



BioPAD



Bioenergy Proliferation and Deployment





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Preface

The BioPAD project aims to improve our understanding of the links between supply and demand by looking at supply chains for a variety of bioenergy fuels and different ways of converting these fuels into sustainable energy. Understanding the supply chains and the ways bioenergy moves from fuel source to energy provision will help the establishment of robust and efficient supply services which can match local demand.

BioPAD is led by the Western Development Commission www.wdc.ie (Ireland) and is funded under the ERDF Interreg IVB Northern Periphery Programme (NPP) <http://www.northernperiphery.eu>. It has partners in Scotland (Environmental Research Institute, UHI <http://www.eri.ac.uk/>), Northern Ireland (Action Renewables <http://www.actionrenewables.org/>) and Finland (Finnish Forest Research Institute, Metla <http://www.metla.fi/>).



Policy Gaps

Background

In conjunction with the policy work carried out during the BioPAD project, involving the policy group and the policy seminars, and after considering the policy issues associated with the Case Studies, we have identified what the Policy Gaps are in the partner regions, in relation to bioenergy. Some of the Gaps are general and relate to the way in which policy has been implemented in the past, others are specific, relating to particular circumstances.

We have chosen the National Renewable Energy Action Plans as the starting point for analysing what is required to get to the positions that the partner regions have identified as being appropriate for them. With the binding renewable energy target of at least 20% of final energy consumption by 2020 laid down in the RES Directive and translated into binding national renewable energy targets, the partner regions have embarked on a sustainable pathway.

The NREAPs give a good indication on each country's ambition in terms of renewable energy. Although facing the largest economic crisis since its creation, EU Member States are committed not only to meet their binding targets by 2020, but also to exceed the EU's overall target of at least 20% renewable energy.

Europe needs to continue on its pathway and speed-up the transformation of its energy system. This will only happen through stable commitments and favourable policy frameworks, especially in economically challenging times. One element of the programme for sustainable economic recovery lies in the promotion of renewable energy, and in this instance the development of policies which will promote bioenergy for electricity, heat and transport.

Biomass

Biomass is planned to represent 17.2% of the planned EU heating and cooling mix and 6.5% of electricity consumption in 2020. According to the NREAPs, the main bioenergy markets in 2020 will be Germany, Sweden, Spain, Italy, United Kingdom, Finland and France, Poland and the Netherlands. This is particularly relevant for our work in Finland and the UK. Ireland has been less focused on using biomass as a significant contributor to achieve their target. Furthermore, the existing controversy regarding the use of biomass for food or energy production did not encourage policy-makers to propose ambitious targets in some countries.

Biomass for Heat

The biggest heat markets will be Germany, Italy, the United Kingdom (UK) and Sweden. According to the NREAPs, biomass heat production will reach 88.8 Mtoe in the EU in 2020 (compared to 63.8 Mtoe in 2008) instead of 124 Mtoe as the European Biomass Association AEBIOM had projected. The heat sector is underestimated in almost all the NREAPs, despite its high degree of efficiency.

Biomass for Electricity

Most NREAPs focus on electricity using biomass, rather than the use of biomass for heating and cooling and for transport. The new main bioelectricity markets will be Germany, the UK, Italy, Poland and the Netherlands. According to the NREAPs, the EU power production using biomass will increase from 9.2 Mtoe in 2008 to 19 Mtoe in 2020.

Biomass for Transport

The new biofuels markets will be the UK, Germany, Spain and Italy. According to the NREAPs, energy from ethanol, biodiesel and biogas will reach around 29 Mtoe by 2020, up from 11 Mtoe in 2008.

Finland

2020 Renewable Energy Targets

The Finnish NREAP splits the overall 38% renewable energy target into 32.9% RES-E, 47.5% RES-H&C and 20% RES-T. The action plan indicates that Finland intends to be above its indicative trajectory throughout the period and meet its 2020 target without exceeding it. The overall targets, as well as the sectoral targets, appear challenging, considering the existing incentives. This indicates the need for new support and incentive mechanisms. However, the Finnish NREAP template has not been appropriately filled in. It does not answer many questions of the template. Finland should present a more complete version of the NREAP to comply with the RES Directive and give visibility to the industry.



Policy Gaps

- **The Finnish REAP template has not been completed appropriately.**
- **Finnish policy regime does not support decentralised electricity production.**
- **No support for farm generators to access the electricity grid**
- **No access to feed in tariff if the generator is below 0.1MVA**

- **Awareness raising of sustainability issues missing for forest owners**
- **Lack of support for research into use of stump extraction and increased use of logging residues**

United Kingdom

The UK NREAP splits the overall 15% renewable energy target into 31% RES-E, 12% RES-H&C and 10.3% RES-T. The UK plan was published on 1 July 2010, shortly after the Parliamentary elections in May and the nomination of a new government. While the UK plan includes the new government's commitments some decisions have not been made on key outstanding issues.



The next steps to be taken by the government are:

- A coordinated delivery plan will be published in, outlining how the remaining commitments in the RES and the NREAP will be implemented,
- An analysis updating the trajectory with additional policies will be published at the same time.

The previous UK government set out its Renewable Energy Strategy in 2009 for achieving the 15% target in 2020. This analysis indicated that 30% RES-E, 12% RES-H&C, and 10% RES-T would best achieve the overall target. The current government has stated it is committed to meeting the 15% target.

The government also asked the Committee on Climate Change (CCC) to review the UK RES target and provide advice on whether there is any scope for increasing it. The advice from the Committee was that the target was roughly right. However they did identify delivery risks that the government should focus on. They will publish a detailed report in April 2015 looking at the deployment of renewables post 2020 out to 2030 and 2050.

We have focussed here on the policies which are applicable at National level and which are influential on how the devolved Governments implement policy on a more local level.

Policy Gaps

- **There are too many un-coordinated schemes and initiatives in the UK.**
- **Many of the support mechanisms are implemented over short time scales**
- **While ROCs and RHI have provided long term stability and transparency in the market, there is now some uncertainty about the UKs commitment to Renewable Energy generally, as result of internal political pressures.**
- **There is a lack of measures which address individual issues in the bioenergy supply chain.**

Scotland

Bioenergy and energy from waste both have an important part to play in meeting renewable energy and climate change targets, with biomass expected to make a key contribution to the delivery of the Scottish Government's target for 11 per cent of heat to come from renewable sources by 2020. In 2013 86% of renewable heat capacity, and 92% of renewable heat output, came from installations which used biomass primary combustion or biomass combined heat and power.



Given the multiple energy uses to which biomass can be put, the limits to supply, and the competition for that supply from other non-energy sectors, biomass policy and support need to encourage the most efficient and beneficial use of this finite resource.

In January 2013 the Scottish Government published a [Draft Outline Heat Vision and Draft Heat Deployment Options Guidance](#) alongside the Second Report on Policies and Proposals. The heat vision brings together policy on heat across government to contribute to the Scottish Government's Economic Strategy's strategic objective to make the Transition to a Low Carbon Economy. Further actions are included in the draft Heat Generation Policy Statement.

A number of policy measures have been implemented to support the development of a bioenergy industry. The Renewables Obligation Scotland (ROS), which is the main driver behind renewable electricity development in Scotland, supports the development of dedicated bioenergy plants and co-firing with biomass. The Feed-in Tariffs (FITs) scheme, which was introduced to encourage deployment of additional small-scale (less than 5MW) low-carbon electricity generation, supports small scale electricity from biomass. In 2013, the government set the support level for wood fuel electricity in Scotland whereby

wood-fuelled biomass stations with an installed capacity greater than 15MW will only receive support under the Renewables Obligation if they operate as combined heat and power (CHP) stations.

The Renewable Heat Incentive is a long-term tariff support currently targeted at the larger emitters in the non-domestic sector, and applies to a range of biomass-based heat technologies. A household scheme is also planned. Biomass is to play an important role in meeting the renewable heat target. In the Electricity Policy Statement, the Scottish Government advocates the deployment of biomass in heat-only or combined heat and power (CHP) schemes, generally prioritised in off-gas-grid areas, at a scale appropriate to make best use of both the available heat, and of local supply.

Capital grants schemes were made available over the last few years to support the establishment of heat installations. Grants to support the production of some bioenergy feedstocks are available under the Scotland Rural Development Programme. The Scottish Forestry Strategy set out the ambition to increase woodland cover in Scotland, from 17% to 25% by the second half of the century. Woodland expansion would increase the availability of a long term resource for wood fuel.

Policy gaps

- **Recognition that stranded assets, forestry, on the west coast and islands needs to be used**
- **Recognition of the potential to use marine biomass and R&D funding to identify the opportunities**
- **Co-ordinated marine biomass strategy.**
- **Promotion of energy crops, particularly on land unsuitable for arable cultivation.**

Northern Ireland

“The bioenergy sector in Northern Ireland may not reach its potential if there are legal, regulatory, operational or administrative factors which may act as an inappropriate obstacle to growth.” This quote is taken from the 2010, DETI Bioenergy Action Plan. However, little has been done since 2010 to address this situation.

Northern Ireland is in a unique position, not just to follow international or global trends but to position itself as centre of excellence for specific bioenergy solutions. It has a diverse



land based sector, with potential to improve and innovate. It has a dedicated Research base in AFBI, that should be aligned and harnessed to NI PLC's requirements. There is recognition throughout the sector that CAFRE has been effective in identifying opportunities and in upskilling the industry to deliver. Northern Ireland is also at a scale, where change is manageable and can be effective in the short term.

Policy gaps

- **Need to address the issues associated with the cost of Grid connection in Northern Ireland. This is relevant to all renewable energy technologies, as well as bioenergy (AD)**
- **Unclear position on the Clean Air act and emissions control from biomass combustion plants**
- **Lack of support for Bioenergy supply chain analysis and development.**
- **Lack of co-ordination between Government Departments, particularly the performance of SEIDWG (The Sustainable Energy Interdepartmental Working Group) which has met irregularly over the last three years.**
- **Lack of adequate incentives to increase the level of afforestation.**
- **No support for the establishment of energy crops. The industry has faltered before it reached a stage of critical mass.**
- **Public Procurement policy hinders the use of biomass for heating in Public Buildings.**
- **Lack of funding to support focussed research into opportunities in the NI market for bioenergy**
- **There is no wood fuel quality standard in Northern Ireland.**

Ireland

The Irish NREAP splits the overall 16% renewable energy target into 42.5% RES-E, 12% RES-H&C and 10% RES-T. The action plan indicates that Ireland expects to significantly exceed its indicative trajectory throughout the period and attain its binding target in 2020 without exceeding it. The NREAP also presents an export scenario. The recognition of Ireland's potential to become an exporter of RES-E to other EU Member States between now and 2020 and the inclusion of an export scenario is welcomed by the RES industry.



The Energy Crop Payment Schemes and the Afforestation Grant Schemes operated by the Department of Agriculture, Fisheries and Food incentivise landowners to put degraded or unused land into energy crops and forestry. The Energy Crops scheme has now been withdrawn.

At the time of writing this report, the Government published the draft Bioenergy Plan. It states “In this context, the Draft Bioenergy Plan is key to the development of bioenergy in Ireland and sets out the necessary principles, policy actions and enablers for delivery of Ireland’s significant potential in this area”. The Plan was only available the day before this report was completed and there may be details within it which clarify or address some of the gaps identified below. The Plan is in Draft form and is open for consultation, until 2015. It is expected that it will be implemented in mid-2015.

Policy Gaps

- **Unequal tax status for energy crops and forestry.**
- **Lack of supply chain support for bioenergy.**
- **The Energy Crops scheme has been withdrawn.**
- **The planned increase in afforestation is welcomed, but will have little effect on short term supplies.**
- **Lack of recognition of the socio-economic benefits to local communities of bioenergy**
- **The Bioenergy Plan gives no indication of the level of support that may be introduced under the Renewable Heat Incentive. It is intended to implement it in 2016. This will tend to stall all large scale heat projects, until there is certainty in the market.**



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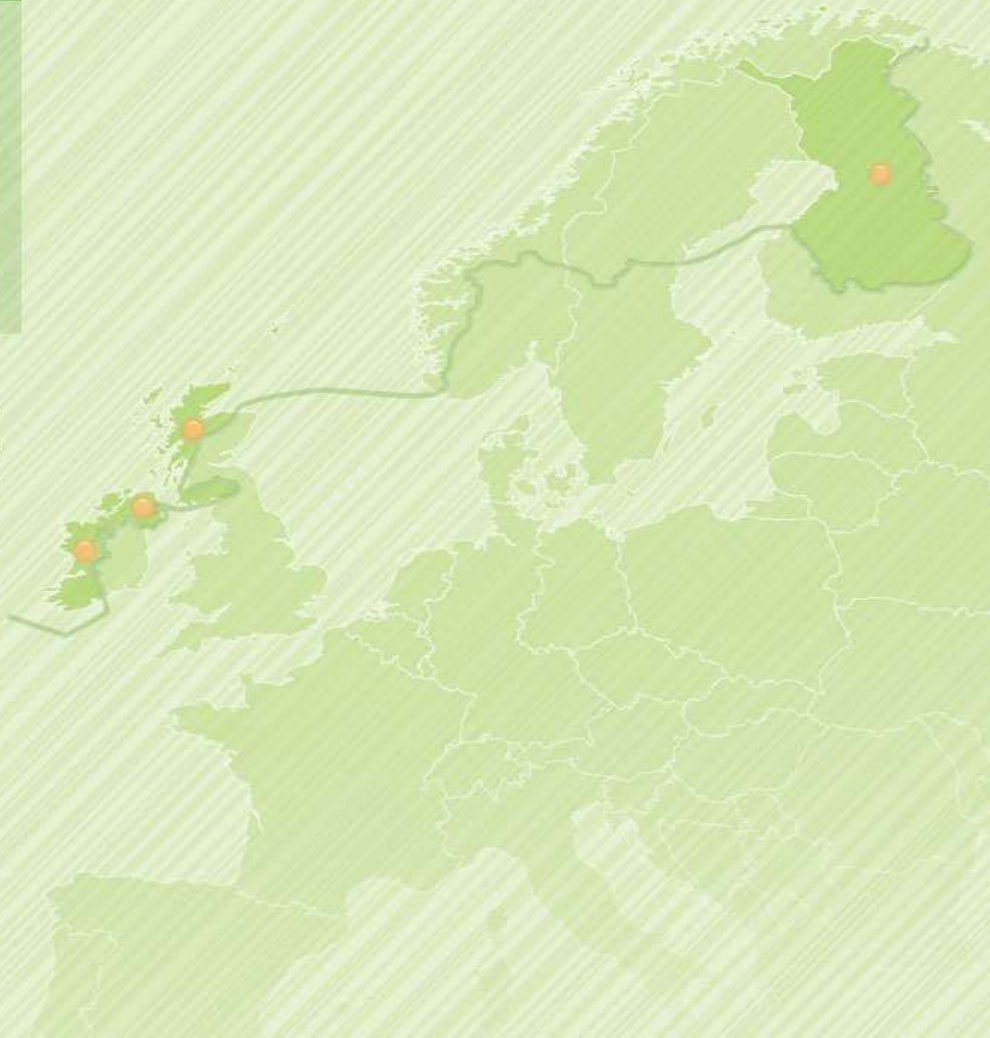
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BioPAD is promoting the wider use of bioenergy and developing applications targeting the whole process from supplying fuel to producing energy.

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BioPAD is funded by the Northern Periphery Programme www.northernperiphery.eu of the European Regional Development Fund (Interreg IVB).



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