TRANSATLANTIC PLATFORM FOR ACTION ON THE GLOBAL ENVIRONMENT (T-PAGE)[1]

Background Paper on European Actions on Climate Change and Energy

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1 CLIMATE AND ENERGY POLICY IN THE EU

The United Nations Framework Convention on Climate Change (UNFCCC) binds signatories to avoid 'dangerous anthropogenic interference with the climate,' but does not specify how this translates to firm goals. The European Union, through various statements by the Council, the Commission and the Parliament, has arrived at a working interpretation of seeing the world avoid global warming exceeding 2°C above pre-industrial levels.

Europe's ambitions to see the world agree large emissions cuts for the future mean that it will need to take the leadership in achieving reductions itself. This starts with meeting its reduction commitments under the Kyoto Protocol (8% below 1990 levels for the EU-15 and for all of new Member States except Poland and Hungary, which are minus 6%). The most recent data (EEA, 2006) indicate that while the EU-25[2] is 4.7% below 1990 levels, the EU-15 has seen a drop of only 0.9%, with an upward trend since 2000. However, projections show that on aggregate, the EU-25 should see a 4.6 per cent drop below 1990 levels accounting for current measures, a 8.1 per cent drop if extra measures, which are already contemplated, are put in place, and a 10.8 per cent drop if including the use of the Kyoto mechanisms and carbon sinks.

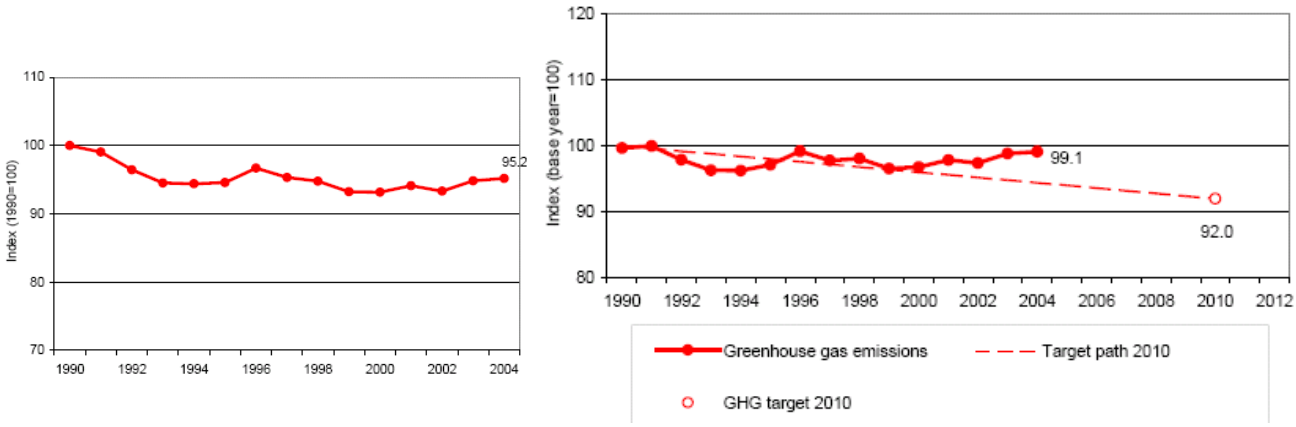

Figure 1: EU-25 (left) and EU-15 emissions since 1990: the trend is worrying at the moment (figures are offset to match y-axis values) (EEA, 2006).

Despite these targets already proving a challenge, it has long been recognised that far deeper reductions are needed to avoid 2 degrees. The headline outcome of the European Council in March was a commitment to a 30 percent reduction in emissions by 2020 if also agreed among other developed countries (with developing countries playing their part as well), with a 20 percent reduction if not. A 30 percent reduction is consistent with the conclusions of a scientific meeting held in Exeter, UK in 2005, which compiled modelling on the probability of keeping global warming under 2 degrees above 1990 levels, based on various assumptions about reduction effort[3]. This

[2] The EU now has 27 countries, but as Bulgaria and Romania have just joined, none of the available analysis incorporates them.

[3] 'Avoiding Dangerous Climate Change:' Report of the international scientific steering committee of the 'International symposium on the stabilisation of greenhouse gas concentrations.' Hadley Centre, Exeter, UK, May 2005; symposium held 1-3 February 2005.

roughly equates to achieving a 450 ppm CO2eq stabilisation target[4].

1.1 The roles of the EU and its Member States in climate and energy policy

Whenever we consider 'EU policy' in the field of climate change and energy, it is important to bear in mind that this term in fact refers to a combination of policies and measures decided and implemented by the supranational institutions of the EU and by national (and, in some cases also sub-national) institutions in 27 Member States. Climate and energy policy in the EU is a typical case of what political scientists refer to as multi-level governance and involves a complex distribution of powers and responsibilities between the EU and the Member States, which differs from that in a federal State like the United States.

The EU institutions can act only to the extent that they have been given the power (or 'competence' in EU legal jargon) to do so by the Member States in the Treaties establishing them. The relevant Treaties are the Treaty establishing the European Community (EC) and the Treaty establishing the European Atomic Energy Community (EAEC or Euratom). The European Union is an umbrella concept and institutional framework uniting all the various forms of cooperation under different Treaties between the Member States; it has also become the political identity under which the Member States act collectively on the international scene.

EU climate change policy in fact originated as part of the Union's external environmental policy in the early 1990s. One of the objectives of EU environmental policy, as laid down in Article 174(1) of the EC Treaty, is 'promoting measures at international level to deal with regional or worldwide environmental problems'. To achieve this objective, the EU can adopt internal legislation but also 'cooperate with third countries and with the competent international organisations' by concluding international agreements. When multilateral negotiations on climate change started in the UN, the EU Member States decided to participate in these negotiations as a single block on the basis of a common position. Thus the EU became one of the main actors in the global negotiations, even though, at the time the UNFCCC was signed, it had not yet adopted any internal legislation to deal with climate change. Its common position was based on political consensus between the Member States and an aggregation of their emerging national policies. Gradually, these national policies were complemented and supported by 'common and coordinated policies and measures' at the EU level, including a number of important legislative measures.

The EU institutions can adopt environmental legislation binding on all Member States without their unanimous consent; a 'qualified majority' of Member State votes is sufficient, except in two cases relevant to climate change. Under Article 175(2) unanimity is still required for any 'provisions primarily of a fiscal nature' as well as for 'measures significantly affecting a Member State's choice between different energy sources and the general structure of its energy supply'. The first exception was invoked in the 1990s to block a Commission proposal for a harmonized carbon/energy tax to be introduced throughout the EU as a climate policy measure. The second has never explicitly been invoked so far but is looming in the background in all political

[4] Emphasis on 'roughly,' as the link between emissions levels, stabilisation and temperature change is determined probabilistically; secondly, the impact of Europe's efforts depend on it being part of a total global effort with others taking on commitments in line with their abilities to do so.

decision-making on climate change, especially as the impact of climate measures on energy policy is increasing.

The latter exception is related to the fact that, as the Treaties currently stand, the EU has no explicit competence in the area of energy policy, except for certain aspects of nuclear energy (including common radiation protection standards) under the antiquated Euratom Treaty. Member States remain reluctant to formally delegate part of their sovereign powers over energy policy to the EU institutions, even though they have accepted limited EU legislation on particular aspects of energy policy which can be justified under other provisions of the EC Treaty. Thus, legislation to liberalize the market for electricity and natural gas was passed in the mid-1990s using the EU's powers to establish a single market. Legislation to promote energy efficiency and renewables was adopted under the environmental provisions of the Treaty. As a result of growing concerns about energy security and climate change, a political consensus has developed between the Member States to establish a stronger role for the EU in energy policy, but this has yet to be formalized in the Treaties.

After signing the Kyoto Protocol, the EU started considering the respective role of 'common and coordinated' versus national policies and measures as a means of fulfilling its collective quantified emission reduction target of 8%. This debate involved conflicting interpretations of the so-called principle of ‘subsidiarity’ laid down in Article 5 of the Treaty, which provides for common action to be taken 'only if and in so far as the objectives of the proposed action cannot be sufficiently achieved by the Member States and can therefore, by reason of the scale or effects of the proposed action, be better achieved by the Community.' Some Member States argued that national measures would be sufficient to reach their targets, while others considered a range of harmonized measures at EU level as necessary. In June 1998, the EU Council reached political agreement on internal 'burden-sharing' - i.e. the allocation of responsibility to individual Member States for the achievement of the common Kyoto target - as well as on the need for further development of common measures. Following the earlier rejection of the Commission's carbon/energy tax proposal, attention shifted to other instruments, and in 2001 the Commission proposed a cap-and-trade system as the flagship measure of EU climate change policy.

1.2 EU Emission Trading Scheme

The EU Emission Trading Scheme (EU ETS) was eventually adopted in October 2003 by Directive 2003/87/EC of the European Parliament and the Council. A Directive, under EU law, is a legislative act which is binding on the Member States as to the result to be achieved, but leaves them some discretion in the choice of the form and method of implementation. Member States have a legal duty to transpose the Directive into binding provisions of domestic law, and ensure its practical application and enforcement. The ETS applies to specific major point sources of greenhouse gases across the EU, including power stations and other combustion plants, oil refineries, coke ovens, iron and steel plants, and factories making cement, glass, lime, brick, ceramics, pulp and paper. Altogether, it covers some 11,500 installations which represent about half of total emissions of CO_2 in the EU. All these installations require a GHG emission permit issued by a competent national authority and must monitor and report their CO_2 emissions. Each installation is allocated an emission cap expressed in a number of allowances (the right to emit one metric tonne of CO_2). These caps are determined by national authorities in accordance with a pre-

established National Allocation Plan (NAP), which each Member State must submit to the European Commission for approval based on a set of criteria laid down in the Directive. The first set of NAPs covered the period 2005-2007; the second the period 2008-2012, which corresponds with the Kyoto Protocol's first commitment period.

Each year, the permit holder must surrender a number of allowances corresponding to actual emissions. If these exceed his emission cap, he will have to acquire additional allowances on the market, originating from operators anywhere in the EU who have reduced their emissions below their assigned caps. Subject to certain conditions, emission credits acquired under the Kyoto mechanisms (JI and CDM) can also be used to discharge obligations under the EU ETS. Permit holders who do not comply with their obligations will be liable to pay a fine per tonne of unlawfully emitted CO_2.

Thus, the EU determines the overall legal framework and basic rules of the ETS, but Member States are responsible for its application to individual plants on their respective territories. They issue permits and allowances and enforce monitoring requirements. They are responsible for drawing up NAPs, but these are subject to supervision by an EU institution, the Commission, which is responsible for ensuring harmonized implementation and avoiding distortions of competition within the internal market. Member States have an obligation to report all relevant data to the Commission, which keeps track of the operation of the system through an Independent Transaction Log linked with the Member States' national registries.

Progress to date in the EU ETS has been a story of ups and downs. The system got up and running quite quickly, overcoming a number of obstacles both political and practical. It is the first of its kind in the world, and there was always a recognition that there would be hiccups- particularly in the 2005-7 trading period, which is something of a trial run in anticipation of the 2008-12 period.

On the other hand, the process of setting allocations at national level, and the subsequent results of that process, highlight the flipside of emissions trading's image as being friendly to both environment and industry. In fact, allocation setting is a process fraught with technical difficulty where industry holds an information asymmetry over regulators, and national governments can produce bogus information to protect its industry[5].

While warnings had long been issued that allocations were too high in the first period, when verified 2005 emissions were released in 2006, the over-allocation was made plain and shocked the market – carbon permit prices plummeted from over €15/ tonne to less that €5/tonne, and now stand (for the 2005-7 period) at less than €1; prices of 2008-12 permits remain above €12.

18 National Allocation Plans for the 2008-12 period have been reviewed and decided upon by the Commission; a further 8 are still under consideration, and one is still in draft form. The Commission has been approving NAPs almost always under the condition that total allocation levels are cut – in the initial wave of 10 NAPs reviewed

[5] This is not an exaggeration. Detailed research by a consortium led by the German Öko Institut has shown that in many if not most Member States, emissions projections produced by national experts for the purposes of UN and EU reporting were ignored or deliberately misstated during the allocation process.

(see table), the cuts demanded by the Commission amounted to 7 per cent below what was requested, and 7 per cent below 2005 emissions – these 10 Member States were in other words on aggregate proposing not to cut below 2005 levels or first period caps, despite guidance from the Commission last December that it would expect reductions of around 6 per cent below first period caps.

Table 1: NAP2 proposals with NAP1 caps and 2005 emissions, for the first 10 plans decided on by the Commission in 2006 (in Mt CO2)

Member State	1st period cap	2005 verified emissions	Proposed 2nd period cap	Allowed 2nd period cap
Germany	499	474	482	453.1
Greece	74.4	71.3	75.5	69.1
Ireland	22.3	22.4	22.6	21.15
Latvia	4.6	2.9	7.7	3.3
Lithuania	12.3	6.6	16.6	8.8
Luxembourg	3.4	2.6	3.95	2.7
Malta	2.9	1.98	2.96	2.1
Slovakia	30.5	25.2	41.3	30.9
Sweden	22.9	19.3	25.2	22.8
UK	245.3	242.4	246.2	246.2

Perhaps most remarkable is the position of new Member States: Latvia, Lithuania, Malta, and Slovakia collectively proposed caps that were fully 87% above 2005 verified emissions. The Commission cut these proposals back to a rise of 23%.

Reaction to these cuts by the Commission has by and large been positive, particularly by carbon traders and environmentalists. Governments, however, have been displeased engaged in fights internally, with their industry and with the Commission over the figures. Germany's Economy Minister Michael Glos initially called the cuts 'totally unacceptable,' but Germany ultimately published a revised plan as demanded by the Commission. Nevertheless it remains to be seen whether second period NAPs will be low enough to spur innovation and emission reduction effort, which everyone agrees has not been the case in the first period. This will depend on the total allocation once all plans are decided, and evolution of underlying trends in emissions from covered facilities.

1.3 Voluntary Initiatives

The term 'voluntary initiatives' is a general way of referring to different voluntary instruments (e.g. voluntary agreements, programmes, standards, codes of conduct, guidelines, principles, statements, policies etc.) with different levels of compliance (e.g. a voluntary agreement in the Netherlands usually refers to a formal, negotiated, legally binding contract between government and industry, while in the United States is generally a non-binding voluntary programme in which companies decide individually whether and when they want to participate). Even within a country, the same term may be used in several ways. At the EU level, with a non legislative Communication (COM(2002)412) on environmental voluntary agreements (EA), the Commission (EC) outlined the necessary terms and conditions for setting out such agreements at the EU level.

So far however, only a few EA have been proposed on the European level. In addition to these, there are a number of programmes, technology platforms, codes of conduct, product labelling, environmental management certification which the EC supports in different ways. The EC believes that voluntary agreements are particularly successful in the area of energy efficiency. Two Codes of Conduct, one for external power supplies and for digital TV services, were introduced, in which participation is voluntary and where energy efficiency guidelines are developed by the EC in close co-operation with industry. In other energy efficiency initiatives, in particular, the EC provides support to partners in the form of information resources and public recognition e.g. the European Motor Challenge Programme, which focuses on non residential actors for compressed air, fan and pump systems; the GreenLight Programme, a partnership between non-residential electricity consumers and the EC to install energy-efficient lighting technologies in their facilities; the Green Building Programme, addressed to owners of non-residential buildings to realise cost-effective measures which enhance the energy efficiency of their buildings. Moreover, the EC participates as an observer in many technology platforms (under the Environmental Technology Action Plan (ETAP) framework e.g. environmental technology platforms on hydrogen and fuel cells, photovoltaics, steel, water supply and sanitation platforms).

In the framework of the new integrated life-cycle approach to environmental product policy, the recent framework Directive on setting eco-design requirements for energy-using products (COM(2005)32) in principle gives priority over regulation to self-imposed measures by industry. Criteria for giving them preference over implementing regulatory measures are: *openness of participation, added value, representativeness, quantified and staged objectives, involvement of civil society, monitoring and reporting, cost-effectiveness of administering a self-regulatory initiative, and sustainability.* The implementation of this Directive has just begun, so it is too early to tell whether in practice self-regulation will prevail over binding standards.

Other voluntary schemes, supported and supervised in various degrees by the EC are: EMAS (Environmental Management Auditing System) certification for companies or services, the EU Eco-label for products and Energy star label for office appliances (in partnership with the US). For EMAS, Member States are responsible for the compliance of the operators, accrediting third parties verifiers and informing the Commission. In 2007, 3,658 organizations and 5,380 sites in the EU are certified EMAS.

Some voluntary agreements at the EU level are considered successful by the Commission (e.g. industry self commitments on washing machines energy savings target, the PVC industry own initiative, the Energy Star programme and Greenlight initiative). However, the failure of the ACEA voluntary agreement to deliver to CO2 targets by car companies has recently come under the spotlight and, in response, the Commission has taken a tougher stance by proposing binding targets. Generally, the debate in the EU is hot between defenders of industry self-regulation (e.g. industry associations supported in this case by the Industry Council) against consumers and environmental lobbyists who believe that legislation is still the best way of dealing with structural market failures. The Commission keeps a positive attitude towards this kind of instrument.

2 ENERGY TECHNOLOGIES

A criticism levelled at the United States over the past few years has been that, although research and development into energy technologies is quite well funded, without a carbon price or emissions limitations of some kind, there is little reason to move them from the lab to the market. Given the US Government's underwhelming enthusiasm for climate policy, technology development there has come to be seen by many European observers as a form of smoke and mirrors to hide a lack of interest in tackling the climate issue.

Having positioned itself at the opposite pole to the US' climate scepticism, Europe has approached the role of technology in climate policy with some caution, choosing instead to emphasize international target setting and economic instruments. But technology clearly has to play a major role in helping reach the goal of avoiding global warming beyond 2 degrees C. European governments have to steer a course between laissez faire and picking winners, promoting enough of the right kind of technology with reasonable investment to get real results – no small order.

At EU level there are range of policies and programmes to promote clean technology, ranging from research (the multi-year framework programmes, of which the new 7th one is an example), to facilitating project and programmes which promote take-up (Energy Intelligent Europe) to policies (renewable energy targets). But it is at national level where the real action is – Germany and Spain's massive growth in wind energy, for example, is the result of guaranteed high tariffs paid by spreading the subsidy over the whole rate base. This is one example out of a variety of policies in place around the EU. Here, however, we focus on EU policy, in particular the result of the new set of policy documents proposed by the Commission in January (the 'Energy Package') and approved by the Council in March.

2.1 The Future of Fossil Fuel and Carbon Capture and Storage (CCS)

In the EU institutions there is currently great enthusiasm for 'sustainable fossil fuels,' which equates to the use of carbon dioxide capture and storage (CCS) – an emerging technology which may significantly reduce the emissions of large point sources of CO2. Although there has been research funding in Framework Programmes 5 and 6 (and much more upcoming in 7), inclusion of CCS in policy and regulatory activity has only started to emerge in earnest. The Commission will produce a proposal for legislation to facilitate CCS by the end of the year, and plans for power plants with capture are springing up quickly around Europe.

Two documents from the Energy Package - COM (2006) 853 on 'Sustainable power generation from fossil fuels' and the associated impact study (SEC(2006) 1723) - indicate how far CCS has come, quickly. While hardly a subject of conversation in the Commission a couple of years ago, CCS is now portrayed in an extremely positive light, and there is a range of ambitious actions planned to facilitate its commercialisation. While much of this enthusiasm may be warranted, several statements are not supported by research to date.

For example, despite assurances that there is more than enough available geological storage space in Europe, this amount is still subject to very imprecise estimates.

Availability will be important to show before putting an obligation on companies to capture CO2 (e.g. they will have to have confidence there is somewhere to put it).

Secondly, although CCS is often called 'zero' or 'near zero' emissions, and the figure of 90% reductions is mentioned in the recent Communication, this is probably optimistic. A study comparing the various CCS options[6] found that most likely reduction rates were between 72 and 90 per cent taking direct emissions into account, but when accounting for the indirect emissions associated with the extra fuel needed to power the capture process (including things like methane release from coal mines and gas transmission), the total reductions fall to between 65 and 79 per cent.

Finally, reported costs in the future are likely to be quite optimistic and depend on reductions through experience – if less experience is gained in the coming decade than hoped (such as an inability to get the hoped-for 12 pilot projects off the ground as quickly as planned – by 2015 - which one has to recognise seems to be the inevitable fate of all pilot projects) then cost reductions will probably be more modest.

These critiques of the Commission's approach may be argued in two almost opposite ways. They can be used to say that CCS is not the solution many think it is, and hence CCS should not be supported with public funding or incentives - rather, this effort should be redoubled to renewables and efficiency. Meanwhile, the power industry may use these arguments to try to get out from under any hard requirements to use CCS – for example the idea floated in these documents that any new power plants should include capture by 2020 (which was watered down to an R&D goal by the Council when it met in March). Industry could say that there have not been the cost reductions anticipated, that storage has yet to be proven, and hence they can not be held to this requirement.

It is very similar to the situation with the auto industry voluntary agreement noted above, where a political commitment was first taken to a 120 gm/km target, then renegotiated years later once the target was obviously going to be missed. Entering into this kind of horse trading on CCS may mean that its use slips past the date when many of Europe's power plants will need replacement, leading, possible, to a new generation of non-CCS coal plants in the meanwhile.

2.2 Renewable energy

Within the Energy Package there are Communications that focus on renewable energy - the first a report on 'Progress in Renewable Energy' (COM(2006)849) and the second a 'Renewable Energy Road Map' (COM(2006)848). The Commission anticipates that the EU will fall short of its established 'indicative' target of 12 per cent renewables in energy supply by 2010 (as laid out in Directive 2001/77/EC), although the contribution of renewables has increased by 55 per cent since 1997. 10 per cent of energy supply may be more likely. Uptake of biofuels has been very uneven, with only Germany and Sweden reaching Directive 2003/30/EC's 'reference value' of 2

[6] Viebahn, Peter. Paper as reported in the presentation 'Comparison of Carbon Capture and Storage with Renewable Energy Technologies Regarding Structural, Economical, and Ecological Aspects' German Aerospace Centre, 11 December 2006.

per cent of all fuels in 2005. The Directive's target of 5.75 per cent biofuel in 2010 is unlikely to be achieved.

The Commission's reaction to the likelihood of missing the targets is interesting – rather than being too difficult, they state that the 12 per cent target was 'insufficiently ambitious to drive change.' So it proposes, and the Council ultimately backed, a new mandatory target be set at 20 per cent for renewable energy's share of energy consumption in the EU by 2020 – covering electricity, heating and cooling, and transport. The proposed target sits directly between the targets previously suggested by the Council and European Parliament of 15 per cent and 25 per cent respectively.

What distinguishes this 20 percent target from the previous 12 percent effort is that it is to be binding rather than indicative, the source of much discussion at the Council meeting. Controversy was diffused by an agreement that differentiated national targets will have to be negotiated 'with due regard to a fair and adequate allocation taking account of different national starting points and potentials'[7]. Secondary targets for specific uses of renewable energy would be left to Member States to decide. Of course, the European Council can not itself make targets binding – this has to occur through legislation, which goes through the usual legislative process involving Commission, Council and Parliament.

2.3 Biofuels

As part of the new overall 20% renewables target, the Council has approved the idea of a specific target for biofuel utilisation – a minimum binding target of 10 per cent of overall consumption of petrol and diesel in transport by 2020, conditional on certain environmental quality considerations.

Biofuels are regarded by the Commission as a key measure not only to reduce greenhouse gases from the problematic transport sector, but at least as important, to reduce the EU's heavy dependence on imported oil, the bulk of which is for transport, and much of which comes from politically unstable parts of the world.

Thus security of supply is a key driver, and with the possibility of oil prices remaining high more or less permanently, the balance of payments is also a significant issue. The Council concurred with the binding target of 10 per cent of all road fuels by 2020, and even higher numbers are mooted in the biofuels papers associated with the Package. This is well beyond what is either technically possible through current or envisaged levels of blended fuels, and probably also beyond Europe's capacity to supply its own needs – at least if much of that demand will continue to be supplied through first generation food crop-based production.

The report contains a fairly realistic assessment of the extent and variability of greenhouse gas savings from European biofuels, and notes, in particular, that biofuels grown on drained wetlands would have an extremely adverse greenhouse gas balance, and that clearance of rainforest should also be avoided. On the other hand, it concludes that to produce enough biofuel to substitute 14 per cent of road fuels would have impacts in agriculture that would be 'manageable'.

[7] Presidency Conclusions, European Council, 8-9 March 2007, on www.EU2007.de

This statement appears to be based on the *Review of economic and environmental data for the biofuels report* (SEC(2006)1721), which accompanies the review. There are a number of concerns with the analysis, which is based on a land use model that is not transparent, with results which appear counterintuitive. Problems include overlooking alternative uses of some possible fuels, the soil impacts of biofuels crops, the risk of growing biofuels on High Nature Value farmland, and a variety of environmental risks which are glossed over.

The Communication envisages a future switch to second generation production processes as these become available. These permit using woody crops and cellulosic residues to create ethanol, allowing higher yields on poorer land. It argues for an incentive system that encourages 'good' biofuels and discourages 'bad' ones, but is less than specific as to how this crucial distinction will be achieved.

2.4 Energy Efficiency

The Green Paper on Energy Efficiency, 'Doing More with Less' (COM (2005) 265) identified over 20% estimated savings potential in EU annual primary energy consumption by 2020. The potential for energy saving in the EU per sector being: households (residential) 27%; tertiary 30%; transport 26%; manufacturing industry 25%. Energy efficiency and demand side management have been recognized by the EU as one the priority means to comply with the energy security of supply and climate change agendas.

There are a number of Directives in place in various sectors promoting energy efficiency targets and standards. The e*nergy labelling of households equipment Directive (92/75/EEC),* for example, has been regarded as a great success in moving the market towards more efficient appliances. The *energy performance of buildings Directive* (2002/91/EC) demands Member States set minimum standards for the energy performance of new buildings; the *energy end-use efficiency and energy services Directive* requires Member States to adopt a national indicative energy savings target of 9 % within 9 years (by 2016) and to provide a series of three reports on their Energy Efficiency Action Plans to outline the progress achieved in their implementation; the *Directive on the promotion of cogeneration* provides harmonisation of definitions of efficient CHP, establishes a framework for a scheme for a guaranty of origin of CHP electricity, and sets the general target of having electricity production from cogeneration increased to 18%.

The Commission recently proposed an energy efficiency Action Plan (COM(2006)545), endorsed by EU leaders at the Spring Council meeting (8-9 March 2007) which pushes the above measures forward and contains over 70 proposed measures targeting buildings, transport and manufacturing. In brief:

- **Labelling and eco-design requirements:** the Commission will legislate on appliances and other energy using equipment (i.e. motors, computers, street and office lighting, televisions, air conditioning and refrigeration) with particular focus on standby loss reduction. In particular, EU Head of government called for increased energy efficiency requirements on office and street lighting to be adopted by 2008 and on incandescent lamps and other forms of lighting in private households by 2009.

- **Energy efficiency in buildings**: by 2009 the Commission will propose expanding the scope of the energy performance of buildings Directive (2002/91/EC), which will include the first EU-level minimum energy requirements for new and renovated buildings.
- **Microgeneration:** in 2007 the Commission will put forward a proposal for a new regulatory framework to promote the connection of decentralised generation and minimum efficiency requirements for new electricity, heating and cooling plants capacity lower than 20 MW.
- **Fuel efficiency of cars**: the Commission will propose in 2007 legislation to ensure the EU meets its target level for average new vehicle emissions of 120gCO_2 /km by 2012, which will not be achieved through the existing ACEA voluntary agreement.
- **Energy taxes:** in a review of the EU energy tax Directive in 2008 the Commission will 'consider the costs and benefits' of using tax credits as incentives for firms to produce and consumers to buy more energy efficient products.

The Commission estimates that implementing the plan should mean that energy consumption will be 20 per cent lower by 2020 than it would have been without intervention. Commissioner Piebalgs said reaching the target would cut consumption by 390m tonnes of oil equivalent. This should translate into savings of €100 billion a year and a reduction of CO_2 emissions of 780m tonnes; double the 2012 EU Kyoto target. The extent to which the predicted benefits materialise will depend on what measures the Commission ultimately takes forward and the response of Member States. Tax harmonisation plans for example are a particularly contentious area, as reflected in Commissioner Piebalgs' reassurances that 'this is not some back door to unify EU taxation policy'. Resistance from key industries, such as the German car-making lobby, and changing consumer behaviour will also be potential barriers to success.

In the same spirit, the Commission will table within the first half of 2007 a proposal for an international agreement on energy efficiency which would bring the OECD and key developing countries (such as China, India and Brazil) together. Ideally, by 2008, this would entail the banning of products failing to meet minimum standards and to agree common approaches to saving energy.

2.5 Nuclear

Nuclear energy is unique in European energy policy in that there is policy competence in the area, in fact there is a whole treaty dedicated to it (Euratom). European NGOs call for the reform of the Euratom Treaty, arguing that it conflicts with energy market liberalization and environmental policy, as neither environmental liability (e.g. in case of a nuclear accident or fuel incident) nor cost internalisation are enforced for nuclear energy providers. For example, in Germany, the liability is limited to €2.5 billion, which is about 0.1% of the expected damage if a nuclear accident occurs (EEB, 2004). The nuclear industry also benefits from one-off payments from Member States and allowances for using decommissioning funds for operation. Presently, only the UK declared that it would be up to the private sector to initiate, fund, construct and operate new power plants. The latest EU R&D programme (7FP) allocates €1,947 million to research into fusion energy and €287 million for nuclear fission and

radiation protection. €517 million are reserved for nuclear activities of the JRC (EU Joint Research Centre).

The divergent position of Member States toward nuclear power continues to cause controversy within the EU. Several Member States have increased their nuclear capacity since 1995, mainly through expansions of existing reactors; also, four new plants were built in the Czech Republic and Slovakia between 1998 and 2003. These augmentations were partly offset by decommissioning or capacity reductions in Slovenia, the UK, Germany, Sweden and the Netherlands. In all, the EU-25's nuclear capacity grew by 5% (6.1 GW) between 1995 and 2003; electricity production from nuclear grew by 26% between 1990 and 2003. The bulk of nuclear power production came from France, whose output in 2003 was more than 43% of the EU- 25's total, along with Germany (17%) and the UK (9%).

The Commission's policy position about nuclear energy is generally cautious given the sensitivity of the issue in the Member States. Communication (COM(2006)844), which addresses nuclear and was published as part of the energy package, focuses on those areas which are unlikely to ruffle too many feathers: safety and security. However, it also makes it clear that *'nuclear energy generation has a role to play in security of supply, competitiveness and sustainability'* and attempts to raise the urgency for action on maintaining nuclear capacity, noting that the average age of most plants in Europe is in the 20 to 30 year old range. There is not much time to consider new construction if the EU wishes to maintain production at current levels.

The Council of EU leaders on 8/9 March 2007 gave in to the pressure coming from France and the Czech Republic agreeing on the role of nuclear in the fight against climate change and stating that '*differentiated national overall targets should be derived with due regard to a fair and adequate allocation taking account of different national starting points and potentials, including the existing level of renewable energies and energy mix'*. The wording 'energy mix' is primarily coded language referring to nuclear, raising the possibility that nuclear capacity will be taken into account when considering renewables targets. On the other hand, there is opposition to nuclear from other Members of the EU: environment Ministers of Ireland, Iceland, Norway, and Austria met in Dublin on 26 March 2007 to sign a Declaration, in which they expressed their concern about atomic energy as a solution to climate change. Germany, Belgium and Sweden have commitments to phase out nuclear energy over time. Also, a recent (March 2007) *Eurobarometer* opinion survey shows that 61% of the overall EU population thinks that the share of nuclear energy should be decreased, due to concerns such as nuclear waste and the danger of accidents.

3 CONCLUSIONS

The headline outcome of the European Council in March was a commitment to a 30 percent reduction in emissions by 2020 if also agreed among other developed countries, with developing countries playing in accordance with their abilities. If this is not achieved through a multilateral agreement, then the EU will retain a 20 percent reduction target.

In addition, the binding renewable energy target of 20% by 2020 and 10% biofuels in the transport sector by that year were also agreed. However, the European Council can not mandate binding targets – this has to occur through legislation. Environmental legislation is usually adopted under article 175(1) of the EC Treaty, which requires majority of votes in the Council, along with the European Parliament's approval. Some Member States would like this issue to be considered as a legislation 'significantly affecting' national energy choices, and therefore regulated under article 175(2). This would require unanimous decision of the Council, with the Parliament having an advisory role only.

Requiring unanimity could easily be the death of the targets, so the Commission is exploring other possibilities. In the meantime, all of the proposals agreed to in principle by the European Council still need to be drafted and formally proposed by the Commission, which has a full agenda, and is expected to table a range of legislative proposals throughout 2007 and the coming years.

4 KEY POINTS OF DEBATE

1. What is the appropriate role of the EU in energy and climate policy versus that of the Member States, and are the institutions currently on the best track to play that role?

2. Is the current approach to clean technology development adequate and appropriate – research, facilitation, target setting, with national support policies? Is the growth of renewable energy due to heavy subsidisation in Germany, etc. evidence of success or just the inevitable outcome of spending a lot of money?

3. Is the EU playing a leadership role internationally with its new long-term targets, with a higher target agreed globally, or is it simply singling itself out and leaving it open to gaming by those playing their cards closer to their chest?

4. Of the instruments employed by the EU, such as cap and trade, regulation and voluntary agreements, is there a clear winner or loser from experience, helping indicate the way for the future?

5. Is the 10% biofuels target justified and achievable? Under what conditions would it be or not be?

6. Has the nuclear debate in Europe been sufficient to consider the impact of its extension, or phase out? Or is it even an EU-wide issue to consider?