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UK Wood Pellet Market

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Report Highlights:

Through EU and UK political and regulatory policy interventions, renewable fuel (e.g. wood pellets) has been incentivized as a vehicle to help de-carbonize the energy sector. Conversion of existing coal firing electricity plants to solid biomass fuel is the quickest and most cost-effective method for the UK to make significant renewable energy gains. Infrastructure investment and private sector relationships have been increasing on both sides of the Atlantic to the extent that the US is now the largest supplier of industrial wood pellets to both the UK and the EU (60 percent market share). The US is expected to ship wood pellets with a value of approximately \$530 million (Free On Board basis) to the UK in 2014, and this is likely to increase over the following few years, before plateauing. The UK government was the first in Europe to introduce sustainability criteria for solid biomass.

Notes:

- 1 Biomass which can be used to generate electricity generally falls into 3 main categories: Biomass from Forestry; Biomass from Agriculture and Fisheries; and Biomass from Waste. In future, biomass from agriculture (energy crops), fisheries, and waste is likely to play a smaller role in delivering against UK renewable energy targets than biomass from forestry products because they are capped by the pace of domestic expansion and less feasible to trade. Since trade between the United States and the United Kingdom is mainly in the form of manufactured industrial wood pellets, these are the main focus of this report.
- 2 The author wishes to gratefully acknowledge the input and guidance of the following colleagues in preparing this report:

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Executive Summary

Based on Her Majesty's Customs and Excise import statistics (Jan to Sept 2014), FAS London conservatively estimates that the UK will import 4.6 million metric oven dried tonnes (MT) of wood pellets by the end of 2014. This makes the UK currently the largest importer of wood pellets in the world. US Department of Commerce, Bureau of Census, data shows that the US is the largest exporter in the world of wood pellets (FAS London estimates 3.6 million MT in 2014), with approximately 75 percent of exports destined for the UK. The additional 1 million MT or more required by the UK in 2014 will be supplied mainly by Canada and other EU countries such as Portugal and Latvia.

Wood pellet manufacturing is the most dynamic wood energy sector in the US because of increases in capacity and production of industrial pellets for export to the UK and wider EU e.g. Belgium, Netherlands, Italy, Denmark. US export capacity has been ramped up quickly from less than 100,000 MT in 2008 to around 4 million MT by the end of 2014. It is projected that by 2015 the capacity for exports could increase to more than 6 million MT in order to capitalize on increased demand from the EU (Aguilar et al, 2012¹). While still a very small portion of US timber harvests (total removals from U.S forestlands equate to about 320 million dry tonnes annually²), US woody biomass exports were the largest in the world in 2012, and this is likely to be the case also in 2014. Current levels of US timber harvests are about 30 percent lower than harvesting in the 1990s due to cyclical (housing demands) and trending (declining paper demand) factors.

The UK is currently a net importer of energy in all its forms. Through EU and UK political and regulatory policy intervention, renewable fuel, e.g. wood pellets, has been incentivized as a vehicle to help de-carbonize the energy sector. The shipping of forestry products across the Atlantic has not been without controversy. There is a degree of contention in some media outlets and from non-governmental organizations around subsidies given to the sector, competition for the wood from other industries, and the efficiency of greenhouse gas (GHG) reduction compared to fossil fuels. The UK government must ensure that any subsidy structure put in place is compliant with UK and EU energy and competitiveness laws. There is a non-linear correlation in the competition for wood that goes into making houses, kitchens, furniture and the pulp and paper industries. It is more likely that an additional market for a relatively low cost product such as wood pellets will ensure a vibrant forestry sector that will create enough resources for all end-users. This is evidenced by the closure of 98 pulp and paper facilities in the US between 1998 and 2003³.

Biomass in electricity generation in existing power stations also comes in for criticism for the current inability of large scale electricity generators to utilize the heat element due to the low value of the heat locally and the impractical distance it would need to be transported to be of use.

It is worth noting the distinction between demand from the relatively small electricity generation sector in the EU which tends to be met by imported wood pellets and the much larger volume of fiber required by the European heat market which tends to be met from sources of indigenous supplies of biomass.

There is an increasing academic research base on both sides of the Atlantic that shows that, with

¹ Aguilar, F.X., Hartkamp, R., Mabee, W. and Skog, K. 2012. Chapter 9: Wood energy markets. In: United Nations Forest Products Annual Market Review 2011-2012. pp.95-106. Available at: [UNECE Publications](#)

² US Billion-ton update – Biomass Supply for a Bioenergy and Bioproducts industry (US Dept for Energy August 2011 p18)

³ American Forest and Paper Association. 2007. Statistics of paper, paperboard & wood pulp. 45th and earlier editions. Washington, D.C.: American Forest & Paper Association

responsible, sustainable forestry management practices, industrial wood pellets can deliver very significant greenhouse gas savings, compared to fossil fuels. Publication of a UK government model to illustrate the potential effects of using biomass sourced from North American forests (BEAC) has highlighted the complexity of modelling future greenhouse gas emissions and carbon accounting scenarios based on hypothetical counterfactuals. It is now becoming more widely accepted that the degree of carbon neutrality achieved depends on the type of forest used, how fast individual trees grow, the parts of the tree used and the rate of growth of the forest relative to harvest rates. This provides a significant competitive advantage to US forestry, especially in the southeastern US, where the USDA Forest Service's Forest Analysis and Inventory program provides a reliable and accurate reference point as well as useful historic data. Carbon research shows that southeastern forests recapture harvested carbon very rapidly⁴. A complex set of forest dynamics indicate potential for slowing carbon accumulation.

The US recognizes the critical role that forests play in addressing greenhouse gas emissions, and an assessment of that contribution has been undertaken as part of the wider work on the President's Climate Action Plan (2013). On November 19, 2014, the EPA released a second draft of its Framework for Assessing Biogenic CO₂ Emissions from Stationary Sources, see: <http://www.epa.gov/climatechange/ghgemissions/biogenic-emissions.html>. The latest Framework includes more technical approaches over an earlier draft released in September 2011, and will similarly undergo a review process by the EPA's Science Advisory Board (SAB).

This body of work and systems approach on US forest management and wood pellet production is providing additional reassurance to the evidence collected and reports completed by the private sector. The latter are required to meet UK sustainability criteria for solid biomass. The US industry has been able to comply with UK requirements by providing "Category A" chain of custody based certification such as Forest Stewardship Council or Programme for the Endorsement of Forest Certification (PEFC), or bespoke "Category B" data. "Category B" incorporates risk assessments, regionally aggregated sustainability monitoring and reporting, and recognizes compliance with local laws and regulations. [Woodfuel Advice Notes](#), published December 22, 2014, provides further guidance. These Notes describe how UK regulations require obligated businesses to source at least 70 percent of woodfuel supplied under their usage of UK government fiscal support platforms to meet the UK definition of 'legal and sustainable'. The [Risk Based Regional Assessment: A Checklist Approach](#) is essential reading on "Category B" compliance.

From a relatively low base of around \$10 million worth of imports in 2009, FAS London estimates that the UK is likely to import around \$875 million worth of wood pellets from global sources in calendar year 2014. Around 60 percent (\$530 million – figures are Free on Board (FOB) basis) will be sourced from the US. Growth is inherently linked to when a small number of large scale coal-fired units make the conversion to firing biomass.

Three more large UK electricity power units are timetabled to convert to biomass in the next 2-3 years. After that, UK wood pellet market for electricity generation is likely to plateau as further units are unlikely to convert, and the ones that have done so have reached their efficiency and capacity maxima. The current UK government (next election is May 2015) has not pledged any further support for

⁴ Coulston, J., D.N. Wear, and J.M. Vose. In press.

additional existing infrastructure conversion to biomass, and existing policy does not favor new large dedicated biomass facilities. The market is further constrained by the fact that UK regulatory support for electricity generation from biomass conversions is all due to expire in 2027.

General EU Policy

As a member of the European Union, the UK is obligated to sustainably reduce greenhouse gas emissions under the EU's [Climate and Energy Package \(CEP\)](#) and the Renewable Energy Directive ([RED, EC/2009/28](#)). Both pieces of legislation were officially published in 2009, but there have been a variety of implementation dates for EU Member States (MS) as they address the composite parts within their own regulation and administrative systems.

The CEP includes the “20/20/20” goals for 2020:

- A 20 percent reduction in green house gas (GHG) emissions compared to 1990
- A 20 percent improvement in energy efficiency
- A 20 percent share for renewable energy in the EU total energy mix

While an additional target of 10 percent share for renewable energy in transport has to be achieved by all EU Member States, the goal for 20 percent renewable energy in the total energy consumption is an overall EU goal (to be met by the sum of Member State efforts). The RED sets different targets for different Member States (MS) based on each MS' capacity. The UK target is 15 percent. For more information on EU policy, please see the EU-28 Biofuels Annual Report available at the [FAS/USDA GAIN database](#).

EU Sustainability Policy

In the RED, sustainability criteria for liquid biofuels are specified. These include minimum GHG emissions reductions, land use and environmental criteria as well as economic and social criteria. The RED does not mandate sustainability criteria for solid and gaseous biomass, but there has been development of several private industry schemes as well as moves to legislate in this area by a number of Member States e.g. the UK, Netherlands, Belgium, Sweden and Denmark.

On July 27, 2014, the European Commission published a [staff working document](#) reviewing the state of play on sustainability requirements for the use of solid and gaseous biomass sources in the EU. The document was accompanied by a [report](#) prepared by the Commission's Joint Research Center (JRC) on the input values and greenhouse gas (GHG) emissions from solid and gaseous bioenergy pathways.

The document analyses the current sustainability status of solid and gaseous biomass for uses in electricity, heating and cooling production in the EU. It highlights the following key findings: 1) the risk of market distortions caused by national sustainability regulations can be managed through the existing EU framework on technical standards, as only a few Member States (MS) are adopting

biomass sustainability schemes; 2) while the vast majority of the biomass currently used in the EU for heat and power provides significant GHG savings compared to fossil fuels, a number of biomass pathways can lead to low or negative GHG savings; further research should be carried out on the future role of such pathways in the EU energy sector; 3) the Commission will monitor the origin and the end-use of biomass in the EU and take corrective action if needed; and 4) the Commission will develop a biomass policy for 2030 aimed at maximizing the overall climate and environmental benefits of biomass and its contributions to significant GHG emission savings. Even though the Commission has decided not to have an EU-wide sustainability criteria on biomass at this time (due to divergences among Commission services as well as Member States), it still plans to develop a biomass policy for 2030.

The EU Commission is expected to announce further proposals to build a resilient energy union by the end of the year.

General UK Policy

Historically, energy production in the UK has been based around its natural resources of fossil fuels, meaning that the UK has not been particularly active in its pursuit of energy from renewable resources. Compared to many other Member States, the UK is therefore starting from a very low level of renewable energy consumption and this means that the challenge to meet its 2020 targets is even greater. The 2009 Renewable Energy Directive sets a target for the UK to achieve 15 percent of its energy consumption from renewable sources by 2020. Though conversely its carbon reductions, in the energy sector, since the early 1990s are relatively high due to the move away from coal to gas generation and to the commissioning of the Sizewell B nuclear station.

In 2008, the UK government introduced a long-term legally binding framework to tackle climate change and transition towards “a low-carbon economy”. The Climate Change Act requires that greenhouse gas (GHG) emissions are reduced by at least 80 percent by 2050, compared to 1990 levels. The Act also introduces legally binding carbon budgets, which set a ceiling on the levels of greenhouse gases that can be emitted into the atmosphere. In the same year, the Energy Act 2008 made provisions for UK government support mechanisms to de-carbonize the energy sector.

The Department of Energy and Climate Change (DECC) estimates that biomass could contribute 21 percent of the UK’s (EU Renewable Energy Directive) target of generating 15 percent of the UK’s energy from renewable sources by 2020. DECC also predicts that sustainably-sourced bioenergy could contribute around 8-11 percent of the UK’s total primary energy demand by 2020. These figures constitute high ‘bars’ for the UK to reach, given that the latter figure was reportedly 3.3 percent in 2010.

Due to the energy market structure and government policy intervention, the UK is at the forefront of industrial bioenergy expansion within Europe - mostly wood burning for electricity in large scale (500-650MW) facilities. Although some energy companies are investing in and proposing new dedicated biomass power stations the Government has capped the total maximum level of new build dedicated

biomass plant which will be eligible for support at 400MW in total. Plants that are already co-firing biomass with coal or converting from coal to biomass are the larger players and are driving the expansion. The change in these plants is also driven by the potential for a number to exceed legally binding EU standards on sulfur dioxide emissions that come into force in 2015.

The UK government set out its thinking on how best to support the use of biomass in energy generation in its [UK Biomass Strategy](#) published in 2012.

Currently bioenergy accounts for 3 percent of total primary energy consumption in the UK with the majority (65 percent) being in power generation. When used in a converted coal plant its relative speed of deployment, cost effectiveness, and direct carbon savings against other alternative renewable technologies makes it an attractive option for contributing towards the delivery of the UK's renewables target. For example DECC's bioenergy strategy estimates the subsidy cost per ton of carbon dioxide saved (£/tCO₂) as £200 for offshore wind, £200 to £530 for new build dedicated biomass and £50 - £60 when biomass is used in a converted coal power station.

UK Fiscal Incentives

UK government support for power generation from sustainable biomass includes financial incentives. The Renewables Obligation (RO) is the main support mechanism for renewable electricity projects in the UK. The RO came into effect in 2002 in England, Wales and Scotland, and in 2005 in Northern Ireland. It places an obligation on UK electricity suppliers to source an increasing proportion of the electricity they supply to customers from renewable sources. For information on how the obligation level is set each year please see the [Department of Energy and Climate Change website](#).

Renewables Obligation Certificates (ROCs) are 'green' certificates issued to operators of accredited renewable generating stations for the eligible renewable electricity they generate. Operators can trade the ROCs with other parties, with the ROCs ultimately being used by suppliers to demonstrate that they have met their obligation. Currently, new dedicated biomass operations receive 1.5 ROCs per megawatt hour (MWh), reducing to 1.4 ROCs for accreditations after 31 March 2016) while new dedicated facilities with Combined Heat and Power can receive double the number of Renewables Obligation Certificates.

Where suppliers do not have a sufficient number of ROCs to meet their obligation, they must pay an equivalent amount into a 'buy-out' fund. The administrative cost of the scheme is recovered from the fund and the rest is distributed back to suppliers in proportion to the number of ROCs they produced in respect of their individual obligation. For the period 2013 to 2014, electricity suppliers received approximately £0.50 (\$0.80) for each ROC they presented (the recycle value).

The Renewables Obligation will close to new generators on 31 March 2017 with all support for biomass conversions ending in 2027. [The scheme closes to biomass before it closes for other technologies.]

Smaller scale electricity generation is supported through the Feed-In Tariff scheme (FITs). This is available through licensed electricity suppliers and is designed to incentivize generation of low-carbon

electricity by paying households, landlords, businesses for the bioenergy they produce. If a householder, community of business has an eligible installation, FITs pays them a tariff for the electricity they generate and a tariff for the electricity they export back to the grid.

In addition, the Renewable Heat Incentive (RHI) was first introduced in November 2011 for non-domestic buildings. Biomass boilers are just one of a number of renewable heat technologies eligible for government support under RHI. Generators of renewable heat for non-domestic buildings can be paid up to 10 pence (16 cents) per kilowatt hour for hot water and up to 8.7 pence (14 cents) for heat which they generate and use themselves. An RHI for domestic buildings was launched in April 2014 and is open to homeowners, private landlords, social landlords and self-builders. See more information [here](#).

The UK government has a Levy Control Framework (LCF) that is designed to help DECC achieve its energy and climate change goals in a way that is consistent with economic growth and at the same time minimizes the impact on consumer energy bills and on the competitiveness of the UK. Electricity Market Reform (EMR) is a package of UK government measures to incentivize the investment needed to replace the UK's ageing electricity infrastructure with a more diverse and low-carbon energy mix. The EMR has two mechanisms: Contracts for Difference and the Capacity Market, see [further information](#).

Essentially the UK has two different subsidy schemes that can enable coal-fired power facilities to convert from coal to biomass: the Renewables Obligation (RO) (explained earlier) and the Contracts for Difference (CfD) Scheme. The most recent LCF budget for renewable energy/CfDs, announced in July 2014, allocated £205 million (\$330 million) across a range of technologies such as on- and off-shore wind, solar, hydro, wave/tidal, etc. with no allocation for coal to biomass conversion in round one. Given the size of the projects, this last option is relatively expensive (in absolute terms compared with smaller projects), so with a tight budget the current UK government has chosen to give a small amount to several options rather than a majority amount to a single technology. However, two projects were awarded CfDs under the Final Investment Decision Enabling for Renewables (FIDeR) scheme, in effect an early form of CfD which is now subject to State Aid Approval from the EU. Meanwhile two other units have converted under the ROC scheme. Furthermore round two of the CfD allocation process will take place in Q1 2015. Therefore, as of November 2014, two 645MW units have fully converted under the RO (running baseload each of these units requires around 2.5 million tons of pellets per year). Looking to the future, although it is difficult to know for sure (pending political, fiscal and private sector investment decisions), it seems that the UK may have at least another 4 power station units (130-645 MW each in capacity) producing electricity from biomass by 2017. In addition to this a Combined Heat and Power Station (350MW) is expected to run on biomass as it also received a FIDeR CfD contract.

UK Sustainability Policy

The EU's Renewable Energy Directive does not mandate sustainability criteria for solid and gaseous biomass. However, under the RO the UK government developed a reporting mechanism and later formal regulation incorporating sustainability criteria for these fuel states based on a recommendation paper published by the European Commission in February 2010.

Since 1 April 2011, under the Renewables Obligation (RO), electricity generators over 50 kilowatts have been required to report annually on their performance against sustainability criteria for biomass feedstocks they use. The currently non-mandatory sustainability criteria are: a) minimum 60 percent Greenhouse Gas (GHG) lifecycle emission saving for electricity generation using solid biomass or biogas relative to fossil fuel; and b) general restrictions on using materials sourced from land with high biodiversity value or high carbon stock – including primary forest, protected areas, peatland and wetlands. The sustainability criteria apply to the use of imported as well as domestic biomass and biogas for electricity generation but do not apply to waste or biomass wholly derived from waste.

In the last quarter of 2012, the UK government held a public comment period (consultation) on proposed amendments to the biomass sustainability criteria used to determine support for biomass through the Renewables Obligation. Following this, the UK Government decided to bring in robust sustainability controls for solid biomass and biogas that go beyond those currently required at the EU level and internationally.

In February 2013, Government announced its intention that the biomass sustainability measures under Renewable Heat Incentive (RHI) should be broadly comparable to the RO (with some differences to account for the differences between the heat and electricity sectors). Compliance with the Timber Standard is expected to become mandatory for the RHI from April 2015.

In August 2013, the UK Department of Energy and Climate Change (DECC) announced that from April 2015 all electricity generators of 1 megawatt capacity or higher must show that renewable fuel used (i.e. solid biomass, biogas) meets certain sustainability criteria to receive financial support under the Renewable Obligation.

At the same time, DECC introduced new criteria for sustainable forest management (the UK Timber Standard for Heat and Electricity, based on the UK Timber Procurement Policy (UK- TPP) principles), establishment of a GHG target trajectory and a requirement for generators to produce independent audit/assessment reports. Full details are set out in the [August 2013 Government Response](#) and further information can be found [here](#).

The sustainable forest management criteria are set out in DECC's [Timber Standard for Heat and Electricity](#), (the 'Timber Standard'), published in February 2014. This draws on the principles set under the UK Government Timber Procurement Policy (UK-TPP) and cover a range of social, economic, and environmental considerations that are part of good sustainable forest management practices and are based on internationally agreed criteria. In practice to meet the Timber Standard criteria wood must either be sourced from a recognised forest certification scheme (this is known as Category A evidence under the UK-TPP) or provide bespoke evidence to demonstrate that it has been sustainably sourced (known as Category B evidence under the UK-TPP).

The [Central Point of Expertise on Timber \(CPET\)](#) for procurement by the public sector provides information on its website on Category A and B evidence under the UK-TPP. CPET have developed a Framework to provide support to both purchasers and suppliers on the provision and assessment of bespoke evidence with respect to the UK-TPP for the UK government. Woodfuel Advice Notes, to support the Timber Standard implementation, were published December 22, 2014. This link: [Woodfuel Guidance](#) provides access to:

- Woodfuel Advice Notes
- Consignment and Mass Balance Approach
- Risk based regional assessment: a checklist approach

The Category B approach incorporates risk assessments, regionally aggregated sustainability monitoring and reporting, and recognition for compliance with local laws and regulations. The [Risk Based Regional Assessment: A Checklist Approach](#) is essential reading on “Category B” compliance.

The UK government undertook another public comment period from June 2014 ([Biomass Sustainability Consultation](#)), and published a response in August 2014 ([Response to Biomass Consultation](#)). The main results of this exercise included a change to the definition of ‘saw logs’, a requirement to report whether biomass is derived from hardwood or softwood (rather than specific tree species), a decision to deem arboricultural residues as sustainable and another to not exempt sawmill residues from compliance with sustainability criteria.

In July 2014, the Department for Energy and Climate Change launched a calculator tool ([Press Release](#)) designed to estimate the carbon emissions impact of biomass sourced from North America to produce electricity. The Bioenergy Emissions and Counterfactual ([BEAC](#)) Model uses a number of hypothetical scenarios to indicate changes in the amount of carbon stored in forests over the lifetime of a biomass project. It is not a policy formation tool and it makes clear that the scenarios it models are not realistic representations of real world situations.

On the renewable heating side, the UK government plans to introduce biomass sustainability Renewable Heat Incentive regulations in Spring 2015, with the obligation on RHI participants to meet the sustainability requirements from Fall 2015.

To ensure sustainability is addressed across the sector, Final Investment Decision Enabling for Renewables (FIDeR) contracts and generic Contracts for Difference (CfD) awarded under the UK government’s Electricity Market Reform follow the same approach as the sustainability criteria set under the RO.

Indirect Land Use Change

The UK government is in close dialogue with the EU Commission with regard to the ongoing debate for proposals to address indirect land use change (ILUC), currently being considered for biofuels and bioliquids. A supporter of ILUC factors being applied to lifecycle analysis of greenhouse gas emissions, the UK government is also interested in how these might be applied to biomass and biogas. ILUC is not particularly relevant to the biomass power sector as the feedstock used tends to be the products and by products of existing sustainable forest management. Furthermore biomass is a very low value product so demand for biomass could not displace demand from other sectors which can pay far more.

UK Production and Consumption

Following the launch of a [strategy document](#) by the Forestry Commission in 2010, supplies from UK forests to the bioenergy sector have been increasing. Around 10 million green MT of wood each year is currently harvested in the UK from woodlands and forests. Harvested timber goes to supply a range of markets including sawmills, panel board producers and heat generation. The UK has made significant progress in developing the wood-fuel supply chains (in 2007 around 0.5 million MT of wood were delivered to energy markets, increasing to 1.5 million MT in 2010) but UK forests are relatively dispersed and the UK lacks the wood volume or infrastructure which would allow this wood fiber to be supplied to the power sector (wood pellet mills for example). The UK's largest generator now operates on pelletized material and therefore did not buy a single ton of UK wood fiber in 2013 for example. Though pelletized energy crops of UK origin are still used. The Forestry Commission's current softwood production forecast estimates that the UK softwood harvest is due to peak at 12 million green tons in the period 2017-21 (equivalent to around 6 million oven dried tons (odt)).

Bioenergy feedstocks from existing woodlands, forests, urban spaces and transport corridors, co-products of the sawmill industry, development of short rotation forestry and small round wood markets represent a significant potential contribution to the UK bioenergy resource for heat. DECC scenarios estimate current potential to be between 6 - 31 terawatt-hours (TWh), rising to between 13 - 34 TWh by 2030, which implies between 2.4 and 6.5 Modt (million oven dried tonnes) of UK forestry resources by 2030.

The target is to bring an additional 2 million MT to market, annually, by 2020, representing 50 percent of the estimated unharvested available material in English woodlands. Achieving the 2 million MT target represents a 60 percent increase in wood production in England.

More realistic, but still challenging, is an estimate of 2.4 million MT of UK produced woody biomass by 2015. Whatever the estimate, it is clear that the UK domestic biomass supply will fall drastically short of the amount need to serve the future bioenergy market in the UK. In 2012, the UK biomass capacity of large electricity generators was 829 megawatts (MW), an increase of over 250 percent from 2011. Over the last ten years biomass-fuelled generation has increased by 400 percent, driven by conversion of coal fired plants.

If all the proposed biomass power plants were up and running (approx total capacity 2,900 MW), around 12-13 million tons of biomass pellets would be needed to fuel them. Almost none of this will be met from the UK woody biomass market.

As can be seen from the below table, UK imports of wood pellets more than doubled in 2013. Until last year Canada had been the largest supplier, but UK energy companies have improved their linkages with U.S. facilities and suppliers and the US surpassed Canada by volume in 2013 to supply 46 percent of imports versus Canada's 42 percent.

UK production and US import of wood pellets, volumes in '000 MT

	2010	2011	2012	2013	Forecast	
					2014	2015

Estimated UK production	1,500	1,750	1,950	1,257	2,200	2,400
Imports of wood pellets	551	1,015	1,487	3,389	4,600	5,500
Exports	60	41	54	106	120	150
Estimated UK consumption	1,991	2,724	3,383	4,540	6,680	7,750
Imports from U.S. (vol)	188	274	475	1,563	2,800	3,575
Imports from U.S. (value)	\$35 mn	\$52 mn	\$96 mn	\$310mn	\$530 mn	\$680 mn

UK production estimates from Forestry Commission

Import/Export data from Global Trade Atlas using 44013020 for 2010-2011 and 440131 for 2012

Import/Export forecasts by FAS/USDA London

Consumption estimated using production plus imports minus exports

Trade

The size of the challenge facing the UK domestic forestry sector in meeting UK government targets is considerable. In order to meet the fast-growing demand for bioenergy in the UK (and other European countries), imports of biomass, particularly wood chips and wood pellets will be essential, and is likely to form around 80 percent of inputs.

As can be seen from the below table, UK imports of wood pellets grew by around 0.5 million MT each year between 2010 and 2012. At that time Canada was the largest supplier, with around 56-57 percent market share. However, as UK energy company linkages with US facilities and suppliers are improving so the US has taken a larger share of the growing market.

Total imports of wood pellets doubled into the UK market between 2012 and 2013, and the latest available figures show the US now has around 60 percent market share. If the pace of US exports to the UK continues through the last quarter of 2014, the annual total could approach 2.8 million MT (\$530 million).

Top 7 Country Suppliers to UK of Wood Pellets (by Volume Jan to Sept 2014)

United Kingdom HMRC Import Statistics							
Commodity: 440131, Wood Pellets							
Calendar Year: 2009 - 2013, Jan To Sept 2014							
Quantity							
Partner Country	Unit						
		2009	2010	2011	2012	2013	Jan-Sept 2014
World	T	44,887	550,684	1,015,102	1,487,076	3,432,436	3,341,584
United States	T	164	188,239	274,453	475,337	1,573,493	2,124,625
Canada	T	2,469	307,865	591,781	854,602	1,466,781	592,341

Portugal	T	0	0	0	15,673	142,392	283,556
Latvia	T	0	0	0	101,877	165,191	276,903
Germany	T	0	0	0	4,839	56,561	20,764
Poland	T	73	0	5,099	0	0	4,212
Netherlands	T	0	0	0	462	5,212	4,111

Source: Global Trade Atlas/HMRC

UK developers of biomass power plants are actively looking for credit worthy existing large industrial players to supply them. US suppliers interested in the UK market need to be aware that they would need to deliver in a 2 year timeframe (from the date in which a contract is signed). The ability to deliver large capacity consistently is paramount. UK power plants vary in their efficiency. The best performers currently use around 0.45 million to 0.5 million tons of wood pellets per 100MW capacity.