200 to 700] million would be incurred and would need to be financed. These costs mainly consist of the value of the site for the NPP, the feasibility studies, licensing and development activities that ČEZ carried out so far, as well as synergies with the existing Dukovany NPP.
- (255) Finally, the Czech authorities mentioned that the selection of ČEZ as the Project promoter was in line with past nuclear cases assessed by the Commission where no open competition processes were carried out for the selection of project promoters due to those projects' specificities⁽¹²⁴⁾.
- (256) In a further submission dated 16 March 2023, Czechia pointed out ČEZ's track record in delivering and operating nuclear power plants. In the past, ČEZ has developed and constructed two units with an installed capacity of 1 125 MW in Temelín (Czechia) that were commissioned in 2000 and 2002, as well as the first nuclear power plant in Dukovany with a current installed capacity of 2 040 MW. These units were commissioned between 1985 and 1987 and Czechia highlights that the WANO considers these unit among the 20 % of the best-run powerplants.

⁽¹¹⁸⁾ <https://www.wano.info/>.

⁽¹¹⁹⁾ <https://www.europeanutilityrequirements.eu/fr>.

⁽¹²⁰⁾ <https://www.epri.com/>.

⁽¹²¹⁾ <https://www.world-nuclear.org/>.

⁽¹²²⁾ <https://snetp.eu/nugenia/>.

⁽¹²³⁾ The Czech Transmission System Operator's simulations on the mid-term adequacy forecasts in three scenarios (namely, (i) progressive scenario under which the decommissioning of coal-fired generation is scheduled by 2033; (ii) the conservative scenario under which the decommissioning of coal-fired generation is scheduled in 2038; and (iii) the reference scenario under which the decommissioning of coal-fired generation is scheduled in 2040) shows the importance of timely commissioning of a new nuclear source to ensure Czechia's security of electricity supply and self-sufficiency.

⁽¹²⁴⁾ By way of example, the Czech authorities indicated that the appointment of EDF for Hinkley Point C was made following an expression of interest consultation to which EDF was the only respondent, while for Paks II, MVM Paks II was appointed without an open competition process as there were no other credible alternatives in the market at the time.

(257) Moreover, besides of security of supply and national security considerations, Czechia stresses the financial security perspective since ČEZ benefits from a strong governmental credit rating ⁽¹²⁵⁾.

(258) Finally, Czechia specified that a tender for selecting a Project promoter that could be potentially different from ČEZ would entail significant disadvantages. In essence, Czechia brings forward that in this case competition on this level of the Project would not yield any results with a view of choosing the most efficient operator. Pointing to the reasons reported above, Czechia opines that since there would be no advantages of competition in requesting other parties' interest or in organising a tender, and therefore the downsides of this process, in particular the delays and additional costs incurred as well as security concerns linked to any other potential candidate, could not be outbalanced. Czechia also state that at no stage of the planning of the Project any third party complained about or raised objections to on the appointment of ČEZ as the Project's promoter, including the third-party responses to the Opening Decision.

4.4. Czechia's position on the Project's impact on trade and competition

4.4.1. Potential price manipulation and withholding capacity by ČEZ

(259) In response to the Commission's doubts raised in the Opening Decision in connection with possible withholding capacity by ČEZ, the Czech authorities explained that the ČEZ Group will not have either the economic incentives or the ability to inflate wholesale prices by curtailing the output of EDU II.

(260) First, the Czech authorities claim that is because the Project's governance structure EDU II's independence from the ČEZ Group; thus, effectively limiting the latter's ability to unduly interfere in the NPP day-to-day operations.

(261) Second, according to the Oxera report ⁽¹²⁶⁾, 'the commissioning of EDUII has a small but noticeable effect on Czech electricity price'. The projections in this report show that the commissioning of EDUII would lower Czech electricity prices by around EUR 2/MWh between 2040 and 2050 (recital 170). Following this, Czech authorities estimate that if EDU II went completely offline for a year, it would result in a loss of revenues totalling approximately EUR 450 million for EDU II ⁽¹²⁷⁾, while ČEZ would accrue only around EUR 17 million of additional revenues from selling the unhedged part of production for the following year ⁽¹²⁸⁾ leading to a significant financial loss for the ČEZ Group.

⁽¹²⁵⁾ Reference to replies by CZ dated 16 March 2023, reply to question 20.

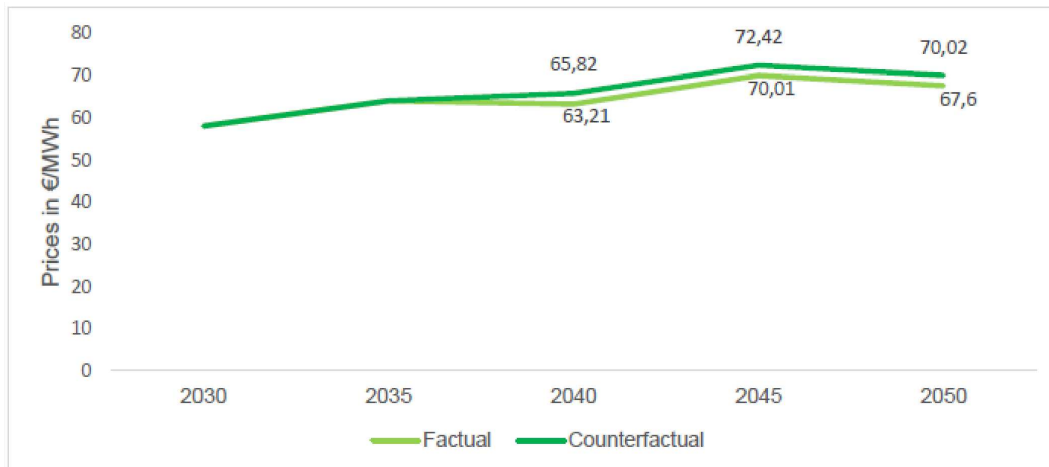
⁽¹²⁶⁾ Oxera Consulting LLP, 2021, The impact of Dukovany on the Central European electricity market (the 'Oxera report').

⁽¹²⁷⁾ Calculated based on annual generation of 9 TWh multiplied by 50 EUR/MWh.

⁽¹²⁸⁾ Calculated based on 21 % of annual generation of 40 TWh multiplied by 2 EUR/MWh inflated to 2020 real prices.

Figure 3

Difference in wholesale electricity prices in Czechia between factual and counterfactual scenarios (2030-2050)



Note: Projections taken from the Oxera model baseline (factual and counterfactual) scenarios. (In the factual scenario, the planned support measures for the construction and operation of Dukovany II are implemented, while in the counterfactual scenario, the planned measures are not implemented.)

Source: Oxera report

- (262) Third, the Czech authorities explained that although some small reduction in the production output may be theoretically possible for EDU II ⁽¹²⁹⁾, such change would unlikely result in any meaningful movement in electricity prices given how interconnected energy markets in Europe are. Specifically, Czechia and its immediate neighbours with interconnected electricity markets are Austria, Germany, Poland and Slovakia. Czechia alleges that the Project would have no or only very limited impact on price setting in Czechia between 2030 and 2050. Indeed, it estimates that the market price of electricity for the interconnected region is set based on electricity prices for energy generated outside of Czechia (up to 98 % of hours from foreign generators). The energy generated inside of Czechia would be covered by natural gas and lignite, with an increasing number of RES. These technologies based inside Czechia would be price setters only for a small number of hours.
- (263) The Czech authorities further argue that ČEZ would be negatively affected if the SPV were to instruct EDU II to curtail production – even for valid reasons, such as system balancing – as such curtailment would lead to lower cash flows for ČEZ. In any event, Czechia claims that NPP once they are operational, they have low marginal costs of operation and are not well equipped to modulate their output volumes to a high extent.
- (264) Fourth, the Czech authorities explained that the economically rational course of action for both EDU II and the ČEZ Group is to always produce maximum possible output from the NPP because EDU II will only earn revenue for the electricity supplied ⁽¹³⁰⁾. The Czech authorities referred to the Oxera report which reads '[a]ny reduction in EDU II output will mean lost cash flows and potential financial issues for EDU II given how low headroom for profitability under which the project operates at the currently proposed 50 EUR/MWh PPA price' ⁽¹³¹⁾. They further explained that EDU II's operating margin is at [40 to 50] % on average, which drops to 6 % once the cost and repayment of the RFA are included. A reduction in load factor from the anticipated [75 to 100] % to below [70 to 90] % would eliminate the cash available to service the debt and potentially result in EDU II not being able to service the RFA. A reduction below [40 to 60] % would lead to cash flows not being sufficient to cover operating costs.

⁽¹²⁹⁾ The specific degree of modulation of the NPP would be determined by the EPC technology to be selected.

⁽¹³⁰⁾ Conversely, the Czech authorities explained that it would not be economically rational for EDU II to produce below the lower bound (i.e. 84 %), which is the amount at which cash flow for debt services is insufficient.

⁽¹³¹⁾ See Oxera report.

- (265) With regard to the Commission's doubts concerning potential price manipulation by ČEZ raised in the Opening Decision, the Czech authorities explained that the market share of ČEZ in Czechia and neighbouring markets will only marginally increase as the result of EDU II installed dispatchable generation capacity and will have a limited impact on ČEZ's market power. The Czech authorities further explained that the gain in market share through the Project's investment in nuclear power will be offset by decrease in market share as the result of lower investment in coal-powered plants and planned decommissioning of existing NPP. In any event, Czechia argues that the SPV is specifically tailored to prevent any possible competition distortions.
- (266) Czechia also contests that the relevant market would comprise Czechia only. Because of ongoing implementation of market coupling mechanisms and the goal of decarbonising Europe with the help of integrating RES, Czechia maintains that interconnectivity between the electricity systems in Member States is expected to increase⁽¹³²⁾. One should also consider the potential for future reviews of bidding zones and the possibility for cross-border bidding zone mergers. Therefore, Czechia concludes that the relevant market is broader than Czechia, which impacts ČEZ's market shares as follows:
- (267) Specifically, the Czech authorities argue that the capacity that will be generated by EDU II will not significantly affect the ČEZ Group's market power in Czechia⁽¹³³⁾. Notably, they estimate the dispatchable generation capacity of EDU II will only equate to 4 % of the Czech market and approximately 0,8 % of the relevant geographic market for the Project in 2040⁽¹³⁴⁾. According to Czechia, the ČEZ Group's projected market share is reduced significantly between 2030 and 2050 and if EDU II becomes operational the Group's market share would only increase by 4,08 % / 0,76 % (in 2040) and 6,97 % / 0,76 % (in 2050) in Czechia and the relevant geographical market, respectively. Such an increase in the Group's market share based on EDU II capacity is not expected to have a material effect on the Group's market power in Czechia or the neighbouring markets.

Table 5

Market share of ČEZ in terms of installed dispatchable generation capacity (2020-2050), factual scenario

Year	Market shares in Czech Republic	Increase in market shares in Czech Republic due to Dukovany II	Market shares in Czech Republic incl. import capacities	Market shares in Czech Republic and four neighbours incl. import capacities	Increase in market shares in Czech Republic and four neighbours due to Dukovany II
2020	80,20%	-	60,29%	6,50%	-
2030	70,37%	-	50,64%	5,89%	-
2035	70,82%	-	49,25%	5,67%	-
2040	71,43%	4,08%	45,06%	5,38%	0,76%
2045	70,40%	5,37%	42,92%	4,86%	0,77%
2050	44,17%	6,97%	28,40%	3,46%	0,77%

Note: Dispatchable capacity includes all thermal, nuclear, and pumped storage hydro plants. Data for 2020 were provided by ČEPS. Market shares 2030–50 is based on the Oxera model, which takes the ČEPS and TYNDP 2020 data as a basis. Projections taken from the Oxera model baseline (factual) scenario.

Source: Oxera report

⁽¹³²⁾ See recital 13 and footnote 6.

⁽¹³³⁾ The ČEZ Group owns 61 % of Czechia's generation assets, 35 % of the Suppliers and 53 % of the lignite mining as of December 2023.2022. See ČEZ Group, Clean Energy of Tomorrow, Investment Story, December 2023 <https://www.cez.cz/webpublic/file/edee/ospol/fileexport/investors/investment-stories2022>.

⁽¹³⁴⁾ The relevant geographic market for the Project consists of Czechia and its neighbouring countries with interconnected electricity markets (namely, Austria, Germany, Poland and Slovakia).

Table 6

Estimate of ČEZ's future market share in terms of generation according to Czechia

Year	CEZ market shares in Czech Republic incl. net imports	Dukovany II market shares in Czech Republic incl. net imports	CEZ market shares in Czech Republic and four neighbours	Dukovany II market shares in Czech Republic and four neighbours
2019	70,48%	-	7,32%	-
2020	64,29%	-	6,94%	-
2030	73,02%	-	5,29%	-
2035	71,24%	-	4,92%	-
2040	45,15%	12,83%	2,89%	0,82%
2045	42,61%	12,40%	2,76%	0,80%
2050	18,98%	10,27%	1,40%	0,76%

Note: Projections taken from the Oxera model baseline (factual) scenario.

Source: ČEPS, ENTSO–E Transparency platform, CEZ, APG, SMARD Strommarktdaten, Oxera model.

- (268) Moreover, the Czech authorities argued that ČEZ Group's main strategic objective has been the efficient management of nuclear plants as well as lignite mining and coal plants. However, the coal-powered plants (which represented 45 % of installed capacity in GW and 39 % of total produced electricity in TWh in 2019) are planned to be phased out in line with the EU decarbonisation requirements. ČEZ is committed to carbon neutrality by 2050 and has planned to reduce the coal-fired capacity by nearly half to 3 GW by 2025 and to 2 GW by 2030. In Czechia, coal currently accounts for approximately half of the electricity production, and it will be partially replaced by nuclear energy and, to a lesser extent, renewable energy sources ⁽¹³⁵⁾.

Table 7

Share of individual fuels in gross electricity generation in Czechia

	2016	2040 target level according to the State Energy Policy
Coal and other solid non-renewable fuels	50%	11-21%
Nuclear energy	29%	46-58%
Natural gas	8%	5-15%
Renewable and secondary energy sources	13%	18-25%
Total	100%	100%

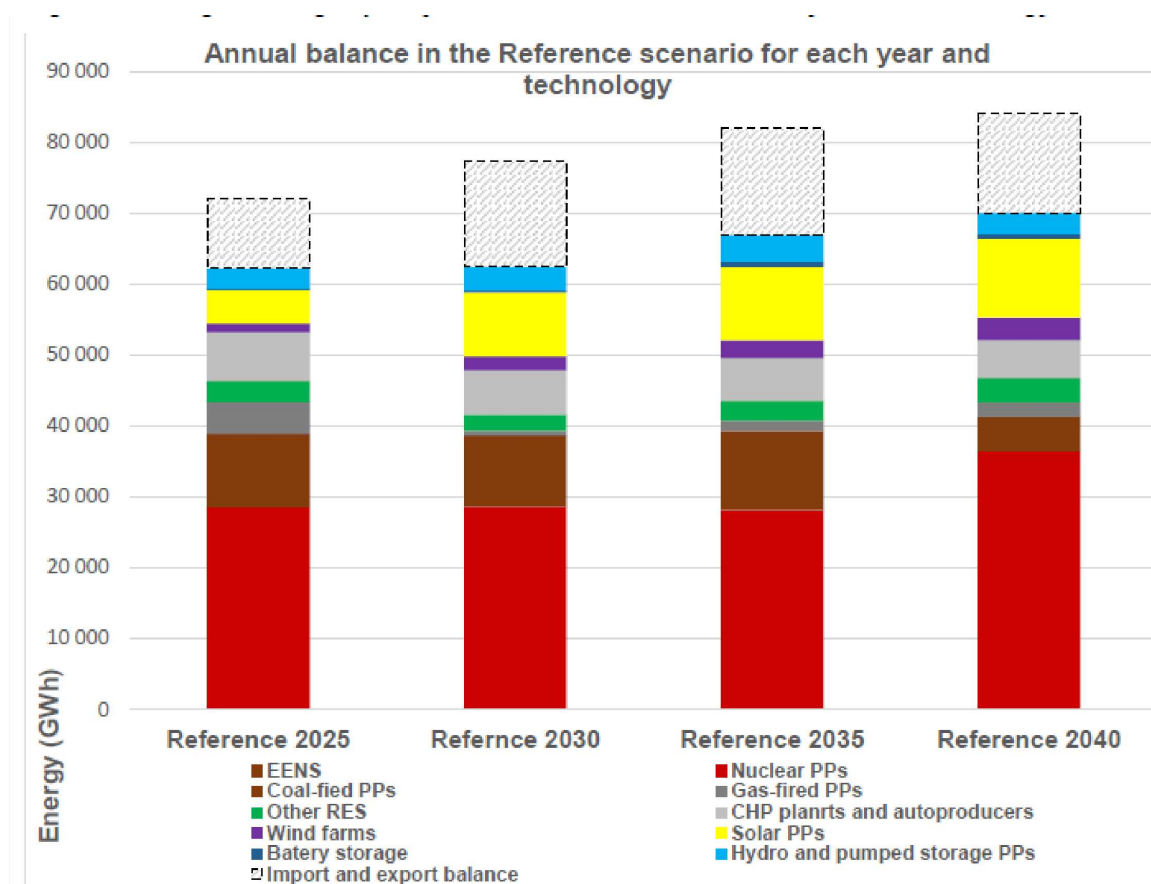
Source: Czech Republic (2019), 'National Energy and Climate Plan of the Czech Republic', November.

⁽¹³⁵⁾ The Czech authorities explained that although Czechia is pursuing the deployment of renewables the country has limited potential for the expansion of RES generation at a greater scale due to its geography, geology, and climate, together with the high cost of available technologies.

- (269) As the result of emission-reduction targets, a significant amount of coal generation will retire in Czechia new investments in nuclear, RES and natural gas production capacity will be required to fill the gap ⁽¹³⁶⁾. Hard-coal and lignite generation is expected to be phased out altogether in 2037, a capacity reduction of around 6,5 GW ⁽¹³⁷⁾.
- (270) The Czech authorities explained that EDU II plays a significant role in achieving the Czech government's targets for emission reductions while contributing to the necessary security of supply in Czechia. The new nuclear units are intended to replace some of the current lignite and hard-coal generation capacity as well as the nuclear units to be retired at the Dukovany site in the period between 2045 to 2047 ⁽¹³⁸⁾. Czechia also contends that the Project would not displace the investment in onshore wind energy production. The same amount of energy production from wind capacity would be installed between 2030 and 2050 under the scenarios with and without the Project, albeit the installation would occur slightly later should the Project be realised.

Figure 4

Net generating capacity in reference scenario for each year and technology



Source: Czech authorities.

⁽¹³⁶⁾ All lignite and hard-coal generation capacities, potentially apart from some combined head and power plants ('CHPs'), are expected to close by 2038 as part of a recent plan to phase out the most polluting power plants. See Czech Coal Commission, 2020, 'Minutes of the 7th meeting of the Coal Commission', 4 December 2020, pp. 6-7, available at: https://www.mpo.cz/assets/cz/rozcestnik/ministerstvo/kalendar-akci-vse/2021/2/Zapis-z-jednani-UK_-4-12-2020_.pdf.

⁽¹³⁷⁾ This is based on data provided by ČEPS.

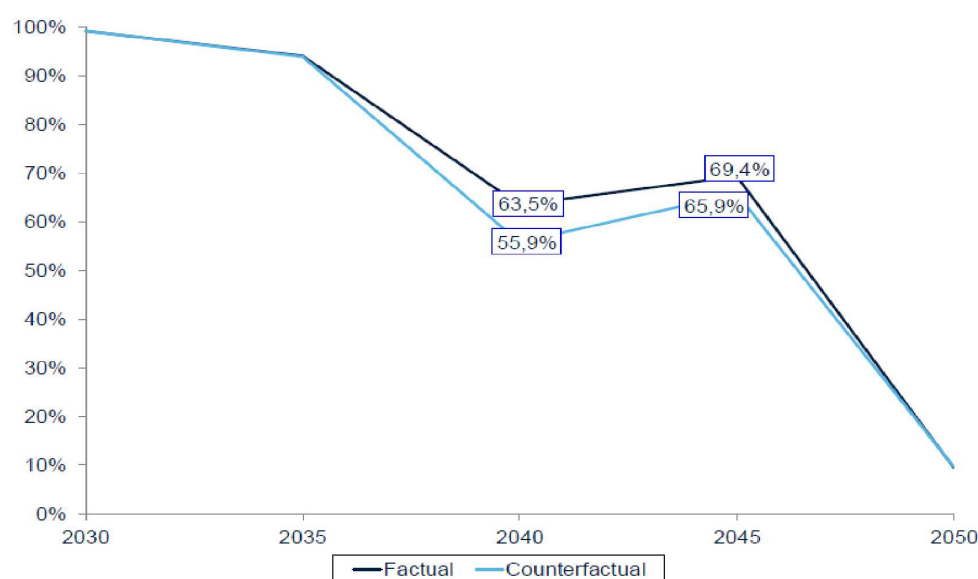
⁽¹³⁸⁾ According to ČEPS data, the four existing nuclear units in Dukovany (each with a capacity of approximately 510 MW) are scheduled to be decommissioned as follows: one unit at the end of 2045, one unit at the end of 2046, and two units at the end of 2047.

- (271) Sixth, Czechia argues that due to ČEZ's obligation under the PC to sell the entire output of EDU II to the SPV as well as Czechia's commitments concerning the trading of electricity produced by the NPP during its lifetime (see Section 3.6.4), any increase in generating capacity implied by this investment would not be expected to result in an increase in electricity available to sell to ČEZ's customers.
- (272) Finally, Czechia alleges that ČEZ's pivotality⁽¹³⁹⁾ according to the residual supply index ('RSI'), which is an index often used to evaluate the ability of a generator to act independently of its competitors, would decrease significantly in future:

Figure 5

ČEZ's pivotality using the RSI according to Czechia

Figure 6.10 Share of hours in which CEZ' RSI is below 1, factual and counterfactual scenarios (2030–50)



Note: Projections taken from the Oxera model baseline (factual and counterfactual) scenarios.

Source: Oxera model based on TYNDP 2020 and ČEPS data.

4.4.2. Role of the SPV on the market

- (273) With regards to the role of the SPV on the market, the Czech authorities claimed that the commercial arrangement surrounding the SPV has been deliberately left open and flexible so that it is appropriately designed to prevent any possible market distortions.
- (274) Czechia explained that the SPV will be fully independent from EDU II and the ČEZ Group and will have separate governance and management structure. It will transact with EDU II (and ČEZ, if relevant) at arms-length basis. The Czech authorities mentioned that this government structure separates the trading strategy decision-making which lies with the SPV and impacts on competition and trade in electricity markets, on the one hand, from the development and the operation of the NPP which lies with EDU II, on the other.
- (275) The Czech authorities further drew a distinction between the SPV approach put forward by the Project and the measures in other nuclear cases with respect to the commercial structure and offtake mechanisms of the NPP. The Czech authorities explained that the novelty of the SPV approach in comparison to the other cases lies in the establishment of a separate entity that is independent from the operator of the NPP. EDU II will own and operate the NPP and generate electricity holding only an electricity generation licence. EDU II's generated capacity will be fully

⁽¹³⁹⁾ Pivotality analysis considers whether power stations owned by a particular company are required to meet demand in a particular period, i.e. at least one megawatt of its generation is needed. If this is the case the company could take advantage of this market power. Pivotality only considers the possibility of market power in the market as a whole, and not whether market power can arise in specific situations such as where there are transmission constraints.

off-taken by the SPV, which will hold an electricity trading licence. The SPV will sell EDU II's output on the wholesale market and will also be a balancing responsible party ('BRP') to the OTE as an electricity trader. As a result, EDU II will not trade with other market participants (aside from the SPV) and will not be exposed to market conditions. The Czech authorities underscored that the objective of this structure is to limit the risk of potential market distortions resulting from the market power.

Table 8

Commercial structure comparison between EDU II (in the Table below referred to as 'Dukovany II'), HPC and Paks II

	Owner/operator of assets	Trading entity	Price mechanism for the offtake of generated electricity
Dukovany II	State support recipient (EDU II)	The Supply SPV, wholly owned by the State [Counterparty to some of the state support]	Power Purchase Agreement (pre-determined PPA price for the full generation volume)
Hinkley Point C	State aid recipient (the NPP)		Contracts for Difference (market price topped up or reduced to match the pre-determined Strike Price)
Paks II	State aid recipient (the power plant)		Market price (with the condition that at least 30% of the generation must be sold on the open market and bilateral contracts must be limited to less than 70% of the output)

Source: Czech authorities.

- (276) The Czech authorities further explained that the SPV is envisaged to set up its own trading desk and operations in house but if it is considered more appropriate and cost-effective the SPV may consider holding a competitive tender to outsource the trading function in the future.
- (277) Moreover, the Czech authorities mentioned that the SPV will adopt a risk-minimising trading strategy and its approach will be to avoid any negative impact on the market. Notably, the envisaged commercial model is expected to incentivise maximum electricity sales proceeds by the SPV for the Czech State and, subsequently, the minimisation of the amount of the aid flowing to the Project. With regards to its trading strategy, the SPV will primarily operate in the Czech wholesale power market but with the understanding that there is a high degree of interconnection in the region and day-ahead market coupling with the neighbouring countries. As markets are expected to grow and liquidity levels are expected to increase in the future, especially considering that the day-ahead markets completed coupling between the Germany-Poland-Austria and Czechia-Hungary-Slovakia-Romania regions in June 2021, the trading strategy will be regularly assessed to align with latest market conditions. The final trading strategy, based on transparent and risk minimising approach, is expected to be adopted post-2030.
- (278) In the course of the formal investigation, Czechia decided to offer nuclear power trading commitments (as described in recitals 112 to 119 above).

5. COMMENTS FROM THIRD PARTIES

- (279) The Commission received submissions from 18 respondents during the consultation on the Opening Decision, which lasted until 5 September. It should be noted that most of the observations from third parties (namely, 12 out of the 18) were in support of the Project. A description of the comments relevant for the State aid assessment is provided below.
- (280) Comments were received from Member States, undertakings, associations and non-governmental organisations ('NGOs'). The comments from third parties will be addressed in the relevant parts of the assessment without specific mention being made to the specific comment.
- (281) Observations from third parties will be described by grouping them by topic.

5.1. Comments on the existence of aid

- (282) No comments were received on the existence of aid.

5.2. Comments on the compatibility of the aid

5.2.1. *Comments as regards the appropriateness of the measure*

- (283) Two third parties iterate their support for the Commission's concerns raised in the Opening Decision in connection with the appropriateness of the measure.
- (284) Additionally, one respondent claimed that current developments in the European electricity market and their future effects cannot yet be estimated. As a result, it would be very challenging to make a concrete assessment of the measure's appropriateness.
- (285) At the same time, many respondents submitted that they do not share the Commission's concerns regarding the measure's appropriateness. In their view, the proposed measure is appropriate because the measure consists of an appropriate combination of instruments to achieve the Project's intended objectives while ensuring there are no less distortive policies or instruments capable of realising the same results. In addition, some third parties argued that the measure's constituent elements (namely, the offtake contract, the loan and the protection against changes in law mechanism) are inseparable and necessary to address the Project's relevant market failures.
- (286) Moreover, some respondents observed that in the Commission's final decision in Hinkley Point C a similar combination of measures (i.e. a contract for difference, a State guarantee, and a protection mechanism against potentially harmful political decisions) was approved and the risk borne by the promoter was along similar lines.

5.2.2. *Comments as regards the proportionality of the measure*

- (287) Two respondents repeat their support for the Commission's concerns raised in the Opening Decision concerning the proportionality of the measure.
- (288) Additionally, one respondent claimed that current developments in the European electricity price market and their future effects cannot yet be estimated. As a result, it would be very challenging to make a concrete assessment of the measure's proportionality.
- (289) Conversely, many third parties responded that they do not share the Commission's concerns in respect of the measure's proportionality. According to them, the proposed measure is proportionate.
- (290) Several respondents argued that the assumptions used to estimate the Project's RoE correctly reflect the risk exposure of ČEZ and the risk borne by the beneficiary.
- (291) Moreover, the Commission received some comments that the proposed periodic review of the PC's Strike Price based on market evaluations does act as a sufficient automatic stabiliser to prevent overcompensation and should provide sufficient financial incentives to both EDU II and the SPV to maximise production and conclude profitable energy trading deals.

- (292) One third party observed that the proposed duration of the PC (namely, 60 years covering the operating period of the plant (according to the LCA, 30 years which may be extended by 10 years several times) with a reassessment of the proportionality of the Strike Price regulated by the Ministry of Trade and Industry of Czechia) is defined to reflect the particular technical, regulatory and financing conditions.

5.2.3. *Comments as regards the need for State intervention*

- (293) One respondent commented that energy supply could also be guaranteed by cheaper technologies and argued that subsidies in the nuclear sector would slow down progress on other cheaper faster and more climate-friendly technologies. Following this it contented that the production of electricity from NPP should not be subsidised because this technology is mature and not profitable.
- (294) The Commission received one comment which pointed out that State intervention to produce electricity from nuclear power plants is not justified in view of recent market developments. In particular, this respondent argued that the high electricity prices which resulted from the recent market turbulence will remain at high levels in the next decades and as a result the aid amount for the measure will not serve one of its objectives to ensure lower electricity prices in the market.
- (295) One submission referred to the possibility for Czechia to invest in the development of RES and generate 5,3 TWh from new wind and 4,9 TWh from new photovoltaic plants by 2030 instead of promoting the development of Dukovany NPP. In addition, it argued that the State support for the development of wind and solar would be much lower in comparison to nuclear energy.
- (296) Contrary to those comments, several third parties contended that State intervention is necessary for the measure to achieve its objectives.
- (297) Some respondents observed that absent the involvement of the State, it would not be feasible to implement a new nuclear power plant project in the current European electricity market. They further submitted that due to existing market failures (exposure to the scale of the capital requirements, long-term market price volatility and legal, policy and regulatory risks), and the high degree of uncertainty attached to nuclear projects, private investors are deterred, and State intervention is necessary to ensure investment in low-carbon nuclear power plants.
- (298) In addition, some third parties pointed out that the recent volatility in energy markets demonstrates the necessity for State aid support schemes to compensate for the distortions on the market. Additionally, these respondents mentioned that market conditions do not provide incentive for the development of large-scale energy infrastructure projects.
- (299) One respondent argued that new nuclear projects need to be analysed from the new security of supply perspective and prioritised, given the potential to reduce dependency on Russian imports. It further observed that the recent inclusion of nuclear power in the EU Taxonomy for Sustainable Finance, makes a key step in paving the way for the further development of nuclear energy.

5.2.4. *Comments received on the selection of ČEZ*

- (300) Certain third parties expressly state in their observations that they do not share the Commission's concerns on the choice of ČEZ without a tender or consultation. For reasons of both State and energy security, as well as for other reasons (such as, the expertise, know-how and efficiency of the incumbent), those parties consider it fully justified to assign a state-owned energy company with the duty to develop a complex task like the construction and operation of new nuclear power plant, noting that this reflects wider international practice.

(301) No competitor or any other third party raised any concern in respect to the choice of ČEZ as the Project promoter.

5.2.5. *Comments received on potential undue distortions to competition and trade between Member States*

(302) One respondent iterates in its submission its support for the Commission's concerns raised in the Opening Decision in connection with possible distortions of competition in the market. It further considers that the production of electricity from nuclear technology is over-subsidised and as a result not competitive and argues that any subsidisation would lead to significant distortions of competition in the market.

(303) On the other hand, several third parties observed that there is a limited risk that the measure will distort or threaten to distort competition in the market.

(304) Some respondents submitted that the SPV architecture may have a limited impact on the market as ČEZ and EDU II are two separate economic entities which will be completely independent from one another. Following this, they argue that there would be limited scope for market manipulation.

(305) One respondent pointed out that ČEZ has a large coal-based generation fleet which is planned to retire in the 2030s as well as the existing four units at the Dukovany site are expected to shut down between 2045 and 2047. Based on this, it argued that ČEZ market shares in electricity production will not increase significantly.

(306) Moreover, one third party commented that the risk of manipulation where market prices are higher than the purchase price of the PC and the ČEZ Group could have an economic incentive to reduce EDU II output so that other units sell more energy at higher market prices appears low. That is because EDU II will be connected with a high load factor (90 %) and EDU II's economic incentive is to provide its entire available volumes to the market to ensure that it receives its compensation, and it can service its debt. In addition, there is the separation between ČEZ Group and EDU II. Additionally, REMIT Regulation prohibits market manipulation conduct.

(307) Further, one third party submitted that the Dukovany NPP aims to generate new capacity and to fill a shortfall in electricity production that is expected in 2030-2040 which will result in positive effects on security and diversification of supply for neighbouring countries. Accordingly, it argues that these positive effects of the measure outweigh and negative effect of the measure, if any.

(308) Finally, one third party observed that any alleged impact on competition should be assessed while having in mind the lack of true level-playing field in the energy sector because new generation capacity is hardly ever developed solely on the market basis. This party mentioned that, for example, renewable energy sources benefit not only from direct support schemes, but also from an array of measures introduced by the EU Green Deal and the REPower EU packages.

5.2.6. *Comments as regards a breach of EU law*

(309) One third party contended that the use of nuclear energy for the production of electricity is in breach of the polluter pays principle and the precautionary principle set forth in Article 191 TFEU.

(310) Moreover, two third parties observed that the polluter pays principle is not ensured by the Project because the measure does not account for the management of spent nuclear fuel, raising doubts as to whether there will be resources available at the end of the estimated useful lifetime of the nuclear power plant corresponding to the estimated cost of radioactive waste management and decommissioning. Those respondents further considered that unless the currently applied system of fees paid into the National Atomic Fund is changed considerably, those funds will not be available, thus not respecting the polluter-pays principle.

(311) The Commission received comments from another respondent who submitted that Czech officials' public statements indicate that they will seek to amend or postpone the Taxonomy conditions concerning the operationalisation of a deep repository of high-level radioactive waste by 2050.

(312) On the other hand, some respondents argued that the measure does not breach EU law.

5.2.7. *Comments received as regards the security of supply*

(313) Two respondents commented that nuclear energy cannot offer any advantages over other energy sources from the perspective of security of supply noting that the availability of uranium and thorium is limited and that the EU has very high import dependency.

(314) On the other hand, one third party argued that nuclear energy has a low dependency on imports, stating that raw material represents a maximum of 10 % of the cost of production, and further noting that the international uranium market is well-regulated and stable.

(315) Moreover, many arguments were submitted to the Commission in support for the measure in light of concerns on security of supply, decarbonisation, affordability of energy, and market developments linked to the Russian invasion of Ukraine. Specifically, respondents observed that nuclear reactors are the technology best placed to guarantee the path to carbon neutrality while maintaining the EU's security of supply. In addition, they pointed out that nuclear energy is also a stable and controllable means of generation, allowing reliable management of the electricity grid and contributing to a high security of supply.

(316) Several observations referred to the development of nuclear projects around the EU to meet the objectives the EU in relation to climate change as well as to ensure the security of supply with stable, reliable, sustainable, low-carbon and competitive energy.

(317) Many comments referred to the geopolitical context (including disruptions in the supply of oil and gas and price volatility) and the importance of security of supply in further reducing the EU's energy dependency from Russia. Additionally, one third party observed that the Russia's aggression against Ukraine highlights the need for nuclear power in gaining independence from fuel supplies from Russia.

5.2.8. *Other comments raised by third parties*

(318) Arguments were submitted to the Commission on safety and security considerations. Some respondents raised concerns in connection with the safe and sustainable management of high-level radioactive waste in general. In addition, they referred to the danger potential of nuclear plants in armed conflict, along with the risks posed by major nuclear accidents. Some of the observations argue that the current situation in Ukraine demonstrates the additional risks that nuclear power plants pose in respect of safety and security.

(319) In addition, some respondents pointed out that due to the high demand for cooling water, nuclear power plants are very sensitive to rising temperatures. They further argued that the Jihlava river provides too little water for additional, new power plant blocks at the Dukovany site to be provided reliably with cooling water, noting that this was already recognised during the planning of the Czechoslovak nuclear programme and led to the limitation of the power of the units installed on the site. In light of climate change, some third parties project that the operation of the new nuclear power plants will not be as stable as envisaged and that their utilisation will not reach the planned levels.

(320) Some submissions raise concerns over the water supply for the new nuclear power plant and particularly its impact on the Jihlava River, and also state that a water use and protection management plan is currently missing.

(321) Two third parties raise the concern that the project will not be completed on schedule, as the three potential technology providers may not be prepared from a technical perspective to operate in Europe, which could lead to delays. The respondents consider that this could lead to economic consequences and have impacts on the environment and climate protection. The respondents also raise the issue cost escalation which is common to nuclear new-build projects.

- (322) One respondent criticised the lack of transparency in the preparation of the new reactor Project, citing the Czech branch of Transparency International who have been questioning the transparency of the Project ⁽¹⁴⁰⁾. In particular, the third party mentions that the Czech Ministry of Trade and Industry refused to disclose to it certain documents about the Project's analysis of investor models and the procedures for the Project's preparation and implementation following an access to documents request submitted by the party.
- (323) One respondent claims that the limited liability of the nuclear power plant operator is insufficient to cover potential damages from a nuclear accident, pointing to the Czech Republic's refusal to accede to the Supplementary Protocol to the 1997 Vienna Convention on Civil Liability for Nuclear Damage, which requires a minimum level of liability for damages of SDR 300 million (Special Drawing Rights). Additionally, the respondent argues that extra State aid will be incurred in costs for construction, transmission and special police protection of the plant site.
- (324) According to several submissions, the Project would contribute to the Europe-wide objectives of meeting energy targets and contributing to the Green Deal.
- (325) Several third parties also drew attention to the social and economic benefits of nuclear energy, noting in particular the jobs provided and the large contribution of nuclear towards EU Member States' economies. In particular, at the EU level, according to an analysis by Deloitte in 2019, the nuclear industry sustains more than 1,1 million direct and indirect jobs and generates more than half a trillion euros in GDP ⁽¹⁴¹⁾.

6. COMMENTS FROM ČEZ

- (326) ČEZ submitted its comments on 5 September 2022. In its submission, ČEZ provides evidence and analysis in support of their argument that some of the doubts raised by the Commission in its Opening Decision would not be founded.
- (327) The main arguments of ČEZ are outlined in more detail below.

6.1. ČEZ's position on the appropriateness of the aid

- (328) In its submission, ČEZ argued that the proposed measures provide appropriate and targeted support to address the principal market failures recognised by the Commission (namely, the scale of the capital requirement, the longevity of exposure to market pricing signals, and the longevity of exposure to political decisions) the three measures should be viewed as a single interlinked support package. In particular, ČEZ submits that the proposed State support package (namely, the PC, the RFA and the Change of Law or Policy Protection mechanism) is appropriate in its entirety since, in case one of the measures were to be removed, the underlying risks would be unmitigated. Under such a scenario, the viability of the Project would be undermined.
- (329) ČEZ further mentioned that similar support packages (such as in Hinkley Point C) have been approved by the Commission in the past.
- (330) Finally, ČEZ explained that the proposed measures are appropriate to mitigate the risk of a potential failure of the Project and the associated public costs.

6.2. ČEZ's position on certain elements of the proportionality of the aid

6.2.1. Risk of overcompensation

- (331) In response to the Commission's doubts concerning the risk of overcompensation, ČEZ argued that the proposed measures include an appropriate overcompensation control mechanism that enables the fulfilment of the market-based RoE which is commensurate with the Project risk. According to ČEZ, the intention of the proposed mechanisms is not to prevent overcompensation entirely, as ČEZ would be facing significant risks associated with the Project.

⁽¹⁴⁰⁾ <https://www.transparency.cz/kauzy/netransparentni-projekt-dostavby-jaderne-elektrarny-dukovany/>.

⁽¹⁴¹⁾ <https://www.nucleareurope.eu/press-release/investing-in-low-carbon-nuclear-generates-jobs-and-economic-growth-in-europe/>.

- (332) In ČEZ's view, the presence of additional measures to eliminate any further potential upside beyond the gain-share mechanism will affect the balance of upside and downside exposure. Potential additional risk premia would result in an upward impact on the RoE increasing the PC price and therefore the cost to the State support.
- (333) Moreover, ČEZ argued that overcompensation would be managed through the gain-share mechanism during EDU II's operational phase. The proposed gain-share mechanism is based on and is more stringent than the previously approved Hinkley Point C mechanism with greater sharing occurring at a lower equity return. The gain-share mechanism is designed to capture realised equity outperformance by tracking the EDU II Project actuals and equity IRR. This mechanism measures the Project's performance across its whole lifetime and ensures all outperformance is factored in.

6.2.2. RoE estimation

- (334) ČEZ provided an analysis of the comparative risks and commensurate returns of EDU II against other energy infrastructure projects (namely, Hinkley Point C, Paks II, conventional independent power plant projects, and offshore wind). The analysis indicated that the appropriate RoE range for EDU II would be between [...] %. It further mentioned that the accurate determination of the RoE would depend on further clarification of the Project's parameters, risk allocation and key features of the State involvement.
- (335) In particular, a RoE estimate closer to the top end of the above range would be consistent with a scenario where EDU II has a disproportionately high-risk allocation and there is a high risk of Project abandonment. Conversely, a RoE estimate closer to the bottom end of the above range would reflect a scenario where there is a proportional allocation of risk strengthened by protections to EDU II in downside scenarios and limited risk of Project abandonment.

6.3. ČEZ's position on its selection as Project sponsor

- (336) In its response to the Opening Decision, ČEZ explained that it has long-lasting experience, capability, and knowledge in the Czech Republic with respect to the design, development, construction and operation of NPPs. Specifically, the ČEZ Group has developed and constructed the country's two NPPs, the Temelín NPP and the Dukovany NPP, and is also developing a new nuclear plant in Slovakia.
- (337) Additionally, ČEZ has extensive experience working with the Czech nuclear authority and possesses an in-depth understanding of the regulatory requirements for nuclear power plants. As the owner and operator of nuclear electricity generation assets in the country, ČEZ has an excellent knowledge of the prevailing legislative framework and licensing/permitting requirements in the Czech Republic.
- (338) ČEZ is an active member of international organisations such as WANO, EUR, EPRI, WNA and NUGENIA. The company follows standards and processes set and recognised by regulators worldwide to promote continuous improvement, safety and state-of-art knowledge in the operation of nuclear plants.
- (339) Finally, ČEZ submitted that as the incumbent owner of the site and developer it can ensure the timely delivery of the Project in a cost-effective manner. In particular, according to ČEZ's estimations its preliminary and enabling activities on the site (including feasibility studies, land acquisition, etc.) have accelerated the Project's timeline by at least 10-12 years and potentially reduced the Project's costs by an estimated [200 to 700] million EUR compared to a greenfield NPP by a third operator.

7. RESPONSE OF THE CZECH REPUBLIC TO THE COMMENTS OF THIRD PARTIES

- (340) The Czech authorities sent their response to the comments submitted by third parties on 21 October 2022.

- (341) Overall, Czechia found that the majority of comments were positive, and in overwhelming support of the Project. In addition, Czechia explained that most of the issues raised had already been addressed in its prior submissions. The main arguments provided by Czechia in response to the concerns raised by third parties will be highlighted below. Only the responses to the comments directly pertinent to the State aid assessment will be highlighted.
- (342) Responding to comments on the appropriateness and the proportionality of the aid, Czechia referred to its past submissions and mentioned that the State support was designed with the objective to minimise the amount of the aid as much as possible while ensuring the feasibility of the Project.
- (343) Moreover, the Czech authorities submitted that they are prepared to fulfil the EU Taxonomy technical criteria in connection with the Project, including putting in place for operation a deep disposal facility for high-level radioactive waste in 2050. In particular, Czechia explained that the national policy for radioactive waste and spent fuel management, approved in 2019, will be updated in line with the EU Taxonomy requirements after the peer review process of the Programme within the mission Artemis performed by the IAEA under Article 14(3) of Council Directive 2011/70/Euratom of 19 July 2011, which will take place in Q4 2023.
- (344) Finally, in response to specific environmental concerns raised by third parties, the Czech authorities submitted that (i) nuclear energy-related activities are low-carbon activities ⁽¹⁴²⁾ and the operation of a NPP is one of the most cost-effective investment opportunities ⁽¹⁴³⁾; (ii) the methodology used to create provisions for decommissioning of nuclear installations is in compliance with EU rules ⁽¹⁴⁴⁾; (iii) sufficient allowances are made for future disposal of radioactive waste and spent fuel based on Czech legislation; (iv) the environmental impact assessment of the Project shows that all environmental concerns, including the consideration of sufficient surface water for cooling the NPP, have been addressed. In any event, Czech authorities explained that the issue of sufficient water provision will be constantly monitored in accordance with the conditions of the environmental impact assessment; and (v) the Czech rules on civil liability for nuclear damage are consistent with international law ⁽¹⁴⁵⁾.

8. ASSESSMENT OF THE MEASURE

8.1. Existence of State aid

- (345) Under Article 107(1) TFEU, any aid granted by a Member State or through State resources in any form whatsoever which distorts or threatens to distort competition by favouring certain undertakings or the production of certain goods, in so far as it affects trade between Member States, is incompatible with the internal market.
- (346) A measure constitutes State aid within the meaning of Article 107(1) TFEU, if it fulfils four cumulative conditions. First, the measure must be funded by the State or through State resources. Second, the measure must confer an advantage to a beneficiary. Third, the measure must favour certain undertakings or economic activities (i.e. there must be a degree of selectivity). Fourth, the measure must have the potential to affect trade between Member States and to distort competition in the internal market. In Section 4.2 of the Opening Decision, the Commission

⁽¹⁴²⁾ See Final Report of the Technical Expert Group on Sustainable Finance from March 2020, available at: https://ec.europa.eu/info/sites/default/files/business_economy_euro/banking_and_finance/documents/200309-sustainable-finance-teg-final-report-taxonomy_en.pdf. In this Report it was stated that 'nuclear energy generation has near to zero green-house gas emissions in the energy generation phase' and 'evidence on the potential substantial contribution of nuclear energy to climate change mitigation objectives was extensive and clear'.

⁽¹⁴³⁾ See International Energy Agency (IEA), Projected Costs of Generating Electricity 2020.

⁽¹⁴⁴⁾ This methodology is set out in the Decree No 250/2020 Coll. On establishing a reserve for decommissioning a nuclear installation and category III and category IV workplace, which according to the Czech authorities is fully in line with the Directive 2011/70/Euratom.

⁽¹⁴⁵⁾ In particular, Act No 18/1997 Coll. On the peaceful uses of nuclear energy and ionising radiation (the 'Atomic Act'), as amended, transposes the Vienna Convention on Civil Liability for Nuclear Damage.

explained that the three measures notified were planned together and are inseparable from each other ⁽¹⁴⁶⁾. Under point 81 of the Commission's Notice on the Notion of Aid, different measures could be considered as a 'single intervention'. This could be the case, in particular, where consecutive interventions are so closely linked to each other, especially having regard to their chronology, their purpose and the circumstances of the undertaking at the time of those interventions, that they are inseparable. ⁽¹⁴⁷⁾ For instance, a series of State interventions which take place in relation to the same undertaking in a relatively short period of time, are linked to each other, or were all planned or foreseeable at the time of the first intervention, may be assessed as one intervention.

- (347) The Commission explained in the Opening Decision that all three measures have the same subject matter and objective, namely to enable the construction and operation of a new nuclear power plant at Dukovany site ⁽¹⁴⁸⁾. The measures are planned and negotiated together in a way that each measure has a direct impact on the others, and that the measures jointly create the financial preconditions to enable construction and operation of the plant. It is undisputed that the grantor of the three measures is the Czech State and that chronologically they coincide. More specifically, all the interventions were planned (and were thus foreseeable when negotiated) together ⁽¹⁴⁹⁾. For example, lowering the commercial risks through a Change of Law Protection mechanism and lowering initial capital requirements through the RFA impact the amount of aid needed for the offtake contract. The three measures at issue are closely linked and it would have been impossible to separate them.
- (348) In light of the above, the Commission found that the three measures should be examined together as a single intervention, as they are interdependent and have mutually enhancing effects for the performance of the Project. The Commission also made the preliminary finding, which applies to the three measures considered together, that the intervention would entail State aid as it was granted from State resources imputable to the Czech State, that the measure would confer a selective economic advantage and that it may have the potential to affect trade between Member States and to distort competition in the internal market.
- (349) The Commission has not encountered any reasons to change its assessment in those respects during the formal investigation.

8.1.1. *Imputability and existence of State resources*

- (350) As explained in the Opening Decision, the support measures for this Project have been decided by the Czech State on the basis of the provisions of the LCA (see recital 27) and the conclusion of the Master Agreement (see recital 190) and First Implementing Contract (see recitals 69, 183 and 380). The PC further stipulates the Czech State's obligation for the creation of a fully State-owned entity, the SPV (for the PC, see recitals 83 to 93 above). The granting authority for all measures is the Czech State acting through the Ministry.
- (351) The Czech authorities do not contest that the measures will be financed from resources under the control of the State.
- (352) As mentioned in recital 107, Article 9 of the LCA specifies that new nuclear power generation can be financed through one or a combination of: (i) the revenues from electricity sales of the SPV; (ii) a price component charged by the transmission and distribution system operators on network users, if so decided; and (iii) contributions from the State budget. The choice of the actual revenue stream for financing the different measures depends on the choice of the Ministry. It is undisputed by the Czech authorities that all revenue streams are or will be controlled by the State.

⁽¹⁴⁶⁾ Opening Decision, recital 143.

⁽¹⁴⁷⁾ Judgment of 19 March 2013, *Bouygues and Bouygues Télécom v Commission and Others*, Joined Cases C-399/10 P and C-401/10 P, ECLI:EU:C:2013:175, paragraph 104; Judgment of 13 September 2010, *Greece and Others v Commission*, Joined Cases T-415/05, T-416/05 and T-423/05, ECLI:EU:T:2010:386, paragraph 177; Judgment of 15 September 1998, *BP Chemicals v Commission*, T-11/95, ECLI:EU:T:1998:199, paragraphs 170 and 171.

⁽¹⁴⁸⁾ Opening Decision, recital 144.

⁽¹⁴⁹⁾ Judgment of 15 December 2021, *Oltchim SA v Commission*, T-565/19, paragraphs 93 to 197.

- (353) Furthermore, Article 4 of the LCA specifies that the RFA would be provided from the State budget and will be granted by the Czech National Bank. As the RFA is financed directly from the State budget, and all three measures are interdependent and constitute a single intervention (see recital 348), it is without bearing on the existence of State resources whether the (still to be established, if any) levy would, if it were to finance measure 1 by itself, result in the provision of State resources. The provision of several billion Euro from the State budget via the RFA at advantageous financial conditions is already sufficient to establish that the overall intervention relies on the granting of State resources. This is further reinforced by the Change of Law or Policy Protection measure, which provides legal protection to the Project, granting rights of financial value against the State, directly affecting State resources in case those rights are exercised.
- (354) Based on the above, the Commission concludes that the measure is granted through State resources and is imputable to the State within the meaning of Article 107(1) TFEU.

8.1.2. *Selective economic advantage*

- (355) A measure is deemed selective if it favours only certain undertakings or the production of certain goods. The Commission reiterates that the measures at issue, both assessed together and separately confer a selective advantage within the meaning of Article 107(1) TFEU.
- (356) Measure 1 (see Section 3.6) protects EDU II from any price volatility in the electricity market over the duration of the PC, as EDU II receives stable remuneration at a predefined Strike Price also in situations where the market prices fall below that level. This ensures a steady flow of revenues for EDU II for the first 40 years of operation of the NPP that other operators not benefitting from a similar support measure do not receive.
- (357) Measure 2 (see Section 3.7) provides a loan at a favourable interest rate, not in line with market conditions. Specifically, the RFA will cover 100 % of the construction costs of the NPP, including costs overruns due to Legitimate Grounds and costs overruns due to non-Legitimate Grounds events that exceed ČEZ's maximum equity financing for the Project (see recital 197). The loan will bear a zero-interest rate during the construction phase. The interest rate charged will be the cost of State debt plus 1 %, but not less than 2 % over 30 years, starting on the date of the commissioning of the NPP. The measure therefore confers an advantage upon its beneficiary as it relieves EDU II from financing costs which it would have to bear under normal market conditions. Other undertakings, including those that undertake long-term investments, do not receive State loans under similar conditions.
- (358) Measure 3 (see Section 3.8) provides cost recovery protection in case of change of law or policy or in case of other events that qualify as Legitimate Grounds, thereby reducing investment risk and transferring it to the State and conferring an economic benefit that could not have been obtained under normal market conditions and which is not available to other market operators.
- (359) Therefore, the Commission concludes that all three measures under discussion amount to individual aid and confer a selective advantage to the ČEZ Group including its subsidiary EDU II.

8.1.3. *Threat of distortion of competition and effects on trade*

- (360) As the Commission pointed out in the Opening Decision, the electricity market has been liberalised and electricity producers are engaged in trade between Member States so that an advantage granted to the producers of nuclear electricity is likely to distort competition and affect trade between Member States. Electricity from nuclear sources is generally sold on the internal market for electricity where it enters in competition with all sources of electricity, including those in other Member States.

- (361) Therefore, the Commission reiterates that the advantage granted to the beneficiary of measures 1 to 3 threatens to distort competition and affect trade between Member States. As all three measures grant advantages to electricity generation as a competitive activity, that conclusion would, again, be the same if the measures were looked at individually.

8.1.4. *Conclusion on the existence of aid*

- (362) The Commission therefore concludes that the PC, the Repayable Financial Assistance and the Change of Law or Policy Protection mechanism as different measures pertaining to one State intervention involve State aid within the meaning of Article 107(1) TFEU.

8.2. **Lawfulness of the aid**

- (363) As the Commission pointed out in the Opening Decision ⁽¹⁵⁰⁾, the measures were notified to the Commission on 15 March 2022 and have not been implemented to date. The implementation is furthermore made conditional upon the Commission approval of the measures (see recital 190). Therefore, the Czech authorities have fulfilled the notification and standstill obligations under Article 108(3) TFEU.

8.3. **Compatibility of the measures with the internal market**

- (364) Given that the measures were found to entail State aid, the Commission has further examined whether they could be considered compatible with the internal market.

8.3.1. *Legal basis for the assessment*

- (365) The Commission has assessed the notified measure on the basis of Article 107(3)(c) TFEU which provides that the Commission may declare compatible 'aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest'.

8.3.2. *Positive condition: development of an economic activity*

8.3.2.1. *Contribution to the development of an economic activity*

- (366) Article 107(3)(c) TFEU provides that the Commission may declare compatible 'aid to facilitate the development of certain economic activities or of certain economic areas, where such aid does not adversely affect trading conditions to an extent contrary to the common interest'. Therefore, compatible aid under that provision of the Treaty must contribute to the development of certain economic activity ⁽¹⁵¹⁾.
- (367) State intervention may be necessary to facilitate or incentivise the development of certain economic activities that, in the absence of the aid, would not develop or would not develop at the same pace or under the same conditions.
- (368) As explained in Section 2 and in Section 4.4.1 of the Opening Decision, the aim of the measures subject to this Decision is to enable investment in new nuclear power generation and ensure its operation for a prolonged period. Specifically, the support provided by the State targets directly the construction, commissioning and operation of the new capacity. According to the Czech authorities, the PC aims at ensuring that the plant will produce electricity and allow for the reimbursement of the RFA (see 3.6). The RFA is necessary for allowing the Project promoter to cover a large part of the investment costs for the Project (see 3.7). The Change of Law Protection is required for lowering the amount of aid necessary to bring the Project forward by reducing certain risks that are considered to be beyond the control of the investor (see 3.8)

⁽¹⁵⁰⁾ *Ibid.*, recital 157.

⁽¹⁵¹⁾ Judgement of 22 September 2020, *Austria v Commission*, C-594/18 P, ECLI:EU:C:2020:742, paragraphs 20 and 24.

- (369) All three measures reduce the main risk factors which otherwise would arise in investments in large nuclear power generation assets. Taken together, they considerably reduce the overall riskiness of the Project for the investor. As set out by the Czech authorities, a number of investment projects in nuclear energy have not been implemented as a consequence of those risks (see recital 220). Thus, the measures contribute to the development of electricity generation from nuclear energy sources in Czechia.
- (370) The Commission recalls that the Court of Justice has recognised the development of new nuclear capacity as an economic activity in the sense of Article 107(3)(c) TFEU ⁽¹⁵²⁾ and has established that Article 107 TFEU may be applied to investments in nuclear power stations ⁽¹⁵³⁾.
- (371) Therefore, the Commission considers that the measures facilitate the development of certain economic activity as required by Article 107(3)(c) TFEU.

8.3.2.2. Incentive effect

- (372) State aid can only be considered to facilitate an economic activity if it has an incentive effect. An incentive effect occurs when the aid induces the beneficiary to change its behaviour towards the development of the economic activity pursued by the aid, and if this change in behaviour would not otherwise occur without the aid.
- (373) Czechia has explained that in the absence of aid, the investor would not have the necessary incentives to invest in the development of new nuclear electricity generation capacity ⁽¹⁵⁴⁾. The market is characterised by high volatility, instability of the regulatory environment, and the economics of nuclear resources in the form of high input costs of investment also represent a barrier to entry into the industry. Investment in nuclear energy without State support is unlikely profitable due to the uncertainty of developments on the electricity market.
- (374) The Commission notes that the Project would not go ahead absent State support in view of the current uncertain and fast-changing market conditions and the market failures associated with nuclear power development (i.e. scale of the capital requirement, longevity of exposure to market pricing signals, and longevity of exposure to political decisions) ⁽¹⁵⁵⁾.
- (375) The Commission further notes that without the aid the funding gap of the Project would not be closed. This is due to the higher financing costs the Project would likely incur in the absence of the RFA and due to the absence of the revenue stability provided by the PC. Furthermore, without State intervention, the investor would need to bear significant additional risks that are otherwise mitigated by the support measures, such as the market price risk and the policy risk (see recital 498), which suggest that the investor would expect a comparatively higher return to implement the project without aid.
- (376) In light of the above, the Commission considers that the aid has an incentive effect as it induces the beneficiary to engage in economic activity that they would not carry out without the aid.

⁽¹⁵²⁾ *Ibid.*, paragraph 63.

⁽¹⁵³⁾ *Ibid.*, paragraph 32.

⁽¹⁵⁴⁾ Opening Decision, recital 163.

⁽¹⁵⁵⁾ Opening Decision, recital 182.

8.3.2.3. Compliance with relevant provisions of EU law

- (377) As explained in the Opening Decision, the Court of Justice held in the Hinkley Point C case ⁽¹⁵⁶⁾ that ‘State aid which contravenes provisions or general principles of EU law cannot be declared compatible with the internal market’. For nuclear energy specifically, the Court of Justice clarified that for the sector ‘covered by the Euratom Treaty, State aid for an economic activity falling within that sector that is shown upon examination to contravene rules of EU law on the environment cannot be declared compatible with the internal market pursuant to that provision’ ⁽¹⁵⁷⁾.
- (378) Moreover, the Court of Justice highlighted that secondary legislation, such as Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment ⁽¹⁵⁸⁾, under which certain projects are subject to an environmental impact assessment, applies to nuclear power stations and other nuclear reactors.
- (379) The Court also clarified that investments in nuclear energy are not precluded by Article 194 TFEU on the Union policy on energy ⁽¹⁵⁹⁾. According to the case law ⁽¹⁶⁰⁾, since the choice of nuclear energy is, under the TFEU, a matter for the Member States, it is apparent that the objectives and principles of EU environmental law and the objectives pursued by the Euratom Treaty, do not conflict, so that the principle of protection of the environment, the precautionary principle, the ‘polluter pays’ principle and the principle of sustainability cannot be regarded as precluding, in all circumstances, the grant of State aid for the construction or operation of a nuclear power plant.
- (380) Thus, the fact that the Project and the measures concern nuclear energy does not render the measures incompatible with the internal market. Czechia has opted for nuclear energy to address its decarbonisation challenge and future resource adequacy issues and security of supply concerns (see Section 2.2 above).
- (381) The Commission has no indications that the Project violates provisions of environmental law. The Czech authorities explained that the Project development was preceded by an extensive and open environmental impact assessment process (see recital 78) conducted in compliance with EU secondary legislation requirements ⁽¹⁶¹⁾.
- (382) According to the case-law, ‘when the Commission applies the State aid procedure, it is required, in accordance with the general scheme of the Treaty, to ensure that provisions governing State aid are applied consistently with specific provisions other than those relating to State aid and, therefore, to assess the compatibility of the aid in question with those specific provisions. However, such an obligation is imposed on the Commission only where the aspects of aid are so inextricably linked to the object of the aid that it is impossible to evaluate them separately. [...] By contrast, if the aspect at issue can be separated from the object of the aid, the Commission is not required to assess its compatibility with provisions other than those relating to State aid in the context of the procedure provided for in Article 108 TFEU’ ⁽¹⁶²⁾.

⁽¹⁵⁶⁾ Judgement of 22 September 2020, *Austria v Commission*, C-594/18 P, ECLI:EU:C:2020:742, paragraphs 44 and 45.

⁽¹⁵⁷⁾ The Commission underlines that this Measure needs and will need to be implemented in line with the relevant secondary legislation, including legislation that has not been adopted yet at the time of this Decision. In this regard, the Commission would like to point to the proposal for a Regulation amending Regulations (EU) 2019/942 and (EU) 2019/943 as regards improving the Union’s electricity market design, COM/2023/148, and in particular to the provisions on direct price support schemes in the form of two-way contracts for difference for investments in nuclear power generating facilities, in line with the final text of the Regulation when it becomes effective.

⁽¹⁵⁸⁾ OJ 2012 L 26, p. 1.

⁽¹⁵⁹⁾ Judgement of 22 September 2020, *Austria v Commission*, C-594/18 P, ECLI:EU:C:2020:742, paragraphs 48 and 49.

⁽¹⁶⁰⁾ *Ibid.*, paragraph 49.

⁽¹⁶¹⁾ Directive 2011/92/EU of the European Parliament and of the Council of 13 December 2011 on the assessment of the effects of certain public and private projects on the environment (OJ L 26, 28.1.2012, p. 1). See Opening Decision, recital 168.

⁽¹⁶²⁾ See Judgment of 3 December 2014, *Castelnou Energía*, Case T-57/11, ECLI:EU:T:2014:1021, paragraphs 181-184 with further references. See also Judgement of 30 November 2022, *Austria v Commission*, T-101/18, ECLI:EU:T:2022:728, paragraph 31.

- (383) The General Court confirmed in its judgment relating to State aid for the nuclear power plant Paks II that the Commission is not required to verify that any aspect of an aid measure or any element relating to an aid – in the absence of an inextricable link – is in compliance with Union law ⁽¹⁶³⁾. In the respective case, the General Court further observed that '[t]he carrying out of a public procurement procedure and the possible use of another undertaking for the construction of the reactors would alter neither the object of the aid [...] nor the beneficiary of the aid [...]' ⁽¹⁶⁴⁾.
- (384) In the present case, the Commission considers that there is no 'indissoluble link' between the State aid and public procurement aspects, because it is possible to evaluate them separately. The State aid measures (PC, RFA, Change of Law or Policy Protection mechanism) support the activity (establishment and operation of a nuclear power plant) independently of how the EPC contractor is chosen. The implementation of the aid measures also does not depend on the exact application of public procurement rules. The measures under assessment regard the outcome of the procurement process (i.e. the investment costs) as an input for the Financial Model that determines the Strike Price of the PC ⁽¹⁶⁵⁾. Even in the hypothetical scenario where those inputs were to be inflated following incorrect application of procurement requirements, this would not result in additional distortions created by the aid measures under assessment. Indeed, a possible inobservance of public procurement rules might only lead to distortive effects on the market of nuclear construction works and not on the market for electricity. The operation of the power plant and the conditions for marketing the electricity are therefore separable from the public procurement aspects regarding the construction of the power plant. It is therefore possible for the Commission to assess the measure without evaluating the public procurement aspects of the EPC contract since such aspects are not inextricably linked to either the economic activity promoted by the aid or its modalities.
- (385) In the field of energy, any levy that has the aim of financing a State aid measure and forms an integral part of that measure needs to comply in particular with Articles 30 and 110 TFEU ⁽¹⁶⁶⁾.
- (386) According to settled case law, for a levy to be regarded as forming an integral part of an aid measure, it must be hypothecated to the aid under the relevant national rules, in the sense that the revenue from the charge is necessarily allocated for the financing of the aid and has a direct impact on the amount of the aid, and, consequently, on the assessment of the compatibility of that aid with the common market ⁽¹⁶⁷⁾. In particular, the concerned charge must be levied specifically and solely for the purpose of financing the aid at issue ⁽¹⁶⁸⁾.
- (387) Furthermore, it is also apparent from the case law that there may be no such hypothecation when the amount of aid is determined solely on the basis of objective criteria, not related to the allocated revenue, and subject to an absolute statutory ceiling ⁽¹⁶⁹⁾. In particular, the Court has held that there is no hypothecation when the national legislation establishes the aid amount between a minimum and maximum value regardless of the revenue from the tax ⁽¹⁷⁰⁾. Moreover, the Court has recently held that there was no hypothecation between the tax and the aid granted in a case where the amount of the aid was determined according to criteria unrelated to the allocated tax revenue and

⁽¹⁶³⁾ Judgement of 30 November 2022, *Austria v Commission*, T-101/18, ECLI:EU:T:2022:728, paragraph 32.

⁽¹⁶⁴⁾ Judgement of 30 November 2022, *Austria v Commission*, T-101/18 ECLI:EU:T:2022:728, paragraph 37. The reasoning concerning the need of 'indissoluble link' for the Commission to assess the compatibility of EU Law of certain aid modalities has been endorsed by the Court of Justice in *Braesch*. See Judgment of 31 January 2023 in Case C-284/21 P, *Commission v Braesch and Others*, paragraphs 96-99.

⁽¹⁶⁵⁾ Specifically, the Project measures will take into consideration the result of the EPC procurement process only in so far as it impacts the calculation of the Project's CAPEX which would amount to an input in the calculation of the aid amounts (e.g. in the calculation of the exact amount of the RFA or in the calculation of the PC Strike Price), as well as regarding the technical capabilities of the power plant resulting from the technology choice in the EPC contract.

⁽¹⁶⁶⁾ Judgment of 17 July 2008, *Essent Netwerk Noord and Others*, C-206/06, ECLI:EU:C:2008:413, paragraphs 40 to 59.

⁽¹⁶⁷⁾ Judgement of 22 December 2008, *Régie Networks v Rhone Alpes Bourgogne*, C-333/07, ECLI:EU:C:2008:764, paragraph 99 and case law cited.

⁽¹⁶⁸⁾ Judgement of 22 December 2008, *Régie Networks v Rhone Alpes Bourgogne*, C-333/07, ECLI:EU:C:2008:764, paragraphs 100 and 104.

⁽¹⁶⁹⁾ Judgment of 20 September 2018, *Carrefour Hypermarchés and Others*, C-510/16, ECLI:EU:C:2018:751, paragraph 21.

⁽¹⁷⁰⁾ Judgment of 27 October 2005, *Distribution Casino France and Others*, C-266/04 to C-270/04, C-276/04 and C-321/04 to C-325/04, ECLI:EU:C:2005:657, paragraph 52.

where national legislation provided that any surplus in relation to this aid had to be reallocated, as appropriate, to a reserve fund or the treasury, that revenue also being the subject of an absolute ceiling with the result that any surplus is also reallocated to the State's general budget ⁽¹⁷¹⁾. To exclude the existence of a hypothecation link, the Court also took into account the fact that, where the revenues from the levy are insufficient to cover the total aid amount, the relevant Member State is required to cover the shortfall by means of contributions from its general budget.

- (388) In the present case, the financing of Measure 1, as pointed out above (recital 107), will be covered by the Ministry from funds that are created by: (i) the revenues from electricity sales of the SPV; (ii) a levy charged by the network operators to final electricity consumers, similar to the existing financing of RES; and (iii) contributions from the State. budget However, as discussed above (recital 41), in case the PC Strike price is above the market prices of electricity, the State will need to finance the price difference through State resources, namely through the State budget and through consumption levies.
- (389) Czechia further confirmed that while a levy may contribute to the financing of the measures, the financing would not depend on such a levy and the State budget would cover costs where required. Specifically, surpluses of the levy, if any, will be reallocated to the general State budget and deficits, if any, will be ultimately covered by the general State budget (see recital 42).
- (390) It follows that the possible introduction of a levy in the Project in connection with the financing of the PC does not have a direct impact on the amount of the aid and, therefore, does not form an integral part of the measure as it is not hypothecated to the aid under the relevant national rules. As a result, the compliance of the levy with Articles 30 and 110 TFEU is not assessed in the present decision.
- (391) Finally, the Commission notes that the Czech authorities committed to fulfil its obligation to notify the Project to the Commission pursuant to Article 41 of the Euratom Treaty.
- (392) Therefore, the Commission concludes that the proposed measures or the supported activity do not, as such, infringe any relevant provisions of EU law.

8.3.2.4. Conclusion

- (393) In light of the above, the Commission concludes that the Project meets the first (positive) condition of the compatibility assessment (i.e. that the aid facilitates the development of an economic activity).

8.3.3. *Negative condition: the aid cannot unduly affect trading conditions to an extent contrary to the common interest*

8.3.3.1. Identification of the market affected by the aid

- (394) As pointed out in the Opening Decision, the Project was designed to help decarbonise Czechia's energy system and address a security of electricity supply concern covering the Czech market (see recitals 8 and following). At the same time, it has been established that the Czech market is well interconnected in the Core region ⁽¹⁷²⁾ (see recital 16).
- (395) In light of the above, the relevant markets for the assessment of the measures at issue are the electricity markets in Czechia and the electricity market in the Core region.

⁽¹⁷¹⁾ Judgements of 20 September 2018, Carrefour Hypermarchés and Others, C-510/16, ECLI:EU:C:2018:751, paragraph 22 and of 10 November 2016, DTS Distribuidora de Televisión Digital v Commission, C-449/14 P, ECLI:EU:C:2016:848, paragraphs 70 to 72.

⁽¹⁷²⁾ The Core region consists of the bidding zone borders between Austria, Belgium, Croatia, Czechia, France, Germany, Hungary, Luxembourg, the Netherlands, Poland, Romania, Slovakia and Slovenia. For more details see footnote 8.

8.3.3.2. Identification of the positive effects of the aid measure

- (396) As explained in Section 4.4.2.2 of the Opening Decision, the transition towards climate neutrality involves the progressive phase out of fossil fuels starting from the most polluting ones. Most Member States have already announced their plans for phasing out coal over the coming years ⁽¹⁷³⁾. Czechia's most recent NECP sets a strategic objective of completely phasing out the use of coal for electricity generation by 2033. These developments lead, according to the CEPS studies (see recital 12), to adequacy issues in the mid-long term. This trend is expected to be observed in other Member States phasing out coal.
- (397) Additional investments in nuclear energy sources provide reliable low-carbon generation assets which have a certain degree of flexibility. By ensuring secure supplies when phasing out the most polluting fuels and reducing dependency on natural gas, nuclear generation, with low carbon emissions per MWh of electricity produced, contributes (jointly with the development of renewable energies) to achieving national and European decarbonisation objectives.
- (398) As explained by Czechia, the Project will also directly support the objectives of REPowerEU as it will reduce dependence on imported fossil fuels which are subject to price fluctuations and geopolitical risks, therefore strengthening energy security.
- (399) Furthermore, the installation of new nuclear generation capacities contributes to maintaining the necessary generation on the supply side. This is needed to address the expected rise in electricity demand in Czechia in parallel with the measures for reducing demand adopted pursuant to the Energy Efficiency Directive (see recital 15).
- (400) The Commission notes that the Czech authorities will ensure that the Project complies with the technical screening criteria for economic activities in the nuclear energy sector as set out in the EU Taxonomy Regulation ⁽¹⁷⁴⁾. While this Regulation does not create legally binding obligations for the construction or operation of nuclear power plants, or additional requirements for the granting of State aid, it establishes the criteria for determining whether an economic activity qualifies as environmentally sustainable. Czechia's commitment to meet those requirements allows to conclude that the Project is sustainable, will not cause significant harm to any of the other environmental objectives and is aligned with a net zero trajectory by 2050.
- (401) Specifically, for the construction and safe operation of new nuclear power plants, for the generation of electricity or heat, including for hydrogen production, using best-available technologies, Annex I Section 4.27 to the Commission Delegated Regulation ⁽¹⁷⁵⁾ establishes a number of screening criteria for investments in new nuclear generation assets. This includes the Member State demonstrating having resources available at the end of the estimated useful lifetime of the nuclear power plant corresponding to the estimated cost of radioactive waste management and decommissioning, the Member State having operational final disposal facilities for all very low-, low- and intermediate-level radioactive waste, the Member State having a documented plan with detailed steps to have in operation, by 2050, a disposal facility for high-level radioactive waste and the project applying best available technology, including from 2025 on the use of accident-tolerant fuel. The Czech authorities have committed to meeting all those requirements (see recitals 81 and 82).

⁽¹⁷³⁾ https://energy.ec.europa.eu/topics/oil-gas-and-coal/eu-coal-regions/coal-regions-transition_en.

⁽¹⁷⁴⁾ See Commission Delegated Regulation (EU) 2022/1214 of 9 March 2022 amending Delegated Regulation (EU) 2021/2139 as regards economic activities in certain energy sectors and Delegated Regulation (EU) 2021/2178 as regards specific public disclosures for those economic activities (OJ L 188, 15.7.2022, p. 1).

⁽¹⁷⁵⁾ Commission Delegated Regulation (EU) 2021/2139 of 4 June 2021 supplementing Regulation (EU) 2020/852 of the European Parliament and of the Council by establishing the technical screening criteria for determining the conditions under which an economic activity qualifies as contributing substantially to climate change mitigation or climate change adaptation and for determining whether that economic activity causes no significant harm to any of the other environmental objectives.

- (402) Whereas third parties had submitted that Czech officials' public statements indicate that they will seek to influence the legislative process in order to amend or postpone the Taxonomy conditions concerning the operationalisation of a deep repository of high-level radioactive waste by 2050, the Commission has no information that would put the commitment by the Czech authorities into question. On 11 January 2023, Czechia adopted Government Resolution No 24 regarding the requirement to meet the technical screening criteria concerning radioactive waste management. According to this resolution, Czechia will do its utmost to fulfil the technical criteria set out in the relevant EU legislation, including putting the deep geological repository for nuclear waste facility in operation by 2050 (see recitals 81 and 82).
- (403) In light of the above considerations, the Commission concludes that the Project has positive effects on the market as it will contribute to the decarbonisation of the energy mix in an environmentally sustainable way and will increase security of supply. Since the Core region is well interconnected, these positive effects would likely benefit the neighbouring Member States importing electricity from Czechia.

8.3.3.3. Necessity of the State intervention

- (404) In order to determine whether an aid measure is necessary, the Commission has to assess whether the measure is targeted towards a situation where the measure could bring about a material improvement that the market alone cannot deliver. Aid which improves the financial situation of the recipient undertaking but is not necessary for the attainment of the intended objective cannot be considered to be compatible with the internal market.
- (405) In the case at hand, Czechia promotes new nuclear investments as enshrined in the Euratom Treaty in order to address its decarbonization challenge and a gap in the overall national installed capacity it will soon be facing due to the planned retirement of existing fossil fuel and nuclear generation (see recitals 8 and 19). The Commission has to assess whether State aid is necessary for achieving the objective of promoting new nuclear investments.
- (406) In the Opening Decision, the Commission explained that the existence of market failures is a relevant factor for the assessment of the necessity of the aid and recognised certain market failures that call for State intervention regarding nuclear power development ⁽¹⁷⁶⁾. Specifically, for new nuclear energy investments, the market failure arises principally due to three aspects: (i) scale of the capital requirement; (ii) longevity of exposure to market pricing signals, which are themselves distorted by interventions; and (iii) longevity of exposure to political decisions.
- (407) First, the scale of capital requirements for nuclear investments is particularly high. While the levelized cost of energy for nuclear generation is not necessarily higher than for other technologies ⁽¹⁷⁷⁾, the long lifetime and large production capacity of nuclear power plants could only be compared to the largest of hydropower projects. These capital needs, reaching several billion of Euros, are further exacerbated by frequent and significant investment cost increases for new-built nuclear generation facilities. Indeed, particularly first-of-a-kind Generation III investments in OECD countries have been affected by construction delays and cost increases ⁽¹⁷⁸⁾.
- (408) Second, planned operation times of 60 years make it difficult to align typical durations of private investments or commercial loans with the lifetime of the Project. This is even more relevant in current electricity markets, which are significantly changed by the energy transition and the rapid deployment of renewable energies, as well as regulatory reforms accompanying this transition. In consequence, even the most experienced market participants struggle to make comfortable predictions for power prices in the far future and most electricity trades cover not more than 5 years in the future.

⁽¹⁷⁶⁾ Commission Decision (EU) 2015/658 of 8 October 2014 on the aid measure SA.34947 (2013/C) (ex 2013/N) which the United Kingdom is planning to implement for support to the Hinkley Point C nuclear power station (recitals 382-385).

⁽¹⁷⁷⁾ See IEA Projected Costs of Generating Electricity 2020, <https://iea.blob.core.windows.net/assets/ae17da3d-e8a5-4163-a3ec-2e6fb0b5677d/Projected-Costs-of-Generating-Electricity-2020.pdf>, p. 46.

⁽¹⁷⁸⁾ IEA Projected Costs of Generating Electricity 2020, p. 145.

- (409) Finally, nuclear energy remains subject to societal and political controversy, and investments in nuclear generation assets have to account for the risk of policy change.
- (410) The Commission also acknowledged that the combination of those elements is unique to nuclear technology⁽¹⁷⁹⁾, and constitutes a general feature of all EU markets, including the Czech electricity market.
- (411) The submissions from interested parties corroborated the Commission's preliminary assessment in the Opening Decision. The Commission notes that in its comments on the Opening Decision, Czechia referred to more recent unfavourable market conditions which are significantly increasing risks for new nuclear project promoters, which include the macroeconomic landscape and inflationary pressures, increases in interest rates, as well as unique events, such as Russia's invasion of Ukraine which led to significant market and supply-chain disruptions. The Czech authorities therefore maintain that the construction of nuclear power plants is unlikely to take place absent State aid support.
- (412) The Czech authorities also pointed to the increased volatility in energy markets, caused in part by increasing shares of resources with zero marginal costs such as wind and solar, but also to swings in gas prices, which create unpredictable returns for market participants and therefore limit incentives for the development of large-scale nuclear projects, unless investors are able to hedge exposure to market prices. However, hedging through long-term contracts requires counterparties willing to accept prices which are sufficiently high to ensure an adequate return for the investors over a very long timeframe. Similar opinions were submitted in the comments of several third parties which concluded that in the current European electricity market it is not feasible to build new nuclear projects without State support.
- (413) As explained in a joint report by the International Energy Agency (IEA) and the Nuclear Energy Agency (NEA)⁽¹⁸⁰⁾, the recent trends in nuclear new build in western markets show significant costs escalations and construction delays. This can be explained, in part, because new projects were initiated after a long hiatus for nuclear construction which significantly eroded the nuclear supply chain and the industry's capabilities, and in part due to a lack of design maturity and execution planning at the time of the construction start, as well as an increasingly uncertain political context. The report finds that this situation has eroded stakeholder confidence in the capability of the nuclear industry to deliver new build projects and has raised the level of the perceived investment risk, intimidating investors and further reducing the chances of attracting financing for future projects.
- (414) The report explains however that in other countries such as China and Korea, new nuclear investments are delivered on time and budget and concludes that the gap with western countries cannot be explained only by site-specific conditions. Therefore, the challenges experienced in western countries are not inherent to the technology itself but depend on the conditions in which projects are developed and executed and on the interactions between different stakeholders.
- (415) The Commission recalls the comments of third parties that argued that energy supply could also be guaranteed by cheaper technologies and considered that subsidies to the nuclear sector would slow down progress on other cheaper and more climate-friendly technologies. The Czech authorities have submitted that the renewable energy potential in Czechia is limited, but that an increase both of the nuclear and the renewable generation form important parts of the national energy and climate strategy (see recital 21). They also submit that, while wind investments would occur later with the Project than without the Project, the total wind energy buildup would be identical in both scenarios (see recital 270). This explanation is plausible. Indeed, investments in wind and solar generation capacity can be realised much faster and at lower capital cost than the Project. They are however limited by other factors, such as available sites and network connection capacity. Furthermore, the limited impact expected

⁽¹⁷⁹⁾ Commission Decision (EU) 2015/658 of 8 October 2014 on the aid measure SA.34947 (2013/C) (ex 2013/N) which the United Kingdom is planning to implement for support to the Hinkley Point C., recital 385.

⁽¹⁸⁰⁾ Projected Costs of Generating Electricity – 2020 Edition, available here: https://www.oecd-neo.org/jcms/pl_51110/projected-costs-of-generating-electricity-2020-edition.

by the Project on market prices on the wholesale market (2 EUR/MWh) suggests it would have minimum impact on renewable investments. The incentives provided by the PC formula to maximise production in high-price hours and reduce it in times of low prices however also reduce the competitive impact of the measure on market-based renewable investments, as renewable generation assets can be expected to run particularly often in the lower-priced time periods (as in those periods, available renewable resources are high which reduces market prices).

- (416) Another respondent argued that high electricity prices are expected in the next decades. The forecast of electricity prices over long time periods involves significant uncertainty. Should electricity prices be considerably higher than expected, the PC and gain share mechanism will provide for revenues to the Czech State, thereby limiting overcompensation to the benefit of ČEZ. If, on the other hand, market prices are lower than expected, notably in view of lower-than-expected demand or rapid rollout of renewable energies, the Project would, absent the measure, be unable to bear its capital cost.
- (417) The Commission concludes that there are clearly identified market failures with respect to investments in new nuclear energy sources in Czechia. Due to the very long investment period, there is no sufficient certainty that the currently high energy prices remain high for a sufficiently long period to affect this assessment. In light of the lack of sufficient electricity generation capacity in Czechia, of those market failures and of the strategic goal of Czechia's energy policy, which aims at relative self-sufficiency in electricity generation parallel to long-term decarbonisation of electricity generation, State support for the construction of the Project in Czechia appears necessary.
- (418) Indeed, it remains unlikely that market forces alone would be capable of ensuring the timely delivery of the same nuclear capacity as the Project, which is necessary to facilitate the development of electricity generation from nuclear energy sources in Czechia.
- (419) In light of the above, the Commission concludes that the State aid is necessary to ensure the development of new nuclear capacities in Czechia. Additionally, the Commission concludes that the measures produce an incentive effect for the beneficiary thus ensuring that the Project will be successfully realised.

8.3.3.4. Appropriateness

- (420) The Commission must determine in its assessment whether the proposed measure is an appropriate policy instrument to address its objective, in this case to promote the development of nuclear power generation to compensate for a future supply gap.
- (421) In the Opening Decision, the Commission noted that Czechia had considered several alternative support mechanisms to incentivise investments into nuclear energy production, such as tax credits, capacity mechanisms, direct investment aid, setting a regulated investment prices model (RAB), etc. which were all considered less appropriate than the measures finally selected to provide aid.
- (422) The Commission agrees that such other policy instruments on their own would likely be insufficient to achieve the same results given the specifics of the Project and the magnitude of the financial resources required. In particular, simply removing one of the three measures without further adjustments would leave major risks for the investor unaddressed, each of them addressing a different market failure.⁽¹⁸¹⁾ Where alternative support mechanisms relate primarily to other sources of funding (tax credits), they do not necessarily reduce the impact on competition. Capacity mechanisms and RAB models are general concepts which can take many forms. The formal investigation has not brought forward evidence that for the concrete measure at hand, such concepts would have provided more appropriate solutions to the market failures raised.

⁽¹⁸¹⁾ Opening Decision, recital 187.

- (423) However, the Commission questioned in its Opening Decision whether the combination of the three measures (i.e. the RFA, the offtake contract, and the Change of Law Protection) could be considered appropriate for providing State aid and inquired whether a higher degree of exposure to market risks would have been more appropriate. More specifically, the Commission considered that the combination of the three measures and the initial setup of the Project may take away important market risks and thereby may hamper certain incentives of competitive behaviour.
- (424) The Commission also raised doubts as to whether the combination of those three measures is appropriate for ensuring the development of the Project while, in the past, a more limited number of measures which may have been less interventionist appear to have been sufficient for enabling the investment.
- (425) Moreover, the Commission questioned whether the balance proposed by Czechia in using multiple instruments is the right one, and whether alternative instruments, or the consideration of only some of them, might be able to achieve the same objectives with less aid or distortions to competition.
- (426) The Czech authorities' arguments in support of the combination of the proposed measures are linked to the main market failures which the measures are designed to address as described in Section 4.1 above, notably, the scale of the capital requirement, the longevity of exposure to market price signals, and the longevity of exposure to political decisions. The Commission already acknowledged that because of those risks the Project would not have been undertaken by a private investor under normal market conditions ⁽¹⁸²⁾.
- (427) As explained above (see recitals 83 to 106), during the formal investigation to allay the Commission's doubts in connection with the Project's degree of exposure to market risks, Czechia injected market price exposure to the formula for the calculation of the EDU II *ex post* settlement and decreased the duration of the offtake contract to 40 years, thereby increasing the Project's exposure to market risks. This also means that EDU II has economic incentives to optimise power output in a way that maximises dispatch in high price periods, while reducing dispatch (and, for example, scheduling maintenance) in low price periods. This reduces the distortive effect of the measure.
- (428) Furthermore, the Commission recalls that a similar combination of measures was considered appropriate by the Commission in the Hinkley Point C case ⁽¹⁸³⁾.
- (429) The Commission considers that the combination of the three measures, as notified by Czechia in the formal investigation, and the corresponding setup of the Project constitute an appropriate instrument to enable the investment in the NPP. The Commission considers that the three measures in tandem are called for to address the market failures which are present in the development of new nuclear power plants.
- (430) Firstly, to the extent that such long-term capital market failures are present, the provision of the RFA would not be sufficient on its own to enable investment in new nuclear as it only addresses the need to obtain capital for the construction of the new nuclear unit, but does not address the specific issues that nuclear energy entails such as the particular risks deriving from its construction and long and complex life cycle. The RFA provides nearly all the capital needed for the construction of the new nuclear power plant, while the offtake contract allows the investor to

⁽¹⁸²⁾ Opening Decision, recital 152.

⁽¹⁸³⁾ See Commission Decision of 8 October 2014 on the aid measure SA.34947 for Support to the Hinkley Point C Nuclear Power Station, recitals 392-405. In particular, in Hinkley Point C the combination of the CfD with the Credit Guarantee and the Secretary of State Agreement (concerning protection from changes in law and/or policy) was considered appropriate instruments to provide aid. For the Project, the use of the RFA was preferred vis-à-vis a State guarantee because (i) the RFA eliminates the risk of a shortfall of commercial financing for the Project; (ii) the RFA offers a more timely solution to arrange the overall financing package vis-à-vis a commercial lending facility; and (iii) the RFA would entail lower cost of debt in view of the direct lending from the State as well as lower fees in connection with arranging and committing financing over the entire construction period. For more details, see recital 166 above.

commit equity to the Project. The RFA would however on its own not ensure that the loan can be reimbursed, and low-price periods could endanger the viability of the Project. Thus, the RFA is itself premised on the existence of the offtake contract and intrinsically linked to it as the Project's rating takes into account the existence of the PC. Only the guaranteed revenues of the PC could compensate for the long-term risk profile of the Project.

- (431) Moreover, the Commission considers that the RFA is appropriate to enable the investment and address the long-term capital market failures also in comparison to a State guarantee on a market-based lending facility because it tackles the risk of not securing sufficient financing to enable the Project from private lenders, it ensures lower cost of debt and lower fees connected with arranging and committing financing over the entire construction period, it requires less time to arrange the financing package also in case of cost increases. As any increase in capital cost would directly impact the calculation of the Strike Price, the RFA enables a lower Strike Price in the PC (see recital 171), reducing overall cost of the measure.
- (432) Secondly, the PC with the duration of 40 years addresses the need to provide price stability and predictability and the equity rate of return, which are particularly important for investments of this size and duration and are therefore essential to enable the investment. In this sense, the PC addresses the market failure concerning the longevity of exposure to market price signals identified above.
- (433) Thirdly, the compensations granted in case of political or legislative forms of discriminatory penalisation of nuclear technology (i.e. the Change of Law Protection) address the additional risks which might be considered to be specific to nuclear (mainly, the possibility of investment hold-ups due to changes in the legislative framework, for example due to political reasons). The adjustments of input elements to the PC formula in case of cost increases based on legitimate grounds also address the risk of cost increases inherent in nuclear generation investments.
- (434) In light of the above, the Commission concludes that the combination of the purchase contract with the 40-year duration, the RFA and the Change of Law protection mechanism, as structured in the notified measures, are appropriate instruments to provide State aid in the Project.

8.3.3.5. Proportionality

- (435) To assess the proportionality of a measure, the Commission must verify that the measure is limited to the minimum that enables the successful completion of the Project for the attainment of the objective pursued.
- (436) In the Opening Decision the Commission explained that the proportionality assessment must take into account the combination of support measures proposed by the Czech authorities. There were three main concerns in the notified measure in relation to proportionality that are relevant for the Commission's assessment.
- (437) First, the notified duration of the off-take contract of 60 years was considered too long, as it significantly exceeded the envisaged period for the repayment of the RFA as well as the duration of direct price support measures in previous nuclear investments ⁽¹⁸⁴⁾. In the Opening Decision, the Commission questioned whether compensation for Project investment costs should not be more closely aligned with the modalities and duration of the RFA repayment.

⁽¹⁸⁴⁾ *Ibid.*, recitals 197-198. Specifically, the offtake contract for Hinkley Point C was concluded for 35 years, while the RFA repayment period in PAKS II was only 21 years and the measure was not accompanied by any other form of operating aid.

- (438) Second, the envisaged rate of return was considered too high, so as to not be able to exclude overcompensation, when taking into account the combination of support measures notified and the resulting risk profile of the Project. In particular, the initially notified fixed-price PPA contract transferred both price and market risks to the SPV and hence, to the State, while the Repayable Financial Assistance significantly reduced the financing risk offering financing at very attractive terms, with no interest rate being charged over the construction period. Finally, the Change of Law or Policy Protection mechanism provided protection against policy changes and other events beyond the control of EDU II. This includes changes to Czech national policy on nuclear energy, decisions not to grant the other support measures or to stop the implementation by rejecting the bidders for the construction of the plant, but also cost increases due to an exhaustive list of Legitimate Grounds. In light of the allocation of risks between the beneficiary and the State, the Commission considered that the inclusion of the nuclear construction and operations premium in the CAPM estimation, was not justified.
- (439) Additionally, the Commission raised doubts as to whether the overcompensation mechanism proposed by Czechia would sufficiently prevent overcompensation, in particular since it includes a burden share of 50:50 between the State and EDU II. ⁽¹⁸⁵⁾
- (440) Third, the Commission raised doubts as to whether the choice of the incumbent ČEZ as project promoter without an open selection process could mean that the support necessary for the Project was higher than it would have been otherwise.
- (441) The sections below will analyse these issues in light of the changes to the support measures proposed by the Czech authorities, before drawing final conclusions on the overall aid package.

8.3.3.5.1. The Purchase contract

8.3.3.5.1.1. Duration of the PC

- (442) As mentioned in recital 437, the notified duration of the off-take contract of 60 years was considered too long. The Commission took the view that compensation for Project investment costs should be aligned with the modalities and duration of the RFA repayment, which is approximately 30 years in the base case scenario presented by the Czech authorities.
- (443) Czechia argued that a buffer (or 'tail' period) between the PC tenor and the RFA repayment is needed to ensure that the Project remains financially viable, notably to ensure that the RFA could be repaid in full during potential downside events. Specifically, the Czech authorities presented data from the International Atomic Energy Agency (IAEA) showing that recent large scale nuclear power projects experienced long periods before being able to stabilise the dispatch of the asset and therefore achieve the targeted load factor which would enable the financeability of the Project.

Table 9

Load factor stabilisation time

VENDOR	NPP TYPE	COUNTRY	UNIT	DESIGN NET CAPACITY	COD	LOAD FACTOR STABILIZATION TIME
WEC	AP1000	China	SANMEN_1	1157 MWe	21 June 2018	4 years
	AP1000	China	SANMEN-2	1157 MWe	17 Aug 2018	2 years
	AP1000	China	HAIYANG-1	1126 MWe	08 Aug 2018	4 years
	AP1000	China	HAIYANG-2	1126 MWe	29 Sep 2018	2 years
EdF	EPR1750	China	Taishan-1	1660 MWe	13 Dec 2018	5 years
	EPR1750	China	Taishan-1	1660 MWe	29 May 2019	4 years
KHNP	OPR1000	S.Korea	Shin-Kori-1	998 MWe	28 Feb 2011	10 years
	OPR1000	S.Korea	Shin-Kori-1	998 MWe	20 Jul 2012	8 years
	APR1400	UAE	Barakah-1	1310 MWe	01 Apr 2021	2 years (so far)
ŠKODA Praha a.s.	VVER V320	CZ	Temelin-1	1027 MWe	10 Jun 2002	8 years
	VVER V320	CZ	Temelin-2	1029 MWe	18 Apr 2003	8 years

Source: IAEA_PRIS - Reactor Details, 20 June 2023

⁽¹⁸⁵⁾ *Ibid.*, recital 205.

- (444) Czech authorities have submitted a revised duration of the PC, reducing the duration from 60 to 40 years. This more closely aligns with the RFA duration, even though it still exceeds it by a considerable period. While a certain period to allow for operation of the power plant to stabilise after start of operation is justifiable in view of the technical difficulties experienced after startup in other projects, the duration is at the upper end of the periods observed in other projects.
- (445) However, it is important to note that the start of the PC contract period is not necessarily identical with the start of operation of the power plant. In fact, the offtake period starts from the earlier of (i) the Start Date, i.e. the day when the NPP exports first electricity into the grid and EDU II has notified the State/SPV that it wishes the Start Date to occur subject to deadlines to be defined in the PC; and (ii) the Longstop Date, i.e. the day following the last day of the Target Commissioning Window which runs for five years starting on the Target Commissioning Date (see footnote 39). The Target Commissioning Date will be extended to account for any delays caused by events constituting Legitimate Grounds. Thus, in case of delays other than for Legitimate Grounds, the period covered by the PC gets shortened accordingly. While this provides for a 5-year buffer in case of delays, given recent delays in nuclear projects for third generation+ generators, delays of more than 5 years are a considerable risk. Taken together, the risk of a shortened PC period and the time needed to stabilise the power plant output after start of operations mean that the PC period approximates the repayment period of the RFA.
- (446) Finally, in case of cost overruns, it cannot be excluded that the repayment of the RFA will partly require refinancing with private market-based loans. In this case, the repayment of the investment cost is no longer directly coupled to the RFA period (see recital 180). In particular, should the market revenues during the PC period not be sufficient to cover the costs to reimburse the RFA, market-based loans could be used to finance parts of the cost for repaying the RFA. Repayment of those market-based loans would then occur after repayment of the RFA, based on market revenues in the post PC period.
- (447) Taken together, the elements set out above are sufficient for the Commission to consider a PC duration of 40 years as proportionate.
- (448) The Commission notes that this does not mean that the Project would be viable with an operating lifetime of only 40 years. Indeed, the Financial Model assumes an operating lifetime of 60 years and relies on market revenues after the end of the PC period to achieve the target equity IRR of [9 to 11] %. While sensitivity analysis assuming low market prices after the end of the PC period shows that the plant could stop operating at this point in time due to lack of financial incentives (see recital 148), this does not mean that the investment would be taken with a view to an operating lifetime of only 40 years. In fact, to make the investment viable, the investor has to assign a high likelihood to a market environment that allows continued operation after the end of the PC period. The target IRR is set over the project lifetime of 60 years. If market prices after the PC period were to be significantly lower than expected, this would negatively impact the realised return on the investment, reducing IRR below the target of [9 to 11] %.

8.3.3.5.1.2. Remuneration formula compensation

- (449) As mentioned in recitals 88 to 91, the remuneration formula in the PC contract consists of two terms: the *ex post* settlement term and the market exposure term. This structure resembles the design of a two-way contracts for differences (CfD) ⁽¹⁸⁶⁾ and therefore has similar effects in terms of providing revenue stability and limiting overcompensation, as well as efficient operation incentives for the power plant. In this section the Commission assesses the aspects related to proportionality (compensation), while in Section 8.3.3.6.2, it assesses the aspects related to efficient operation incentives.

⁽¹⁸⁶⁾ For example, in Hinkley Point C a similar CfD formula is used.

- (450) The yearly *ex post* settlement term ensures revenue stability for the power plant, while it also limits compensation. The settlement term hedges the power plant against the risk of uncertain evolutions of average market prices and, given that it is calculated for a fixed reference volume (subject to formula adjustments as described in 88 and 90), further provides a hedge against volume risks. On the one hand, the settlement term guarantees that after each year the nuclear plant receives any necessary top-up on average market prices to achieve the target remuneration. Specifically, if the *ex post* yearly average of hourly market spot prices on the day ahead market (i.e. the reference price) is below the Strike Price, the settlement amount gives the remuneration that the market did not deliver. On the other hand, the settlement term ensures that if the yearly average market price is more than sufficient to achieve the target remuneration, the excess (i.e. the difference between reference price and Strike Price) is paid back by the power plant to avoid overcompensation.
- (451) Regarding the adjustments in the *ex post* settlement term of the PC Remuneration Formula as described in 88 and 90, the first adjustment (when the reference price (p') is above the operational variable costs (c)) provides additional revenue safety for the power plant in case of unplanned outages during years with high average market prices. Then, the payback is limited to the difference between reference price and Strike Price times actual quantity instead of reference quantity. The second adjustment (when the market reference price (p') is at or below the operational variable cost (c)) introduces a cap on the settlement term and thus limits overcompensation. For example, in situations of very low market prices when the plant is incentivised to efficiently reduce output, the compensation from the settlement term is limited to the difference between Strike Price and operational costs for the reference quantity. The Commission therefore considers that the *ex post* settlement term, including the adjustments, ensures that the power plant does not receive more compensation than necessary to achieve the target remuneration, while providing revenue stability and efficient operation incentives.
- (452) Further, as discussed in Section 8.3.3.6.2., the CfD remuneration formula in the PC provides efficient incentives for the power plant to maximise its profits instead of incentives to maximise output. This profitability effect can also be seen from the fact that the Czech authorities estimate the power plant under the CfD remuneration formula to achieve on average higher revenues and lower costs than under output maximisation (see recital 150). In consequence, replacing the fixed PPA approach with the PC formula approach results in a lower funding gap (higher expected revenues and lower expected costs), thereby reducing the Strike Price and the amount of aid required.

8.3.3.5.1.3. Overcompensation mechanism

- (453) In the Opening Decision, the Commission expressed doubts that the equity gain-share mechanism proposed by Czechia would sufficiently prevent overcompensation and considered that the sharing factor of 50:50 was not aligned with the distribution of risks between the beneficiary and the State, as entailed by the initially notified measure.
- (454) First, the Commission recalls that, as explained in the previous section, the revised remuneration method under the PC contract mitigates overcompensation risk in situations of high market prices, as the operator is required to return to the SPV market revenues that exceed the Strike Price of the purchase contract. It is acknowledged that a fixed price remuneration per unit of electricity produced, as initially notified by Czechia, would have had a similar effect, while it would have applied over a longer period (i.e. the lifetime of the asset compared to the 40 years maximum duration of the PC). However, the Commission notes that modelling results show that the efficient operation incentives built into the revised PC remuneration formula are likely to translate into decreases of the SP compared to a fixed price offtake contract, due to lower operation costs and higher market returns, and hence in lower levels of support over the duration of the PC.

- (455) Second, with regards to the gain sharing factor, the Commission notes that Czechia maintains a 50:50 sharing during the PC, and slightly increases it to 60:40 to the advantage of the beneficiary in the 20 years following the expiration of the PC. Czechia justifies this increase by a need to reflect a higher exposure of the beneficiary to market price risk. The Commission agrees that the reduction of the duration of the PC to 40 years increases the overall risk profile of the Project as it introduces market price risk during a considerable period that covers one third of the asset's expected lifetime. Therefore, the Commission considers that the revised gain sharing factors are aligned with the overall higher risk profile of the Project resulting from the adjustments of measure 1, in particular the reduction of the duration of direct price support. The equity gain-share mechanism will ensure that any upside for EDU II will be shared with the State while at the same time leaving sufficient incentives for EDU II to seek the realisations of those upsides, for example through cost reductions.
- (456) Czechia points out that, even with its slight adjustment post PC, the proposed sharing factor provides greater sharing between the operator and the State (i.e. 50:50 during the PC and 60:40 for the remainder of the NPP's lifetime) compared to a precedent nuclear investment in Hinkley Point C (HPC), where the Commission assessed as proportionate an initial sharing factor of 70:30, which was applicable from a higher project IRR compared to the present case. The Commission notes that the equity gain-sharing mechanism in HPC was in fact based on two thresholds, whereby the sharing factors between the beneficiary and the State change from 70:30 to 40:60, when the realised equity IRR is above the second (higher) threshold. Therefore, the HPC's equity gain-share mechanism does not, in all possible circumstances, provide for a less favourable sharing factor for the State compared to the Project. At the same time, the Commission considers that the HPC gain-sharing mechanism is not necessarily a good benchmark for assessing the proposed overcompensation mechanism of the Project, as there are significant differences between the projects as regards their risk profiles, market circumstances, and support packages.
- (457) Third, the Czech authorities also referred to the competitive EPC tender selection that, in their view, embeds a market-based mechanism, removing potential undue contingencies in the underlying investment cost assumptions of the Financial Model. The Commission agrees that carrying out a competitive process for the selection of the EPC contractor where potential suppliers bid against each other to win the contract is likely to provide more value for money compared, for example to a direct award (i.e. without competition) of the EPC contract. Therefore, given that the investment costs used in the Financial Model to calibrate the Strike Price of the PC are determined in a competitive tendering process may contribute to reducing overcompensation risks.
- (458) Finally, the Commission notes that gains by the SPV resulting from overcompensation adjustments will either take the form of a lump sum payment from the beneficiary to the SPV or will lead to a reduction of the SP of the PC, therefore lowering the level of support to be provided by the State during the entire period of the operation of the plant.
- (459) In view of the arguments above, the Commission considers that the overcompensation control mechanisms embodied by the PC remuneration formula and the revised equity gain-share mechanism are appropriate and aligned with the distribution of risks between the beneficiary and the State.

8.3.3.5.2. The Initial assumptions and scenario analysis in the financial model

- (460) The Czech authorities have provided a number of assumptions on parameters which are still unknown but which have a considerable impact on the Strike Price. This concerns in particular market price expectations, the plant's availability, construction costs, operating costs and decommissioning costs and capital cost.
- (461) Those assumptions are used as inputs into the financial model, to calculate the currently expected Strike Price (see Section 3.6.2), with the aim of reaching an equity IRR of [9 to 11] % over the operating lifetime of the Project. The Strike Price is therefore an output of the financial model and will be calculated accordingly.

- (462) Certain assumptions also have a direct impact on the expected equity IRR. While the model generally aims to resolve for a target equity IRR of [9 to 11] %, modifications to as of yet unknown input parameters can result in deviations from this target equity IRR. By way of example:
- (a) If the technical availability drops below the target availability of [70-100] %, thereby preventing the plant from producing in periods where the cost c is below the market price p , this results in lower returns; where this occurs due to non-legitimate grounds, this results in a reduction in the equity IRR;
 - (b) If the market prices p are for a large share of the Project lifetime below the operating costs c , the power plant will not operate. In this case, the second part of the remuneration formula caps the compensation, reducing the equity IRR to an expected level of [...] %;
 - (c) If, on the hand, market prices after the end of the PC period were to be significantly higher than expected in the base case, this would result in returns exceeding the target equity IRR of [9 to 11] %. In this situation, the gain-share mechanism would apply, leaving 60 % of those excess returns to EDU II and returning 40 % to the State.
- (463) For the reasons set out above, credible assumptions including on future market prices, construction costs, operating costs, the plant's availability, decommissioning costs and other relevant parameters such as capital expenditure and financing of the project are of high relevance to ensure a proportionate return for the Project. However, many of those assumptions are subject to considerable uncertainty for new nuclear power plant projects. Assumptions on construction costs of generation III+ NPP have been repeatedly unreliable in several European projects in the recent past. Cost estimates over an operation lifetime of 60 years are challenging. The same applies for market price predictions reaching the end of the century. Against this background, Czech authorities need to not only ensure that the assumptions underlying the initial granting act are credible, but also that where updates to those parameters are required, they are performed in a predictable, transparent, objective and verifiable manner.
- (464) The Czech authorities have provided assumptions on the various revenue and cost input parameters to the financial model, as set out in Section 3.6.6.
- (465) As regards market price estimations, it should be noted that there is no forward market price available for periods stretching sufficiently far into the future to cover the post-PC period. Whereas during the PC period, deviations from the market price forecast are largely compensated for in their effect by the effects of the PC, which shields EDU II from deviations in average prices, the same cannot be said for the future post-PC. Czechia relied on ČEZ's commercial assumptions for the evolution of average yearly electricity market prices in the Czech Republic between 2035 and 2050. For the period 2051-2096, which includes the post-PC-period, to cover the entire expected operating lifetime of the plant, the Czech authorities assume market prices to gradually decline at a constant rate of [...] % per annum, to reflect the expectation that market prices will tend to fall in the longer term due to increased RES in the system. Without inflation adjustments, the central market price assumption starts from EUR [...] per MWh in 2036, decreasing to EUR [...] per MWh by 2050, and gradually declining to EUR [...] per MWh in 2076, and EUR [...] per MWh in 2096.
- (466) The Commission cannot predict with certainty whether these prices will indeed be realised on the market. In the 2016 impact assessment accompanying the recast Electricity Regulation (EU) 2019/943, it was stated that 'in 2050 the share of RES E is projected to approach 60 %. In this case the spread between the baseload and peak load prices increases significantly, mainly due to the lower baseload prices compared to the previous periods. The average day-ahead market prices though remain high throughout the projection horizon, as thermal generation is still expected to be marginal (thus setting the day-ahead market price) during most hours of the year.'⁽¹⁸⁷⁾ Under these assumptions, the model in the impact assessment predicted average day-ahead market prices in the EU to rise from

⁽¹⁸⁷⁾ Section 6.2.6.4, Level and volatility of wholesale prices, Commission Staff Working Document Impact Assessment accompanying the Proposal for a Directive of the European Parliament and of the Council on common rules for the internal market in electricity (recast) SWD/2016/0410 final – 2016/0379, 30 November 2016.

74 EUR/MWh in 2020 to 118 EUR/MWh in 2035, and thereafter stay relatively flat, with 122 EUR/MWh in 2050. Based on the 2016 assessment, the prediction of slowly falling prices from 2036 would thus not be aligned with studies conducted by the Commission.

- (467) However, the ambition regarding the share of renewable energies has since significantly increased. The renewable energies Directive adopted in 2018 and thus prepared in parallel to the above-mentioned impact assessment provided for a renewable energies target of 30 % in final energy consumption by 2030. The revised Renewable Energy Directive, adopted in 2023, raises the EU's binding renewable energy target for 2030 to a minimum of 42,5 %, with a view to achieving 45 %. The European Climate Law ⁽¹⁸⁸⁾ sets out that Union-wide greenhouse gas emissions and removals regulated in Union law shall be balanced within the Union at the latest by 2050, thus reducing emissions to net zero by that date, and that the Union shall aim to achieve negative emissions thereafter. This increased ambition in renewable generation, which is mostly low marginal cost generation, and decarbonisation objectives means that the assumption underlying the 2016 assessment that 'thermal generation is still expected to be marginal (thus setting the day-ahead market price) during most hours of the year' cannot be taken as a given already for the 2050 horizon. While it cannot be excluded that high marginal cost generation continues to play an important role (e.g. using carbon capture and storage technology, or consuming low carbon fuel such as hydrogen), other scenarios can plausibly predict a high share of hours with very low marginal cost. Indeed, this is something that can already be seen for brief time periods in parts of the Union electricity market ⁽¹⁸⁹⁾. If this is already exceptionally the case now, in periods with high renewable energy production and low demand, it can be seen as one of several plausible scenarios for the time period after the end of the PC, starting in 2078. Czech authorities do not, however, argue that electricity prices are on average assumed to be close to zero after the end of the PC. Instead, they assume average prices to slowly decline ⁽¹⁹⁰⁾, reaching still an average of [...]EUR/MWh in 2096.
- (468) To demonstrate the impact of different price assumptions on the model, the Czech authorities have presented price sensitivity analyses within the financial model, with the help of further scenarios assuming constant yearly average market price expectations ranging from EUR – 10 per MWh to EUR 150 per MWh. In the scenarios with market prices at EUR – 10 per MWh, EUR 10 per MWh and EUR 20 per MWh, they expect the plant to shut down after the PC expires, as revenues would be below operational costs. In this situation, there is no risk of overcompensation. If, on the other hand, electricity prices were significantly higher than assumed, this would result in an increase to the IRR. However, if the IRR increases above the target rate of [9 to 11] %, a gainshare mechanism is applied, whereby the State recovers 40 % of the additional returns from EDU II. As a consequence, should electricity prices over the lifetime of the plant be at EUR 150/MWh, the equity IRR over the lifetime of the Project would be of [...] % before application of the gain-share mechanism, and of [...] % after gain-share. This ensures that even in case of significantly higher electricity prices than expected, any risk of overcompensation is limited.
- (469) Based on the above considerations, the assumptions on electricity prices are thus plausible and the application of a gain-share mechanism to any excess revenues from higher electricity prices particularly after the PC period ensures proportionality in this respect.
- (470) Other core assumptions (notably on construction cost and availability) are based on experiences in other projects and technical capability descriptions by technology providers. If the assumptions used in the base case turn out to be overly optimistic, this could either result in a stable IRR (in case the cost increases are based on legitimate grounds, thereby not impacting IRR) or in a reduction in IRR. Based on the information provided on experiences in

⁽¹⁸⁸⁾ Regulation (EU) 2021/1119 of the European Parliament and of the Council of 30 June 2021 establishing the framework for achieving climate neutrality and amending Regulations (EC) No 401/2009 and (EU) 2018/1999 ('European Climate Law') (OJ L 243, 9.7.2021, p. 1).

⁽¹⁸⁹⁾ By way of example, wholesale electricity prices in the day-ahead market on the Iberian peninsula were below 10 EUR/MWh in 63 % of the hours in the three weeks between 26 February and 17 March 2024; Source: ENTSO-E Transparency Platform.

⁽¹⁹⁰⁾ The slow decline of [1 to 2] % per year in 2020 prices is in nominal values overcompensated by the assumed inflation of 2 %, thus in nominal values prices are assumed to slowly increase in this period.

other recent nuclear projects, the Czech authorities have provided sufficient grounds to deem a significant reduction in costs to be unlikely. Even then, if such a reduction in costs were to result in an increased IRR, it would be limited by the gain share mechanism. While there is a significant risk of cost increases beyond the assumptions in the base case, this would not result in overcompensation.

- (471) As regards financing costs, prediction is much more reliable than on technical elements. This is based on the clearly defined financing cost under the RFA. Assumptions on private refinancing can have a minor impact on IRR but are based on additions to the RFA rate. On this basis, financing cost assumptions are sufficiently plausible.
- (472) The Financial Model, as described in Section 3.6.2, is used to calculate the Strike Price necessary to reach an equity IRR of [9 to 11] % over the operating lifetime of the Project. In the initial (or base) case, the Financial Model uses as inputs several assumptions, of which many will be updated after the conclusion of the EPC contract. As described above, the Commission considers these initial assumptions to be plausible. The updating process relies on the list of parameters provided in Annex. This exhaustive list sets out which parameters can be updated and result in an adjustment (both upwards or downwards) of the Strike Price to maintain the target equity IRR. The updating process is therefore sufficiently transparent and predictable.
- (473) The Commission has assessed the functionality of the Financial Model and considers that it is appropriate to calculate the minimum Strike Price necessary to achieve the target return, by using several input variables. The Commission has verified that the Financial Model takes into account the initial assumptions, including the load following functionality as described in recital 149, to estimate an initial Strike Price of EUR [65 to 80], achieving the target return of [9 to 11] %.
- (474) The Commission has further verified that the Financial Model can take into account a range of assumptions (scenarios) for the input variables and that the equity IRR estimated by the Financial Model reacts accordingly. Further, the Commission has verified that the Financial Model can be used to solve for the necessary Strike Price to achieve the target return under these different scenarios.
- (475) The Commission therefore concludes that the financial model of the Project including its functioning and underlying assumptions are thus plausible and appropriate to ensure the proposed target return for the Project.

8.3.3.5.3. Benchmarking of the rate of return

8.3.3.5.3.1. Introduction

- (476) In this section, the Commission discusses its assessment of the rate of return (RoE) of the EDU II investment. In order to ensure the proportionality of the State aid measure and avoid overcompensation, the State aid measure must ensure the minimum rate of return for the beneficiary to undertake the EDU II investment. In other words, the minimum rate that closes the funding gap of the Project. The funding gap is defined as the difference between the Net Present Value (NPV) of the factual scenario and of the counterfactual scenario and it is at the same time the minimum amount of State aid needed for the measure to have an incentive effect on the firm and the maximum amount of State aid proportionate to trigger the investment.
- (477) The funding gap concept is deeply rooted in ordinary business decision making. When profit maximising companies decide on whether to undertake a project, they assess the value generated by the project in question against alternative courses of action and choose the one with the highest expected return. Thus, for companies to be willing to undertake a project that is not the one with the highest expected return, they may need to be incentivised by means of State aid covering the funding gap.

- (478) In this case, the factual scenario consists in investing in the EDU II project, whilst the counterfactual scenario consists in the absence of investment. Czechia's Financial Model provides the expected value of the EDU II project at the valuation date, 31 December 2023, by discounting the positive and negative cash flows that the Project is expected to generate over its lifetime. Czechia's Financial Model for the factual scenario (i.e. the investment in EDU II) shows that the proposed State Aid measures result in an NPV of the factual scenario equal to zero and such State aid measures are dimensioned to that effect (i.e. the SP of the purchase contract is calculated so that the NPV of the Project, including aid, is nil). In this case, the counterfactual scenario consists in the absence of investment (i.e. an NPV of the counterfactual investment of zero). The fact that the NPV of the factual scenario inclusive of the proposed State aid and the NPV of the counterfactual scenario are the same means that the proposed State aid measures close the funding gap, incentivising the EDU II investment without generating any overcompensation ⁽¹⁹¹⁾.
- (479) A nil NPV of the factual scenario (in the EDU II investment obtained by the inclusion of the State aid measures) implies that the project's WACC, or cost of capital, and the project's Internal Rate of Return (project IRR), or project's return, are the same. The WACC is the weighted average of the cost of equity (CoE) and of the cost of debt (CoD), as discussed in Section 3.6.5. Thus, the project rate of return takes into account the entire capital structure which is used to finance the project, i.e. the equity provided by shareholders and debt provided by lenders.
- (480) In the EDU II case, the Commission focused on the assessment of the target RoE. This is because, in this case, the equity is provided by ČEZ, whilst the debt is provided by the State (RFA) at a subsidised interest rate (see Section 3.7). The debt, or loan, at a subsidised rate and the contract for difference, through the Strike Price, are the measures that close the funding gap of the EDU II project. Thus, establishing the proportionality of the CoE, ensures the proportionality of the total State aid.
- (481) The CoE estimation is then aimed at assessing whether the shareholders' return is proportionate. Given the CoD of the RFA, once the target RoE is found to be proportionate, the Strike Price of the contract for differences is calibrated so that the total State aid closes the funding gap, i.e. produces a nil NPV for the factual scenario ⁽¹⁹²⁾. In other words, State aid proportionality is ensured through the calibration of the Strike Price, given the subsidised CoD and the proportionate RoE. For these reasons, in the remainder of this section, the Commission focuses on assessing the proportionality of the target RoE.

8.3.3.5.3.2. Assessment

8.3.3.5.3.2.1. Standalone Major Risk Premium

- (482) In the Opening Decision, the Commission expressed doubts about the proportionality of Czechia's proposed target RoE and in particular on the need to include a standalone major risk premium ("SMRP") of 3 to 3,5 % in addition to the base return ⁽¹⁹³⁾,
- (483) Regarding the SMRP, Czechia argued that NPPs have certain unique characteristics and risks as compared to other power generation projects, which need to be considered through the inclusion of an SMRP in the CAPM-derived RoE. Czechia estimate of 3-3,5 % would account for these risks not captured by the beta estimates of diversified energy utilities involved in more traditional forms of generation and regulated network companies ⁽¹⁹⁴⁾.

⁽¹⁹¹⁾ The counterfactual scenario's nil NPV means that in that scenario, the company is willing to go ahead with a project that provides a return to the capital that is the same as the cost of that capital (i.e. WACC = project IRR). Thus, given that here the funding gap is equal to the NPV of the factual scenario, the fact that the State aid ensures that the NPV of the factual is zero, means assuming that also in the factual scenario the WACC is equal to the project IRR, in line with the counterfactual scenario.

⁽¹⁹²⁾ With a discount rate, or WACC, reflecting the relevant CoD and CoE.

⁽¹⁹³⁾ Opening Decision, recital 67.

⁽¹⁹⁴⁾ Opening Decision, recital 69.

- (484) In the Opening Decision, the Commission questioned the need for an SMRP given the three aid measures which have been proposed to address the risks associated with NPPs. The Commission argued that the risks borne by the investor after considering the protection provided through the PC, RFA and IA are reflected in the CAPM-derived RoE and it therefore had doubts as to the need for an additional risk premium ⁽¹⁹⁵⁾.
- (485) After the Opening Decision, on 25 September 2023, Czechia submitted a paper aimed at supporting the inclusion of an SRMP ⁽¹⁹⁶⁾. The Commission notices that the literature references provided by Czechia in this submission ⁽¹⁹⁷⁾ are not supportive of the inclusion of any such premium when state intervention is foreseen. This is because the State Aid removes the need for a higher remuneration, by removing at least part of the risks which would otherwise be particular to nuclear investment projects. Further, no SMRP was accounted for neither in Hinkley Point C, nor in Paks II ⁽¹⁹⁸⁾. Thus, the Commission concludes that the addition of the SMRP to the estimated CoE range would not be proportionate in the present case.
- (486) In the course of the investigation, the Czech authorities have agreed that no SMRP will be taken into account in the calculation of the CoE. The doubt as regards the inclusion of an SMRP raised in the opening decision is thereby addressed.

8.3.3.5.3.2.2. Target rate of return on equity

- (487) In this section, the Commission assesses whether the target RoE of [9 to 11] % is proportionate. To do so, the Commission compares Czechia's target RoE to a market based CoE range. A target RoE higher than the range means a disproportionately high return, a target RoE lower than the range means a disproportionately low return (i.e. a return that a market investor would not accept).
- (488) To estimate this market-based CoE range, the Commission follows the standard CAPM approach ⁽¹⁹⁹⁾ that arrives at a theoretical CoE, or CoE range, by estimating each of its components on the basis of market data. Further, the Commission benchmarks its analysis by comparing the derived CoE range to that of industries that are comparable to the nuclear industry and, thus, to EDU II.
- (489) Once the CoE range is estimated, the Commission draws its conclusion on the proportionality of the target RoE. Finally, the Commission assesses how the target RoE would change in case of changes of costs and timeline.

8.3.3.5.3.3. Estimation of the CoE

- (490) In this section, the Commission estimates its own baseline CoE, as well as a CoE range. The CoE range is set by identifying a 'low' scenario and a 'high' scenario. For each of the CoE parameters, the Commission explains the reasons for accepting or rebutting Czechia's assumptions and provides benchmarks based on widely accepted sources.
- (491) The methodology used by the Commission for the estimation of the CoE relies on the standard CAPM formula, also used by Czechia and described in Section 3.6.5.1. The Commission estimated the CoE parameters as explained below.
- (492) For the RfR, the Commission observes that Czechia have estimated their range, relying on 2-year and 20-year averages of Euro 30Y Government bonds, German 30Y Government bonds, and European AAA 10+Y corporate bonds, and then adding a premium to translate these averages into an RfR range for the Czech Republic ⁽²⁰⁰⁾. The Commission deems it more appropriate not to consider corporate bonds as proxies for the RfR, because these

⁽¹⁹⁵⁾ Opening Decision, recital 207.

⁽¹⁹⁶⁾ See Czechia's submission dated 25 September 2023.

⁽¹⁹⁷⁾ See Czechia's submission dated 25 September 2023, Table 15 'Risk premium studies'.

⁽¹⁹⁸⁾ Paks II decision, paragraph 258. In the Hinkley Point C decision there is no mention of an SMRP, or similar type of premium.

⁽¹⁹⁹⁾ **This approach is based on the Harris-Pringle formula and is** described in section 3.6.5.

⁽²⁰⁰⁾ See section 3.6.5.1 for further details.

cannot be considered risk-free. Further, the Commission deems it more appropriate to look at contemporaneous 6-month and 12-month data, as opposed to 2-year or 20-year data ⁽²⁰¹⁾. Thus, the Commission estimates the RfR by taking an average of the German and Euro area triple A 30Y Government Bonds yield over the 6-month period starting in July 2023 and the 12-month period starting in January 2023. These averages are equal to 2,72 % and 2,55 %, respectively ⁽²⁰²⁾. Adding the 0,6 % risk premium ⁽²⁰³⁾ to these RfRs, the Commission obtains an adjusted RfR range of 3,09 %-3,26 %. For conservativeness, the Commission adopts Czechia's 2,3 % assumption in its low scenario, the 2,72 % assumption in its baseline scenario and the 3,26 % assumption in its high scenario. Thus, the Commission's RfR range is 2,30 %-3,26 %, as opposed to Czechia's [2 to 5] %.

(493) For the market risk premium, Czechia assumes a range between [5 to 7] %, on the basis of Damodaran's and Fernandez's data, as discussed in Section 3.6.5.1. These databases are widely recognised and relied upon in the finance and business world. The Commission finds these sources reliable and assumes in its low scenario the average of Damodaran's data (5,6 % ⁽²⁰⁴⁾) and in its high scenario Czechia's conservative figure of 6,3 % ⁽²⁰⁵⁾. In its baseline scenario, the Commission uses a conservative 6,1 %, which is the simple average of Damodaran and Fernandez's data ⁽²⁰⁶⁾.

(494) For the unlevered beta, the Commission assessed the methodology put forward by Czechia, which is based on a weighted average of peers betas and results in a beta of [...] ⁽²⁰⁷⁾. The Commission found this methodology in line with widely recognised methodologies ⁽²⁰⁸⁾. The Commission finds this figure conservative if compared to industry information provided by Damodaran, who estimates an average unlevered beta of 0,54 for a sample of power companies ⁽²⁰⁹⁾. The Commission assumes Czechia's beta of 0,54 in its high scenario. However, for conservativeness, the Commission assumes a beta of 0,51, as opposed to Czechia's [...], in its baseline scenario and in its low scenario ⁽²¹⁰⁾. This beta is the result of a conservative assessment on the basis of the data provided by Czechia ⁽²¹¹⁾ ⁽²¹²⁾. It should be noted that for conservativeness, the Commission adopts the standard Hamada

⁽²⁰¹⁾ This is also in line with the approach the Commission took in the Paks II decision.

⁽²⁰²⁾ For the Euro area triple A 30Y Government Bonds yield, the data is from the ECB Data Portal, Yield curve spot rate, 30-year maturity - Government bond, nominal, all issuers whose rating is triple A - Euro area (https://data.ecb.europa.eu/data/datasets/YC/YC.B.U2.EUR.4F.G_N_A.SV_C_YM.SR_30Y). For the German 30Y Government Bonds yield, the data is from the Deutsche Bundesbank website, Daily yield of the current 30 year federal bond, time series BBSSY.D.REN.EUR.A640.000000WT3030.A (Daily yields of current Federal securities | Deutsche Bundesbank).

⁽²⁰³⁾ See section 3.6.5.1 for further details.

⁽²⁰⁴⁾ See footnote 65 for details on how this figure is estimated.

⁽²⁰⁵⁾ This figure is conservative compared to Fernandez most recent survey of MRP, published in June 2022, which indicates a median MRP of 6,7 %. See footnote 66 for further details.

⁽²⁰⁶⁾ Average of Damodaran's 5,6 % and Fernandez's 6,7 %. This approach is in line with the Commission's approach in the Paks II decision.

⁽²⁰⁷⁾ See section 3.6.5.1 for further details.

⁽²⁰⁸⁾ This methodology used by Czechia consists in using a composite of the two-year regression beta and the five-year regression beta, weighting the former 2/3rds and the latter 1/3rd. Beta = (2/3) 2 year regression beta + (1/3) 5 year regression beta. This is the same methodology used by prof. Damodaran, as explained here: Variables used in Data Set (nyu.edu).

⁽²⁰⁹⁾ See Prof. Damodaran's website, data for 2023, file 'betaEurope', industry 'power', showing an unlevered beta adjusted for cash of 0,54.

⁽²¹⁰⁾ This is the simple average of the 5-year weekly regression betas of EDU II's peers. The 5-year regression beta is the most conservative of the two sets of betas (the other being the 2-year weekly beta) used by Czechia and Damodaran in the beta assessment. Indeed, the simple average of the 2-year weekly betas is 0,55. The Commission further notes that the 0,51 beta corresponds to the conservative un-adjusted for cash simple average of the betas of the three industries that can be used to benchmark the EDU II project: Green and Renewable, Power and Utility (source: Prof. Damodaran's website, file 'betaEurope').

⁽²¹¹⁾ The Commission, using the same sample used by Czechia, unlevered the peers' betas accounting for tax (assuming Damodaran's global tax rate of 24,8 %, per Damodaran file 'betaEurope', dated January 2023, betaEurope22.xls (live.com)). This is in line with the Hamada approach described in footnote 213, whereby taxes are accounted for in the calculation of the beta. This leads to an unlevered beta estimate of 0,595, following Damodaran's approach explained in footnotes 69 and 208, which consists in taking the weighted average of the weekly 2-year and 5-year peers betas. For conservativeness, the Commission removed Nuclearelectrica, from the sample. When doing this, the overall unlevered beta figure becomes 0,516.

⁽²¹²⁾ This assumption is also in line with the Paks II assumptions.

approach ⁽²¹³⁾ for the levered beta estimation, as opposed to the Harris-Pringle approach ⁽²¹⁴⁾ relied upon by Czechia.

- (495) For the gearing, Czechia assumed a figure of [...] % ⁽²¹⁵⁾. The Commission notes that [...] % is the target gearing of the project ⁽²¹⁶⁾, as well as the average gearing of the project over its lifetime ⁽²¹⁷⁾. Moreover, the Commission observes that a [...] % gearing is within the project's peers gearing in the last available full financial year ⁽²¹⁸⁾, as well as being substantially more conservative than the gearing of 98 % based on the capital structure of the project ⁽²¹⁹⁾. The Commission further notes that the [...] % gearing is broadly in line with industry information provided by Damodaran, who estimates an average gearing of 61,2 % for a sample of power companies ⁽²²⁰⁾. Thus, the Commission assumes a gearing of [...] % in its three scenarios.

8.3.3.5.3.3.1. Conclusion

- (496) The Commission's conclusions on the CoE are shown in Table 10 below. The table shows three CoE scenarios, which are the result of three sets of assumptions: a 'Low', a 'Baseline', and a 'High' scenario.

Table 10

CoE conclusions

Scenarios	Low	Baseline ⁽¹⁾	High ⁽²⁾
Risk free rate	2,3 %	2,7 %	3,3 %
Equity risk premium	5,6 %	6,1 %	6,3 %
Beta (unlevered)	0,51	0,51	0,54
Gearing (D/(D+E))	[...] %	[...] %	[...] %
CoE	[...] %	[...] %	[...] %
CoE range mid-point	[...] %		

⁽¹⁾ The Commission notes that if in the 'baseline' scenario the 6-month 2,7 % RfR is replaced with the 12-month RfR of 2,5 %, then the [9 to 11] % target equity return is still achieved.

⁽²⁾ The Commission notes that if in the 'high' scenario EDUII's target gearing of [...] % is replaced with the 56 % average gearing of EDU II's peers in the last full year for which figures were available on Bloomberg (i.e. 2022), then the CoE would be [...] %. Thus, the [9 to 11] % target equity return would still be achieved.

Source: Commission analysis.

⁽²¹³⁾ This approach is based on the Hamada formula. Under this approach, the interest tax shield (i.e. the tax reduction resulting from allowable deduction from taxable income) is used in the leverage adjustments of the beta, thus reducing the levered beta and, in turn, reducing the RoE. The Hamada formula is the following: $\beta_L = \beta_U + \left[1 + \frac{D}{E}(1 - T)\right]$, where β_L is the levered beta, β_U is the unlevered beta, D is the Debt, E is the Equity, T is the tax rate and $(1 - T)$ is the tax shield. The tax rate is assumed to be equal to 21 % in line with Czechia's Financial Model. Note that in this formula the debt beta is assumed to be nil.

⁽²¹⁴⁾ See section 3.6.5.1 and footnote 57 for further details.

⁽²¹⁵⁾ This is the project's average gearing over the lifetime of the contract. See section 3.6.5.1 for further details.

⁽²¹⁶⁾ See Czechia's submission dated 21 March 2024.

⁽²¹⁷⁾ Czechia's Financial Model.

⁽²¹⁸⁾ The gearing ratio of EDU II's peers in the last full year for which figures were available on Bloomberg (i.e. 2022), ranges from 41,8 % to 75,6 %, with an average of 56,3 % and with 68,4 % being the threshold for the 75th percentile. The target gearing of [...] % is thus below the 75th percentile.

⁽²¹⁹⁾ The [...] % figure is conservative also compared to the 67-78 % range, which is based on the 'effective gearing' methodology submitted by Czechia and described in section 3.6.5.1, footnote 76.

⁽²²⁰⁾ See Prof. Damodaran's website, data for 2023, file 'dbtfundEurope23', industry 'power'.

- (497) The CoE parameters shown in Table 10 result in a CoE range of [...] % to [...] % and an average value of [...] %, with the baseline scenario assuming a value of [...] %. The target RoE of [9 to 11] % is within this range and lower than the average of the three scenarios. It should be noted that these figures do not include an SMRP, for the reasons explained in Section 8.3.3.5.3.2.1. These figures compare with Czechia's CoE range of [...] to [...] and average of [...], excluding SMRP, as discussed in Section 3.6.5.1.
- (498) These CoE figures are conservative because the only industry specific parameter of this calculation is the beta, which is derived from a group of companies invested in nuclear but with a varied portfolio. While significant risks are mitigated by the support measures, individual nuclear projects are still subject to considerable risks, many of which remain for EDU II. This includes notably lower than expected availability, construction or operation cost increases other than for legitimate grounds, construction delays beyond the Longstop date, unplanned outages notably in high price periods, and electricity prices after the end of the PC period which could be significantly lower than currently expected. Many of these risks can partly be mitigated by companies with a higher number of power generation assets and other energy market activities, and if those risks realise for those peers, they only affect a part of their operation. EDU II is an individual nuclear project and thus riskier than its peers with a varied portfolio.
- (499) Further, the Commission relied on Damodaran's industry-level CoE database to benchmark the required RoE ⁽²²¹⁾. To do so, the Commission looked at the average CoE for those industries that are the closest to the nuclear one and obtained an average CoE of 10,21 %-10,26 % ⁽²²²⁾. The CoE figures calculated for these sectors can be considered as conservative estimates for nuclear power plants given that the only industry specific parameter is the beta, as explained in paragraph 498.
- (500) The Commission used the Financial Model provided by Czechia ⁽²²³⁾ to assess how the equity IRR (or target equity) would change as a result of changes construction costs and construction time ⁽²²⁴⁾.
- The Commission found that by applying a scenario of 10 % cost-overrun caused by Non-Legitimate Grounds, the equity IRR falls to [...] %. This is a likely scenario, given the recent history of the nuclear industry ⁽²²⁵⁾. If instead the actual costs were to be 10 % lower than expected, the equity IRR would increase to [...] %. This is, however, an unlikely scenario in the nuclear industry.
 - Further, the Commission found that a 5-year construction delay would result in an equity IRR of [...] %, whilst were the construction to be finished 5 years in advance, the equity IRR would be [...] %. The construction delay is a realistic scenario, based on the industry's history, whilst the shortening of the construction period is unrealistic.
- (501) Thus, based on these sensitivities, the Commission found an equity IRR range of [...] % to [...] %, with an average [...] %. This range is never higher than the CoE range of [...] % to [...] % and is on average below the required rate of return of [9 to 11] %, thus ensuring the proportionality of the State aid measures.

⁽²²¹⁾ For country-specific WACC figures relevant for 2023 see 'Data', 'Archived data', 'Cost of capital by industry', 'Europe', '1/23', at <http://pages.stern.nyu.edu/~adamodar/>. This database is part of a global database and it includes European countries (labelled as Western Europe). However, countries are further grouped and the Czech Republic is part of a subgroup called 'Developed Europe', see tabs 'Global alphabetical' and 'Europe by industry', file <http://www.stern.nyu.edu/~adamodar/pc/datasets/indname.xls>.

⁽²²²⁾ These industries are 'Green and Renewables', 'Power' and 'Utilities (General)'. The CoE for Green & Renewables is 10,65 %, for Power 9,98 % and for Utilities (General) 10,01 %. The simple average of these figures is 10,21 %, whilst the weighted average (where the weights are the number of firms included in the sample) is 10,26 %. See Damodaran, January 2023, file 'waccEurope'.

⁽²²³⁾ Czechia Financial Model.

⁽²²⁴⁾ To run these sensitivities, the Commission did not change any of the other assumptions, including the Strike Price.

⁽²²⁵⁾ See section 8.3.3.3.

8.3.3.5.4. The selection of ČEZ as Project promoter

- (502) In the Opening Decision, the Commission raised a doubt as to whether ČEZ would be the most efficient operator and specifically inquired whether having an open selection procedure for the project promoter might have led to reducing the support necessary for the realisation of the Project.
- (503) First, in their comments on the Opening Decision, both Czechia and ČEZ submitted that important cost and time savings are made as the result of the selection of ČEZ as Project promoter. In particular, Czechia noted that the selection of ČEZ results in avoiding additional costs of approximately EUR [200 to 700] million (see recital 254 above). Similarly, ČEZ observed that its selection as Project promoter potentially reduced the Project's costs by an estimated EUR [200 to 700] million compared to a greenfield NPP by another operator (see recital 339). The Commission considers that the invoked costs savings, consisting in the value of the acquired site, the cost of licensing and development activities already done by ČEZ appear plausible and are not covered by the CAPEX estimations for the project, therefore reducing the amount of aid for the project by comparison to situations where an open selection were to take place. On this basis, the remuneration formula and overcompensation mechanism (see Sections 8.3.3.5.1 to 8.3.3.5.3) ensure that the aid is limited to the minimum necessary.
- (504) Second, the Project's overall design and the distribution of risks between the beneficiary and the State and the incentive structure of the support measures should ensure that the construction and operating costs are kept to the minimum. While many risks are mitigated by the support measures, EDU II maintains exposure to risks of construction and operation costs increases other than for Legitimate Grounds or construction delays beyond the Longstop date, which constitutes an incentive to minimise costs and delays. During the construction and development phase of the Project, ČEZ's total maximum committed contingent equity for financing any cost overruns will be EUR 1,95 billion (recital 197). Furthermore, as explained by Czechia, the update of the input values to the financial model to reflect the results of the EPC tender should ensure that actual construction costs on the basis of which the Strike Price of the PC are calculated are competitive, thus removing potential undue contingencies in the underlying cost assumptions of the financial model (recital 457). Finally, the gain-share mechanism encourages EDU II to pursue additional cost reductions and make greater returns, which will be in part shared with the State.
- (505) In light of the above, the Commission concludes that the aid package for the Project includes the necessary safeguards and incentives to minimise costs, and therefore the amount of aid necessary for the project and considers that it is unlikely that an open selection procedure for the project promoter would have led to lower amounts of support.

8.3.3.6. Avoidance of undue negative effects on competition and trade and balancing test

- (506) For the measure to be compatible with the internal market, the negative effects of the measure in terms of distortions of competition and impact on trade between Member States must be limited and outweighed by the positive effects of the aid.
- (507) In the Opening Decision, the Commission considered that the Project might distort competition in several ways.
- (508) First, the Commission questioned the technical and economic grounds on the basis of which ČEZ (as single owner of EDU II) was selected as the beneficiary of the measure, considering the lack of tender or selection process. In particular, it was not clear at that stage whether there may have been other, potentially more efficient, operators willing to pursue the Project with less aid.
- (509) Second, the Commission expressed concerns that the terms of the offtake contract between EDU II and the SPV would lead to inefficient operation behaviour by EDU II and distort the electricity market merit order by displacing cheaper technologies such as renewables.

- (510) Third, the Commission referred to ČEZ's strong position in the Czech electricity market and expressed concerns of potential distortions of the market structure because of the aid measure under discussion, for example by displacing alternative investments.
- (511) Fourth, the Commission could not fully exclude, at the time of the Opening Decision, that ČEZ could not distort downstream market functioning by influencing the market price or other types of strategic behaviour facilitated by large output volumes such as capacity withholding.
- (512) Finally, the Commission lacked sufficiently established information to assess the effects of the SPV on the market.

8.3.3.6.1.Choice of ČEZ as Project promoter ⁽²²⁶⁾

- (513) In the Opening Decision, the Commission noted that ČEZ was chosen as Project promoter without a tender, a selection process, or a public call for expression of interest and inquired on what technical and economic grounds ČEZ was selected. Based on the above, the Commission raised doubts as to whether the choice of ČEZ as Project promoter could result in a potential distortion of the market structure.
- (514) Following the Opening Decision, Czech authorities explained that alternative solutions for the role of the Project promoter had been considered and ČEZ was selected as the preferred option (see recitals 50 to 59 above).
- (515) The Czech authorities further indicated that ČEZ is the most suitable choice as a Project promoter in view of its ability and incentives to deliver the Project, security of energy supply considerations, national security interests, and technological neutrality (see recital 247 above).
- (516) Moreover, the Czech authorities explained that the selection of ČEZ creates significant efficiencies, avoids additional costs, and does not require a separate site development. Thus, this selection creates significant Project delivery timing advantages which could not be replicable by alternative structures (see recital 248 above).
- (517) The delivery timing advantages were explained by Czech authorities with the preparatory works ČEZ has undertaken so far. ČEZ Group is the owner of the proposed site for the NPP. The acquisition process for the land required for the construction site started in April 2008 and was concluded in 2021 (recital 249 above). In addition, ČEZ undertook feasibility studies as well as licensing and development activities which aimed to reduce the time and the cost for Czechia in the development of the Project. Additionally, as of early 2021 ČEZ has obtained all the key licences and permits needed to progress the Project in line with the Project plan (such as, the licence for the siting of the nuclear installation and the EIA (recital 250 above)). The licence for the siting of the nuclear installation typically requires 6-7 years and the EIA acquisition between 3-5 years.
- (518) Furthermore, the Czech authorities explained that ČEZ as a nuclear power plant owner and operator has in-depth knowledge and understanding of the regulatory requirements, including licensing requirements, for a new NPP and the legislation in Czechia (recital 251 above). In addition, ČEZ and EDU II are members of several international organisations, and as such have access to standards and processes which are recognised and encouraged by regulators worldwide to promote continuous improvement (see recital 251 above).
- (519) The Czech authorities further underscored the key role of the Project in Czechia's security of electricity supply in the future, especially in light of the decommissioning of coal-fired plants. Specifically, the Czech authorities explained that a shorter development horizon for the Project will contribute to addressing the forecasted capacity gap. Developing a different project at a different site with significantly longer time horizon would not address the system's security of supply immediate needs (see recital 252 above).

⁽²²⁶⁾ For clarity, under Section 8.3.3.5.4 above, the selection of ČEZ as the Project promoter was assessed in connection with its impact on the proportionality of the aid. Under this Section, the choice of ČEZ as the Project promoter is assessed with respect to its possible undue negative effects on competition and trade.

- (520) Moreover, Czechia explained that if any alternative project promoter were to procure a potentially suitable site for a nuclear power plant in the territory of Czechia this would lead to significant delays for the realization of the Project in comparison with ČEZ. Specifically, in this counterfactual scenario the Czech authorities estimate delays of up to 14 years compared to the Project's timeline. In the counterfactual scenario, one could not rule out that the site characterisation or planning steps that have been successful for EDU II would encounter any problems or delays, thus increasing the risks and costs for the development of the Project. In any event, the Czech authorities claim that there is no evidence of technology-neutral, nuclear experienced operator in Europe developing NPP outside their own country (see recital 253 above) ⁽²²⁷⁾.
- (521) Czechia also points to additional costs that would be incurred if a project promoter different from ČEZ would develop the Project. Czechia estimate that these costs would be at least EUR [200 to 700] million (see recital 254 above). Similarly, ČEZ estimates cost savings compared to other operators at approximately [200 to 700] million Euros.
- (522) The Czech authorities further mentioned that the selection of ČEZ as the Project promoter was in line with past nuclear cases assessed by the Commission where no open competition processes were carried out for the selection of project promoters due to those projects' specificities (see recital 255 above).
- (523) Czechia further provided evidence on ČEZ's track record in successfully delivering and operating NPPs (see recital 256 above).
- (524) Moreover, besides of security of supply and national security considerations, Czechia stresses the financial security perspective since ČEZ benefits from a strong governmental credit rating (see recital 257 above).
- (525) Finally, Czechia specified that a tender for selecting a Project promoter that could become an entity different from ČEZ would entail significant disadvantages. In essence, Czechia brings forward that in this case competition on this level of the Project would not yield any results with a view of choosing the most efficient operator. Pointing to the reasons reported above, Czechia opines that since there would be no advantages of competition in requesting other parties' interest or in organising a tender, and therefore the downsides of this process, in particular the delays and additional costs incurred as well as security concerns linked to any other potential candidate, could not be outbalanced. Czechia also states that at no stage of the planning of the Project any third party complained about or raised objections concerning the appointment of ČEZ as the Project's promoter.
- (526) Moreover, notably, no competitor or any other third party raised any concern in connection with the choice of ČEZ as the Project promoter. Conversely, some third parties explicitly observed that they do not share the Commission's concerns on the choice of ČEZ without a tender or consultation and considered it fully justified to assign a State-owned energy company with the duty to develop the construction and operation of new NNP (see recitals 300-301 above).
- (527) In light of the above, the Commission considers that the arguments put forward by Czechia and by third parties during the formal investigation sufficiently address its doubts raised in the Opening Decision regarding ČEZ's selection as a Project promoter and the potential distortion of the market structure. The Commission notes that this is without prejudice as to whether or not future nuclear projects may require a more open selection process to ensure aid is limited to the minimum necessary.
- (528) Finally, the Commission considers that the selection of ČEZ as the Project promoter is unlikely to result in any undue distortions of competition as further explained in Section 8.3.3.6.3. Moreover, during the formal Investigation no competitor or any other third party pointed to any undue distortions of competition resulting from choosing ČEZ as Project promoter.

⁽²²⁷⁾ The Commission notes that while many NPPs are operated by operators with their seat in the Member State of the investment, this is not always the case (e.g. as regards EDF which was selected as operator in the UK).

8.3.3.6.2. The electricity PC

- (529) In the Opening Decision the Commission expressed concerns that the terms of the PPA contract between EDU II and the SPV would essentially mute the incentives provided by electricity price variations to produce electricity when it is needed most. The Commission noted that the fixed price under the PPA could create an incentive for EDU II to maintain production at the technical maximum also under market conditions where a reduction of output would be more efficient from a system perspective. This is of particular importance in view of the long operational lifetime of 60 years of the new NPP, given that the future generation mix marked by higher shares of renewable energies with typically very low marginal cost could, depending also on other developments such as storage or hydrogen production, result in higher volatility including periods of low or even negative prices⁽²²⁸⁾. The Commission had doubts whether that impact on efficient dispatch signals could not be minimised while still achieving the objectives of the measure⁽²²⁹⁾.
- (530) Indeed, if a generator receives a fixed remuneration for each MWh produced, it will derive no benefit from following the market price signal and from increasing output at times of high prices (scarcity) or reducing output at times of low or negative prices (abundance) or scheduling maintenance in periods of low demand (for example, during summer months). To the contrary, at fixed remuneration per MWh, a generator has incentives to produce at maximum output in times of negative prices, thereby creating a negative effect from the system perspective and possibly displacing even low marginal cost renewable energies. Furthermore, a fixed-price remuneration for all hours of production incentivises investments in plants optimised for baseload operation, that lack flexibility to ramp up and down quickly or to follow load. In particular given the need to speed up the deployment of renewable energy sources to decarbonise EU electricity generation, and the variable energy output of many renewable generation facilities, low carbon power plants which are technically capable of providing flexibility to the system and economically incentivised to make use of this flexibility are particularly valuable in providing benefits to the electricity system.
- (531) The Commission considers that the CfD remuneration formula in the PC contract, as described in recitals 88-91, apart from providing revenue stability and limiting overcompensation (as discussed in Section 8.3.3.5.1.1), provides efficient operation incentives for the power plant and therefore limits negative effects on competition and trade. This is mainly achieved due to the market exposure term as well as certain parameter choices in the *ex post* settlement term.
- (532) The market exposure term provides efficient operation incentives to the power plant because the plant receives remuneration for every unit of its output at the actual hourly day-ahead market price⁽²³⁰⁾. Based on the market price signal and its own operational costs, the plant is incentivised to dispatch efficiently by making use of its technical flexibility potential. The power plant is incentivised to reduce production when the market price is lower than its operational cost, and to increase production when the market price is higher. While the power plant is subject to technical limitations (such as on ramp-up and ramp-down speed and minimum load requirements to

⁽²²⁸⁾ See, e.g. section 6.2.6.4 'Level and volatility of wholesale prices' of the impact assessment accompanying the Clean energy for all Europeans package, SWD(2016) 410 final of 30 November 2016, which sets out that 'the improved market design will lead to more volatile average hourly prices, partly due to the introduction of locational signals which reveal the different value of electricity in the various nodes. This volatility though will be fairly restricted and will not be the result of extreme price fluctuations between zero and VoLL. The observed price ranges will be fairly constrained, as long as the share of variable RES E remains within certain limits. When the share of RES E, and specifically of variable RES E technologies, exceeds these rough limits though, price volatility may increase significantly if other resources like storage are not in place yet to absorb a large part of it. As can be seen in the table below, in 2050 the share of RES E is projected to approach 60 %. In this case the spread between the baseload and peak load prices increases significantly, mainly due to the lower baseload prices compared to the previous periods. The average day-ahead market prices though remain high throughout the projection horizon, as thermal generation is still expected to be marginal (thus setting the day-ahead market price) during most hours of the year.

⁽²²⁹⁾ Opening Decision recital 224.

⁽²³⁰⁾ Based on the PC contract and overall aid structure, the market term remuneration is paid to the power plant through the SPV. Nevertheless, since all dispatch rights remain with the power plant and the remuneration is directly linked to actual hourly day-ahead market prices, the operational incentives for the power plant should be as if the power plant was trading itself directly on the market.

prevent having to shut down entirely), this incentivises the power plant operator to use the technically available flexibility as optimally as possible. Further, the power plant is incentivised to efficiently schedule maintenance and refuelling to periods of lower expected prices.

(533) The parameter choices in the *ex post* settlement term support the efficient operation incentives provided by the market price exposure.

- (1) First, the reference price is defined as the *ex post* average of hourly market prices over a year. Within the year, the settlement term is not determined and therefore in general the plant is incentivised to take undistorted dispatch decisions based on just the market price signal. Further, incentives for abusive behaviour leading to higher market prices (such as capacity withholding, compare Section 8.3.3.6.3) are mitigated because higher market prices would result in a higher reference price and hence a lower settlement term payment.
- (2) Second, the reference period length of one year is sufficiently long to ensure that the power plant is exposed to the market price within the reference period, thereby having more incentives to dispatch as well as schedule maintenance and refuelling efficiently, compared to a shorter reference period. The power plant is provided with incentives to use its flexibility to operate more at times when market prices are particularly high and less when market prices are particularly low.
- (3) Third, the settlement term is defined over a fixed, pre-determined yearly output (the reference quantity), subject to the adjustments discussed below. Therefore, in general, dispatch decisions and the resulting output quantity of the power plant do not affect the settlement term, allowing for undistorted and efficient operation incentives for the power plant based on just the market signal. The reference quantity is set based on the target output level of the power plant over the reference period.

(534) The adjustments to the *ex post* settlement term as described in 88 and 90 on the one hand limit the potential pay back by the plant, providing a safeguard against excessive risks from unplanned outages when prices are high, and on the other hand cap the settlement term when prices are very low, providing a safeguard against excessive remuneration in times of negative prices. The design of these adjustments has been calibrated to largely retain the extent of the efficient operation incentives provided by the CfD formula elements as described above. Overall, the efficient operation incentives as provided by the CfD remuneration formula in the PC contract ensure that the aid does not provide the power plant with incentives to inefficiently operate when market prices are below its operational costs. Such inefficient operation would distort the electricity market merit order and risk displacement of cheaper technologies such as renewables. Further, this could have a negative impact on market integration and renewable development. This efficiency effect can also be seen from the fact that the Czech authorities estimate the power plant to operate under the CfD remuneration formula on average with less capacity than under output maximisation (compare 150), hence leaving more 'space' for cheaper technologies such as renewables.

(535) The Commission also notes that the PC does not provide for a direct redistribution of revenues from the PC to electricity consumers. Furthermore, the NPP is not expected to be frequently the price-setting plant on the Czech market. While the RFA and Change of Law or Policy Protection measures reduce overall costs of the Project, and thereby increase potential revenues from the PC compared to those under a measure financed exclusively via a CfD, this therefore does not result in an increased distribution of CfD revenues to consumers compared to a measure financed exclusively via a CfD. The combination of the three measures is therefore not liable to result in any distortion of competition at the level of the consumers via revenue distribution mechanisms.

(536) Based on the above, the Commission considers that the changes introduced by Czechia during the formal investigation sufficiently address its doubts raised in the Opening Decision regarding the incentives resulting from the remuneration formula.

8.3.3.6.3. Effects on market structure, potential price manipulation and withholding capacity by ČEZ

- (537) In the Opening Decision, the Commission expressed concerns about effects on the market structure through the setup of EDU II as well as EDU II's possibilities to manipulate the market in favour of ČEZ. Specifically, the Commission referred to ČEZ's strong position in the Czech electricity market and could not fully exclude potential distortions to the market structure because of the aid measure under discussion, for example by consolidating market power, displacing alternative investments, or distorting cross-border flows. Furthermore, the Commission could not fully exclude that EDU II would distort market functioning by influencing market prices or by pursuing certain types of strategic behaviour facilitated by large output volumes such as capacity withholding. For example, the Commission questioned whether in period of high market prices, EDU II would have economic incentives to reduce output to drive market price higher, so that other ČEZ units would be able to sell more energy at higher market prices.

Effects on the market structure

- (538) The Commission notes that the Czech electricity generation market is characterised by high market concentration, as the ČEZ Group accounted, in 2020, for a sizable share of 60,29 % of dispatchable ⁽²³¹⁾ generation capacity, including net imports. The equivalent market share taking into account total generation capacity in 2020 was 64,29 %. Such market concentration could be detrimental to efficient market competition as it may constitute a barrier to entry for new market players and pose a liquidity risk by limiting the number of supply offers available.
- (539) Czechia explains that ČEZ's market share is projected to decline significantly and that the generation capacity incentivised by the aid package under discussion (the Project) will not significantly affect ČEZ's power on the Czech electricity market. Specifically, ČEZ's market share of dispatchable generation capacity (not counting EDU II) is expected to drop to 45,06 % in 2040 and to 28,40 % in 2050, while the increase due to the Project will be of 4,19 percentage points in 2040 and 5,23 percentage points in 2050. Similarly, ČEZ's market share of total generation capacity is expected to drop to 45,15 % in 2040 and 18,98 % in 2050, while the Project will add 12,83 percentage in 2040 and 10,27 percentage point in 2050.
- (540) The Commission has assessed the data underpinning those estimations and considers them plausible but conservative considering that the decarbonisation plans of the Czech authorities have in the meantime become more ambitious. Specifically, the market share estimations above, sourced from the Oxera report, are based on the assumptions that most of the coal powered plants would be retired by 2038 (specifically, Czechia referred to ČEZ's plans to reduce coal-fired capacity by nearly half to 3 GW by 2025 and to 2 GW by 2030) and that the four units at Dukovany I would be decommissioned between 2045-2047. The Commission understands that those assumptions are rather conservative, as Czechia confirmed plans to phase out coal by 2033. Thus, ČEZ's market share is likely to decrease faster in the years ahead as a result of the lignite closures and be at a lower level at the expected start-up time of EDU II than foreseen in the Oxera report. Moreover, for the existing nuclear assets at Dukovany I to continue operation until 2045-2047 this requires approval from the Office for Nuclear Safety, which has not yet been secured at the time of the adoption of the decision.
- (541) The Commission considers that the structure of the Project, whereby all electricity produced by EDU II during the PC must be sold to the SPV, the fact that the SPV and EDU II/ ČEZ cannot coordinate the trading of electricity, and the trading commitments applicable to EDU II/ ČEZ after the expiration of the PC sufficiently mitigate any potential additional reinforced influence for ČEZ on the Czech electricity market resulting from the Project.

⁽²³¹⁾ Dispatchable capacity includes all thermal, nuclear and pumped storage hydro plants.

- (542) The Commission notes that the requirement for the SPV to market the electricity in line with the power trading commitments (see 3.6.4) will contribute to liquidity of the short-term markets in Czechia. Ensuring a steady offer of electricity on the short-term market at non-discriminatory conditions could potentially facilitate market entry or expansion of suppliers competing with ČEZ on the retail market. This is particularly the case to the extent that the electricity marketed by the SPV replaces other existing generation of ČEZ, which ČEZ can also directly use for its retail activities, bypassing the wholesale market.
- (543) With regards to the measure's potential effects on new market entry on the generation market, the Commission recalls its assessment in recital 415 that shows that the Project is unlikely to displace alternative investments, except, at most, by potentially slightly delaying wind build-up. Additionally, the remuneration formula under the PC reduces the competitive impact of the measure on market-based renewable investments as it provides financial incentives to operate efficiently and thus limits potential distortions of the electricity market merit order or displacement of cheaper technologies (see recital 534).
- (544) Furthermore, the Commission notes that Czechia estimates that the expected retirement of hard-coal and lignite generation will result in a significant capacity reduction of app 6,5 GW and the expected phase-out of existing nuclear units in Dukovany I between 2045-2047 will create an additional generation gap of about 2 GW, of which the Project will provide only 1,2 GW. Furthermore, significant increase in projected electricity demand is also expected in the next decade and a half (see recital 14).
- (545) The Commission also takes note of Czechia's comments as regards to the geographical market being wider than Czechia. Indeed, the electricity grid of Czechia is closely interconnected with neighbouring Member States (see footnote 134), and electricity generation in other Member States is frequently price setting on the Czech market (see recitals 262, 551 and 552). If one were to define a market wider than Czechia, the market share of ČEZ would be considerably lower, further reducing the potential for ČEZ to negatively affect competition by influencing the behaviour of EDU II. Also under the narrower possible market definition, looking at a separate Czech market for electricity, the interconnectivity of the Czech system to its neighbours provides a significant constraint on any such behaviour.
- (546) The Commission therefore considers that the aid does not lead to an increase of market concentration and has a limited impact on investment.

Potential price manipulation and withholding capacity by ČEZ

- (547) According to ACER ⁽²³²⁾, manipulative capacity withholding occurs, for example, 'when a market participant with relative ability to influence the price or the interplay of supply and demand of a wholesale energy product decides, without justification, not to offer or to economically withhold the available production, storage or transportation capacity on the market. In particular, electricity generation capacity withholding refers to the practice of keeping available generation from being competitively offered on the wholesale electricity market, even though offering it competitively would lead to profitable transactions at the prevailing market prices.' It is therefore necessary to assess whether the market participant at issue is able to influence the price or the interplay of supply and demand of the wholesale electricity market by engaging in such behaviour.
- (548) Czechia submitted that the ČEZ Group will not have economic incentives, nor the ability to inflate wholesale market prices by curtailing the output of EDU II. First, Czechia puts forward that the loss of revenue to the ČEZ Group in a hypothetical scenario, in which EDU II would not generate electricity for an entire year, could by far not be recouped through additional revenues generated by selling the unhedged portion of production in the following year. Czechia points to the fact that reduced output from EDU II will mean lost cash-flows and that a significant reduction of the load factor would eliminate the cash available to service debt and potentially lead to EDU II not being able to service the RFA or could even lead to cash flows not being sufficient to cover operating costs.

⁽²³²⁾ https://acer.europa.eu/sites/default/files/documents/en/remit/Documents/ACER_Guidance_on_REMIT_application_6th_Edition_Final.pdf.

- (549) As explained in recital 39, the Project is of critical importance for the ČEZ Group, especially after the phasing out of existing coal and potentially nuclear generation assets expected to occur by 2033 for coal and between 2045 and 2047 for nuclear. The Project is expected to contribute to an increase of [10-20] % of the ČEZ Group's EBITDA, therefore any behaviour liable to reduce the financial results of the Project would have a significant impact on the financial results of the ČEZ Group.
- (550) Second, the Commission notes that the remuneration formula of the PC contains in-built elements that significantly limit the benefits the beneficiary may be able to derive from manipulative capacity withholding behaviour. As explained in recital 533, abusive behaviour leading to higher market prices (such as capacity withholding) is mitigated as it would result in a higher reference price and therefore a lower *ex post* settlement term payment. Despite the fact, that these safeguards against withholding behaviour disappear post PC, it is important to note that there will still be limited incentives to manipulative capacity withholding behaviour. Despite the absence of *ex post* settlement, the ČEZ Group will not find withholding profitable, due to the significant costs of the operation and maintenance of such a power plant. Further, future abusive behaviour is constrained by the extensive interconnection with neighbouring markets because the electricity production landscape is expected to rely on a more diverse and developed mix of energy sources, diminishing the capacity to influence prices through withholding.
- (551) Third, Czechia sets out that, given the high degree of interconnection of the Czech electricity market with Austria, Germany, Poland and Slovakia, the Project is expected to have no or very limited impact on price setting in Czechia between 2030 and 2050, as the market price for the interconnected region is expected to be based on the price of electricity generated outside Czechia for an overwhelming majority of hours. Indeed, as set out in more detail in footnote 139, Czechia is particularly well interconnected with neighbouring electricity systems, which therefore are able to exert a considerable influence on price formation in the Czech market. This is coherent with the findings of the Oxera report which assessed the price setting technology in the Czech electricity market, over 2030-2050, and concluded that the Project will be price taker as the price will be set in a large majority of hours by external generators, and in the remaining hours, mainly by Czech gas and lignite plants. As more renewable generation comes online, the number of zero-priced hours are also expected to increase considerably and reach about 16 % by 2050.
- (552) The Commission notes that these conclusions are in line with the findings of an analysis ⁽²³³⁾ by the Joint Research Centre (JRC) of the Commission which shows that in 2022, due to its geographical location and high level of interconnection capacity, the prices on the Czech electricity market were overwhelmingly driven by the market dynamics of their neighbours, as shown by the fact that the share of price hours set by external generators was over 90 % in Czechia, one of the highest ratio in the EU. A major factor influencing Czech electricity prices is the neighbouring German market, which, due to its large size and growing renewable electricity generation increasingly affects the price patterns of its trading partners. Since Germany trades increasing volumes of electricity with its neighbours, their electricity prices are being increasingly driven by fluctuations in Germany ⁽²³⁴⁾. In fact, Czech hourly electricity prices on the day-ahead market were nearly identical (meaning less than 1 % divergent) in 48 % of hours between 2021 and 2023 ⁽²³⁵⁾. According to JRC's analysis, the same trend is expected to persist in the period to 2030, when external generators are expected to be price setters in about 80 % of price hours in Czechia. In 2030, the price setting technology on the Czech electricity market is expected to be natural gas (in about 50 % of the time), followed by lignite, oil, RES, and nuclear.

⁽²³³⁾ The merit order and price-setting dynamics in European electricity markets, available here: <https://publications.jrc.ec.europa.eu/repository/handle/JRC134300>.

⁽²³⁴⁾ BloombergNEF: EU Power Weekly: Identifying Europe's 'Macrogrids', 10 February 2020.

⁽²³⁵⁾ ENTSO-E Transparency Platform.

- (553) Fourth, Czechia submits that electricity market outcome can vary significantly between hourly settlement periods, and that overall generation market shares do not provide a full picture of market power. Czechia considers that indicators such as the residual supply index ⁽²³⁶⁾ are useful in evaluating the ability of a generator to act independently of its competitors, as it measures the extent to which a generator is required to meet residual demand. As shown by the analysis in the Oxera report, ČEZ's pivotality according to the residual supply index is expected to decrease strongly from 2030 to 2050. While ČEZ is expected to be pivotal in 2030 in nearly all hours, the share of hours in which ČEZ is pivotal decreases below 10 % by 2050. Importantly, this trend is only slightly influenced by the commissioning of the Project as ČEZ's pivotality increases by only 14 % due to the Project, and this effect is expected to disappear by 2050. The Commission notes that the likelihood for price manipulation generally increases when ČEZ is dominant. With its market shares of generally above 50 % on a specific relevant market, there is a presumption of dominance that very large shares are in themselves, and save in exceptional circumstances, evidence of the existence of a dominant position ⁽²³⁷⁾. At the same time, for the assessment of dominance, market shares are only the starting point and other aspects need to be taken into account ⁽²³⁸⁾. The Commission notes in this context that ČEZ's market shares in generation of electricity decline over time and are to decrease in particular in the year 2040 significantly and in any case below 45 % by 2050. Furthermore, the Commission has not identified any indications that ČEZ's development of pivotality is not accurate and plausible. In particular, comments from third parties were raising concerns with respect to a possible market distortion through the Project only to a very limited extent.
- (554) Fifth, Czechia referred to the findings of the Oxera report according to which the commissioning of EDU II will have a small effect by lowering the electricity price on the Czech market by around EUR 2 per MWh between 2040 and 2050.
- (555) In conclusion, in light of the arguments above, the Commission believes that competition distortions in respect of potential withholding of capacity are kept to the minimum. In addition, the Commission considers that, as the measure is currently designed, market liquidity risks that could arise are minor and impacts on prices, investments, and cross-border flows are minimised.

8.3.3.6.4. Role of the SPV on the market

- (556) In the Opening Decision, the Commission initially considered the SPV's design as it was known at that point in time to be generally a suitable set-up to alleviate possible competition-related concerns. However, the impact of the set-up on the market, and in particular of the role of the SPV, was still difficult to assess in view of changes being continuously implemented to the structure of the Project by Czechia and hence due to the lack of sufficiently established information. For that reason, the Commission raised doubts on the effects of the SPV on the market.
- (557) Following the Opening Decision, Czechia has further detailed out in several submissions the role of the SPV on the market situation in Czechia (see paragraphs 273 to 278 above).
- (558) Considering these submissions, the Commission concludes that Czechia has sufficiently clarified the facts that led the Commission to raise the doubts in the Opening Decision also by adding further explanations. This is for the following reasons:

⁽²³⁶⁾ The residual supply index is calculated as the ratio between total available capacity less the capacity of the firm all divided by the residual demand.

⁽²³⁷⁾ Judgment of 3 July 1991, *AKZO Chemie BV v Commission of the European Communities*, C-62/86, ECLI:EU:C:1991:286, paragraph 60.

⁽²³⁸⁾ Judgment of 13 February 1979, *Hoffmann-La Roche & Co. v Commission*, 85/76, ECLI:EU:C:1979:36, paragraphs 39- 41.

- (559) Firstly, the Commission was concerned about the SPV's autonomy, particularly whether it would act sufficiently as a profit-maximising private entity. For this, it is important that the SPV and EDU II cannot coordinate the operation of the nuclear power plant on the one hand and the trading of the generated electricity on the other. Whilst ČEZ is the sole shareholder of EDU II (see Section 3.2.1 above), the shares in the SPV are held solely by Czechia and therefore any possible coordination cannot be exerted by ČEZ. However, since Czechia holds a controlling stake both in ČEZ (see recital 32) and the SPV, it would be conceivable that Czechia itself coordinates the operation of the nuclear power plant on the one hand and the trading behaviour of the SPV on the other to maximise ČEZ's profits.
- (560) The Commission notes that the SPV's governance structure segregates its trading strategy decision-making from EDU II, ensuring autonomy and minimising risks of undue influences. This is in particular important because it renders it unlikely that Czechia will use its controlling stake in ČEZ and therefore in EDU II on the one hand and its control of the SPV on the other to maximise profits of ČEZ, from which it potentially and indirectly benefits through dividend payments, through the increase of ČEZ's generation capacity and the simultaneous, new vertical link to the wholesale and retail markets through the SPV. This way, the Commission takes the view that it is ensured that the SPV's functioning and trading strategy will not be swayed by any vested interests of one market participant (ČEZ) and will remain aligned with broader public interest objectives of the security of supply and affordable energy prices.
- (561) Secondly, the possibility of the SPV's structure distorting market signals, particularly regarding the dispatch of the power plant, was of concern. However, under the revised PC, the SPV has no influence on the dispatching decision of the power plant which is fully under the control of EDU II. As concluded in Section 8.3.3.5.1.2, the remuneration formula provides sufficient incentives for EDU II to operate efficiently in the electricity market, limiting distortions to the market price signal or the merit order.
- (562) Furthermore, Commission notes that the Oxera analysis ⁽²³⁹⁾, as cited by Czechia, suggests that the commissioning of the NPP will not substantially affect wholesale electricity prices or the position of ČEZ in the market. The NPP would not significantly influence wholesale electricity prices, which reaffirms that the SPV's operation and the commissioning of the plant will not distort market dynamics or give undue advantage to specific players.
- (563) Thirdly, uncertainty surrounding how the SPV would sell its electricity, especially to industrial consumers, was a significant concern. In response, Czechia committed that the SPV will sell a minimum of 70 % of the electricity produced by EDU II on exchanges (see recital 112 above) and the rest by auctions that are subject to conditions that prevent competitive distortions on the electricity market(s) (see recital 113 above).
- (564) Czechia explained that the envisaged parameters of the future nuclear power auctions will include estimated lot sizes of 1-10 MW, auction contract durations of one year, one-quarter of a year, or shorter term. Auctions will be organised as pay-as-bid, with a predefined minimum price that will be announced not earlier than one- to two days before bid closure. Further, the frequency of the auctions shall be set on quarterly to annual basis with transparent rules of announcement period of 30 days before the start of the auction. Finally, the auctions' length will not exceed a period of seven calendar days with the results announced within the following week. This applies both to auctions during the PC period and in the post PC period. These envisaged parameters provide sufficient clarity that the auctions can indeed be expected to be conducted in a non-discriminatory manner, allowing a sufficiently large group of market participants to effectively submit bids in a transparent manner.

⁽²³⁹⁾ See the Oxera report.

- (565) Under exceptional circumstances, EDU II is entitled to directly sell electricity on the wholesale market. However, this occurs only where the SPV does not meet its offtake obligation under the PC. In these circumstances, the power plant is still running, and the electricity needs to be brought to the market. The fallback possibility for EDU II to directly sell the electricity appears therefore reasonable. It needs to be avoided however that this could enable EDU II to bypass all the limitations put in place which aim to ensure non-discriminatory sale of electricity. The Commission notes that Czechia has committed that in this case, EDU II will sell all produced electricity on the spot market as a price taker. In doing so, EDU II cannot select any specific buyer (as the sale happens on an anonymous exchange) nor can it determine price or conditions of sale (as standard products are sold at the marginal price on the exchange). This is also coherent with the underlying problem to be solved: if the SPV does not offtake produced electricity, this requires a rapid solution to dispose of the power plant output. Using the spot market as a price taker provides this rapid and reliable solution. Against the background of these commitments, the Commission considers the fall-back solution of exceptional direct sales by EDU II to not result in additional competition concerns.
- (566) Even in exceptional cases when the liquidity of the relevant exchanges significantly decreases, these trading conditions would not change and the SPV may only temporarily amend the ratio of allocating the produced electricity to the trading platforms. More specifically in such cases 50 % of the produced electricity could be traded on the exchanges and 50 % via auctions (see recitals 117 to 118). This transparent operation ensures equitable access to the electricity produced and reinforces the integrity of the market.
- (567) Fourthly, Czechia provided reassurances that the SPV and ČEZ will operate independently with distinct governance and management structures. If the SPV were to outsource its trading activities, it would be achieved through a non-discriminatory public tender, ensuring no undue advantage is given to any particular entity. With respect to ČEZ, however, the SPV's must not outsource its trading of electricity to the ČEZ Group or to entities that form part of the ČEZ Group (see recital 46). This commitment by Czechia ensures that ČEZ does not factually regain control over the sale of EDU II output by way of delegation, thereby circumventing the effects of the SPV structure.
- (568) The Commission notes that ČEZ will oversee the EDU II operations as the Project Sponsor and EDU II's sole shareholder. ČEZ direct involvement will be limited to provision of equity capital to EDU II and possibly to providing shared services activities to EDU II at an arm's length basis.
- (569) The Commission also notes that the governance structure will separate ČEZ from that of the State aid recipient, EDU II (as the developer, owner, and operator of the NPP). EDU II will be a separate legal entity with a separate board and management with fiduciary duty to EDU II company. EDU II will be independently managed, both financially and operationally and will be subject to regulatory scrutiny. EDU II will have a defined reporting structure established for communication to ČEZ as parent company. The governance structure will ensure EDU II's independence from ČEZ by effectively limiting ČEZ's ability to unduly interfere in EDU II's day-to-day operation. EDU II will act according to the incentives provided through the remuneration formula in line with its own operations strategy. The Commission concludes that Czechia has sufficiently clarified the facts that led the Commission to raise the doubts in the Opening Decision by adding further explanations on the relationship between SPV, EDU II and ČEZ.
- (570) The Commission acknowledged the potential for undue influence if the SPV's trading activities were outsourced. Czechia's commitment to holding an open, non-discriminatory tender for any such outsourcing, excluding outsourcing to ČEZ, and combined with contractual provisions to maintain the trading strategy's ownership with the SPV, however, significantly diminishes such risks.
- (571) Considering the above, the Commission concludes that the concerns initially raised have been adequately addressed by Czechia. The measures, as described, and the safeguards put in place ensure the functionality and adequate competitiveness of the market. The Commission, therefore, has no remaining doubts about the proposed SPV role's impact on the market.

8.3.3.6.5. Conclusion on undue negative effects on competition and trade

(572) The Commission concludes that overall, the potential for distortions of competition is limited, based on the considerations in Sections 8.3.3.6.1, 8.3.3.6.2, 8.3.3.6.3, 8.3.3.6.4 above, and taking into account the commitments offered by Czechia.

8.3.4. *Weighing the positive effects of the aid against the negative effects on competition and trade*

(573) Following a careful assessment in Section 8.3.2 of this Decision, the Commission acknowledges that the package of measures is aimed at promoting an investment in nuclear energy and therefore contributes to the development of an economic activity, i.e. electricity generation from nuclear energy sources, while also contributing to the security of electricity supply.

(574) The Commission also takes note that this activity would, based on the commitment to implement the technical screening criteria for economic activities in the nuclear energy sector as set out in the EU Taxonomy Regulation, be considered an environmentally sustainable investment under that Regulation.

(575) The Commission acknowledges that without the aid, including all three measures constituting the aid package, the investment could not be expected to be implemented. The aid is therefore necessary to the development of this economic activity.

(576) The Commission has found that the combination of the PC with the reduced 40-year duration, the RFA and the Change of Law protection mechanism, as structured in the notified measures, are appropriate instruments. The formal investigation has not brought forward evidence that other measures would have been equally effective with lower distortive effects.

(577) The aid will be granted in a proportionate way, as the beneficiary will not retain extra profits beyond what is strictly necessary to ensure the economic operation and viability of the nuclear power plant. The reduced duration of the purchase contract ensures that after reimbursement of the capital cost, the plant will be fully exposed to price risks.

(578) Specifically, the Commission notes that also during the PC period, the remuneration formula provides strong incentives to EDU II to operate the plant in an efficient manner, using existing flexible capabilities to react to market prices.

(579) The regular review of a clearly defined set of input values to the financial model, allowing upward and downward adjustment, ensures that the significant uncertainties which currently exist regarding capital and operational costs do not result in overcompensation for the beneficiary. The application of a gain-share mechanism further ensures that EDU II remains incentivised to operate as efficiently as possible, while also sharing increased return on equity with the State, thereby limiting overcompensation in case of better-than-expected cost or revenue developments.

(580) The target rate of return on equity of [9 to 11] % is proportionate, given the risk of the Project, taking due account of the risk-mitigating effects of the aid measures.

(581) The Commission also notes that ČEZ will not control the trading activities of the SPV and will be subject to constraints limiting incentive and ability to abuse any reinforced market position resulting from the measure. The high interconnectivity of the Czech system will also provide further constraints to an exercise of market power. Furthermore, the Commission notes that the trading commitments ensure a steady sale of electricity by the SPV and thereafter by ČEZ under non-discriminatory conditions to all market participants, which can improve liquidity on the short-term electricity wholesale market and could benefit competition in retail markets.

(582) The Commission concludes that overall, the potential distortions of competition are limited, based on the considerations in Section 8.3.3 above, taking into account the commitments offered by the Czech authorities and the beneficiary of the aid.

(583) After a thorough balancing and taking into account the commitments offered, the Commission reached the conclusion that competition distortions resulting from the measure are kept to the minimum necessary and are offset by the positive effects of the measures.

8.3.5. *Conclusion on the compatibility of the aid*

(584) Based on the assessment conducted and in light of the specific circumstances of this case, the Commission finds that the package of measures notified and subsequently amended by the Czech authorities, including the commitments provided, is compatible with the internal market pursuant to Art. 107(3)(c) TFEU.

9. CONCLUSION

(585) The measure as amended is compatible with the internal market on the basis of Article 107(3)(c) TFEU.

(586) The Commission notes that it has been provided, for assessment, with the draft terms of the Purchase Contract, Investor Agreement, and Repayable Financial Assistance as agreed to date between the Czech State, CEZ and EDU II. The Czech authorities declare that the rest of the terms and conditions as well as the final financial documents will contain standard clauses that any investor would seek for a similar project (see recital 194). As the Commission did not have the opportunity to verify the final documents, should they amend the measure as presented in this Decision, they will have to be notified by the Czech authorities to the Commission,

HAS ADOPTED THIS DECISION:

Article 1

The aid which Czechia is planning to implement to support the construction and operation of a new nuclear power plant at the Dukovany site is compatible with the internal market.

Article 2

This Decision is addressed to the Czech Republic.

Done at Brussels, 30 April 2024.

For the Commission
Margrethe VESTAGER
Executive Vice-President

ANNEX

Inputs into the financial model that are subject to changes**Post EPC tender**

Input	Description of the input	Sheet	Row	Justification for the update
Development phase 2 duration	Duration of phase 2 of the project's development	Inp_C	43	Updated to reflect the EPC selection outcome. The exact timing will be confirmed on the basis of the winning EPC tender.
Construction period duration	Duration of the construction period of the project	Inp_C	47	Updated to reflect the EPC selection outcome. The exact timing will be confirmed on the basis of the winning EPC tender.
Full operation period	Duration of the full operation period of the project (excluding trial operations)	Inp_C	51	Updated to reflect the EPC selection outcome. The exact timing will be confirmed on the basis of the winning EPC tender.
Base capex – development phase 2	Cost for phase 2 of the project's development	Inp_C	59	Updated to reflect the EPC selection outcome. The costs will be confirmed on the basis of the winning EPC tender.
Base capex – construction phase	Cost for the construction phase of the project	Inp_C	60	Updated to reflect the EPC selection outcome. The costs will be confirmed on the basis of the winning EPC tender.
Gross plant capacity	The gross capacity of the plant (not including any deduction for own consumption)	Inp_C	112	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Own consumption	Amount of consumption needed to operate plant	Inp_C	113	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.

Input	Description of the input	Sheet	Row	Justification for the update
Trial period availability	Availability of the plant during the trial period	Inp_C	132	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Post-trial period availability	Availability of the plant during full operations	Inp_C	135, 138	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Development phase 2 capex phasing	Profile of spend during the phase 2 of the project's development phase	Inp_V	43-48 (chosen at Inp_C 65)	Updated to reflect the EPC selection outcome. The costs and exact timing will be confirmed on the basis of the winning EPC tender.
Construction capex phasing	Profile of spend during construction	Inp_V	53-61 (chosen at Inp_C 66)	Updated to reflect the EPC selection outcome. The costs and exact timing will be confirmed on the basis of the winning EPC tender.
Availability assumptions	Annual profile of plant availability	Inp_V	70-82 (chosen at Inp_C 138)	Updated to reflect the EPC selection outcome. The parameters affecting availability assumptions depend on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender. However, the update cannot reduce the availability assumptions in the Financial Model of 15 March 2024 which are based on the plant's designs complying with minimum European Utility Requirements for LWR Nuclear Power Plants.
Variable cost	Costs which are largely determined by plant output (e.g. fuel, disposal of non-radioactive waste, decom. provision)	Inp_V	143-220 (chosen at Inp_C 226)	Updated to reflect the EPC selection outcome. The costs and will be confirmed on the basis of the winning EPC tender.
Fixed cost	Costs which will be incurred regardless of plant output (e.g. wages, office supplies, security)	Inp_V	237-279 (chosen at Inp_C 225)	Updated to reflect the EPC selection outcome. The costs and will be confirmed on the basis of the winning EPC tender.

Input	Description of the input	Sheet	Row	Justification for the update
Lifecycle cost	Costs which will be incurred for the replacement and major refurbishment of components in the NPP	Inp_V	286-295 (chosen at Inp_C 227)	Updated to reflect the EPC selection outcome. The costs and will be confirmed on the basis of the winning EPC tender.
Operational cost	Profile of values of parameter c in the remuneration formula.	Inp_V	502-506	Updated to reflect the EPC selection outcome. The costs and will be confirmed on the basis of the winning EPC tender.
Additional costs due to load following	Costs not captured in other cost items that are driven by the load following operation of the plant	Inp_V	300 – 304 (chosen at Inp_C 228)	Justified by EPC outcome (the costs will be specified based on the technical specification of the bidder)
Original debt – Interest rate fixed/ floating	Determines whether the interest rate for the RFA is a fixed or floating rate	Inp_C	337	Updated to reflect the terms of the RFA.
Original debt – Interest rate – margin during operation	The cost of debt for the RFA during the operation phase	Inp_C	346-356	Updated to reflect the terms of the RFA.
Original debt – fees	Fees related to securing the RFA	Inp_C	359-361	Updated to reflect the terms of the RFA.
Standby debt repayment mode	The principal repayment option of any standby debt	Inp_C	376	Updated to reflect the terms of the RFA.

Input	Description of the input	Sheet	Row	Justification for the update
Standby debt – Interest rate fixed/floating	Determines whether the interest rate for the standby debt is a fixed or floating rate	Inp_C	380	Updated to reflect the terms of the RFA.
Standby debt – interest rate – margin during operation	The cost of debt for the standby debt during the construction phase	Inp_C	389-399	Updated to reflect the terms of the RFA.
Standby debt – fees	Fees related to securing the standby debt	Inp_C	402-404	Updated to reflect the terms of the RFA.
Fuel cost depreciation	Duration of depreciation of fuel costs	Inp_C	230	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Lifecycle cost depreciation	Duration of depreciation of lifecycle costs	Inp_C	233	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Working capital days	Days between generation of electricity and payment	Inp_C	251-253	Updated to reflect the EPC selection outcome (payment terms with the EPC Supplier and with the SPV). Current assumption in the model may be updated to align with the RFA drawdown and repayment terms and any contractual provisions in the EPC contract.
Start of debt active funding period	Beginning of drawdown of RFA	Inp_C	276	Updated to reflect the EPC selection outcome. The exact timing is tied with the start of Development Phase 2 and will be confirmed on the basis of the winning EPC tender.
Dividends restriction by retained earnings	Determines whether dividends are restricted by retained earnings	Inp_C	455	Updated to reflect the EPC selection outcome. The EPC tender will define construction costs and therefore the debt amount and the final financing structure. Also, the form of equity could impact this input.

Input	Description of the input	Sheet	Row	Justification for the update
Reference quantity (k) profile	Profile of values for the k parameter in the remuneration formula	Inp_V	473-485 (chosen at Inp_C 185)	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender.
Alpha parameter profile	Profile of values for the alpha parameter used in the remuneration formula	Inp_V	489-493 (chosen at Inp_C 187)	Updated to reflect the EPC selection outcome. The parameter depends on the technical specifications and operating costs of the plant and will be confirmed on the basis of the winning EPC tender.
Load following assumptions – pasted from revenue model – % of revenue	Impact on revenues which represent the benefit of load following behaviour (modelled in the revenue model)	Inp_V	523-540 (chosen at Inp_C 198)	Updated to reflect the EPC selection outcome. The parameters affecting load following availability assumptions depend on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender. However, the update cannot reduce the availability assumptions in the Financial Model of 15 March 2024 which are based on the plant's designs complying with minimum European Utility Requirements for LWR Nuclear Power Plants.
Load following assumptions – pasted from revenue model – % of operational cost	Impact on costs which represent the benefit of load following behaviour (modelled in the revenue model)	Inp_V	536-542 (chosen at Inp_C 199)	Updated to reflect the EPC selection outcome. The parameters affecting load following availability assumptions depend on the technical specifications of the plant and will be confirmed on the basis of the winning EPC tender. However, the update cannot reduce the availability assumptions in the Financial Model of 15 March 2024 which are based on the plant's designs complying with minimum European Utility Requirements for LWR Nuclear Power Plants.
Target DSCR	The target Debt Service Cover Ratio for total debt service	Inp_C	297, 328-330	Justified by finalisation of RFA and EPC tender (construction costs will be confirmed through the EPC tender).
Target LLCR	The target loan life cover ratio for total debt service	Inp_C	301	Justified by finalisation of RFA and EPC tender (construction costs will be confirmed through the EPC tender).

Input	Description of the input	Sheet	Row	Justification for the update
Target PLCR	The target project life cover ratio for total debt service	Inp_C	304	Justified by finalisation of RFA and EPC tender (construction costs will be confirmed through the EPC tender).
Original debt – debt tenor and moratorium period	The total tenor of the RFA	Inp_C	311-312	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Original debt repayment mode	The principal repayment profile for the RFA	Inp_C	329	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Maintenance reserve account details	Account used to cover a portion of anticipated maintenance over a defined forecast period	Inp_C	466-472	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Debt service reserve account	Account used to cover a portion of anticipated debt service over a defined forecast period	Inp_C	482-502	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Decommissioning reserve account details	Account to cover anticipated decommissioning costs	Inp_C	474-480	Updated in case of costs increases covered by Legitimate grounds.
Decommissioning reserve	Profile of funding requirement for the decommissioning reserve	Inp_V	310-315 (chosen at Inp_C 477)	Updated in case of costs increases covered by Legitimate grounds.
Original debt sculpting factor	Sculpting factor of RFA principal repayment	Inp_V	354-364 (chosen at Inp_C 330)	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.

Input	Description of the input	Sheet	Row	Justification for the update
Fixed debt repayments	Profile of fixed debt principal repayment per year	Inp_V	378-388 (chosen at Inp_C 335)	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Floating rate for original debt	Profile of floating rate for the RFA cost of debt	Inp_V	390-397 (chosen at Inp_C 340)	Updated to reflect the EPC selection outcome and the RFA as the investment costs and amount of the RFA will be confirmed on the basis of the winning EPC tender.
Inflation assumptions	Macroeconomic assumptions related to the chosen indexation mechanisms	Inp_V	15-24 (chosen at Inp_C 239-245)	Updated to calculate nominal value of CAPEX from over-night CAPEX inputs received in EPC tender.
VAT rate	Rate of value add tax applicable to the project	Inp_C	548	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
VAT applicability	Revenue and cost items for which VAT is applicable	Inp_C	544-556	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Business tax – Maximum allowable interest as % of EBITDA	Maximum allowable interest expense expressed as a % of EBITDA which is used to calculate taxable income	Inp_C	562	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Business tax rate	Rate of business tax applicable to the project	Inp_C	576	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Capital allowance rate – general and special rate pool	Rates for capital allowances	Inp_C	581-583	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).

Input	Description of the input	Sheet	Row	Justification for the update
Project costs taxation	Determines capital allowance taxation related to specific cost items	Inp_C	587-589	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Accounting depreciation	Accounting depreciation information across different asset categories	Inp_V	324-336	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Tax depreciation	Tax depreciation information across different asset categories	Inp_V	338-350	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).

During the PC

Input	Description of the input	Sheet	Row	Justification for the update
Variable cost	Costs which are determined by plant output (e.g. fuel, disposal of non-radioactive waste, decom. provision)	Inp_V	143-220 (chosen at Inp_C 226)	Variable cost will be updated to reflect cost overruns in Legitimate Grounds events. Variable cost which constitute 'c' will be updated periodically as part of the remuneration formula review.
Fixed cost	Costs which will be incurred regardless of plant output (e.g. wages, office supplies, security)	Inp_V	237-279 (chosen at Inp_C 225)	Updated to reflect cost overruns in Legitimate Grounds events.

Input	Description of the input	Sheet	Row	Justification for the update
Additional costs due to load following	Costs not captured in other cost items that are driven by the load following operation of the plant	Inp_V	297 – 306 (chosen at Inp_C 228)	In case a Legitimate Grounds event leads to an overrun in additional load following costs, the input 'additional cost due to load following' will be updated in the financial model accordingly. Additional cost due to load following will be also revisited and updated as part of the periodic PC remuneration formula review.
Overrun capex – development phase 1	Quantum of any overrun spend occurring during the first phase of development	Inp_C	70	Updated to reflect cost overruns in Legitimate Grounds events.
Overrun capex – development phase 2	Quantum of any overrun spend occurring during the second phase of development	Inp_C	71	Updated to reflect cost overruns in Legitimate Grounds events.
Overrun capex – construction phase	Quantum of any overrun spend occurring during construction	Inp_C	72	Updated to reflect cost overruns in Legitimate Grounds events.
Percentage of overrun which is LG	Proportion of overruns which are due to Legitimate Grounds issues	Inp_C	77	Justified by cost overruns in Legitimate Grounds event Updated to reflect cost overruns in Legitimate Grounds events.
Overrun capex – development phase 1	Profile of any overrun spend occurring during the first phase of development	Inp_V	415-420 (chosen at Inp_C 83)	Updated to reflect cost overruns in Legitimate Grounds events.

Input	Description of the input	Sheet	Row	Justification for the update
Overrun capex – development phase 2	Profile of any overrun spend occurring during the second phase of development	Inp_V	425-430 (chosen at Inp_C 84)	Updated to reflect cost overruns in Legitimate Grounds events.
Overrun capex – construction phase	Profile of any overrun spend occurring during construction	Inp_V	435-440 (chosen at Inp_C 85)	Justified by cost overruns in Legitimate Grounds event Updated to reflect cost overruns in Legitimate Grounds events.
Inflation assumptions	Macroeconomic assumptions related to the chosen indexation mechanisms	Inp_V	15-24 (chosen at Inp_C 239-245)	Updates to reflect movements in the value of the respective indices over time. Update of the values will be overseen by MIT.
VAT rate	Rate of value-add tax applicable to the project	Inp_C	548	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
VAT applicability	Revenue and cost items for which VAT is applicable	Inp_C	544-556	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Business tax – Maximum allowable interest as % of EBITDA	Maximum allowable interest expense expressed as a % of EBITDA which is used to calculate taxable income	Inp_C	562	Justified by changes to tax law Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).

Input	Description of the input	Sheet	Row	Justification for the update
Business tax rate	Rate of business tax applicable to the project	Inp_C	576	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Project costs taxation	Determines capital allowance taxation related to specific cost items	Inp_C	587-589	Updated in case of legislative changes in both directions (increase or decrease compared to initial assumptions).
Reference quantity (k) profile	Profile of values for the k parameter used in the remuneration formula	Inp_V	473-485 (chosen at Inp_C 185)	The reference quantity will be determined <i>ex ante</i> every five years. The value of k will change over the PC (during these periodic reviews), reflecting the expected output of the plant for each year based on maintenance activities, before the impact of any load following operation. This parameter will also be updated in case of Legitimate Grounds.
Alpha parameter profile	Profile of values for the alpha parameter used in the remuneration formula	Inp_V	489-493 (chosen at Inp_C 187)	The alpha parameter will be determined <i>ex ante</i> every five years (as stated in recital 97). The alpha parameter is defined equal to f/c each year, and its value will need to be updated in line with any update to c, over the PC.