▸Other Energy-Related Developments

This section presents the important energy-related policies in the region, with an emphasis on EU-level developments, and brief reports on particular events/ policies in some of the fifteen Member States.

EU Policies

EU level policies have a bearing on the energy markets in Europe in many respects. In fact, a common energy policy was one of the founding pillars of what is now the European Union. Two out of the three European communities that were founded in the 1950s had a strong energy aspect; the European Community of Coal and Steel (ECCS, 1951) and Euratom (1957).

In recent years, climate change has been one of the major factors, though far from the only one, in debates on future energy policy. Energy consumption is the source for most of the emissions of greenhouse gases that are responsible for global warming. The European Union has taken on a leadership role among developed countries with regard to this global problem. Under the Kyoto Protocol, which could enter into force in 2002, the EU as a whole has pledged to cut its emissions of a basket of six such gases by eight percent during the period 2008-2012 from their levels in the base year 1990, which is also the base year for the SEW indicators evaluated in this report.

The provisions of the Kyoto treaty allow the EU countries to achieve their commitments jointly. In effect, this implies a reallocation of the reduction effort among the fifteen Member States, based vaguely on their economic capability and their consumption levels. The arrangement is know n as the "burden-sharing agreement", and it includes a range of targets, from –28% for Luxembourg to +27% for Portugal[6].

The European Community (as the European Union was known prior to the Amsterdam Treaty) as a legal entity is also Party to the treaty and responsible for complying with it. Common and Coordinated Policies and Measures (CCPM) are, therefore, key to EU Member States and thus the EU as a whole achieving the targets they agreed to under the Kyoto Protocol. Achieving these targets will arguably be one of the most important factors for the region's future energy situation.

Accordingly, the following policy round-up focuses on the EU climate change strategy and some of the policies it incorporates, including an overview on the most important debates relevant for the energy sector.

Although we concentrate on climate change issues here it is important to recall that this is not the most important driver in EU energy policy. Although no policy proposal fails to mention climate, recent policies have been influenced more by security of supply concerns and the drive to liberalise the electricity and gas markets.

The European Climate Change Programme (ECCP)

The European Climate Change Programme (ECCP) is the official implementation strategy of the European Union for compliance with its Kyoto target of an eight percent reduction in greenhouse gas emissions. The process was initiated in March 2000 with the release of a Commission communication entitled "Towards a European Climate Change Programme"[7]. It established a twelve-month stakeholder consultation process, whose

[6] The EU burden-sharing agreement (in % of 1990 levels): Austria –13, Belgium -7.5, Denmark –21, Finland 0, France 0, Germany -21 ,Greece 25, Ireland 13, Italy -6.5, Luxembourg -28, Netherlands -6, Portugal 27, Spain 15, Sweden 4, UK -12.5 => EU -8. Agreement also known as "the bubble".

[7] Document index: COM (2000) 88.

goal it was to identify and develop all the necessary elements of an EU strategy to implement the Protocol. Six working groups were initially set up.

- Working Group 1 Flexible mechanisms
- Working Group 2 Energy supply
- Working Group 3 Energy consumption
- Working Group 4 Transport
- Working Group 5 Industry
- Working Group 6 Research

These were then in some instances divided into more specific subgroups. WG 5 established a sub-group on Fluorinated Gases and one on Voluntary Agreements. WG1's main group discussed an EU-wide Emissions Trading Scheme, and a smaller group debated the use of the project-based mechanisms of the Kyoto Protocol, Joint Implementation and the Clean Development Mechanism. An additional group on agriculture was also set up in 2001. The reports from these working groups were synthesised into a final document and published in June 2001. In late October 2001, the Commission then presented a communication outlining the results and listing twelve priority measures, which should be put in place during the coming two years. The list excludes measures which were already well advanced or adopted at the time of its publication, such as the directives on Emissions Trading and the promotion of renewable energy sources.[8]

Emissions trading

Given the failure to implement energy taxation at the European level, the Commission proposed an emissions trading scheme for large point sources of CO2 emissions in the EU. This proposal was presented along-side the ECCP communication in October 2001 and is now being considered by the European Parliament and Council. It would set an overall emissions cap for all large installations in a small range of sectors, including cement, refineries, pulp and paper, ceramics and power generation plants over 20 MW. Allowances under this cap, each worth one tonne of CO2, could then be traded among the installations subject to this cap (there are roughly 4,000-5,000 such sites in the EU) and thus make emissions cuts where they are most cost-effective. Any company failing to obtain enough allowances to cover its emissions would be liable for a penalty payment of €100 per tonne as well as having to make up the emissions cuts in the following year. The crucial details of the level of the overall target and the way to allocate allowances to companies before the trading system starts are left to the member states, subject to Commission review.

At the time of writing it is unclear what the finished article will look like – whether it will remain mandatory or become (for some time) voluntary; whether allowances will be exchangeable for Kyoto mechanism units; or whether there will be a "pilot phase" during 2005-7, for instance.

Directive on Combined Heat and Power (CHP)

A Directive on the promotion of Combined Heat and Power, or cogeneration, is being prepared within the European Commission's department for energy and transport (DG TREN). In the first half of 2002, its progress was delayed because of concerns from Commissioner de Palacio (head of DG TREN). Even if and when it emerges, it seems likely to be very weak: no targets are included, and issues such as grid access for CHP are restatements of the hopes of the liberalisation directives.

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[8] The final reports from these groups and the official report are available from the ECCP web page of the European Commission's General Directorate (DG) on Environment <http://europa.eu.int/comm/environment/climat/eccp.htm>

The CHP Directive is among the twelve priority measures listed in the ECCP communication.

Renewable Energy Directive

This Directive was approved in September 2001 and must be implemented by the member states by October 2003. It sets indicative targets for the consumption of electricity from renewable sources in the EU by 2010, totalling 22.1% of EU electricity consumption in that year. The means to meet those targets are left to member states. Renewable energy sources in this Directive include both large scale hydroelectricity and the biodegradable fraction of incinerated municipal waste. This Directive is set in the framework of an EU aim to supply 12% of primary energy demand from renewables by 2010. Current levels are at around 6% under this definition of renewable energy. The SEW indicator follows a definition by the International Energy Agency (IEA), which divides hydro power plants into large and small facilities, using a threshold of 10 MW generating capacity.

Energy efficiency

The EU has a long-standing Action Plan on energy efficiency which has as its target an additional 1% per annum improvement in energy intensity (energy per unit of GDP) above business as usual (business as usual is not defined.) This includes a wide range of proposals for Commission initiatives, including:

- Updating of the "SAVE" Directive 1996/73
- Voluntary agreements on appliance standards and industry efficiency
- Proposals for promoting boiler efficiency
- Proposal for a CHP Directive (see above)

The most significant current energy efficiency initiative is the proposal for a Directive on energy efficiency in buildings. This is currently being revised by the Parliament and Council. It mandates energy audits for most classes of building at the time of sale and otherwise at regular intervals (exactly how often is still being debated – every 10 years looks likely). Large buildings visited by the public would have to display energy consumption data prominently.

The Commission is expected during 2002 to start drafting a proposal for a Directive on energy services for demand side management, but at time of writing no progress has been seen on this initiative. This Directive is part of the ECCP priority list.

Liberalisation of the gas and electricity markets

Liberalisation of electricity markets in Europe is breaking down non-innovative state monopolies and opening the system to green power producers. On the other hand, competition on price and volume could induce higher consumption. As a result the process has been closely followed for its environmental implications. Individual national initiatives in the UK and the Nordic region began the liberalisation trend in the early 1990s, and a 1996 EU directive mandated a target of 33% market opening for the whole Union by 2003.

At the behest of the Council, the European Commission has proposed to speed up the process so that 100% of all customers, from industry to households, could choose their supplier by 2005. Objections by the French lead to a compromise at a heads of state meeting in Barcelona in March 2002, whereby only the industrial and commercial sectors will be opened; it may be that following French elections their resistance to household level competitions softens. The meeting also called for investment in high-voltage interconnections to maintain at least 10% exchange capacity between markets, ensuring liquidity; environmental NGOs in particular have emphasised distributed generation as an alternative.

In its first reading of the Commission proposal, the European Parliament added measures to promote distributed energy, strengthened provisions on labelling the source of and environmental damage resulting from electricity delivered to customers, and called for separate management of nuclear decommissioning funds to avoid them being used for corporate takeovers in the sector.

Security of Supply

In October of 2000 the European Commission released a green paper on security of energy supply for a year-long consultation period. Citing the EU's increasing reliance on foreign fuel sources, particularly petroleum, it called for measures to reduce risks to that supply and to increase domestic flexibility. Controversially, it mentioned nuclear energy as a necessity if Kyoto goals and security of supply considerations were to be reconciled. A European Parliamentary opinion was similarly controversial in its apparent support for nuclear energy.

The support for nuclear has overshadowed discussion of efficiency and demand-side management, despite the rhetorical importance placed by the EU institutions on the latter. The Green Paper will be followed by a directive, scheduled for late 2002. Environmental NGOs have emphasised the importance of efficiency, renewable energy and distributed generation as means of both diversifying and localising production, while reducing the overall need for energy and the vulnerability to changes in external supply.

Member States

In order to complement the policy round-up for the EU region, this section depicts noteworthy national policies. Three national SEW reports for the EU region were prepared in 2002: France, Germany and Portugal. For three of the other Member States, specific policies are briefly presented.

a) National Reports Synthesis

France

Status: France has a better balance regarding most of the SEW indicators than the EU average, because of its use of nuclear power plants for electricity production. This makes the economy less carbon intensive and reduces import dependency, at least as calculated under SEW indicator 5. However, since uranium is all imported, this indicator may be misleading. France also has a slightly higher deployment of renewable energy than the EU average and the other two countries for which a SEW report was prepared. Yet, levels are still small, produced by large hydroelectric dams, and, therefore, highly unsustainable.

Trend: The development between 1990 and 1999 shows only very slow improvement. Primary energy consumption rose by 14% in the 1990s. Electricity consumption soared even higher, climbing more than one fifth of 1990 levels, an expansion driven nearly exclusively by the use of nuclear power. This rise accounts for more than half the additional nuclear electricity used in the EU between 1990-1999. A larger share of French electricity (net 12%) is now being exported.

Energy productivity, as measured in SEW indicator number 7, was better than the EU average in 1990. However, it has not improved since then but remained stable over the decade. Its indicator value is now below the EU average. Dependency on energy imports has also remained stable and high.

The share of energy-related investment for renewable sources remains minimal and little input was received from the government. However in April 2002, the French government announced plans "to invest 10 billion euros ($8.81 billion) to build 10,000 megawatts of wind generating capacity by 2010" (Reuters, 3rd April 2002).

Germany

Status: Germany is the largest economy in the EU and also by far the biggest emitter of greenhouse gases (in absolute terms). Per capita levels are also above the EU average. One of the reasons is that Germany's energy supply still includes a considerable share of coal and lignite, parts of it from domestic sources.

Trend: Germany has shown mixed progress. Its per capita carbon dioxide emissions are still over 20% higher than the EU average, despite a reduction in per capita levels by a fifth since 1990. Germany has done particularly well in improving its energy productivity indicator and cutting its emissions of air pollutants. This is in large part due to the modernisation and restructuring of the former East Germany and improvements in coal power generation.

Energy import dependency has risen, for some part because of lower coal production. The share of investment for clean energy remains very small (due to still high levels of coal subsidies) and so does its deployment. However, figures up until 1999 do not yet take into account the effect of policies such as the eco-tax or the Renewable Energy Sources Act, which extends the successful feed-in tariff, that guarantees a premium of up to 50 Euro cents (for photovoltaic) for electricity from renewable sources. Due to this law in particular, installed wind power capacity nearly tripled within three years, amounting to 8750 MW in 2001 (generated by over eleven thousand rotors). That is half of all installed capacity in Europe and the largest amount in any single country world-wide.

Other recent policy initiatives to support renewable energy sources include a negotiated agreement with industry on the promotion of Combined Heat and Power (CHP), as well as legislation for the promotion of biomass.

One other noteworthy policy decision is the phase-out of nuclear power in Germany. The government was elected on an anti-nuclear platform in 1998 and has followed suit. A negotiated agreement with industry foresees a flexible maximum running time system, in which each utility can choose how long to run individual plants, provided that they do not exceed their overall number of allowable years for all the plants it operates. Critics of the phase-out deal have calculated that the agreed times allow for business-as-usual end of life-time shut-downs for all nuclear plants. However, it is possible that this as well as other policies could be altered or even reversed in the case autumn elections hand the office to a different government coalition.

Portugal

Status: Portugal is one of Europe's smallest economies and under the EU's regional policy it qualifies for extra financial support. It has much lower levels of carbon emissions than the EU average and the same goes for other pollutants. However, Portugal is nearly exclusively dependent on imports for its energy supply. And its economy was much less energy intensive per unit of GDP than the EU average in 1990.

Trend: Due to the comparably low (but already unsustainable) starting levels, emissions of carbon dioxide and local air pollutants have been rising, as opposed to the reductions seen in the EU as a whole. Renewable energy did not increase significantly, but a recent raise in the feed-in premium for green electricity has resulted in a small boom in wind power and small hydro during the last two years. Economic expansion over the 1990s caused an even stronger surge in energy consumption that has led to a worsening of energy productivity. Import dependency on the other hand improved a little, but a further shift towards gas may prove to be a disincentive to exploring endogenous energy sources. However, in early 2002, a new major hydro power project was initiated.

b) Other Member State Issues

Belgium

Climate Plan and Nuclear Phase-out (Stephan Vis - IEW)

In terms of sustainable energy, Belgium is far from being the best student of Europe. Some facts: Per capita emissions of carbon dioxide are among the highest in Europe (12 tCO_2/year; only Luxemburg is worse), despite large use of nuclear energy to generate electricity. 57% of all electricity comes from nuclear power, making Belgium the 3rd most "atomic" country in the world behind France and Lithuania. Electricity intensity per unit of GDP is the highest of all 15 EU Member States (27% more than the Netherlands). Energy and environment taxes are among the lowest in the EU. The share of renewable energies is the weakest (1,1% in 1997). While the European target is 22% of electricity consumption by 2010, the Belgian target under the Renewable Energy Directive is only 6%. Energy subsidies are proportional to existing market share for each energy source: While fossil fuels receive 9 million of Euros per year (money transfers and tax relief), nuclear get more than 40 and renewable energy 5 million.

Unfortunately, the institutional complexity in Belgium makes it difficult to implement a proactive policy. That does not mean there are no attempts to do so. In March 2002, the Belgian government decided to initiate a phase-out of nuclear fuel, demanding a shut-down of the 7 Belgian nuclear reactors after 40 years of use (between 2014 and 2025). However, implementation of the phase-out is strongly questioned in Belgium's regional parliaments.

Hopefully, this decision will oblige Belgium to act on the real cause of climate change, the excess of consumption. Belgium has ratified the Kyoto Protocol and introduced green certificates to promote green electricity. That won't be sufficient. Will it do more by imposing public service obligations on suppliers, introducing disclosure on bills, and tackling the transport problem ? It remains to be seen whether Belgium can leave its unsustainable path towards a more efficient and environmentally friendly future.

Ireland

offshore wind and peat combustion (Pat Finnegan, Grian)

Two recent developments in Ireland—one positive and one negative—illustrate perfectly the divided loyalties present in Ireland as it, in common with other industrialised countries, attempts to face up to climate change. Essentially, the challenge is the choice between the environmentally-destructive technologies in use in the last century, and those more appropriate to the new one. Briefly this amounts to Business as Usual (BAU) versus fuels for the future.

Firstly, the good news: Ireland approved in January 2002 a 640 million euros plan to build the world's largest offshore wind farm, capable of generating 520 megawatts of electricity. Authorities say the project would be three times the size of all existing offshore wind farms in the world put together. The facility could end up supplying 10% of national electricity.

The farm is going to be built on Arklow sandbank, a location about four miles offshore at the point closest to the coast, and would be made up of up to 200 giant turbines, according to current plans. If realized, the wind farm could reduce Ireland's emissions of harmful carbon dioxide gas by 1.1 million tonnes a year. Irish private company Eirtricity, which is building the facility, could begin construction work in early 2002, with the first phase of the project, generating 60 megawatts, going into operation in Autumn. [9]

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[9] Some information available at Eirtricity website: http://www.eirtricity.ie/news-11-01-2002.htm

Unfortunately, however, this positive news has to be offset against simultaneous Irish government action in favour of local political interests, protection of business as usual (BAU), and continued use of fossil fuels. This is represented by the Irish government's successful negotiations with the European Commission of a PSO (Public Service Obligation) under security of supply headings to allow the State-owned Electricity Supply Board construct two brand new high-carbon-intensity peat-fired generating stations.

Local NGO's campaigned vigorously and vociferously against this action, citing amongst other things, the EU Habitats Directive, the Convention on Biodiversity, the Kyoto Protocol protection of sinks provisions - bogs are important sinks and biodiversity havens - and the Irish government's own National Climate Change Strategy, all of which are fundamentally breached by this proposal. This campaign is still continuing, and is currently in the Irish courts.

United Kingdom

Renewables Obligation (John Lanchbery, RSPB)

On 1 April 2002, under the provisions of the Utilities Act 2000, the UK Government placed a legal obligation on electricity suppliers to supply 3% of all electricity from renewable sources by 2002/3 (1999 renewable generation was about 2.8%). Increasing obligations will thereafter be placed at yearly intervals rising to 10.4% in 2010/11. The government say that the obligation will then remain in force at a minimum of 10.4% until at least 2027. It may increase.

Supplier's compliance with the Obligation will be established by the surrender of Renewable Obligation Certificates (ROCs) equivalent to their Obligations. (ROCs will originate with generators.) Suppliers that do not meet their annual Obligation have two options for coming into compliance. They can either buy ROCs from others (i.e. trade) or they can buy themselves out of the Obligation at a rate of 3 pence per kWh, which is currently more than double the normal price of electricity. This rate may be raised over time but will not fall. Issuance, trading and surrendering of ROCs will be supervised by the Gas and Electricity Regulator (OFGEM).

UK legislation requires electricity generation, distribution and supply to be accounted for separately, in spite of companies "vertically integrating" to include all three. Hence an obligation on suppliers ensures that the renewable energy is actually used (and is of benefit to the climate) whereas an obligation on generators might mean that plants were built but not used. The current aim of government is to include in the Obligation only those renewables that are not commercially competitive. The long term idea is thus to keep the level of the Obligation at 10.4% after 2011 but drop out those renewables that are competitive thereby, in effect, raising the Obligation.

Eligibility for the Obligation. The list of eligible renewables is complex but basically it includes all of the unambiguously renewable technologies: wind, solar, small hydro (<20MW), tidal, wave, photovoltaics and energy crops. It also includes landfill gas and sewage gas. It includes large hydro built after 1 April 2002 and the electricity accruing from both large and small hydro refurbishments after 1990. Mixed waste burning is not eligible but non-fossil derived waste can be counted under specified circumstances. The biomass component of co-fired will count, up to a limit, but will be ineligible after 2011.