

COMMISSION DECISION (EU) 2017/1436**of 1 December 2015****on state aid for Lynemouth Power Station biomass conversion SA.38762 (2015/C) which the United Kingdom is planning to implement***(notified under document C(2015) 8441)***(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 (TFEU), 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 ⁽¹⁾ pursuant to the provision(s) cited above and having regard to their comments,

Whereas:

1. PROCEDURE

- (1) Following pre-notification contacts, on 17 December 2014 the United Kingdom notified, pursuant to Article 108(3) of the Treaty on the Functioning of the European Union (TFEU), the support for the Lynemouth Power Station biomass conversion project. It provided the Commission with further evidence on 5 February 2015.
- (2) By letter dated 19 February 2015, the Commission informed the United Kingdom that it had decided to initiate the procedure laid down in Article 108(2) of the Treaty in respect of that aid (the 'Opening Decision').
- (3) The United Kingdom provided its comments on 23 March 2015.
- (4) On 10 April 2015 the Commission decision to initiate the procedure was published in the *Official Journal of the European Union* (see footnote 1). The Commission invited interested parties to submit their comments.
- (5) The Commission received observations from 30 interested parties. It forwarded them to the United Kingdom on 20 May 2015, which was given the opportunity to react. The United Kingdom replied to these observations on 12 June 2015.
- (6) The Commission requested further information on 23 July 2015, which the United Kingdom provided on 29 July 2015. On 7 October 2015 the United Kingdom provided additional information.

2. DETAILED DESCRIPTION OF THE MEASURE**2.1. The Lynemouth biomass conversion project and beneficiary**

- (7) The United Kingdom selected eight renewable projects under the 'Final Investment Decision Enabling for Renewables' (FIDeR) process ⁽²⁾. Support for these selected projects will be provided on the basis of investment contracts. The notified project is part of the eight projects selected under FIDeR.

⁽¹⁾ OJ C 116, 10.4.2015, p. 52.

⁽²⁾ The Commission adopted a decision on six of these eight projects. On 23 July 2014 a no objection decision was adopted for five offshore wind projects (cases SA.38758, SA.38759, SA.38761, SA.38763 and SA.38812 (OJ C 393, 7.11.2014, p. 7) and on 22 January 2015 a no objection decision was adopted for the Teesside CHP biomass project (SA. 38796), decision not yet published).

- (8) The notified aid measure concerns aid for the conversion of the coal fired Lynemouth power station to operate entirely on biomass. The power plant is situated in Northumberland on the north-eastern coast of England. The power plant is owned and operated by Lynemouth Power Limited, a wholly owned subsidiary of RWE Supply & Trading GmbH.
- (9) Lynemouth is a 420 MW coal-fired power station that started commercial operation in 1972. Under the current proposal, the power plant will be retrofitted to operate exclusively on biomass. Due to the characteristics of the combustion process, the plant will be able to burn only industrial-grade wood pellets. The plant will provide electricity to the Northern Power Grid powering the north-east of England. The United Kingdom estimates that project will generate 0,7 % of the United Kingdom future final electricity consumption.
- (10) According to United Kingdom estimates, the project will save approximately 17,7 million tons of CO₂ over its 12-year lifetime and supply about 2,3 TWh of electricity per year. The plant will operate at base-load, thus providing schedulable low-carbon electricity.
- (11) According to the United Kingdom authorities, the plant is designed to operate at 420 MW nominal electrical power with a mean load factor of 77 % ⁽³⁾. The plant will use approximately 1,44-1,56 million dry tonnes of wood pellets a year, most of which imported from the South-East of the United States ([60 %-80 %] of the total fuel required). Approximately [5 %-20 %] of the fuel will be sourced from Europe and the remainder from Canada. The plant conversion will not be designed to be compliant with the waste incineration regulations, and therefore will not be able to burn waste wood.
- (12) The table shows the expected operating parameters of the Lynemouth plant. According to the United Kingdom authorities, the load factor is the product of the amount of time the plant is technically available to generate electricity (subtracting, for example, the time required for maintenance or repair) and the time the plant is actually scheduled to generate (subtracting, for example, the time the Distribution Network Operator curtails the plant due to network congestion; this is sometimes referred to as the gross load factor). The net load factor shown in the table is obtained multiplying a mean technical availability of 80,77 % and a gross load factor of 95,51 %.

Lynemouth operating parameters

Fuel cost (GBP/GJ)	Thermal efficiency (%)	Mean net load factor (%)
7,17	36,9	77

2.2. National legal basis, financing and budget

- (13) The national legal basis is the Energy Act 2013.
- (14) The total budget for this project is estimated at GBP 0,8 billion. The United Kingdom confirmed that no aid will be paid to the beneficiary before the commissioning date.
- (15) The aid will be disbursed by a government counterparty funded through a statutory levy imposed on all licensed electricity suppliers, based on the suppliers' market share, defined by metered electricity use. Suppliers will have to meet their obligations from their own resources but will be free to pass the costs on to consumers as part of their overall pricing strategies.

⁽³⁾ The load factor was estimated at 75,3 % in the original notification and subsequently updated by the United Kingdom.

2.3. The form of the aid, duration and production costs

- (16) Aid to the project would be granted in the form of a variable premium (a so-called 'Contract for Difference' (CfD)) calculated as the difference payment between a pre-fixed price (the strike price) and a measure of the market price for electricity (the reference price). The reference price is a price based on forward wholesale market electricity prices in a given period. The beneficiary will earn money from selling its electricity into the market, but when the average wholesale price of electricity is below the strike price, the beneficiary will receive a top-up payment from a United Kingdom Government-owned counterparty (Low Carbon Contracts Company Ltd — the 'CfD Counterparty') for the difference. The beneficiary will however retain the risks of not achieving the reference price and a volume risk of not achieving the forecasted sales volumes ⁽⁴⁾.
- (17) The support to the biomass project is accordingly determined on the basis of an administratively set strike price. Strike prices were set at such levels that the support under the FIDeR is broadly equivalent to that provided under the current renewable obligation scheme ⁽⁵⁾, in order to smoothen the transition between the support schemes.
- (18) For calculating the strike price for dedicated biomass conversion plants (applicable to the Lynemouth plant), the United Kingdom in particular considered the ranges of levelised costs of electricity in the range of 105 GBP/MWh to 115 GBP/MWh. The United Kingdom explained that the level of the strike price for biomass conversion projects was calculated considering a range in hurdle rates ⁽⁶⁾ of 8,8 %-12,7 %.
- (19) The applicable strike price for this project is 105 GBP/MWh (2012 Prices — indexed annually to the consumer price index). The same amount per MWh will be the maximum strike price offered to biomass conversion plants under the CfD scheme. The levelised costs include the financing costs of new power plants based on a 10 % discount rate for all technologies. The United Kingdom presented in detail how these costs were calculated, the sources of data used and the hurdle rates considered ⁽⁷⁾.
- (20) The key assumptions used for the calculation of strike prices, including for levelised costs, fossil fuel prices, effective tax rates and maximum build assumptions are listed in the United Kingdom Government's levelised cost report ⁽⁸⁾ and the reports from the Department of Energy and Climate Change ⁽⁹⁾. For this purpose, the wholesale price of electricity is assumed to be approximately 55 GBP/MWh in real terms increasing to 65 GBP/MWh in 2020.
- (21) Based on this strike price, the internal rate of return (IRR) for the project was estimated at 9,7 % on a real, pre-tax basis. The proposed investment contract will end on 31 March 2027 regardless of the starting date.

2.4. Cumulation

- (22) The United Kingdom clarified that the projects that have been awarded investment contracts will be unable to receive a CfD for the same electricity generation under the new support scheme. Moreover, no project receiving payments under the investment contracts will be able to receive renewable obligation certificates for the same electricity generation. Finally, renewable generation that receives support through an investment contract will not be able to participate in the Capacity Market or receive investment aid during the term of the investment contract.

⁽⁴⁾ For more detail on the CfD remuneration mechanism, see recitals 17 to 31 of the Commission decision on Case SA.36196 Electricity Market Reform — Contract for Difference for Renewables (C(2014) 5079 final).

⁽⁵⁾ The scheme was originally approved by the Commission Decision of 28 February 2001 in Case N504/2000 and subsequently amended several times. In its current form, the scheme was approved by the Commission in its Decision of 2 April 2013 in case SA.35565 (OJ C 167, 13.6.2013, p. 5). Some specific elements were afterwards approved for Northern Ireland (case SA.36084) and Scotland (case SA.37453).

⁽⁶⁾ The hurdle rate is defined as the minimum rate of return needed to realise a project of this kind.

⁽⁷⁾ All these elements have been published by the UK authorities in the document 'Electricity Generation Costs', available on <https://www.gov.uk/government/publications/electricity-generation-costs>

⁽⁸⁾ 'Electricity Generation Costs December 2013' DECC (2013), available at <https://www.gov.uk/government/publications/electricity-generation-costs>

⁽⁹⁾ Available at <https://www.gov.uk/government/publications/electricity-market-reform-delivery-plan>

- (23) Based on the principles described in recital 22, the United Kingdom confirmed that neither the generator nor any of its direct or indirect stakeholders has received, been granted or applied for any other support from the United Kingdom or from any other Member State.

2.5. Use and availability of biomass

- (24) As explained in recital 9 above, the Lynemouth project will only be able to burn wood pellets. Wood pellets used in the Lynemouth plant will have to satisfy the United Kingdom sustainability criteria including a minimum of 60 % greenhouse gas savings against the average fossil grid intensity in the Union (namely, against the coal and gas average in the Union, measured using the methodology set out in the Renewable Energy Directive). These targets will be reinforced to a minimum of 72 % greenhouse gas saving from April 2020, and then to a minimum of 75 % saving from April 2025. The United Kingdom sustainability criteria also contain provisions to protect biodiversity and avoid unsustainable practices ⁽¹⁰⁾.
- (25) The global trade of wood chips was estimated at 22 million tonnes per year in 2011. Demand in the Union is higher than production which means wood pellets are imported in the Union. Net imports of wood pellets in the Union in the same year were estimated at 3,2 million tonnes per year and increased to about 4 million tonnes per year in 2012.
- (26) The global wood pellet consumption was estimated at 22,4 to 24,5 million tonnes ⁽¹¹⁾ in 2012, of which approximately 15,1 million tonnes were consumed in the Union. The Member States consuming most wood pellets in power plants are the United Kingdom (1,3 million tonnes, in 2013) ⁽¹²⁾, Belgium (1,3 million tonnes), Netherlands (1,2 million tonnes), Denmark (1 million tonnes) and Sweden (1 million tonnes).

2.6. Transparency

- (27) With regard to reporting and transparency, the United Kingdom indicated that all the investment contracts awarded through the FIDeR process have been published online in the form in which they were signed ⁽¹³⁾.

2.7. The decision to initiate the formal investigation

- (28) On 19 February 2015 the Commission decided to initiate the formal investigation procedure regarding the compatibility of the aid with the internal market, in particular in view of the proportionality of the aid and the risk of market distortion.
- (29) More specifically, the Commission concluded that the risk of overcompensation could not be excluded. The Commission noted that the IRR was significantly affected by the initial assumptions used in the financial calculations and that the values of the operating parameters initially estimated by the United Kingdom were not fully consistent with available market information.
- (30) The Commission carried out a sensitivity calculation to estimate the impact on the IRR of changes in the plant average thermal efficiency, load factor and fuel cost. According to these calculations, if the thermal efficiency and the load factor were to increase by 5 % and fuel cost to decrease by 5 %, the IRR (on pre-tax real basis) would have increased from 9,7 % to 23,1 %. A similar 10 % variation of the three parameters would have increased the IRR to 31,7 %. The Commission therefore considered that uncertainties in the assumptions used in the cost calculation might result in potential overcompensation.
- (31) Moreover, the Commission expressed concern that the amount of feedstock required to operate Lynemouth entirely on biomass is significant compared to both the European Union and the global market. On the basis of 2012 data, the Lynemouth power station would amount to approximately 7,4 % of the world wood pellet consumption, 11,2 % of the European consumption and 88,2 % of the United Kingdom consumption with increasing imports.

⁽¹⁰⁾ For more details, see: www.gov.uk/government/consultations/ensuring-biomass-affordability-and-value-for-money-under-the-renewables-obligation

⁽¹¹⁾ AEBIOM European Bioenergy Outlook 2013.

⁽¹²⁾ AEBIOM European Bioenergy Outlook 2013.

⁽¹³⁾ Available on the website <https://www.gov.uk/government/publications/final-investment-decision-fid-enabling-for-renewables-investment-contracts>

- (32) The Commission expressed doubts that such demand increase in a short timeframe could be accommodated by the wood pellet market without significant market distortions. The Commission further noted that wood biomass is used as raw material in a number of industries (such as the pulp and paper or board manufacturing) and could not exclude market distortions.

3. COMMENTS FROM INTERESTED PARTIES

- (33) The Commission received 30 comments from concerned stakeholders. Comments from trade organisations ⁽¹⁴⁾ and United Kingdom Members of Parliament highlighted the economic and social importance of the project. Support letters from various stakeholders were also submitted by Lynemouth Power Ltd and the Spencer Group.
- (34) Four non-governmental organisations stressed the environmental risks of the project ⁽¹⁵⁾. In particular, the submissions questioned the CO₂ savings obtained by generating electricity from imported biomass and expressed concerns on possible negative impacts on air pollution and biodiversity.
- (35) Six organisations provided argument supporting the view that the Lynemouth project may distort competition in the raw material market for wood fibre. The submissions received covered: the effect of increase use of biomass for energy on the global wood fibre market (UK Wood Panel Industries Federation, WPF) and on the European price for raw materials (European Panel Federation, EPF); the effects on the pulpwood market in the United States (US) South-East (the American Forest & Paper Association, Steptoe and Johnson on behalf of a stakeholder from the US South-East and a US-based pulpwood user) and effects in the North America market for wood residues (Mulch & Soil Council).
- (36) A US-based pulpwood user and Steptoe and Johnson claim that, although the manufacturing sites concerned are based in the US, semi-finished materials are exported to the Union. Therefore, potential market distortion might affect operations in the Union. The contributions submitted by the WPF and the EPF argue that the Lynemouth conversion project may distort competition in the United Kingdom and European Union market for wood fibre. To substantiate their claim, the WPF provided data showing an increase in prices for sawdust, wood chips and round wood in the United Kingdom market based on a survey. The data (graph) show a price increase of approximately 80 % (data not corrected for inflation). The EPF submitted a graph about prices of roundwood, sawdust and wood chips in Europe taken from a study by consultant Ecofys ⁽¹⁶⁾. The data show an increase of approximately 40 % from 2009. However, the data show that the price increase is limited to some countries (Austria, France, Italy, Sweden, United Kingdom) while prices were relatively constant in others (Belgium, Lithuania, Slovakia, Spain).
- (37) Submissions from a US-based pulpwood user, the American Forest & Paper Association ('AFPA') and Steptoe and Johnson argue that, since most of the wood pellets will be imported from the US South-East, the proposed measure might distort competition in the US market.
- (38) A US-based pulpwood user and AFPA submitted that the total timber output in the US South-East in 2011 amounted to 230 million green tonnes ('GT', equivalent to 107 dry tonnes since due to moisture content 2,15 GT are required to obtain 1 dry tonne ⁽¹⁷⁾). Out of this total approximately 115 million GT was pulpwood (mostly softwood pulpwood). Figure 1 shows the total harvest in the US South-East per type of product ⁽¹⁸⁾.

⁽¹⁴⁾ North East Local Enterprise Partnership; North East Chamber of Commerce; UK Trade & Investment.

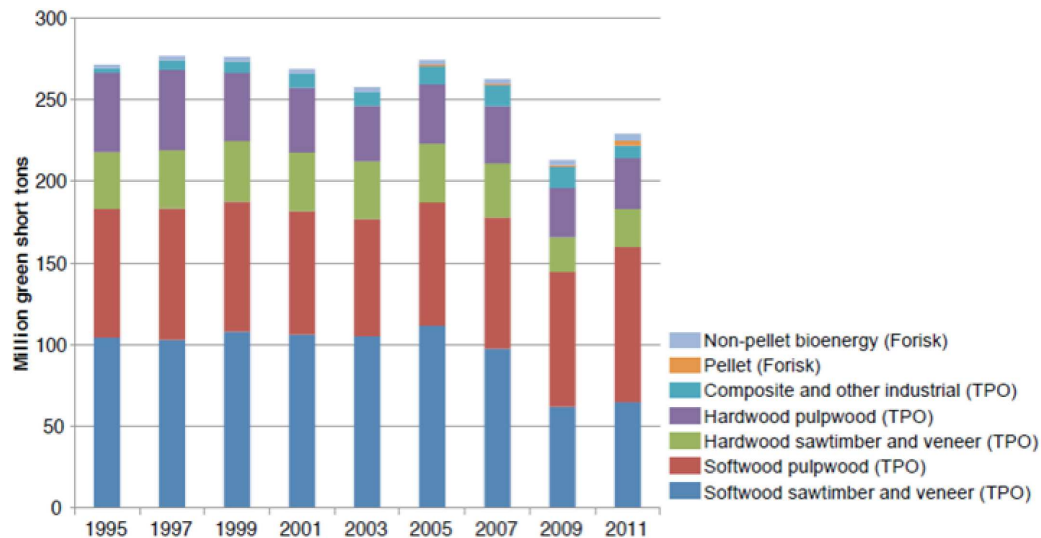
⁽¹⁵⁾ Friends of the Earth; Natural Resources Defense Council; Fern and Biofuel watch.

⁽¹⁶⁾ Ecofys (2014), Carbon Leakage assessment for the European Panel Federation — Wood panel industry and the carbon leakage list 2015-2019 criteria.

⁽¹⁷⁾ For reasons of consistency all data regarding the pulpwood market and the US South-East market are presented in green tonnes. The conversion factor of 2,15 GT per 1 dry tonne is consistently used.

⁽¹⁸⁾ Karen Lee Abt, Robert C. Abt, Christopher S. Galik, and Kenneth E. Skogn. 2014. 'Effect of Policies on Pellet Production and Forests in the US South'. Accessible at: <http://www.srs.fs.usda.gov/pubs/47281> This report was submitted in the context of the opening phase of the investigation by several parties.

Figure 1

Timber product output (TPO) removals for US South for 1995-2011 (Abt et al., 2014)

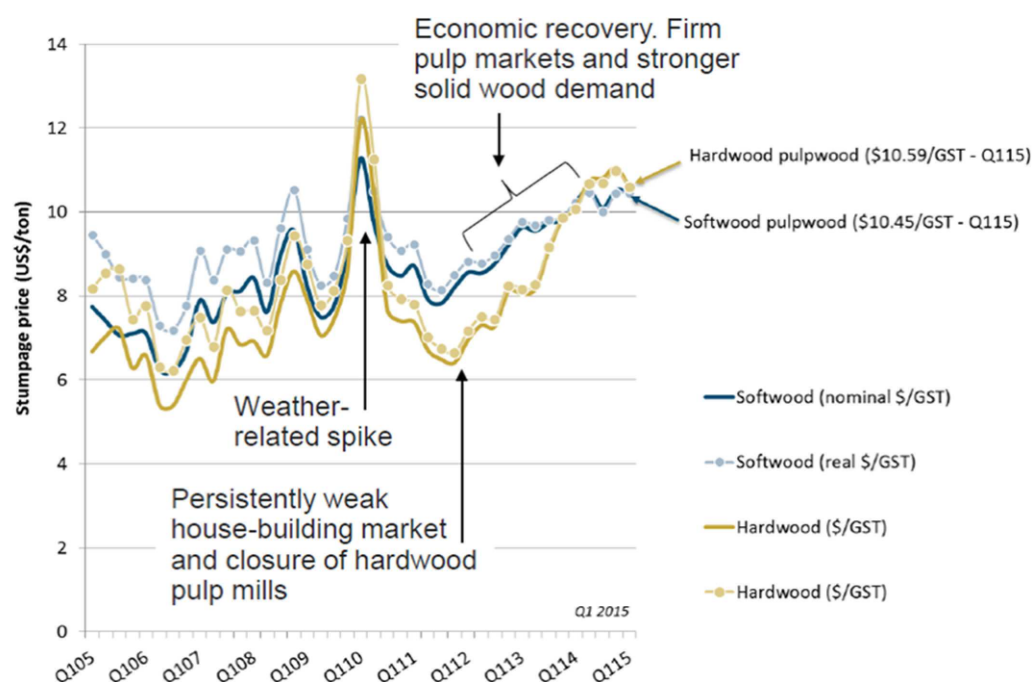
- (39) The data submitted in the report show an increase in pellet production from the US South-East in recent years and during the same period an increase in pellet exports from the US South-East. Based on the same report, wood pellet production capacity in the US South-East increased from 2 million GT in 2010 to 6 million GT in 2011. Nearly all of this new capacity was developed to produce pellets for export to EU Member States.
- (40) According to data submitted by Steptoe and Johnson, the price of pine pulpwood in the US South-East increased by 25 % between 2011 and 2014 and the price of hardwood pulpwood by 60 %. According to AFPA, pine pulpwood stumpage prices in the US South increased by 11 % in 2013 and by 10 % in 2014. These parties claim that the increase is caused by increased wood pellet production. The pulpwood user mentioned in point 36 above does not provide cost data, but makes similar claims about the risk of increased raw material price due to subsidised wood pellet use.
- (41) According to data submitted by Steptoe and Johnson, the price of pine pulpwood in the US South-East increased by 25 % between 2011 and 2014 and the price of hardwood pulpwood by 60 %. The parties mentioned claimed that the increase is caused by increased wood pellet production.
- (42) To support this claim, a US-based pulpwood user and AFPA submitted a theoretical study analysing the economic impact of large increase in pellet production on the US South-East wood fibre market ⁽¹⁹⁾. This study models scenarios with high penetration of biomass. The authors estimated the future demand of wood pellets taking into account high penetration of bioenergy (including domestic and international policy trends and the forecasts in the EU National Renewable Energy Action Plans). The model assumes that by 2020 as much as 44 million GT of pellets and wood chips per year will be produced in the US South-East for energy use. According to the model used, this high volume of additional demand causes a significant increase in raw material price in the short term (in the range of 70 % on average for the whole market). In the long term, however, forestry resources would increase to meet demand and prices would decrease.
- (43) Steptoe and Johnson noted that planting of commercial trees in the US South-East has been declining for 3 decades. Combined with increased pellet production, this might lead to negative growth rates in the region leading to unsustainable environmental practices and loss of biodiversity.

⁽¹⁹⁾ Abt et al., 2014.

- (44) A US-based pulpwood user, the EPF and Steptoe and Johnson expressed concerns about the cumulated impact of other large projects (in particular those of the Drax power plant in the United Kingdom) and of the European biomass policy in general.
- (45) The Mulch & Soil Council raised concerns about possible distortion in the North America market for wood residues.
- (46) The WPF, Steptoe and Johnson and the Mulch & Soil Council questioned the CO₂ savings obtained by generating electricity from biomass imported from North America. Steptoe and Johnson also raised doubts about the proportionality of the aid and provided further data about the source of the wood used for pellet manufacturing and the raw material needs of the packaging industry.
- (47) Twelve ⁽²⁰⁾ companies and industry associations submitted technical arguments stressing the soundness and the positive impact of the project. The submissions cover topics including (among others): the project IRR; the availability and sustainability of biomass; the role of biomass energy in reaching the United Kingdom renewable targets; the plant's expected operating parameters and the logistic of the fuel supply.
- (48) In particular, the United States Industrial Pellet Association highlighted the emission reduction associated with bioenergy and sustainability of pellets produced in the US. They also provided data on the price of raw materials in the US South-East (see Figure 2 below).
- (49) The Wood Pellet Association of Canada reported data on the availability of wood pellets. In particular the submission quotes a study by consultant Pöyry ⁽²¹⁾ according to which the supply regions United States South-East, West Canada, and Russia collectively have 50 million oven dry tonnes of surplus biomass feedstock.

Figure 2

Stumpage prices in the US South-East



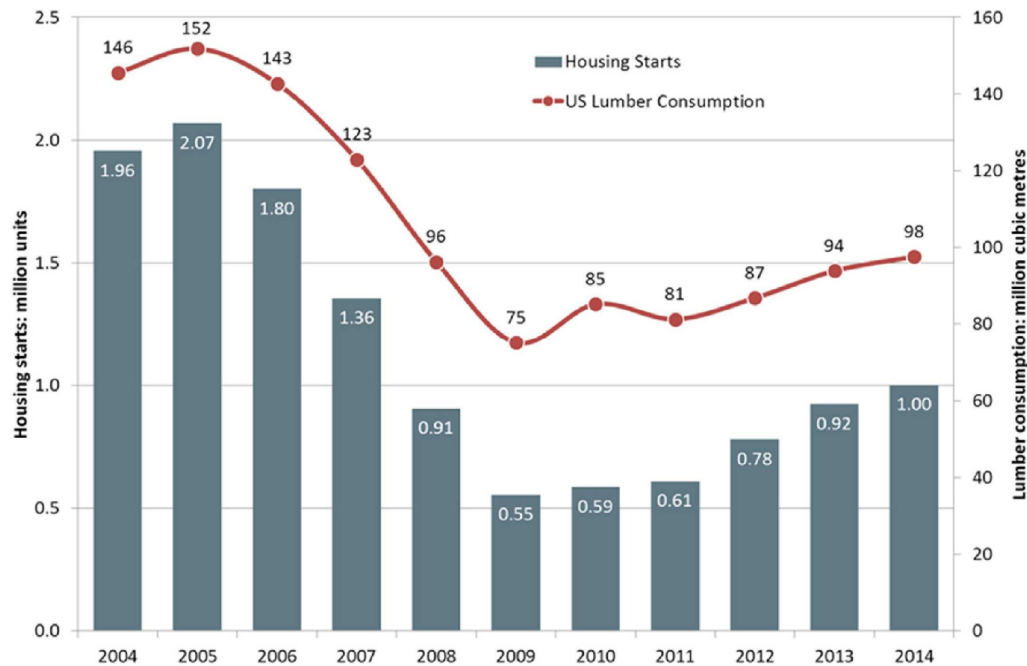
⁽²⁰⁾ RWE Group; EDF; Lynemouth Power Ltd; the Renewable Energy Association; Port of Tyne; Dong Energy; Energy UK; US pellets association; Canada pellet association; Enviva; Doosan; European Pellet Council.

⁽²¹⁾ Pöyry. The Risk of Indirect Wood Use Change, Final Report Prepared for Energie Nederland. July 2014.

- (50) Enviva submitted data on the projected demand and supply for wood pellets. According to Enviva, there were wood pellet projects in development in the first quarter of 2015, which, once completed, will together add 18,1 million dry tonnes to the global production capacity. The submission also provided data on the US lumber production (see Figure 3).

Figure 3

US housing starts and lumber consumption, 2004-2014



- (51) The European Pellet Council provided data on the price and availability of wood pellets and on raw material prices in the Union and in the US. According to the European Pellet Council, the strong increase of pellet demand between 2012 and 2014 did not lead to a significant increase in pellet prices. To substantiate this argument, the European Pellet Council submitted data on the price of wood pellets in the US from December 2013 to April 2015 and in the Union from January 2011 to March 2015. In both cases no increase in prices could be observed.
- (52) According to these data, the strong increase of pellet demand between 2012 and 2014 did not lead to a significant increase in pellet prices.
- (53) Finally, one contribution (Société Générale) submitted data on the profitability of the project.

4. COMMENTS FROM THE UNITED KINGDOM

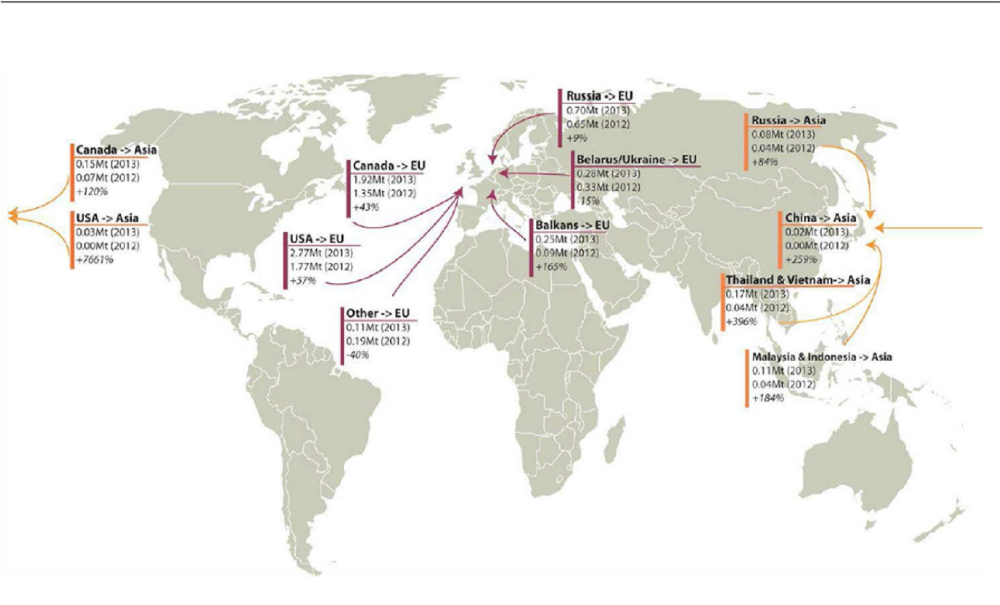
- (54) The United Kingdom provided additional information on the operating parameters of the Lynemouth power plant. Following a review of other biomass plants, the plant load factor was increased from 75,3 % to 77 % (as reported in the table, see also footnote 3). In addition, the United Kingdom showed that the thermal efficiency of pulverised coal power plants is around 36 % for the United Kingdom coal fleet for the 2009-2013 period. Finally, the United Kingdom provided a breakdown of the fuel costs and explained that all operating parameters are robust as they are benchmarked against other plants and reviewed by independent experts ⁽²²⁾.
- (55) The United Kingdom claims that the economics of the Lynemouth project changed considerably since the notification. In particular, the project was foreseen to be commissioned in the third quarter of 2016, but the United Kingdom estimates that the project will now be commissioned by the second half of 2017. Since the support to biomass conversion will end in March 2027 regardless of the starting date, the project lost approximately one year of subsidy. The project also had increased capital costs. Moreover, due to a policy change, from August 2015 renewable sources of electricity would not be exempt from the climate change levy (a carbon tax). Finally, the depreciation of the pound with respect to the US dollar further reduced the profitability of the project.

⁽²²⁾ Oxera, Parsons, Brinckerhoff and Ramboll.

- (56) According to the United Kingdom authorities, these developments significantly reduced the profitability of the project. The estimated IRR is now approximately [3 %-8 %] on a real, pre-tax basis.
- (57) In 2014 the global wood pellet market grew to reach 27 million dry tonnes. The United Kingdom also provided data on the trade in the global wood pellet market (see Figure 4). Wood pellet consumption in the Union almost doubled from approximately 8 million dry tonnes in 2009 to approximately 16 million dry tonnes in 2013 ⁽²³⁾.

Figure 4

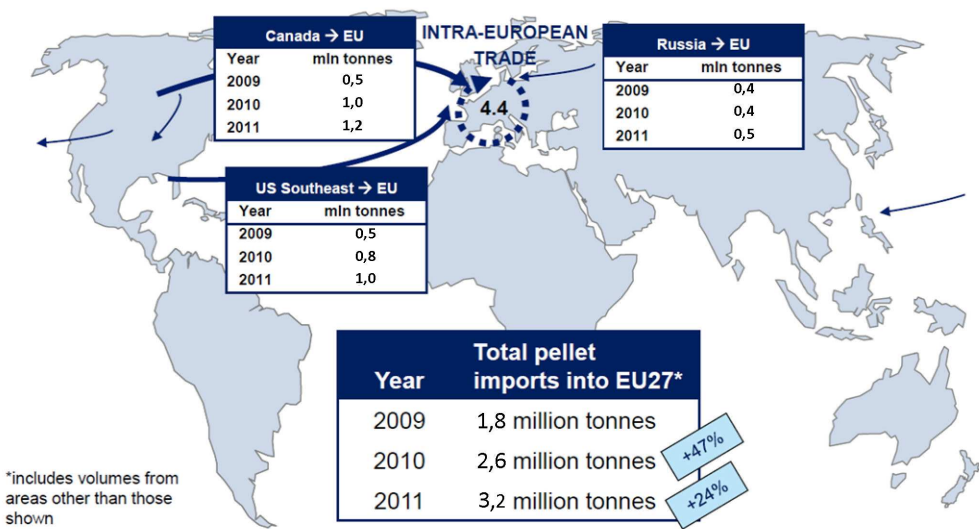
Trade in wood pellet imports in the EU in dry tonnes



- (58) Figure 5 shows that the pellet imports in the Union increased from 1,8 million dry tonnes in 2009 to 3,2 million dry tonnes in 2011. In 2012 the imports to the Union amounted to approximately 4 million dry tonnes and imports are expected to increase in the coming years. In 2014 wood pellet imports from the US South-East to the Union amounted to approximately 7,3 million dry tonnes ⁽²⁴⁾.

Figure 5

Wood pellet import in the EU in dry tonnes



Source: UK data.

⁽²³⁾ AEBIOM, 2013.

⁽²⁴⁾ UK data.

- (59) The United Kingdom also clarified that the vast majority of available pellet supply is currently bought under individually negotiated contracts (usually lasting 5 to 10 years). The wood pellet spot market represents a very limited proportion of the overall wood pellet supply. Pellet mills can be built in 18 to 30 months and, potentially, backed by a long-term supply contract. Due to low barriers for new market entrants, the United Kingdom authorities claim that the wood pellet market can accommodate the increase in demand required to supply Lynemouth.
- (60) To support this point, the United Kingdom compared pellet consumption in the Union with the spot price in the US South-East. As shown in Figure 5, imports to the Union from the US South-East doubled from 2009 to 2011. During this period, the prices on the spot market did not change substantially despite increased imports in the Union as shown in Figure 6.

Figure 6

Wood pellet consumption and FOB US South-East spot wood pellet prices (2009-2013)

[...] (*)

- (61) The United Kingdom also provided data on the proposed supply chain. Lynemouth plans to source approximately [60 %-80 %] of the required pellets from the US South-East. Approximately [5 %-20 %] will be sourced from other Member States and the remainder from West Canada. Lynemouth has identified [...] possible suppliers, of which [...] in [...] different States in the US South-East and [...] in Europe. Lynemouth does not intend to source any biomass from the United Kingdom.
- (62) According to the United Kingdom, the increase in raw material prices can be explained by a lack of sawmill residues. The United Kingdom explained that mill residues are produced in large quantities when processing sawtimber and can be used for wood pellet production as well as for other uses. However, the availability of sawmill residues is limited and tied to the production of sawtimber. According to the United Kingdom, the US building sector didn't fully recover since the financial crisis. Reduced housing starts and sawtimber production reduces the available supply of mill residues that could be used for wood pulp and wood pellet production. In the United Kingdom's view, the scarcity of sawmill residues contributes significantly to the increase in raw material prices.
- (63) To support this argument, the United Kingdom authorities claim that the raw material price increase in local markets does not correlate with increased pellet production. Figure 7 shows the price increase in local US markets from the second quarter of 2013 to the first quarter of 2015, indicating which markets have seen a significant increase of pellet production.

Figure 7

Pine stumpage price increase in US local markets Q2 2013-Q1 2015

[...] (*)

- (64) Finally, the United Kingdom confirmed that, through amendment of the contract provisions, the Lynemouth plant can be required to amend the sustainability criteria described in recital 24, for instance in case of any future European mandatory sustainability criteria for solid biomass.

5. ASSESSMENT OF THE MEASURE

- (65) A measure constitutes State aid within the meaning of Article 107(1) TFEU if it is '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'.

(*) Business secret.

- (66) As set out in the Opening Decision of 19 February 2015, the beneficiary will receive operating aid in form of a variable premium (see recitals 16 to 19 above) from the United Kingdom Government-owned counterparty, the Low Carbon Contracts Company Ltd, for the electricity generated. The measure favours the generation of electricity from renewable energy sources (in this case biomass) by the selected beneficiary. Electricity is widely traded between Member States. The notified measure might therefore distort competition on the electricity market and affect trade between the Member States. Moreover, the plant will compete for biomass fuel in the raw material market. More specifically, due to a lack of sufficient local forestry resources, most of the solid biomass needed to fuel the plant will be imported from abroad (see recital 61).
- (67) The Commission concludes that the notified measure constitutes State aid in the meaning of Article 107 of the Treaty ⁽²⁵⁾.

5.1. Legality of the aid

- (68) Based on the information provided by the United Kingdom, the Commission notes that no final investment decision has been taken. No payments will be made before State aid approval has been obtained. The Commission considers therefore that the United Kingdom has fulfilled its obligations under Article 108(3) TFEU.

5.2. Compatibility of the aid

- (69) The Commission notes that the notified measure aims at promoting the generation of electricity from renewable energy sources, namely from solid biomass. The notified measure falls within the scope of the Guidelines on State aid for environmental protection and energy 2014-2020 (EEAG) ⁽²⁶⁾. The Commission has therefore assessed the notified measure based on the general compatibility provisions of the EEAG (set out in Section 3.2 EEAG) and based on the specific compatibility criteria for operating aid granted for electricity from renewable energy sources (Section 3.3.2.1 EEAG).

5.2.1. Objective of common interest

- (70) As concluded in its Opening Decision, the Commission notes that the aim of the notified aid measure is to help the United Kingdom to reach the renewable energy targets and the CO₂ reduction objectives set by the EU as part of its EU 2020 strategy ⁽²⁷⁾. As described in recital 10 above, according estimates from the United Kingdom, the plant is expected to generate about 2,3 TWh of renewable electricity saving 17,7 million tons of CO₂. Therefore, in line with paragraphs 30, 31 and 33(a) EEAG, the United Kingdom explicitly provided the expected CO₂ savings and renewable electricity expected from the project. The Commission concludes that the notified aid measure is aimed at an objective of common interest in accordance with Article 107(3)(c) of the Treaty.
- (71) Environmental organisations and Steptoe and Johnson raised concerns about the environmental effects of the project. The United Kingdom confirmed that aid will only be granted to biomass meeting the definitions set out in the EEAG (see recital 6 EEAG). The Commission recalls that the aid will meet the environmental objectives set out in recital 69 and thereby meets the environmental test to be undertaken for State aid control purposes. In addition to meeting this State aid relevant test, the plant will have to respect all applicable environmental legislation, in particular regarding impacts on air pollution. The plant is subject to and has to comply with Directive 2010/75/EU of the European Parliament and of the Council ⁽²⁸⁾, which sets limits for NO_x, SO₂ and particle emissions from large combustion plants. In addition, the Commission notes that the wood pellets used

⁽²⁵⁾ See also the decisions for cases SA.38758, SA.38759, SA.38761, SA.38763 and SA.38812; and case SA.38796 (decision not yet published) which benefit from a similar CfD aid.

⁽²⁶⁾ OJ C 200, 28.6.2014, p. 1.

⁽²⁷⁾ See Directive 2009/28/EC of the European Parliament and of the Council of 23 April 2009 on the promotion of the use of energy from renewable sources and amending and subsequently repealing Directives 2001/77/EC and 2003/30/EC (OJ L 140, 5.6.2009, p. 16) and Directive 2003/87/EC of the European Parliament and of the Council of 13 October 2003 establishing a scheme for greenhouse gas emission allowance trading within the Community and amending Council Directive 96/61/EC (OJ L 275, 25.10.2003, p. 32) and Communication COM/2011/0885 final.

⁽²⁸⁾ Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control) (OJ L 334, 17.12.2010, p. 17).

by Lynemouth will have to satisfy the United Kingdom sustainability criteria. According to the UK authorities these criteria including minimum CO₂ savings are calculated on a life cycle basis. The United Kingdom sustainability criteria also contain provisions to avoid other negative environmental effects (such as loss of biodiversity).

5.2.2. *Need for State intervention, incentive effect and appropriateness of the aid.*

- (72) The Commission also concluded in its Opening Decision that the aid is necessary, has an incentive effect and is appropriate. In particular, with reference to paragraphs 38, 107 and 115 EEAG, the Commission notes that the market failures (i.e. the failure to include externalities generated by the use of fossil fuels in the price of energy) are not sufficiently addressed by the existing policy framework and without the operating aid under assessment the project would not be financially viable.
- (73) With reference to paragraphs 49 and 58 EEAG, the United Kingdom showed that the levelised costs of electricity are well above the expected electricity market price and the United Kingdom authorities provided a financial analysis demonstrating that without the aid under assessment the IRR of the project would be negative. In such a situation, market players would not want to invest in the biomass project. The aid therefore changes the beneficiary's behaviour. The United Kingdom confirmed that the beneficiary was required to submit applications and that this was submitted before work on the project has started (paragraph 51 EEAG).
- (74) With reference to in particular paragraphs 40 and 116 EEAG, the United Kingdom showed that the aid is an appropriate instrument. As explained in the Opening Decision, the levelised costs of electricity are above the expected electricity market price and the expected IRR without State aid would be negative. In order to remedy the lack of sufficient revenues for the specific project, the United Kingdom grants State aid, that is particularly targeted at the specific project and addressing the needs for the project to be undertaken without exceeding the expected IRR (e.g., within the hurdle rates described in point 18 above). In particular, the Lynemouth project was selected among several others for the purpose of reaching the Union renewable energy targets (see recital 7 above) and awarded operating aid in the form of a CfD. The Commission in its decision on case SA.36196 ⁽²⁹⁾ (Electricity Market Reform — Contract for Difference for Renewables) concluded that the CfD is an appropriate instrument for reaching the objective of common interest.
- (75) Therefore, the Commission concludes that the aid for the notified project is necessary, has an incentive effect and that it is granted by means of an appropriate instrument.

5.2.3. *Proportionality*

- (76) In its Opening Decision, the Commission expressed doubts that the aid is proportionate (see recital 28 above). The Commission recalls that the levelised cost of electricity (LCOE) for such biomass project, on the basis of an IRR of 10 %, was calculated by the United Kingdom as at least 105 GBP/MWh (see recital 19). The Commission considers the LCOE appropriate as was already confirmed in previous decisions ⁽³⁰⁾. The United Kingdom demonstrated that the aid per unit of energy does not exceed the difference between the LCOE and the expected market price of electricity, as the strike price (reflecting the market price plus the premium) does not exceed the LCOE ⁽³¹⁾. Furthermore, the United Kingdom confirmed that aid will be granted until the investment is depreciated according to normal accounting rules.
- (77) The hurdle rate for the project is between 8,8 % and 12,7 % on a real, pre-tax basis as described recital 18 above and accepted by the Commission in its Opening Decision. It was in line with the rates previously approved by the Commission for biomass projects in the United Kingdom ⁽³²⁾. The Commission will assess whether the IRR of the project is respecting the hurdle rate.

⁽²⁹⁾ OJ C 393, 7.11.2014, p. 2.

⁽³⁰⁾ See for example the decision for cases SA.38758, SA.38759, SA.38761, SA.38763 and SA.38812 and the decisions for case SA.38796 (decision not yet published).

⁽³¹⁾ See recitals 20 to 33 of the opening decision for more details on the LCOE of the project.

⁽³²⁾ See for instance the Renewable Obligation scheme — SA.35565 (OJ C 167, 13.6.2013, p. 5).

- (78) Following the Opening Decision, the United Kingdom submitted updated information about the project showing that the IRR for the Lynemouth project is considerably lower compared to the notification mainly due to the loss of approximately one year of subsidy, higher capital costs, abolishment of the exemption from the climate change levy and unfavourable foreign exchange rate developments. In addition, the United Kingdom authorities updated favourably the load factor, one of the operating parameters.
- (79) According to the financial calculation submitted, the IRR for the project is now approximately [3 %-8 %] on a pre-tax real basis which is well below the hurdle rate and therefore is already an indication of the absence of overcompensation. Nevertheless, the Commission notes that the operating parameters can still vary such as the average thermal efficiency, load factor and fuel cost.
- (80) In this light, the United Kingdom provided data demonstrating that the thermal efficiency of pulverised coal plants is around 36 % and market information suggests this type of biomass conversion project could reach a thermal efficiency of approximately 38 % to 39 %. An increase of 10 % of the thermal efficiency as was reflected in the Opening Decision does therefore not seem realistic.
- (81) As set out above, the load factor of the project (see recital 12) was increased to 77 % on the basis of an analysis of data from other biomass plants reviewed by the United Kingdom following the Opening Decision. In addition, information submitted by the United Kingdom indicates the net load factor for this type of plant would not exceed approximately 80 % ⁽³³⁾.
- (82) As regards the fuel cost, the United Kingdom explained in detail the cost of securing sufficient supplies of wood pellets. The documentation provided was verified by independent experts and includes a detailed breakdown of the main cost elements in the Lynemouth supply chain including manufacturing costs, transport and logistic (including the costs associated with upgrading the port facilities required by Lynemouth). Based on the explanation provided, the Commission concludes that the fuel cost of 7,17 GBP/GJ is a reasonable estimate of the expected fuel cost.
- (83) The IRR was estimated if the thermal efficiency and the load factor were to increase by 5 % and fuel cost to decrease by 5 %. Changes of this magnitude are considered consistent with the realistic ranges of the operating parameters as discussed in recitals 79 to 81. Such cumulative changes would increase the IRR (pre-tax real basis) from approximately [3 %-8 %] to [...]. This value is still within the range of hurdle rates envisaged by the United Kingdom.
- (84) In light of the above the Commission concludes that the aid does not lead to overcompensation. Therefore, the notified measure is proportionate to reach the objective of common interest.

5.2.4. Avoidance of undue negative effects on competition and trade.

- (85) In assessing the compatibility of a State aid measure, the Commission must establish that 'the negative effects of the aid measure in terms of distortions of competition and impact on trade between Member States must be limited and outweighed by the positive effects in terms of contribution to the objective of common interest' (see paragraph 88 EEAG).
- (86) With reference to paragraphs 94-96 EEAG, the Commission finds that the measure does not lead to manifest negative effects, as the aid is proportionate and does not purely lead to a relocation of the activity without an environmental effect. The aid will help the Lynemouth project to convert from coal to biomass leading to CO₂ savings (see recital 10 above).
- (87) In assessing the negative effects of the aid measure, the Commission focuses on the distortions resulting from the foreseeable impact the aid has on competition in the product markets affected and the location of economic activity (see paragraph 97 EEAG). As the aid is granted for producing electricity from renewable energy sources, the affected product market is the electricity market.

⁽³³⁾ These assumptions are in line with the data provided by Société Générale in the submission (see recital 53 above).

- (88) Firstly, the Commission recalls the limited market share of the beneficiary (0,7 % of the United Kingdom electricity generation market). Secondly, with reference to paragraph 101 EEAG, the Commission further notes that the project consist of retrofitting an existing coal-fired power plant and therefore will not lead to negative effects such as, in particular, enhancing the beneficiary's market power. Therefore, the Commission concludes that the measure would not have any significant impact on competition in the United Kingdom electricity generation market.
- (89) In its Opening Decision, the Commission expressed doubts about whether the project distorts competition in the wood pellet market and further upstream in the raw material market to an extent contrary to the common interest. In view of the specific characteristics of this individually notified project, the Commission extended the analysis to indirect effects on the secondary markets.

5.2.5. *Distortion in the wood pellet market.*

- (90) The Commission first recalls that the Lynemouth plant will only be able to use industrial-grade wood pellets. While some plant might be able to partially substitute wood pellets for other fuels, it is not expected that the Lynemouth plant will be able to substitute wood pellets for another product in view of its design. For the purpose of analysing the scale of distortion of competition of the project, the industrial wood pellet market constitutes the appropriate product market.
- (91) Data provided by the United Kingdom (see Figure 4) show that wood pellets are traded between the main production and consumption areas. In addition, trade flows have increased significantly in the past few years (more than 40 % in one year). In addition, the United Kingdom provided data that the wood pellet imports in the EU from the US South-East doubled from 2009 to 2011 (as shown in Figure 5).
- (92) Therefore, based on the trade flows and the volume of the imports into the Union, the Commission concludes that the wood pellet market is not limited to a single Member State or the Union but should be considered a global market for assessing the market distortions in the wood pellet market.
- (93) In 2014 the global wood pellet market grew to reach 27 million dry tonnes. The European consumption of wood pellets doubled between 2009 and 2012 (as shown in Figure 5). Despite this increase, the data in Figure 6 show that the prices on the spot market did not change significantly.
- (94) Furthermore, from the information submitted in reply to the Opening Decision, the Commission notes that most of the wood pellet supply is currently bought under individually negotiated long-term contracts. Pellet mills can be built within 2 years once (or before) new contracts are signed and sales are secured. Therefore, the market barriers for new production facilities seem to be low. The recent increase in pellet production capacity both in the US South-East and the Union ⁽³⁴⁾ supports this observation.
- (95) The amount of wood pellets required by Lynemouth represents approximately 5,5 % of the 2014 global wood pellet market. This is substantially less than the 7,4 % estimated in the Opening Decision based on 2012 data. In view of the fact that new pellet mills can be built more or less in parallel with the conversion project in terms of duration (see recitals 59 and 60), it can be anticipated that additional capacity will become available with additional demand as confirmed by the envisaged supply chain for the project.
- (96) Also looking at the past, imports and consumption levels have increased rapidly in the Union which is another indicator that the wood pellet market can absorb large increases in wood pellet demand. It is also noted that the spot price in the US South-East, the main area from which the project is anticipated to source wood pellets, did not change significantly (Figure 6) while imports in the Union from that region increased (Figure 5).
- (97) The analysis shows that the market for wood pellets is global and can accommodate growth in the wood pellet demand as expected to result from the project. The Commission therefore concludes that the aid does not adversely affect trading conditions on the wood pellet market to an extent contrary to the common interest (CO₂ savings and increased generation of electricity from renewable energy sources).

⁽³⁴⁾ See, for example Figure 2 in the Opening Decision (OJ C 116, 10.4.2015, p. 52).

5.2.6. Distortion in the raw material market.

- (98) The Commission noted in the Opening Decision (see recital 75 of the Opening Decision) that increased demand for wood pellets can lead to further distortions in the raw material market (that is the wood fibre market). In this respect it is recalled that the aid is granted for the MWh of electricity produced by the Lynemouth plant. The potential distortions in the wood pellet market and raw material market do not result from direct subsidies for wood pellets or raw material but from the increased demand of fuel for electricity generation. In addition, the effects on the raw material market are indirect compared to the distortions in the wood pellet market.
- (99) While pellets can be transported overseas, for economic reasons, raw materials used by the wood pellet industry can normally be only transported over limited distances. Manufacturing plants of semi-finished pulpwood products source wood supply from within an average distance of approximately 100 km to 150 km (called the catchment radius of the plant). To assess the impact of those plants on competition, it is therefore necessary to determine from which local market the pellets will or are likely to be sourced.
- (100) As explained in recital 11 above, the Lynemouth plant is to source [60 %-80 %] of the total wood pellet fuel required from the US South-East. Approximately [5 %-20 %] to 15 % will be sourced from other Member States. This implies that approximately [...] million dry tonnes per year will be sourced from other Member States from about 16 different suppliers. This would amount to approximately [...] of the EU wood pellet consumption (see Figure 6). Moreover, the Lynemouth project does not intend to source from the United Kingdom. It is therefore unlikely that the project will increase raw material prices in the United Kingdom or on the European Union market as claimed by the EPF and the WPF respectively. Therefore, the measure is not expected to lead to undue distortions of competition within the Union. As most of the wood pellets are sourced from outside the Union and the market for raw materials is local, the effects take place outside the Union.
- (101) Approximately [10 %-30 %] of the wood pellets required will be sourced from Canada. Potential supplies from Canada are considered to be significantly higher than from Europe. The data submitted by the Canadian Pellet Association estimated a surplus of 14 million dry tonnes of biomass in West Canada. The sourcing from Canada would amount to [...] of the estimated surplus. Therefore, the project is not expected to cause an undue impact on the Canadian market concerning the raw material for wood pellets.
- (102) Most of the supply for the project will be imported from the US South-East. Therefore, the investigation of potential market distortions in the raw material market (wood fibre) focusses on that region.
- (103) Lynemouth will import approximately 2 million GT (equivalent to approximately 0,9 million dry tonnes) from the US South-East. This amounts to 1,7 % of the total supply of pulpwood in 2011 in the US South-East and 0,9 % of the total removals in the same year in that region. Such low percentages alone do not give strong indications of undue distortions in the raw material market. In particular, taking into account the total removals, the impact would not lead to undue distortions in the market. Furthermore, these figures only take into account pulpwood and do not take into account other input materials such as logging and sawmill residues that can also, to some extent, be used to produce wood pellets.
- (104) However, some third parties submitted that the increase in pellet production caused an increase in raw material (pulpwood) prices in the US South-East. In particular, Steptoe and Johnson and AFPA submitted data showing a price increase in the 2011-2014 period. The same data, but over a longer period, were submitted by the US Industrial Pellet Association (Figure 3).
- (105) The Commission notes that, as shown in Figure 2, the average raw material (stumpage) price in the US South-East is not outside the historical range. Therefore, the increase in prices since 2011 does not appear unusual. In 2010 prices were even higher, allegedly because of weather events.
- (106) In addition, the United Kingdom submitted that the US market was still affected by the reduction in demand following the financial crisis. In particular sawtimber production was reduced by approximately 57 million GT compared to 2005. If this quantity would be available, this would generate approximately 28-19 million GT of residues which could serve as a source for wood pellets or competing products. Moreover, the United Kingdom claims that there is no correlation between areas with strong pellet production and increase in pulpwood prices in local markets (Figure 7).

- (107) Indeed, the data in Figure 1 show that larger volumes of sawtimber, and therefore residues, were available before 2008. A more limited availability of residues could therefore have negatively impacted the price of pulpwood. Furthermore, the United Kingdom has shown that a strong pellet production does not necessarily correlate with raw material price increases (see recital 63 above).
- (108) As set out above (see recital 62 above), the pulpwood price is affected by elements such as weather conditions, the availability of residues (linked to the sawtimber market) and price fluctuations were also observed in the past. Moreover, price increases and price decreases do take place both in areas with strong and weak pellet production. Therefore, the indirect demand for raw materials resulting from the Lynemouth project is not expected to lead to undue distortions in the market.
- (109) Interested parties also submitted a theoretical study modelling the possible effects of future scenarios with high penetration of bioenergy. The study does not assess the impact of the Lynemouth project on the market, but assesses the effect of expected global biomass demand taking into account existing and future policies. It is however uncertain to what extent future biomass plans will be realised and if so under what conditions and from which regions biomass would then be actually sourced. The study therefore does not change the conclusions on the potential impact of the Lynemouth project, as it addresses in particular the potential effects of future developments.
- (110) Finally, according to data submitted by the United Kingdom, Lynemouth intends to source biomass from approximately [...] production mills across [...] States in the US South-East. The diversification of the supply chain will further mitigate any risk of distortions in local markets.
- (111) The Commission therefore concludes that the measure is not expected to lead to undue distortions in the raw material market. In this respect, it is recalled that the aid is granted for the production of electricity from solid biomass and any effects of the aid would be indirect to the sourcing of raw material used by the wood pellet industry.

5.2.7. *Balancing test*

- (112) As set out in paragraph 97 EEAG, for State aid measures that are well-targeted to the market failure they aim to address, the risk that the aid will unduly distort competition is more limited. The Commission notes that the aid is directly aimed at achieving the renewable energy targets and CO₂ reduction in a proportionate and appropriate way. Therefore the risk of undue distortions of competition is also more limited. As set out in recital 110 above, the Commission did not find undue distortions in the affected product market (wood pellets). Also, no undue distortions were found in upstream markets (raw material).
- (113) In addition, the Commission needs to assess whether the measures distort or threatens to distort competition in so far as it affects trade between Member States. The effects in the raw material market are local and mostly take place outside Europe as the wood pellets are imported. The effects on trade between Member States would therefore in any case be limited.
- (114) Therefore, the Commission considers that the negative effects of the aid to the Lynemouth project in terms of distortions of competition and impact on trade between Member States are limited and out-weighted by the positive effects in terms of contribution to the objective of common interest (production of energy from renewable sources and reduction of CO₂ in the electricity generation) so that the overall balance is positive.

5.2.8. *Other aspects — Compliance with Article 30 and 110 TFEU.*

- (115) In the context of the decision on CfD for renewables (SA.36196) and the decision regarding FIDeR aid to five offshore wind projects (SA.38758, SA.38759, SA.38761, SA.38763 and SA.38812) and to a CHP biomass plant (SA.38796), the United Kingdom has committed that it will adjust the way in which electricity suppliers' liabilities for CfD payments are calculated so that eligible renewable electricity generated in EU Member States outside the United Kingdom and supplied to customers in the United Kingdom is not counted towards suppliers' market shares.

- (116) The United Kingdom will ensure that no CfD payments are made before this exemption is in place, or if this is not possible the United Kingdom will put in place a mechanism to reimburse suppliers for any imported eligible renewable electricity supplied before the exemption comes into effect but after CfD payments have started to be made.
- (117) The commitment referred to in recital 114 will also apply to the notified measure.
- (118) In the light of the commitment referred to in recital 114, the Commission considers that the financing mechanism of the notified aid measures should not introduce any restrictions contrary to Article 30 or Article 110 TFEU.

6. CONCLUSION

- (119) In light of the above, the Commission considers that the notified aid measure pursues an objective of common interest in a necessary and proportionate way in accordance with the EEAG and that therefore the aid is compatible with the internal market on the basis of Article 107(3)(c) TFEU,

HAS ADOPTED THIS DECISION:

Article 1

The aid measure notified by the United Kingdom is compatible with the internal market pursuant to Article 107(3)(c) of the Treaty on the Functioning of the European Union.

Article 2

This Decision is addressed to the United Kingdom of Great Britain and Northern Ireland.

Done at Brussels, 1 December 2015.

For the Commission
Margrethe VESTAGER
Member of the Commission
