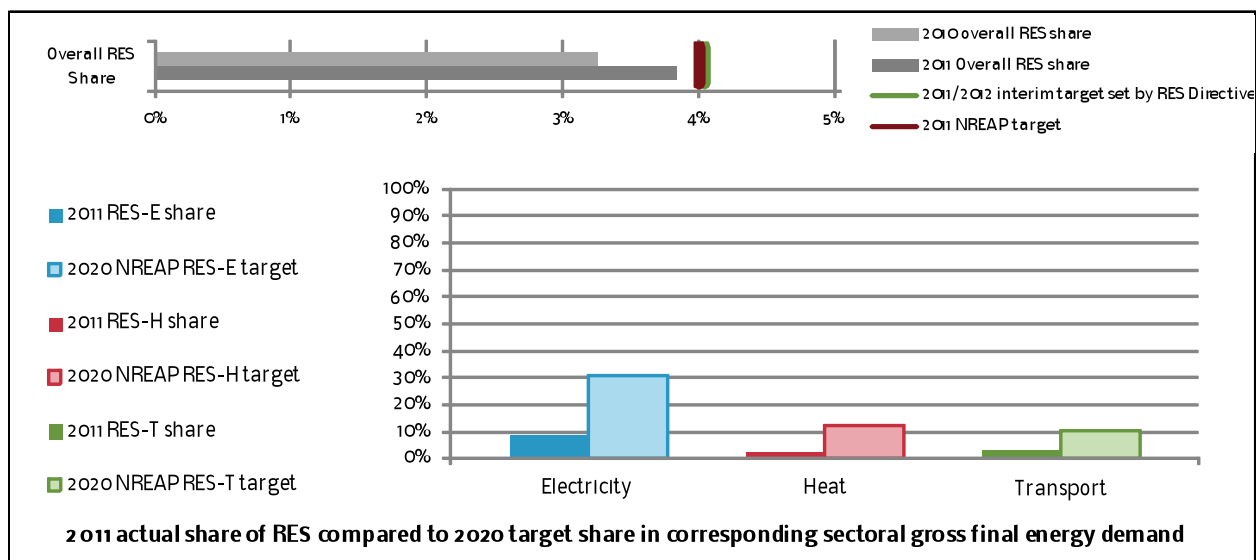


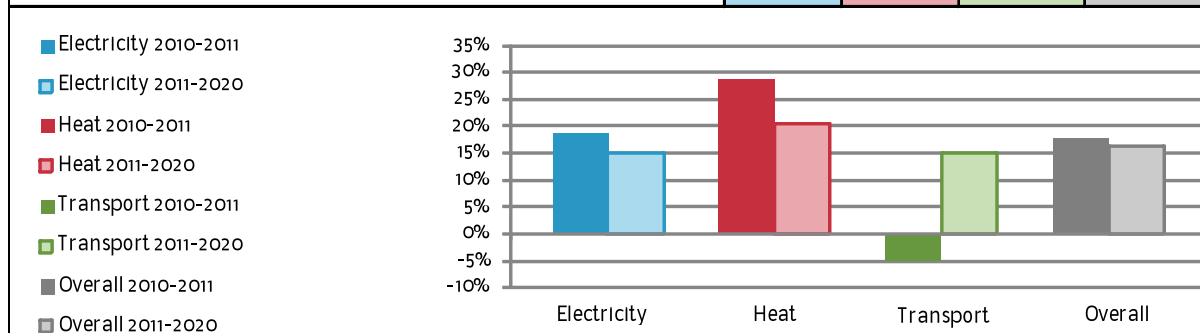


K. UNITED KINGDOM

1. NATIONAL DEVIATIONS REPORT



	Electricity	Heat	Transport	Total
2011 actual share of RES in sectoral gross final energy demand	8.7%	2.2%	2.9%	3.8%
2011 NREAP target	10.0%	1.0%	3.4%	4.0%
2011/2012 Interim target set by RES Directive	-	-	-	4.0%
2020 NREAP target	31.0%	12.0%	10.3%	15.0%
Percentage of sector consumption in total final energy consumption in 2011	23%	38%	38%	100%
2011 Production [ktoe]	2,782	1,160	1,087	5,028
2010 Production [ktoe]	2,410	1,068	1,167	4,645
2005 Production [ktoe]	1,456	571	0	2,027
2020 NREAP target production [ktoe]	10,059	6,199	4,251	20,510
Deviation [%] of actual from planned share in 2011	-12.83%	123.96%	-14.11%	-4.01%



RES growth rates achieved from 2010 to 2011 compared to RES growth rates required from 2011 to 2020 by sector

- The United Kingdom is slightly off track regarding its NREAP 2011 target, and has not yet achieved its 2011/2012 interim target.
- Average annual growth in RES overall has slightly decreased between 2010 and 2011 compared to the prior 6-year average, with the transport sector even showing a negative growth trend.
- Growth rates in the electricity and heat sectors would be sufficient to reach the 2020 target. Only in the transport sector growth is too low to if the 2020 targets are to be achieved.



2. NATIONAL BARRIERS REPORT

Introduction to the UK situation

Under the Renewable Energy Directive⁹⁰ (hereafter - RED) the UK has to achieve one of the most ambitious growth rates to attain its 15% renewable energy sources (hereafter - RES) deployment target by 2020. According to the UK Renewable Energy Association (hereafter - REA), the deployment figure amounted to 3.8% in 2011. The UK Government claims to be committed to achieving the target however its actions fall short of creating the environment to make this possible. Furthermore, whilst some senior Government ministers see renewables as a major policy goal, others in the coalition are openly hostile towards renewable. The open conflict within the Government seriously undermines industry's confidence and enthusiasm towards getting involved. Having this in mind, the overarching barrier in the UK can be called **'Political Risk'** and many of the other individual barriers stem directly or indirectly from this (REA 2012).

Besides, as suggested by REA (2012) the UK has always been extremely focused on cost issues with respect to renewables. Therefore much of the industry has felt that it is struggling against difficult odds to make a clear financial case (though some technologies have fared better than others). Whereas marginal economics is clearly a very major barrier, the barriers stated in this report relate more to imperfections in the legal/regulatory environment, and for which there are often low-cost and/or practical solutions. Many of these issues have been well-known for a long time, like for examples issues relating to planning and environmental constraints, grid connection, financing of small-scale projects, etc. The industries have been seeking solutions with the relevant authorities for many years. In the end the discussion usually comes back to the issue of the lack of a clear Government commitment to renewables, being a crucial issue in the UK (REA 2012).

⁹⁰ 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



Common Barriers to the Electricity, Heat and Transport Sector

Policy risk and uncertainty

According to REA (2012), the overarching barrier affecting all technologies, across all sectors, in the UK renewable energy industry, and directly or indirectly impacting on all project development steps, is the policy risk and uncertainty in the market. It stems from continually changing policies, making the development of an investment in UK renewables high risk - and for some technologies like for instance dedicated biomass, nigh on impossible. Lack of agreement between Treasury and Department of Energy and Climate Change (hereafter - DECC) and coalition partners led to delays in publishing the Renewable Obligation Bands and the Electricity Market Reform (EMR). Moreover, the Government is permanently altering the financial support schemes. As a result, it is not clear what approach Government employs when it determines which technologies to support. For example, is it technologies offering the lowest cost to consumer; the lowest cost per tonne of carbon saved; a variety of technologies; the least visually intrusive or contentious; small scale or large scale technologies? The developers lack clarity of the effects of the changing policies on their existing projects in the medium and long run. Investors are unclear about the level of Renewable Obligation Certificates (ROCs) for certain projects and are concerned that the Government will withdraw or reduce the financial support despite promises of grandfathering.

The policy risk and uncertainty in particular hits some RES-E technologies. For example, “hard won battles have resulted in a relatively simple means to reward success in generating electricity from the waves and tides through 5 ROCs. However the short horizon between now and 2017 and the time it will take to get these pioneering machines built (if invested in now) means that the moment the machines get to the water will be the moment the multiple ROCs ends. Lack of clear commitment by the Government to either guarantee a comparable regime beyond 2017 for even the first farms/machines, or to take marine out of the larger EMR process, leads to uncertainty and frustrates the industry. As a result, there are no commercial sites operating yet and they are finding it hard to attract investment despite a real interest to invest in marine” (REA 2012).

According to REA (2012), there are also great uncertainties surrounding the UK Government proposal to impose sustainability criteria within the Renewables Obligation (RO) in October 2013 and within the Renewable Heat Incentive (RHI) in 2014. The main concern here relates to the implementation details and potential administrative burdens once these are finalised. The developers fear that the burden of adhering to too strict sustainability criteria will deter investors. They are convinced that complying with such tighter regulations will add to operational risks and costs. In addition, developers fear that, even if none of these regulations are decisive in themselves, the cumulative effect of regulations on sustainability, air quality, etc. will discourage people from choosing biomass power or heat. The main concern by the project developers is that delay in resolving uncertainties will mean projects are unable to be confident of RO support before it closes to new entrants in 2017.

In terms of the transport sector, not only has the Renewable Transport Fuel Obligation⁹¹ (RTFO) been amended twice since its introduction, but the Government has refused to set a trajectory to reach 10% renewable energy in transport (RES-T) target by 2020. The European biofuels market is driven exclusively by mandatory targets so the absence of a forward trajectory represents a significant risk for the funders in the biofuels sector - for both first and second generation biofuels. The RED began to create some investor confidence as the EU seemed to be committed to reducing its dependency on fossil fuels and to combating climate change. However, the European Commission (hereafter - EC) proposal of October 2012⁹² to effectively reduce the target for 2020 through the cap of 5% from crop based biofuels would impact virtually all current producers and investors as the market stability would be severely damaged to the extent that the RED RES-T target (and potentially the entire UK RES target) could be threatened in the proposed review of 2014 (REA 2012).

Furthermore, it was suggested by REA (2012) that “by not putting in place any trajectory to 2020 or setting increased targets to 2030, the EC has now destroyed investor confidence in the European biofuels sector, particularly at this time of financial fragility when potential investors look very closely at market certainty. Given the high capital costs of biofuel facilities, banks, are unlikely to be willing to commit funds until this is resolved. Without this clarity hardly any additional facilities will be constructed”.

⁹¹ www.legislation.gov.uk

⁹² European Commission proposal for a Directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources, COM(2012) 595 final



In addition, in July 2012, the Department for Transport (DfT) announced proposals to include Non-Road Mobile Machinery (NRMM) within the scope of the RTFO. Because DfT does not want to increase the volume of biofuel supplied to the market, the RTFO target is expected to decrease from 5% to around 4.7% by volume for 2013/14 and subsequent years (REA 2012).



Common Barriers to the Electricity and Heat Sector

Lack of skilled workforce

According to REA (2012), lack of a skilled workforce for the installation of all renewable microgeneration technologies is one of the main barriers to the electricity and heat sector in the UK. It was reported that not enough engineers are coming into the renewable industry. This is largely because companies want to see a long-term, stable support regime before committing themselves to training staff and installing new technologies. Moreover, it is hard to find skilled people for the highest level project development positions in case of very complex offshore wind projects (REA 2012a). If this problem continues to remain, there will be not enough suitably trained individuals to install at the required rate to meet the UK objectives under the RED and any growth in the UK market might be stalled (REA 2012).

Cost and Complexity of the Microgeneration Certification Scheme

The Microgeneration Certification Scheme⁹³ (MCS) is perceived by many as a barrier to the widespread implementation of small-scale renewable technologies within the UK. The MCS Installer Certification Scheme is currently the only recognised scheme for the certification of renewable energy installers wishing to access governmental fiscal and financial incentives. The scheme therefore has an extremely important role to play in protecting those who wish to invest in the industry. The high costs and complexity of the MCS however are perceived as significant barriers acting as a dis-incentive for many small installation companies or sole traders willing to enter the UK renewables market and ultimately preventing the scheme from working effectively and achieving its aim (REA 2012).

According to REA (2012), the barrier affects all renewable technologies within the UK aiming to access governmental incentive schemes. Moreover, it restricts access to the UK market to installers who already have installer certifications awarded by other EU Member States and thus infringes the RED on the mutual recognition of installer certifications issued by other EU Member States. It also affects installations going into public buildings since the compliance with MCS is usually a minimum requirement.

High focus by UK Government on costs

The high focus by the UK Government on costs constitutes a barrier to renewable electricity and heat in the UK. Cost reductions can often result in compromises whereby corners are cut and errors are made. This may result in project failure and in turn damaged industry reputation. A specific example of this concerns the gasification and pyrolysis industry whereby the reputation of these technologies has been damaged due to the plant failure. Therefore it has to be acknowledged that successful cost-related compromises cannot always be made in these complex technologies (REA 2012).

⁹³ MCS is an industry-led and internationally recognised quality assurance scheme, supported by DECC. The Scheme was launched in 2008. It certifies microgeneration products used to produce electricity and heat from renewable sources. MCS also certifies installation companies to ensure the microgeneration products have been installed and commissioned to the highest standard for the consumer. MCS covers electricity generating technologies with a capacity of up to 50kW, and heat generating technologies with a capacity of up to 45kW. More on MCS see <http://www.microgenerationcertification.org>



The United Kingdom RES-E Sector

Support schemes

In the UK, the generation of electricity from renewable energy sources (RES-E) is supported through Feed-in Tariffs (FiT) and the RO - a quota system based on certificates. Under the feed-in tariff, accredited producers whose plants have a capacity of up to 5 MW can sell their electricity at fixed tariff rates established by the DECC; the scheme is managed by the Gas and Electricity Market Authority (Ofgem). Under the quota system, licensed electricity suppliers are obliged under the Renewables Obligation Orders⁹⁴ (ROO) to present a certain number of ROCs obtained from renewable generation or pay a forfeit (the 'buy out price') (RES LEGAL Europe 2012).

Barriers to RES-E

Grid related issues

Currently the grid is underdeveloped in the UK for renewable energy, resulting in **too little capacity to transmit and distribute RES-E** at the required scales and in some locations. The electricity grid needs to be upgraded within an overall strategy to provide power grid infrastructure where it is needed. For RES-E, this often means in places where historically no electricity was generated (AEON 2010). These issues affect all technologies, but in particular large wind (especially offshore) and marine energy installations. Regarding marine energy technologies, the grid rules were written for a time of carbon based generation and sought to minimise waste in transmission. They do not recognise the strategic nature of marine resources and the fact that they are dispersed at the periphery of the country. No encouragement is provided to harvest resource at the most efficient locations (REA 2012).

As suggested by REA (2012), the strategic configuration of the grid to accommodate increasing penetration of dispersed and embedded renewable generation is needed. Renewable installations are meant to compete with established conventional electricity generating technologies, however they have to fight with a playing field designed to support centralised generation. Furthermore, greater costs are incurred and longer timescales to connect are observed.

Technical practices differing among Distribution Network Operators (hereafter - DNOs) are further perceived as a barrier hindering all renewable technologies in the UK electricity sector while incurring costs in grid connection to the developers. These issues are not under open governance and therefore it is difficult to engage with the DNO on such technical practices. Specific examples include reluctance by some DNOs to utilise full reactive capability of generators, insistence on two physically close circuit breakers in series, etc. (REA 2012).

According to REA (2012), **DNOs are also reluctant to publish hv network data on line and free of charge**. Although perceived as being of moderate severity, this barrier affects all technologies below few MW that may connect at hv, i.e. projects in the 500kW to 3MW band. As a result developers of such projects have difficulties to quickly assess the likely ease and cost of connecting to the grid at a particular location.

During the RES-Integration survey carried out in 2011 stakeholders indicated some **offshore wind specific issues** in this context. It was complained about the tender process favouring a less-than-optimal structure of the offshore grid or generator use of system charges varying by location, with higher charges in areas remote from the load centre. These areas often have the greatest RES-E resource and therefore the charging regime may not play in favour of developing generating facilities in such locations. In addition, before the actual connection and the payment of a connection charge, a user commitment shall be provided by generators to the System Operator in order to secure the connection for both onshore and offshore technologies. According to one stakeholder, these commitments, particularly the ones paid by offshore developers, had reached very large levels, up to billions of pounds, and consequently investments for such subjects were unsustainable (RES-Integration 2011). According to REA (2012), it has however been improved given that generators can build the infrastructure themselves and then auction it to the person who will take it on and run it for the lowest overall cost. Basically this becomes a competition between entities with the lowest cost of capital.

A further technical grid issue adversely affecting RES-E deployment is that of the **over-voltage**. "It has been found, specifically in small-scale PV generation that inverters cut out frequently due to over-voltage. The inverters can

⁹⁴ www.legislation.gov.uk



connect to the grid at up to 300v, yet G83 and G59 generation connections constrain the connection from reaching this voltage. Therefore when the grid voltage exceeds the set parameters on the inverters, they cut out. The owner can request the DNO to reset the parameters however in some cases owners are not even aware that the inverters are cutting out. The consequences of grid over-voltage are lost revenue to the owner, and more power having to be generated from elsewhere to compensate” (REA 2012).

The whole charging system is currently undergoing an extensive review, known as project Transmit⁹⁵. As suggested by REA (2012), the “outcome of the project will not be known until spring or summer next year. There will still be locational differentials, although they may be slightly lower particularly for lower load factors and intermittent generation”.

Planning issues

Most RES-E installations need to obtain **planning permission** before they can proceed. As suggested by REA (2012), this is often cited as one of the key barriers to RES-E deployment in the UK. For large projects (>50MW) applications are made to the Government (DECC). Projects below 50 MW have to apply to the Local Authority (LA). There have been significant changes to the planning requirements for RES-E projects lately; some of them being helpful, and others not. There is now a National Policy Statement for Renewable Energy Infrastructure⁹⁶ (EN-3) providing useful guidance for projects above 50MW. The guidance below 50MW should in principle reflect that document, but a comprehensive renewable energy Planning Policy Statement has recently been replaced by a much shorter National Planning Policy Framework⁹⁷ providing only very general guidance for renewable (REA 2012). According to REA (2012), so far it is not clear what the impact of all these changes will be. However it is expected that planning will continue to constitute a significant barrier for some technologies, especially wind and bioenergy.

A number of previously carried out surveys suggested that the planning procedures in England, Wales and Scotland often cause long administrative times due to a very comprehensive involvement of subjects (AEON 2010, Wind Barriers 2010, RES-Integration 2011). These issues are relevant both in terms of connection and of grid development (RES-Integration 2011). Whilst in general renewable energy is quite popular in the UK, many individual proposals are strongly opposed by a very vocal and active minority. The Localism Act⁹⁸ introduced in November 2011 gives even more weight to localism agenda. Thus it may be assumed that social opposition will continue to constitute a barrier for some renewable technologies, especially bioenergy and wind projects (REA 2012a).

Planning consent is sometimes refused due to **competing public interests**. For example, “airports have been seen to be cautious with regards to using new technology in order to ensure that there is no radar interference with wind turbine projects. One worry is that changing technologies may have public safety implications” (REA 2012).

LAs are meant to develop policies on renewable energy deployment in their area as part of their development plan. This can be very politically contentious and result in deployment being heavily restricted. However there is currently **no way to ensure that the UK 15% national renewable energy target is reflected in local planning policies** (REA 2012). Moreover, the UK Energy Minister declared that there is no need for more onshore wind; because there are already enough consented projects to meet the 2020 target. Such statements hamper onshore wind development, not only because of the resulting uncertainty of the project developers, but also because the LAs feel that they are justified in refusing planning consents to onshore wind projects (REA 2012a).

Finally, **planning consent is treated differently** in Scotland and in England/Wales, being under different pieces of legislation (RES-Integration 2011). This in itself constitutes a barrier.

Biomass specific issues

According to REA (2012), developers and funders of RES-E projects are concerned about the **future security of biomass fuel supply**, i.e. that the necessary quantity and quality of biomass fuel may not be available, at least at

⁹⁵ Project Transmit is Ofgem's independent review of the charging arrangements for gas and electricity transmission networks, and the connection arrangements. More on the project see <http://www.ofgem.gov.uk/Networks/Trans/PT/Pages/ProjectTransmit.aspx>

⁹⁶ www.official-documents.gov.uk

⁹⁷ www.official-documents.gov.uk

⁹⁸ www.legislation.gov.uk



an affordable price, over the life of a biomass power plant project. One stakeholder suggested that this barrier is caused by the very large biomass power plant projects proposed, and the export of biomass contained in waste, including Refuse Derived Fuel (RDF) and Solid Recovered Fuel (SRF) from the UK. REA (2012) suggested that a significant share of biomass power projects have been shelved due to such concerns.

Biomass projects are also hindered by the **insufficient focus and commitment from potential on-site power users**. Although many developers have a good project, since this is not necessarily their main area of business, focus is elsewhere and therefore the biomass power project does not receive the required commitment for success. Furthermore there is a **lack of readily available and trusted information** for such businesses and organisations. This barrier affects a number of technologies, but most specifically biomass (REA 2012).

Additionally, **contractor related problems** have been reported by some stakeholders. As suggested by REA, “too few projects have proceeded in the UK for a significant contractor supply base to be established. Large, experienced and international contractors are too expensive and inflexible for biomass power plant projects in the range 2 to 15 MWe to be viable. Small evolving contractors on the other hand are too inexperienced to develop biomass power projects. A significant number of biomass power projects have proven to be unbankable due to this” (REA 2012).

Marine specific issues

According to REA (2012), the generation of electricity from marine sources is seen as strategically important for the future RES-E supply of the UK. One stakeholder has identified that a key barrier to this progress are the rules set by Ofgem for test sites. The **rule sets are incapable of accommodating several scenarios for testing** and are not reflective of the experimental nature of this stage of development. A specific example of this given by REA is that when surrendering a registration (for upgrade, attraction of higher support), it is necessary to show that the original electricity generating station is no longer in existence. This requires having to demonstrate a machine being physically dismantled, even when it may just be necessary to move the plant elsewhere, or to make short term changes.

A further issue concerning the rules for testing is that the grid capacity for export is not able to accept the highly variable generation from test machines. As the grid capacity is currently not capable of expansion, in order to ensure the maximum generation it has been proposed that a load dump be installed on the site and the excess energy over and above the export limit is dissipated. As advised by Ofgem, such an arrangement would render the entire site ineligible for ROCs even if the intent would be to only claim the exported energy, not that which has been dissipated. According to REA, these **rules are unnecessary** and are delaying testing activities and therefore the realisation of the benefits of marine energy (REA 2012).



The United Kingdom RES-H Sector

Support schemes

In the heat sector the main instrument for funding heat from renewable energy sources (RES-H) is the RHI, supporting RES-H installations with a fixed amount per kWhth produced. Currently the scheme is only open for non-domestic installations. Domestic installations are covered by the Renewable Heat Premium Payment (RHPP), which provides a grant to households that apply for the scheme for installing RES-H generators. The RHPP will be discontinued in 2013 (RES LEGAL Europe 2012). However from summer 2013 domestic installations will be covered by the RHI.⁹⁹

Barriers to the heat sector

Well developed gas infrastructure

One of the main barriers to the renewable heat in the UK is a very well developed gas infrastructure. Since a very large part of the country has access to gas, it is a challenge for renewable energy sources to compete with it (REA 2012b).

Market perception

RES-H technologies have not been widely employed in the UK (REA 2012b). Poor understanding of the benefits and potential of certain renewable technologies inhibits their deployment. An example of this can be seen in the solar thermal industry. It is often claimed that there is not enough solar resource in the UK in order to make it a worthwhile investment (this also applies to PV). Although this is not the case, such statements and beliefs may adversely affect deployment of renewable technologies (REA 2012).

Insufficient support for district heating

According to REA (2012), district heating has a significant potential to deliver renewable heat but is still very poorly developed in the UK. A lack of regulatory support and a wide range of legal and regulatory issues (such as the set up of the scheme, access to land, continuity of supply and consumer repayment), inhibit the progress of the industry.

Biomethane injection - Capacity Issues

The capacity of a gas network to accept biomethane depends on the consumer demand on the network. During the times of low demand (e.g. summer nights), there may be an issue as to what to do with the excess gas production. This issue depends mainly on the location of the biogas plant, i.e. whether it is in an area where there is sufficient capacity to accept the gas all year round. Usually it is impossible to overcome this issue by restricting the flow of biomethane into the grid. According to REA, the ideal solution is to inject the biomethane into the medium pressure gas grid which has the capacity to accommodate the output from the biomethane. However where there is only a low pressure connection available, a compression facility to transfer gas from low to medium pressure gas grid has to be installed in order to balance demand with supply. Since, however, the compression facility is always remote from the plant it can be difficult to reach an agreement between the grid operators and project developers as to who is responsible for paying and running the compressor, therefore posing a barrier to the implementation of this solution (REA 2012).

Proposed EU end-of-waste criteria

In the UK, an industry specification against which producers can verify that the digestate derived from the AD of source-segregated biodegradable materials is of consistent quality and fit for purpose (i.e. ceased to be a waste and can be termed 'bio-fertiliser'), is provided in PAS110¹⁰⁰ and the Certification Quality Protocol¹⁰¹. Although these specifications work well, the EC is proposing to adjust end-of-waste criteria so as to suit all Member States. As requirements for this standard differ across the countries, such as due to different industries and quality of

⁹⁹ www.decc.gov.uk

¹⁰⁰ PAS 110: Specification for whole digestate, separated liquor and separated fibre derived from the anaerobic digestion of source-segregated - <http://www.biofertiliser.org.uk/pdf/PAS-110.pdf>

¹⁰¹ Quality Protocol: Anaerobic digestate - <http://www.environment-agency.gov.uk/static/documents/Business/W524AnaerobicDigestatev4%281%29.pdf>



digestates, the biggest fear of the industry is that the criteria may become increasingly complex. This will likely result in operators having to carry out numerous and unnecessary tests, using complicated machinery and consecutively causing the costs related to AD end-of-waste to increase. Furthermore, according to REA, if this EU standard is not fairly achievable, then the operators will be unable to meet the end-of-waste criteria. On the other hand, if the standard is too lax, there will be no market for digestate and the disposal of this digestate will become an issue. Therefore whilst this is not yet a barrier, it is highly likely that in case the EU standards are passed, it will act as one in the future, and will affect a large number of RES-H installations (REA 2012).



The United Kingdom RES-T Sector

Support schemes

An obligation system for biofuels has been in place in UK since 2008 (DfT 2009). Fuel suppliers for transport are obliged to supply a volume of biofuels based on a percentage of the volume of fossil fuel they supply onto the market. This percentage is set annually. There is a certificate system for providing proof of compliance (RES LEGAL Europe 2012).

Barriers to the transport sector

Government reluctance to introduce E10

Whilst a number of other EU Member States have taken steps to introduce E10 (a fuel mixture containing 10% ethanol and 90% gasoline), the UK Government appears to be reluctant to sanction such a move despite the European Committee for Standardization (CEN) (and the UK standards organisation, the BSI) approving the specification. As reported by the stakeholders, in absence of a greater leadership towards this end, the UK will be physically unable to reach the 10% RES-T target at the current biofuel blend levels (E5 and B7). This will further lead to a lack of investor confidence in the market and consequently negatively impact the whole biofuels industry. If fuel suppliers would launch E10 without Government support, this might confuse consumers and harm the reputation of the biofuels industry (REA 2012).

Fuel duty based on volume

As suggested by REA (2012), “fuel duty based on volume instead of energy content prevents the use of bioethanol as a diesel replacement in high ethanol blends (e.g. ED95). As the energy density of bioethanol is much lower than that of both gasoline and diesel it would carry a much higher fuel duty and VAT burden than the fossil fuel it displaces. This is important because diesel fuel use is growing in Europe at the expense of petrol and diesel is mainly used for heavy goods vehicles / fleets. ED95 can be used as a low carbon displacement for diesel in HGVs (heavy goods vehicles) and passenger cars. As many bus and truck fleets have dedicated refuelling stations, the use of ED95 can reduce CO₂ emissions from fleets and achieve high penetration quickly; however the issue surrounding fuel duty prevents this from reaching its potential”.

European Commission proposal to amend the Renewable Energy Directive

The EC made a series of proposals on 17 October 2012 to amend the RED¹⁰². According to REA (2012), a number of the proposals will in themselves constitute further barriers for the transport sector in the UK. Of these the most significant barriers are:

A 5% cap on the amount of crop-based biofuels that can count towards the RED target

The EC is proposing a 5% cap on the amount of crop-based biofuels, because to its opinion the use of all crop-based biofuels increases CO₂ emissions and takes land away from food production. However, REA (2012) suggests that this position ignores:

- the fact that there are good crop-based biofuels which make a significant contribution to reducing CO₂ emissions;
- the additional market provided by biofuels has incentivised increased crop productivity for a number of crops and led to greater agricultural production;
- crop-based biofuels provide the market bridge to the commercialisation of advanced biofuels

According to REA (2012), if these proposals are agreed this will deter investment for all good biofuels and impose a severe barrier to achieving the RED target.

Introduction of Indirect Land Use Change (ILUC) factors

The industry is concerned over the EC’s proposal to introduce the ILUC factors that will be applied to the carbon intensity calculations of biofuels. It is suggested that the ILUC factors as they stand now are not based on

¹⁰² European Commission Proposal for a Directive of the European Parliament and of the Council amending Directive 98/70/EC relating to the quality of petrol and diesel fuels and amending Directive 2009/28/EC on the promotion of the use of energy from renewable sources, COM(2012) 595 final.



comprehensive science. For example the International Food Policy Research Institute (IFPRI) model used to calculate the factors fails to take into account certain agricultural realities and animal feed co-products. If fuel suppliers are required to report against the factors as they stand now, they will be seen to be producing a product that is against the aims of the RED. This in turn will cause significant damage to the public perception of biofuels in the EU (REA 2012).

Proposed double/quadruple counting

According to REA (2012), both first and second (advanced) generation biofuels are struggling to obtain project finance due to perceived market and technology risks. “Although the proposal for double or quadruple counting for second generation biofuels is welcomed, it will not help to get projects financed as the mechanism is yet untested and the value uncertain. Without a stable market beyond 2020 and a timeframe that allows returns to be made in line with rational business plans, technology developers and potential investors will not be willing to commit to the market. Lacking longevity and stability, even quadruple counting is unlikely to bring forward the necessary investment”.



Literature and other sources

AEON (2010): ECORYS, eclareon, *Assessment of non-cost Barriers to Renewable Energy Growth in EU Member States* (United Kingdom). Available at: <http://ec.europa.eu/energy/renewables/studies/renewables_en.htm> (last visit on 3 December 2012).

DfT (2009): UK Department for Transport, *UK Report to the European Commission under Article 4 of the Biofuels Directive (2003/30/EC)*. Available at: <<http://webarchive.nationalarchives.gov.uk/+http://www.dft.gov.uk/pgr/roads/environment/rtfo/biofuels/biofuels2008.pdf>> (last visit on 10 January 2013).

REA (2012): Renewable Energy Associations. Questionnaire provided as member of the Keep-on-Track consortium.

REA (2012a): Hartnell, Gaynor, *Renewable Energy Associations*. Interview on 27 November 2012.

REA (2012b): Thompson, Paul, *Renewable Energy Associations*. Interview on 27 November 2012.

RES-Integration (2011): eclareon, Öko-Institut, *Integration of electricity from renewables to the electricity grid and to the electricity market - RES INTEGRATION* (Great Britain). Available at: <http://www.eclareon.eu/sites/default/files/great_britain_-_res_integration_national_study_nreap.pdf> (last visit on 3 December 2012).

RES LEGAL Europe (2012): Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit (Federal Ministry for the Environment, Nature Conservation and Nuclear Safety), *Website on Legal Sources on Renewable Energy*. Available at: <www.res-legal.eu> (last visit on 3 December 2012).

UKpia (2012): United Kingdom Petroleum Industry Association (UKpia), *Renewable Transport Fuels Obligation (RTFO)*. Available at: <www.ukpia.com/files/pdf/ukpia-briefing-paper-rtfo-october-2012.pdf> (last visit on 3 December 2012).

Wind Barriers (2010): EWEA, European Wind Energy Association, *WindBarriers - Administrative and grid access barriers to wind power*. Available at: <http://www.windbarriers.eu/fileadmin/WB_docs/documents/WindBarriers_report.pdf> (last visit on 3 December 2012).