



Western Development Commission

Response to consultation on the preparation of a National Policy Statement on
the Bioeconomy

Submitted to Department of the Taoiseach

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Introduction

The Western Development Commission (WDC) is a statutory body promoting economic and social development in the Western Region of Ireland (the counties Donegal, Sligo, Leitrim, Roscommon, Mayo, Galway and Clare). The WDC¹ is involved in policy analysis and development, the promotion of regional initiatives and the operation of the Western Investment Fund.

The WDC has been actively involved in the renewable energy sector since 2003, and specifically involved in the bioenergy heat market since 2006 delivering a range of development projects and policy analysis.

The WDC has led a number of EU renewable energy projects (RASLRES and GREBE) and is also involved as a partner in REDIRECT and LECO, two other renewable energy projects. The WDC also led the BioPAD project (Bioenergy Proliferation and Deployment) which focused specifically on the development of bioenergy in the Northern Periphery of Europe. It promoted the wider use of bioenergy and increased awareness of the opportunities it provides. The project improved our understanding of supply chains for a variety of bioenergy fuels and different ways of converting these fuels into sustainable energy. WDC experience in this area is very applicable to the development of the bioeconomy in Ireland.

Developing local renewable bioenergy supply chains helps provide sustainable enterprise opportunities for individuals, communities, and municipalities. Through various project the WDC has aimed to

- build awareness of opportunities for rural communities to produce and supply locally produced biomass (wood, seaweed and energy crops) to towns and cities
- provide business development support to rural biomass producing communities
- support development of local biomass supply chains through direct business and community engagement

In the Western Region the WDC focused on support to the wood energy sector by delivering practical services to market players and by informing policy development. RASLRES adopted a full supply chain approach - looking at the energy chain from supply (i.e. fuel producers/processors) to demand (i.e. energy users). The services to the sector included:

- provision of technical and business advisory support services to selected clients progressing wood energy projects in the region
- generation of market information and intelligence to support the sector e.g. resource
- forecasting from private sector forestry, assessment of energy crop potential
- accessing of international expertise and facilitation of networking with EU markets

For more information on specific projects please see:

www.raslres.eu

www.biopad.eu

www.grebeproject.eu

¹ See www.wdc.ie for more information

and www.wdc.ie for information on our other projects.

Given the WDC experience in renewable and bioenergy we are pleased to respond to the consultation on a National Policy Statement on the Bioeconomy and we consider this engagement process a progressive action for the bioeconomy in Ireland. Based on our experience we first highlight some general issues of relevance to a National Bioeconomy Strategy and then address the questions outlined in the consultation document.

Bioeconomy Development: issues for consideration:

The WDC wishes to outline a number of priority issues for consideration in the development of the policy statement on the bioeconomy. While the focus of this consultation is on a national statement on the bioeconomy, for this to be effective it needs to consider options for the development of the bioeconomy within the context of that statement. Any strategic market and policy interventions must be cognisant of the wider market environment in order to define a national bioeconomy approach and design and deliver effective, value for money policy and identify actions which result in sustainable market growth.

The WDC identified the following as priority market development issues to achieve sustainable supply chain growth in the bioenergy sector. These are likely to be very relevant to the development of the wider bioeconomy in Ireland:

- *Flexibility of Approach:* High level targets, be they national or EU, must be translated into a regional and local context if they are to drive delivery of market growth rates. Regions have varying levels of competitive advantage in bioeconomy resources e.g. there are significant wood resource in the western counties, energy crop potential in the southern tillage areas. Regions must develop their bioeconomy resources in the most effective and appropriate manner given their conditions and characteristics. The development of local loops of demand and supply typically result in sustainable, efficient deployment of resources.
- *Supply Chain Approach:* A supply chain development approach is necessary to tackle the barriers to growth and achieve sustainable development of the sector. The development of the bioeconomy is very dependent of the establishment of appropriate supply chains, along which the bioeconomy resource passes, from production, various uses and extractions to its final uses and contribution to future bioeconomy resources (in a circular approach). The piloting of supply chain demonstration projects serves to build market confidence and expertise. Such projects will highlight current gaps and limitations to the policy framework and thereby inform policy makers on the design of national policy.
- *Partnership Approach:* The WDC advocates a supply chain approach to support the development of the bioeconomy. The successful delivery of this approach is dependent on effective cross-agency and cross departmental working arrangements, and partnerships between public and private stakeholders. Effective supply chain interventions must be dealt with through partnership i.e. linking of demand- and supply-side support programmes delivered by various agencies and departments into present a coherent and comprehensive sectoral intervention.

Barriers to Bioenergy Development

The WDC believes the following are key issues for the development of the bioenergy sector and which should be addressed in any National Bioeconomy Statement.

While focusing on sustainable market growth, the statement should also be cognisant of the Action Plan for Jobs and the Action Plan for Rural Areas. Additionally, while accepting the principle of cascading uses as outlined in the consultation document, it is important to place this hierarchy of use within a local and regional context. In other words there should be a recognition that in order to bring most effective regional economic and sustainability benefits from developing the bioeconomy there should be a focus on regional and local loops within that economy and given that some of the bioeconomy markets will be small or less applicable in some regions, and emphasis on local supply chains should recognise that not all potential stages of the bioeconomy cascade or hierarchy will be relevant in some areas and closing local loops within the bioeconomy may be preferable to transporting resources from the regions for processing or use elsewhere. Of course markets, value and costs will also influence this.

To maximise the economic benefits of market growth, policy and the market must stimulate local fuel supply chains in as far as is practically possible given the resource base, and then assess import scenarios and consequences.

While use of bioeconomy resources for energy production is considered to be the last level in the principle of cascading resource use, The WDC is aware that the renewable heat market has the potential to create considerable levels of employment across the Western Region and to provide long-term stable markets for low value wood fuels which can compete with fossil fuels and so reduce and fix energy prices for end users. Local wood biomass resources are finite, however, and as demand for biomass increases in a variety of markets, a greater understanding of the available resources at both a county and regional level is required. Under RASLRES the WDC prepared resource assessments which provide an overview of the potential supply of wood based biomass and estimate demand for renewable heat market within each county. They also highlight the issues regarding the potential impacts of large scale projects such as Bio-Refineries and/or Combined Heat and Power (CHP) plants on county and regional supply chains. From this experience we are aware that assessing the availability of all kinds of bioeconomy resources and their potential use in new value added activities should be an important action for the development of the sector.

An OECD report “Linking Renewable Energy to Rural Development”² contains a very useful examination of policy options and actions in fifteen OECD regions. It highlights what makes effective renewable energy policy and shows how bioenergy can provide greater local and national economic benefits than other renewable energies. Its analysis should influence the development of the bioeconomy statement. As noted in the OECD report, bioenergy policy interventions are typically most effective when delivered at a regional and/or local level where they can be tailored to local resources and conditions.

² OECD, 2012, *Linking Renewable Energy to Rural Development*, OECD Green Growth Studies, OECD publishing. <http://dx.doi.org/10.1787/9789264180444-en>

This focus on ensuring the most suitable development takes place in the right location is important in ensuring that the widest benefits are levered from the development. This finding will have some applicability to the development of the bioeconomy, especially for lower value resources. It is likely that the development of high value bioeconomy outputs will be spatially specialised, and location will depend on local resources and expertise. The Western Region, with a significant bioeconomy and with expertise in Ireland's national Technology Centre for Biorefining & Bioenergy (TCBB) at NUI Galway is a potential location for this more specialised activity.

In conclusions, the WDC believes that the bioeconomy policy statement should seek to apply the principles of a full supply chain approach, partnership and industry consultation, and continued flexibility of response to ensure that appropriate targets are set and actions developed to ensure that they are met, and that the benefits of bioenergy development are realised in their fullest sense.

QUESTIONNAIRE

Summary of Questions

This public consultation is intended to provide an opportunity for input into the creation of a national policy statement on the bioeconomy in Ireland. The intention is to provide an overarching policy framework that offers a national perspective and drives developments. Questions are posed below to stimulate the discussion around the bioeconomy. Please note that all relevant submissions and comments submitted to the Department of the Taoiseach for this consultation will be placed on the Department's website.

1. Does the broad definition outlined adequately encompass the opportunities presented by the bioeconomy?

The very broad based definition of the bioeconomy encompasses the opportunities presented by the bioeconomy. However, while a broad definition is important at the highest level of the national policy statement, for the statement to be effective it should focus on more specific aspects of the bioeconomy which are most likely to develop or can provide the most important benefits for the local, regional and national economy, as well as contributing to sustainability goals and development of local innovation capacity. Different parts of the policy statement should address more specific aspects of the bioeconomy, as using the broad based definition throughout the Statement could result in a broad, non-specific Statement which does not achieve its goals.

2. How can a high-level policy statement on the bioeconomy assist in progressing the development of the priority value chains identified?

A high level policy statement can indicate the priorities for development in the value chains. However, without accompanying policy it cannot ensure that these priorities are adhered to. In many cases in the early stages of development of the bioeconomy it may not be appropriate to stipulate a particular priority order in the value chain. When supply chains are in early stages of

development (as is the case for many bioeconomy chains) there is often a mismatch between supply and demand at different stages of the supply chain.

Consideration therefore needs to be given to whether the development of the appropriate priority for use also the value chain is more important than enabling the most development ready aspects of the bioeconomy. Markets may not yet exist for many of the higher value possibilities in the value chain, and therefore development at a lower level of the value chain may be quicker and still of benefit to the local and regional economy and to regional sustainability. Energy is one example of where the market is developing (albeit very slowly) but to insist on higher use value in the first instance before energy might impede the development of that market without incentivising the development of the higher value chain market.

Regulations applying in different areas (regarding for example waste, or uses of produce) may conflict with the development of a thriving bioeconomy, and while it would not be expected that the high level statement would address particular issues in detail it should set up structures within which the different regulatory conflicts could be discussed and changes or amendments agreed while, of course, still ensuring that health, safety and sustainability considerations are prioritised.

As has been noted in the consultation document, the development of the bioeconomy is challenging, and while it is important to gain as much value as possible, pragmatism is also important.

Given that different elements of the bioeconomy are influenced by different types of policy (energy policy, agricultural policy etc.) the high level policy statement can best support bioeconomy development by providing an overall direction to policy in the different sectors to ensure issues of the wider bioeconomy are addressed alongside the sectoral aims of the policy and that conflicts within sectoral policies (as regards priorities or differing objectives) or among policies in different sectors (probably relating to different priorities or regulatory issues) are recognised and addressed.

3. What lessons can Ireland take from the European approach, including to the Circular Economy?

The European approach provides a context for the high level statement on the bioeconomy and it also provides a structure which can be followed in the development of the statement. Using the commonly accepted European structure but prioritising the bioeconomy aspects which are most important to Ireland will simplify the development of the statement and also ensure that it fits in with a common European approach.

The EU focus on the transition to a stronger and more circular economy where resources are used in a more sustainable way is, of course, in line with the emphasis on the development of the bioeconomy in Ireland. "Closing the loop" of product lifecycles through greater use and reuse of resources will bring benefits for both the environment and the economy. Emphasis on extracting the maximum value and use from all raw materials, products and waste, fostering energy savings and reducing Green House Gas emissions should underpin any effort to development the bioeconomy in Ireland which should focus on producing a wide range of social and environmental benefits as well as economic opportunities.

Given that the EU has developed an Action Plan for the circular economy, it is important that the policy statement on the development of the Irish bioeconomy uses that Action Plan as a context and aligns with it, so as to ensure that it can benefit from schemes and funding for development in this area.

4. *Given the cross-sector nature of the bioeconomy, how can a national policy statement best support development?*

As has been noted throughout the consultation document, and in this submission, the cross sectoral nature of the bioeconomy makes policy development complex as responsibilities relevant to its development are spread across departments and agencies. In the first instance, working with stakeholders in a variety of different areas can help to ensure that all elements of the bioeconomy are considered. As noted above, an assessment of bioeconomy resources is also essential to development of an appropriate strategy for its development.

The next stage is this development of the policy statement. This must provide an overarching context for relevant policy developments in other sectors (agriculture, energy for example) and provide clarity on priorities in relation to bioeconomy development and the direction in which the government expects to promote development.

A vision and targets for development in this wider context should be developed but these should be translated into more practical actions, in a number of priority areas. These individual, more specific actions, can then be worked on by subgroups with a particular focus which involve relevant stakeholders.

A focus on developing and enabling specific aspects of the bioeconomy (in the context of the larger statement) is the most effective way to ensure development in a complex policy environment.

5. *Can we identify a common set of principles, including in particular the application of the cascading principle, which will assist in the development of both the bioeconomy and circular economy?*

It is important that the national statement identifies a common set of principles for the development of the bioeconomy. Indeed, the focus on ensuring sustainability is emphasised in the consultation document. It is agreed that it is essential that, in the context of bioeconomy policy as well as energy policy, incentives such as the Renewable Heat Incentive (RHI), or indeed the energy market itself, do not incentivise heat production beyond what is required or inappropriate use of resources which might have a more sustainable value elsewhere.

The WDC supports the principles suggested in the consultation document for the bioeconomy policy statement. The emphasis in the statement and in future policy should be to ensure these principles are applied across the bioeconomy and in the sectors that contribute to it.

6. *How can a national policy statement support local and regional cooperation around the use of renewable biological resources?*

The national policy statement on bioeconomy should indicate the direction in which the bioeconomy in Ireland should develop. It should also provide targets for the level of development in a number of areas and for integration of supply chains to help achieve these targets.

It should then be possible to provide some support to incentivise the development of the local and regional aspects of the bioeconomy, and by using a competitive approach which favours co-operation and integration across the different elements of the bioeconomy it should be possible to support more effective regional and local co-operation.

7. How can waste policy, including an examination of the definition of waste, best support developments in the bio and wider circular economy?

The WDC has not conducted any analysis of waste policy.

8. How can we stimulate market demand for bioeconomy products? What is in it for the consumer?

The WDC considers that, based on its experience in renewable and bioenergy market stimulation (particularly with the RASLRES and BioPAD projects), there are a number of ways to stimulate market demand and overcome barriers to the development of an effective bioeconomy.

Market awareness and confidence: Many consumers are simply unaware of the technology and the product options available. In addition there can be a lack of market confidence in the technology and products where they are new or have not previously proved successful. For the market to develop there needs to be greater confidence in the reliability and convenience of the supply chain.

Market development: In order to grow the market, the technical, design and practical skills in the installation, operation and conversion of bioenergy resources to suitable products (both high and low tech) must be developed. The business case and resource supply models must be understood. The investment process may be more complex than in existing markets and specialist expertise may be required. This investment is therefore more time consuming and risky than an investment in established technologies.

Integrated supply chain: There is a low level of awareness of the market opportunities, and limited knowledge and technical expertise in relation to newer aspects of bioeconomy supply chains amongst potential suppliers/producers. New investment in equipment and infrastructure will be required in order to respond to market opportunities.

Supportive policy: Supportive planning policies will help to increase the rate of market development. For instance there is a lack of awareness among potential users as to the planning requirement for a wood heat facility, or regulations on use of food products or waste products. Similarly, better understanding of the benefits of bioeconomy systems and technology is needed to improve their passage through the planning process.

Finance: Some aspects of bioeconomy development may be capital intensive. In countries with more established bioeconomy this is widely recognised and accessing private finance from a bank is relatively straightforward and projects which would be innovative in Ireland may not be considered unusual. In Ireland where the sector is less established, and where banks have less experience of the sector, and where there are significant difficulties in gaining finance for all project types, lack of access to loans could be an important restriction on the development of the sector. It is essential to consider capital grants or alternative loan facilities for those making an investment in those areas of the bioeconomy which policy most wishes to stimulate.

While much of the above focuses on supply, and the matching of market supply with market demand is one of the difficulties in an emerging sector, many consumers will be influenced by price as well as reliability and safety. It is important that the sector is developed in a steady manner so that new products have time to develop reputation for quality and reliability.

While there are different requirements in each of these sectors because of the early stage of development of the bioenergy sector in Ireland they all face some common issues. Policies and actions which develop the supply chain along all stages are essential and should be developed based on a rigorous analysis of the stage of supply chain development and the gaps or weaknesses.

9. What is the most appropriate mechanism to coordinate development and monitor progress?

While the policy statement will indicate the direction envisaged for the development of the bioeconomy, it should also contain targets for its development and actions to help achieve these targets. A clear list of these actions, stakeholders responsible for their delivery and timelines should be developed. It will then be possible to monitor their delivery. Alongside this, indicators of progress in the development of the bioeconomy (for example, innovations, people employed, outputs of the bioeconomy and their values should be agreed and baseline data collected. A time period for indicator update should also be agreed and these figures should then be monitored in line with that. These wider indicators, along with monitoring of progress in relation to the actions, should allow for coordination and monitoring of progress.

10. Are there any other issues to be addressed through a national policy

The WDC has significant experience in bioenergy development, supporting pilot projects and conducting essential analysis. While the RASLRES project worked to support the development of renewable sector in the Western region by detailed assessments of the issues it also provided consultancy support to potential bioenergy users under a series of pilot projects for assessment of bioenergy options and installation of bioenergy systems. The WDC is happy to share these experiences to contribute to the further development of a National Bioenergy Strategy.

The BioPAD project focused on further understanding of supply chain issues and the development of bioenergy clusters and on the dissemination of the work undertaken during the RASLRES project. Good understanding of resources available and options for uses are essential to the development of the bioeconomy.

It should be noted that not all policy and market interventions require significant funds. A directive ensuring that public procurement takes account of the bioeconomy statement, or that particular products which are part of a sustainable circular economy are used could considerably aid the development of the sector. Additionally, experience on the RASLRES project found that a broadening of support, with less focus on grants but with a focus on provision of information, analysis and expertise can be a very cost effective means of providing support for the development of the sector.

The RASLRES aim was to stimulate the western bioenergy sector (primarily heat). We designed a method we called market stimulation method (MSM) which basically involved a range of specialist supports directly to clients and providers to enable commercially viable biomass projects to be realised. We supported the supply chain and the client demand aspects as both were deemed in

need of stimulus. We undertook 11 pilot projects working through difficulties, creating networks and ensuring the projects could develop and act as models for the bioenergy market.

The WDC has found that soft supports such as information and market analysis, provision of specialist expertise and advice, sourcing of supplies, understanding of quality issues and tendering and contracting (all provided by consultants) and networking of suppliers and users were important and very cost effective mechanisms for stimulating development.

Conclusion

The WDC welcomes the development of a national policy statement on the bioeconomy and the opportunity to input into this consultation.

While the focus of this consultation is on the development of a the policy statement on the bioeconomy, in order for it to be successful it is important that this is accompanied by actions which will support the development of the bioeconomy, with the goal of making our economy more sustainable, of taking advantage of the economic opportunities provided by the bioeconomy, also improving employment opportunities and stimulating innovation.

The WDC believes that the bioeconomy has the potential to create considerable employment across the Western Region and to provide long term stable markets for many low value biological outputs. Therefore we suggest that any high level targets for the development of the bioeconomy should also be translated into a regional and local context so they can drive the delivery of a thriving bioeconomy and spread the benefits throughout the country.

For further information or discussion of any points raised, or to find out more about WDC work on please contact helenmchenry@wdc.ie

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Appendix

The BioPAD project

Developing a local bioenergy market can provide significant opportunities for rural and remote areas, by improving security of supply, contributing to reduction in CO₂ emissions and stimulating the local economy by creating jobs and keeping payments for energy within the community.

BioPAD (Bioenergy Proliferation and Deployment), which targeted the Northern Periphery of Europe, aimed to ensure that bioenergy becomes more widely used and that awareness of the opportunities for it provided are increased. The project goal was to help the development of bioenergy and 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 helps the establishment of robust and efficient supply services which can match local demand.

The Project was led by the Western Development Commission (Ireland) and was funded under the EU's Northern Periphery Programme (NPP) and had partners in Scotland (Environmental Research Institute, UHI), Northern Ireland (Action Renewables) and Finland (Finnish Forest Research Institute, METLA). Along with these four partners, the €0.7 million two year project included 11 associated partners representing five countries with experience throughout the supply chain.

While some areas of northern Europe have well-developed biomass supply chains, others face significant challenges in developing cost-effective and sustainable supply chains to better exploit their biomass resources. The project aimed to gain a better understanding of the current status of biomass supply chains for a range of biomass types including wood products, energy crops, marine macroalgae and agricultural wastes.

The analysis of regional supply chains helped develop tools which enabled users to source and use locally available biomass, across a range of appropriate technologies (anaerobic digestion, combustion, or micro combined heat and power (CHP)). In addition, supply chain mapping work, undertaken as part of the project, informed policy frameworks and interventions to support renewable energy deployment in the northern periphery.

A bioenergy tool which highlights key steps along the supply chain for each fuel type or conversion method was made available in a variety of formats (for web, mobile and app). The promotion of this information system and tool were important elements of the project and there was a focus on making it accessible through the project region.

This development of local renewable bioenergy supply chains provides sustainable enterprise opportunities for individuals, communities, and municipalities in northern Europe and stimulate great use of bioenergy for heating.

RASLRES publications

The RASLRES project has been responsible for the drafting and dissemination of a number of important publications in the bioenergy field – all of which are available to download for free from <http://www.raslres.eu/publications/>

These publications include:

- **Resource Assessments of the Western Region:** These provide interested parties with an overview of the potential supply of wood based biomass and estimated demand

for renewable heat market within each county. They also highlight the issues regarding the potential impacts of large scale projects such as Bio-Refineries and/or Combined Heat and Power (CHP) plants on county and regional supply chains.

- **RASLRES ESCO Model Contracts and Guidance Notes:** The ESCO model contracts and guidance notes were developed to provide a template for public ESCO model contracts which would be available to business or public sector users seeking to use a heat purchase contract.
- **District Heating as an Enabling Technology for Biomass in the Western Region:** examines issues for District Heating as an Enabling Technology for Biomass in public sector buildings and the wider community in the Western Region.
- **Wood Energy Guide:** The Wood Energy Guide is an ‘all you need to know guide’ for end users in considering locally produced timber as a renewable energy resource for their homes and businesses
- **Energy from Wood Biomass – Environmental Management Considerations:** This report raises awareness of potential environmental impacts and how to mitigate them when increasing the uptake of biomass in terms of forestry
- **Wood Energy in the Western Region of Ireland:** A series of reports on Wood Energy in Western Region of Ireland resulting from the RASLRES pilot projects, including:
 - **Bioenergy in the Western Region of Ireland:** This report aims to assist the Local Authorities in reviewing the benefits of bioenergy and how they may be leveraged
 - **Review of Woodchip Supply in the Western Region of Ireland:** This market research report presents an overview of the woodchip supply sector in the Western Region
 - **Wood Energy Installations in the Western Region of Ireland:** This market research report presents a review of medium scale wood energy installations (defined as systems with a boiler size range of 60kW to 1MW) in the Western Region of Ireland
- **Energy Crop Opportunities in the Western Region:** This report presents an analysis of the potential of energy crops in the Western Region of Ireland based on the application of the national bioenergy Geographical Information System (BGIS), and discusses key factors impacting on the future development of the energy crop sector
- **Research on Wood Energy in the West of Ireland:** The results of research that has been carried out through the RASLRES project into the availability and need for wood energy in the West of Ireland is available in 3 specific publications
- **Technical Reports:** These 2 Technical Reports share lessons from the RASLRES project with other potential industrial heat users- specifically on “Process Drying” and “Biomass Boilers for Process Steam”