

# **European (Bio)Energy Policy 1996-2006**

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**September 2006**

When considering bioenergy policy and implementation in the European Union it is important to remember that, while member states are free to set their own renewable energy policies, put in place support systems, incentives etc, these will inevitably be influenced, to some degree by European legislation, policy and activities. For example: member state policies must be consistent with European legislative restrictions including: state aid restrictions and European procurement laws; research or demonstration funding may be provided for activities in a member state under an EU-funded programme; national policies may be influenced by requirements to meet targets in European directives and there may be a desire not to duplicate, but too appropriately support activities at the European level. It is therefore important, when looking at activity in the bioenergy sector, to consider not only national policies and support mechanisms, but also European energy policy.

This brief report for Thermalnet members therefore examines European bioenergy policy so as to get a better understanding of how European and member state policies fit together in determining overall priorities and actions, any restrictions European policy may place on national policies and how European policy has developed and is developing.

## **1996 White Paper on Energy**

An EU White Paper on energy was published in 1996, with 3 major priority policy objectives:

- Security of supply
- Improving the competitiveness of European business
- Taking environmental aspects into account, with an emphasis on the “energy dimension of climate change”

It concluded that the role of the European Community in relation to renewable energy policy was to:

- Support research
- Stimulate cooperation
- Introduce appropriate equipments standard
- Establish a Community framework for national fiscal and other incentives

Notably, the European Community is taking no direct role in fiscal or other incentives. However, the white paper notes that, owing to the size of investments needed, these actions will only substantially change the contribution of renewables if both national and community authorities adopt policies that are able to effectively mobilise significant resources.

## **1997 White Paper on Renewable Energy**

Subsequently in 1997 a white paper on renewable energy was published by the Commission: “Energy for the Future: Renewable sources of energy” (COM(97) 599). This reviewed the background to renewable energy in Europe, considered potential technical contributions sector by sector and defined a strategy and action plan to promote the market penetration of renewable energy sources, with an overall target of doubling their use by 2010 (from 6% in 1996 to 12% in 2010). The plans and actions being carried out by member states are reviewed and the share of renewable energy sources (RES) in their current energy budgets are estimated, as well as projected RES contributions by 2010. Costs, benefits and strategy are detailed by sector and a number of targets or key actions are included, including the establishment of 10,000 MW of biomass installations.

The need to improve coordination of both European and member state programmes and policies is noted and a working group was established to monitor the measures undertaken and evaluate the impact of energy policy decisions at all levels with regard to the use of renewable energy sources. Member states were exhorted to adopt national goals and strategies, which will be compared alongside European wide action. The specific action plan included the following items relevant to biomass:

- Member states to set individual objectives and strategies for 2005 and 2010
- Member states to progressively increase the market share of liquid biofuels
- Promotion of biofuels via a directive, which is being transposed into member states legislation
- Support for EU programmes to promote RES, such as Altener
- 10,000 MWth of biomass installations via EU promotion and financial contribution and member state co-funding

## **2001 Renewable Energy Sources Directive**

In 2001 the first ever piece of European legislation aimed at promoting the production of energy from renewable sources was introduced. This European Renewable Energy Sources directive aimed to increase the share of green electricity from 14 to 22% of consumption by 2010 and to double the share of renewable energy from 6% to 12% of gross energy consumption in the same period. The directive required all member states to set indicative targets for the consumption of electricity from renewable sources by 2010. The Commission will monitor progress towards these targets and will, if necessary, propose mandatory targets for states failing to achieve their targets. The Directive does not propose a harmonised Community support system for green electricity, but does undertake to assess the support measures implemented by member states, with a view to possibly proposing a community support framework if that were considered necessary in the future. Member states are required to review their existing regulatory and legislative frameworks with the aim of reducing obstacles to renewable energy production.

## **2003 Directive on Promotion of Biofuels**

This directive required member states to set national targets for the minimum level of bio or other renewable transport fuels on their markets. The reference levels recommended in the Directive were 2% by 2005 and 5.75% by 2010.

## **2004 Communication on share of renewable energy in the European Union**

In 2004 the Commission issued a communication evaluating progress towards the targets set in the 2001 RES directive. It noted that with existing national policies and measures the EU would achieve only 18-19% of renewable energies as share of total electricity consumption instead of the 2010 target of 22%. Only 4 member states (Germany, Denmark, Spain and Finland) are on track to achieve their national targets. Regarding the target of 12% share of renewable in overall energy consumption by 2010 the Commission believed that, even with full application of the biofuels directive (above) and other existing legislation only 10% would be achieved. Extra actions were identified as being needed in the heat sector. As well as encouraging member states to maintain investment and support schemes and enhance research efforts other specific proposals were for a biomass action plan (see below).

## **2005 Communication from the Commission on “The Support of Electricity from Renewable Energy Sources”**

In 2005 the Commission completed its review of member state's systems for implementation of renewable energy systems and concluded that due to widely varying potentials and developments in different member states a harmonisation seems to be very difficult to achieve in the short term. Furthermore competition between different national schemes was perceived as healthy over this transitional period. It was also noted that it was too early to compare the advantages and disadvantages of well-established support mechanisms with systems with a shorter history. Therefore it was not considered appropriate to introduce a harmonised European system at present. Instead the Commission has called for intensified coordination between member states

With regard to the biomass sector this EC review concluded that the effectiveness of policy mechanisms being deployed in the member states for solid biomass electricity was significantly lower than for wind, confirming previous suspicions that the development of biomass is lagging behind expectations at EU level. The following conclusions were drawn:

- Even in countries where the level of support was considered enough it appeared that the biomass sector was not yet ready to cope with the risk of the green certificate schemes.
- The success of feed-in tariff schemes varied depending on the actual overall level of support. For example, Denmark, Finland and Netherlands show the best effectiveness and the smallest gap between support and generation costs. However in France, Greece, Ireland, Luxembourg, Portugal and Spain the feed-in tariff support is not enough to bring about a real take-off in the biomass sector.
- Secondary instruments especially small investment-plant support and tax relief are good catalysts for kicking off biomass. They also have the advantage of less interference with the wood market
- In many cases infrastructure barriers are significant eg. Good management of agriculture and forest residues provides a firm starting base.

It was noted that the analysis of the biomass sector is complex, with big variations in generation cost, depending on different feedstocks, conversion processes and sizes of

plants. The complexity of the sector and regional variations mean that other factors play a strong role, as well as support mechanisms.

### **2005 Biomass Action Plan**

Stakeholder consultation on a proposed EU biomass action plan was carried out in the first quarter of 2005, followed by publication of the final biomass action plan at the same time as the review into support of renewable energy sources (above) was carried out. The proposals that received most support across EU respondents are listed below:

- Fiscal measures that consider the external costs of fossil fuels and benefits of bioenergy
- Harmonising quality standards for bioenergy products
- Promoting renewable heat eg. By a directive
- Raising awareness
- Amending ~CAP regulations
- Increasing R&D funding
- Mandatory levels of co-firing for coal-fire plant
- Harmonise trade regulations to create an EU bioenergy market
- Harmonise policy goals and support schemes to facilitate long term policy stability
- Promote the energy, environmental and cost efficient use of available bio-resource
- Integrate waste and renewable energy policies
- Set mandatory targets for transport biofuels
- Define targets for biogas
- Limit bioenergy imports to the EU, especially those of biofuels
- Speed up national implementation of EU regulatory acts that promote bioenergy

The actual action plan was published in December 2005. It aims to set out measures to increase the development of biomass energy from wood wastes and agricultural crops by creating market-based incentives for its use and removing barriers to the development of the market. It is seen as a first coordinating step, setting out measures to promote biomass in heating, electricity and transport, followed by cross-cutting measures affecting biomass supply, financing and research. As a second step, individual measures will be brought forward subject to specific impact assessment in line with Commission rules. Over 30 proposals were made in the document. The key ones with relevance to policy/support mechanisms are:

- Proposed EC legislation in 2006 on renewable energy heating
- Encourage member states that apply a reduced VAT rate to gas and electricity to apply such a rate to district heating too
- Encourage member states to harness all cost-effective forms of biomass electricity generation
- Encourage member states to take into account, in their support systems, the fact that, in CHP plants, biomass can provide heat and electricity at the same time
- A report in 2006 on possible revision of the biofuels directive to set national targets, use obligations and certify minimum sustainability criteria

- Promote public procurement of clean vehicles, including those using high levels of biofuels
- Monitor possible discrimination against biofuels in industry
- Bring forward a communication on biofuels early in 2006
- Assess the implementation of the energy crop scheme
- Consider how the waste and animal by-products legislation could be amended to facilitate use for fuel
- Encourage member states to establish national biomass action plans

## **2006 Energy Green Paper**

A green paper on energy was published early in 2006 and is open for consultation until 24 September. The main aim of the green paper is to develop a common, coherent European energy policy, which would allow Europe to speak with a common voice, taking the lead in the global energy debate to lay the foundations for secure, competitive and sustainable energy. This approach was agreed by heads of state and government in 2005.

It is written against the backdrop of a number of key concerns in the European and global energy market. These include increasing global energy demand, European import dependency, rising prices, climate change and the needs to substantially renew European energy infrastructure and develop fully competitive energy markets. From this changing energy landscape the Green Paper identifies six key areas that must be addressed:

- Energy for growth and jobs in Europe: completing the internal European electricity and gas markets
- An internal energy market that guarantees security of supply: solidarity between member states
- Tackling security and competitiveness of energy supply: towards a more sustainable, efficient and diverse energy mix – it is suggested the first step to addressing this could be a strategic EU Energy Review, which would analyse all the advantages and drawbacks of different sources of energy (including renewables and biomass) to facilitate transparent and objective debate. It is postulated that it might be appropriate to agree an overall strategic objective, balancing the goals of sustainable energy use, competitiveness and security of supply
- An integrated approach to tackling climate change – the EU Emissions Trading Scheme is seen as a good starting point for this, but more needs to be done on energy efficiency (for which an action plan on energy efficiency is to be proposed by the Commission in 2006, which it is hoped might catalyse global activity and agreement), renewables and carbon capture and storage. On renewables the importance of long term commitment is recognised and there is a recommendation that the EU Energy Review would bring forward a Renewable Energy Road Map, which would consider appropriate targets, a programme to ensure existing targets are met, any need for further targets, a Community directive on heating and cooling, a plan to reduce dependence on imported oil, building on the biomass action plan and biofuels strategy and R&D initiatives.
- A strategic European energy technology plan to encourage innovation, with industry-led European technology platforms on biofuels, hydrogen and other

areas to strengthen European research effort and prevent overlaps in national programmes.

- Development of a coherent external energy policy for Europe

### **2006 EU Strategy for Biofuels**

Reducing the EU's dependence on imported oil is seen as a key objective of any new European energy policy. The strategy for biofuels looks at the role biofuels could play in the context of reducing greenhouse gas emissions and diversifying fuel supply. It resolves to stimulate demand by reviewing the biofuels directive in 2006, encouraging member states to give favourable treatment to second generation biofuels and promoting clean vehicles in public procurement. It resolves to look at the sustainability of feedstock cultivation and explore further optimisation of greenhouse gas benefits. The Commission will look at the wider context of implementation and encourage Member States to take biofuels in to account in other areas, such as rural development as well as examining industrial practices that act as barriers. Steps will be taken to attempt to expand the current feedstock base and market and trade issues will be considered, including amendments to fuel standards. R&D support is promised and a biofuels assistance package is to be developed to help developing countries that have a potential for biofuels.

### **Commentary**

European policy pronouncements with regard to renewables generally and biomass, specifically has become increasingly more frequent and more interventionist over the last 10 years. The 1996 energy white paper largely restricted the role of the European Commission to supporting research and stimulating co-operation, with small moves towards facilitating members states fiscal policy instruments.

The 1997 white paper on renewables was more exhortive, asking member states to set targets for renewable electricity and increase their use of biofuels, but the main thrust is still providing background support for research and other programmes.

However, moving on from that we see an increasing interest in renewables and biomass and increasingly direct involvement in member state's policies and support mechanisms. This starts with the 2001 directive actually requiring specific renewables targets to be set by member states. Then in 2003 an equally "hands-on" approach is apparent with respect to targets for biofuels – showing a much more technology-specific, interventionist stance.

This is followed up with active monitoring of the situation with regard to renewables in the 2004 communication.

Most significantly when this communication determines that the EU is likely to miss its target there is a relatively swift follow-up in 2005, taking a critical look at what each member state is doing in terms of renewable energy sector by sector. This does, however, fall short of making specific active changes, concluding that there are a number of different schemes out there and that a "watch and see" brief is probably best employed at present. The biomass sector is particularly singled out in this document as "complex" and this is reflected in the subsequent biomass action plan. It is worth noting that this is not simply one of many different action plans, developed for each of the renewable sectors; only bioenergy has aroused sufficient interest/concern at European level to warrant an action plan. This is partly a reflection of the complexity of the sector and a recognition of the need for a broad supportive framework across areas other than just the energy field and partly a recognition of the unique potential to contribute not just to the renewable electricity

share, but also to offer potential solutions to carbon emissions in the heat and transport sectors. No other primary fuel is as adaptable. The biomass action plan goes further than previous communication actually proposing concrete implementation steps at a European level eg. A renewable heat directive, the possibility of mandatory targets for biofuels and direct engagement with private industries perceived to be presenting barriers to implementation. The level of direct European involvement in the biomass sector has been increased, although much of the really concrete steps are still proposed or pending.

The 2006 Green Paper on energy revolves around the desire to make a previously unprecedented, common European energy policy, a reality. There is a further increase of resolve in respect of renewables, with promises of a roadmap and an energy review that would look directly at some of the implementation issues that are key to the biomass sector eg. Analysis of pros and cons of different fuels for different applications, a community directive on heating and cooling and a strategy to reduce imported oil dependence.

This has already been followed by the biofuels strategy, which is currently under consultation. It proposes to review the biofuels directive, attempt to create niche markets via public procurement, pays attention to wider environmental and sustainability concerns and, at the same time moots a programme that would help developing countries supplying biomass feedstock.

There is no doubt that the level of interest in bioenergy at the European policy level is increasing and the steps being taken and proposed are getting bolder and more technology specific, although they are still moving incrementally and stopping short of direct intervention. If a common European policy can successfully be formulated, negotiated and ratified it is likely that this may pave the way for more direct involvement at European level in the future.

Addressing the reduction of carbon emissions by increasing renewables, including increasing biomass implementation, involves a market shift from a fossil-fuel based economy to a more sustainably focused one. This requires massive technological and associated change, the implementation of which has and will continue to be complex and slow. Economic studies of innovation and technical change generally recommend action along at least 4 dimensions:

- Take measures to achieve emissions reduction in the near term
- Develop international institutions and rules needed to address the global problem
- Develop new technologies needed to reach more stringent future levels
- Strengthen networks of actors that recognise the need for more stringent change

Traditionally European policies and involvement has concentrated on the activities near to the latter 3 areas – actual policies required to achieve the first have not been part of its remit. However, there are signs that this is changing. Increasing involvement in setting explicit targets and monitoring member states support mechanisms shows more direct hands-on policy involvement. Furthermore there is more to achieving emission reductions than direct electricity price subsidies/taxes. Policy instruments that adjust prices are one of the most common and effective tools and the EU has not been involved with these. However, these generally favour near-to-market or already available technologies. In many member states biomass does not fall into that category. Therefore the other categories of policy instruments become more important for biomass. These include funding of R&D (a traditional EU activity, funding for which is increasing at European level in contrast with decreases

at many national levels), demonstration (an active EU area), formation of networks (another active area eg. Thermalnet) and market formation (a more recent EU level foray via target setting for renewables and initiatives such as the biofuels directive).

It is clear therefore that EU policy is becoming increasingly important as an adjunct to member states own policies in relation to renewables in general and biomass particularly. Also the EU is becoming increasingly involved in setting the agenda for member states own policies. To date that has stopped short of direct intervention to harmonise support mechanisms and other measures, but ratification of a common European energy policy could well pave the way for this.

It is crucial for the biomass industry therefore that EU policy continues to develop that fosters the expansion of the industry, but in a way that recognises that the bioenergy world is diverse and one size will not fit all. There are, of course, different technologies, feedstocks and applications. However, even beyond that application of the same system in two different member states can result in massively different results because of different contexts, experiences, cost bases, infrastructures etc. This can result in the need for a range of measures and initiatives to assist the bioenergy industry develop in an optimal way. So far the signs are that this complexity is recognised by the EC, although, if current recommendations are followed through, the European energy review and bioenergy roadmap will be critical in this respect.