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## **What the EU Climate Package means for the Global Climate Deal**

### **E3G Briefing Note, January 2009<sup>1</sup>**

#### **Summary**

Even before the conclusion of a global climate deal, the EU's domestic "Climate Package" agreed in mid-December 2008 (to be implemented 2010-2013) will create the world's largest single market in low carbon technology and investment and provide powerful momentum towards building a global low carbon economy. However, several important issues remain open and will need to be resolved in the process of concluding an effective global climate agreement.

- The EU package includes binding legislation which immediately commits it to greenhouse gas (GHG) reductions by 2020 of 20% below 1990 levels, and additionally to increase this to 30% inside an ambitious international climate change agreement. Effort is shared among EU countries according to a formula based on GDP per capita.
- The package commits Europe to generate 20% of its total energy from renewables by 2020; requiring an additional investment of €380-€420 billion in these technologies over the period<sup>2</sup>.
- An additional target to increase EU energy efficiency by 20% will save the EU €160 bn per annum in 2020. Air pollution costs will be cut by €10 bn per annum.
- Up to 2 million jobs could be created in the renewables sector in the EU according to the European Renewable Energy Council; up to 1 million jobs would be created in energy efficiency through the 20% efficiency target.
- European car efficiency legislation agreed alongside the package will limit average emissions to 95 gCO<sub>2</sub>/km by 2020 (57 mpg); tighter than proposed CAFE standards for 2035.
- Under the 20% GHG reduction target, current proposals for using external offsets could generate opportunities through the CDM of approximately €70 bn.
- The EU agreed regulation governing the geological storage of carbon dioxide and requiring all new power plants to be carbon capture ready, and agreed €9 bn of

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<sup>1</sup> E3G is a European non-profit organisation which works in the public interest to accelerate the transition to sustainable development: [www.e3g.org](http://www.e3g.org).

<sup>2</sup> Unless otherwise indicated all figures are taken from published European Commission impact assessments, or Commission supporting documents. These use a conservative estimate of oil prices at \$60 bbl in 2020; IEA assumptions suggest \$120 bbl by 2020.

European support to build a programme of up to 12 large-scale carbon capture and storage (CCS) demonstration power plants by 2015.

- CCS demonstration is the first stage of an EU Strategic Energy Technology Plan (SET-Plan) covering major technologies such as biofuels, solar, nuclear and wind. Research platforms will also cover low carbon steel, cement, and construction and will be open to international cooperation.
- However, the EU package has left some critical areas undecided in advance of the Copenhagen negotiations, many of which will be discussed over the course of 2009, particularly: detailed measures to address carbon leakage and competitiveness impacts; additional funding for EU low carbon R&D and infrastructure programmes; funding for international cooperation; additional efficiency and regulatory measures needed to meet the 30% target; CDM reform.
- In March 2009 EU leaders will adopt a “Road to Copenhagen” declaration drafted by the European Commission setting out Europe’s vision of the global climate deal.

## Background

On 11-12 December EU leaders met in Brussels to agree a Climate Package of legislation to deliver the EU’s domestic climate targets for 2020, representing the EU’s position on key issues related to the international post-2012 climate negotiations. Over 550 members of the European Parliament backed the package on 17 December, while fewer than 100 voted against. European Commission President Jose Manuel Barroso has hailed the package as “the most ambitious proposals anywhere in the world” to tackle global warming.

The package is based on “20/20/20 by 2020”<sup>3</sup> targets agreed by EU leaders in 2007 and proposals put forward by the Commission in January 2008 to deliver a unilateral commitment to reduce GHG 20% below 1990 levels by 2020; plus a move to 30% reductions as part of a global climate deal. The four key elements are 1) revision of the EU Emissions Trading Scheme (ETS) for Phase III in 2013-2020;<sup>4</sup> 2) GHG targets for

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<sup>3</sup> This refers to the EU commitment to a 20% reduction in GHG emissions below 1990 levels, increasing the share of renewables in the energy mix by 20%, and a 20% increase in energy efficiency by 2020. The energy efficiency target is non-binding.

<sup>4</sup> Capping the number of emission allowances to deliver a 21% cut in industrial emissions during the whole period 2013-2020 compared with 2005. The annual EU ETS emissions cap will fall linearly by 1.74% each year – this will be reviewed by 2025. During Phase III emissions allowances will increasingly have to be auctioned rather than being distributed free of charge. (A separate deal will see the aviation sector brought into the ETS).

non-ETS sectors<sup>5</sup>; 3) a renewable energy target; and 4) measures to support CCS technologies.

European car efficiency legislation that has also been agreed alongside the package will limit average emissions to 95 gCO<sub>2</sub>/km by 2020 (57 mpg); tighter than proposed CAFE standards for 2035

The success of this agreement is important not just for the EU's transition to a low carbon economy but also for wider global efforts at addressing climate change. Europe needs to forge consensus between 27 countries – north, south and east – and so is in some ways a microcosm of global climate politics. European commitments – including the ETS – have been crucial in forming expectations in global business that action on climate will happen and will result in the creation of real markets inside and outside Europe. The markets created by the package will shape the growth and pace of the global low carbon economy, and set standards in areas such as cars, housing, renewable energy and CCS.

The EU package involves a huge amount of detail: this note highlights seven key debates that have wider implications for the Global Climate Deal.

1. Compatibility of the EU target with the IPCC range of 25-40% by 2020
2. Renewable energy
3. Energy efficiency
4. Use of offsets and the carbon market
5. ETS auction revenues and carbon leakage
6. Carbon capture and storage
7. Strategic Energy Technology (SET-Plan)

### **1. Compatibility of the EU target with the IPCC range of 25-40%**

The most recent findings of the IPCC suggest that in order to limit global warming below 2°C and avoid the worst effects of climate change, developed countries will need to reduce their emissions by 25-40% below 1990 levels by 2020, and developing country emissions will need to deviate substantially below business as usual during the same timeframe. The EU has endorsed these findings and has pushed for recognition of the 25-40% range by other Annex I Parties to the UNFCCC. The EU's commitment to move from a 20% to a 30% reduction if a global deal is reached is therefore critical, and the package includes an agreed process and timetable by which EU commitments in

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<sup>5</sup> Buildings, transport, agriculture, waste, and industrial plants falling under the threshold for inclusion in the ETS: sectors representing about 60% of total EU GHG emissions.

both ETS and non-ETS sectors will be revised to reach a 30% reduction. This commitment serves as an important signal to other Annex I Parties including the US, Japan, Australia and Canada as they consider their own mid-term targets.

The European Commission's methodology for sharing the overall 20-30% target between Member States – using a formula based on GDP per capita – is an interesting example for any future decisions on differentiation in the Copenhagen agreement.

## **2. Renewable energy**

The package includes legislation to enable the EU to achieve its target of increasing the proportion of renewable energies in the EU's total energy consumption to 20% by 2020 (the level is currently 8.5%). This includes differentiated mandatory targets for Member States, ranging from 10% to 49%, taking into account starting points, potential, energy mix and per capita GDP<sup>6</sup>. The renewables target includes increased support for electricity from solar, wind, geothermal, hydro and biomass; new support policies for use of renewables in heating and cooling including installation of renewable technologies in all new or refurbished buildings; and a sub-target of 10% share of transport fuel consumption to come from sustainable biofuels by 2020.

This is widely recognized as an ambitious objective which will generate new markets - multiplying by five the current production of wind turbines and solar cells, and requiring an additional investment of €380-€420 bn. Meeting the target could also create up to 2 million new jobs in the sector.

The key European negotiation around renewable energy concerned the 10% biofuels target, with many questioning its environmental benefits; to meet these concerns, a certification scheme will guarantee that the production of bioenergies meets strict environmental and social sustainability criteria. To be counted against the targets (which will be reviewed in 2014), individual biofuels will have to reduce CO<sub>2</sub> emissions by at least 45% compared to traditional fuels, rising to 60% in 2015<sup>7</sup>.

## **3. Energy efficiency**

In October 2006 the European Commission adopted an Energy Efficiency Action Plan, introducing a goal of improving energy efficiency by 20% by 2020 and proposing 10 priority action areas including minimum performance standards in key sectors. Elements of the action plan have been integrated into the package as updates to

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<sup>6</sup> See also Pew Center on Global Climate Change: European Commission's Proposed 'Climate Action and Renewable Energy Package', January 2008

<sup>7</sup> *Renewables push: The EU gets closer to a target for renewable energy*. The Economist, 16 September 2008.

existing energy performance of buildings and energy labelling legislation, and in proposals which introduce a labelling scheme to promote energy efficient buildings, in guidelines clarifying the calculation of amounts of electricity from cogeneration, and proposals on combined heat and power generation.

Member States are also required to produce action plans; these will generate new markets and new demand for energy efficient products. The Commission predicts that achieving a 20% reduction in energy consumption by 2020 could save the EU up to €160 bn per annum by 2020, assuming an oil price of €60 bbl. This priority is also reflected externally, in the promotion of the International Partnership for Energy Efficiency Cooperation (IPEEC) launched at the G8 Summit in June 2008.

#### **4. Use of offsets and the carbon market**

Independent of an international agreement, the package allows for Member States to count unused emissions allowances permitted during ETS Phase II towards the 20% reduction target through to the end of Phase III in 2020. This is roughly equivalent to 1/3 of the overall 2020 target being met through international offsets (CDM/JI). EU demand for carbon credits from developing countries will be significant under both the 20% and the 30% scenarios: through 2020, independent of an international agreement, EU member states will be able to undertake up to 50% of their industrial emissions reductions outside Europe. Non-ETS sectors covered by the effort sharing agreement will also be able to use international offsets to meet a portion of their target. Assuming a carbon price of €30 per tonne, combined demand from the ETS and effort sharing sectors could reach €70 bn between 2008 and 2020, or almost €6 bn per year<sup>8</sup>. There are no binding quality criteria for CDM credits but buyers must report on their quality. In the event that the EU moves to 30%, half of the extra effort required by ETS installations may be covered by international credits.

#### **5. ETS auction revenues and carbon leakage**

During ETS Phases I and II (to 2012) the vast majority of emissions permits were freely distributed. During Phase III full auctioning will be phased in, but there was an intensive debate regarding how quickly this should occur and how the revenues will be used. The EU power sector will have to buy 100% of allowances from 2013. However Poland and some other Eastern states won concessions enabling certain power stations to get up to 70% of allowances for free in 2013, declining to zero in 2020. Eligible

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<sup>8</sup> These figures are based on approximations of the total number of credits available between 2008 -2020 under both the ETS and non-ETS sectors. Only rough estimates can be provided as eligible Member States will need to satisfy several conditions to have access to additional credits for non-ETS sectors. These credits can come only from CDM projects in least developed countries and small island developing states, are non bankable and non transferable.



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plants will be those poorly integrated into the European electricity grid or those that individually provide more than 30% of national electricity in countries with relatively low GDP.

To underpin this deal, an additional 10% of allowances to be auctioned each year will be distributed to poorer member states for "solidarity and growth", and 2% will be given to countries whose GHG emissions in 2005 were at least 20% below their Kyoto base year emissions, i.e. Eastern Europe.

Energy intensive industries (e.g. steel and cement) lobbied strongly against full auctioning, arguing that this would damage their competitiveness and force them to relocate production to other parts of the world with lower environmental standards ("carbon leakage"). Independent studies suggest that these risks are limited to a relatively small number of industries accounting for less than 1% of European GDP<sup>9</sup> However the political influence of energy intensive industries in key Member States enabled them to extract significant concessions. The final agreement provides for at least 20% auctioning of industrial emissions permits from 2013, rising to a minimum of 70% in 2020, with a view to reaching 100% by 2027. Industrial sectors and sub-sectors considered at significant risk of carbon leakage according to generous criteria agreed by EU leaders will be eligible to receive up to 100% of allowances free from 2013 until an international climate agreement is concluded, when the situation will have to be reviewed. Free allowances will be allocated on the basis of best-in-class technology benchmarks. The complex process of setting those benchmarks in 2009 will determine how many permits actually do get auctioned in practice and is therefore a key area to watch. Sectors exposed to carbon leakage are to be identified by the Commission by the end of December 2009.

Extensive use of free allowances could end up backfiring on European industry as it complicates and delays linkage with other emission trading schemes, reducing the savings from trading and failing to incentivise innovation and substitution in key areas such as construction and materials use. This is recognised by the Commission and by some Member States, which argued for postponing final decisions until after the Copenhagen Agreement and in the meantime requiring industry to come forward with hard data demonstrating their exposure to carbon leakage. However other Member States were more sympathetic to industry demands for "protection" and free allowances emerged as the most politically feasible compromise.

A range of other options were debated, including state aid for vulnerable industries and external tariffs on imports from countries with lower environmental standards ("border tax adjustment"). The latter has generally fallen out of favour in Europe, including with

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<sup>9</sup> In some individual Member States this proportion rises to 3%. For a summary of the evidence see the report by Climate Strategies: [http://www.climatestrategies.org/reportfiles/cs\\_interimreport\\_leakage-final\\_ct.pdf](http://www.climatestrategies.org/reportfiles/cs_interimreport_leakage-final_ct.pdf)

industry, which fears retaliation from other countries and an increase in the cost of imported materials.

The high level of auctioning originally proposed by the Commission would have generated significant revenues, by some estimates in the region of €75 bn per annum in 2020. The Commission originally proposed that 20% of auction revenues (€15 bn) should be recycled back into climate change related activities, including facilitating developing countries' adaptation to the impacts of climate change. More ambitiously, the Environment Committee of the European Parliament proposed that 100% of ETS auction revenues be used for climate change purposes, with at least 50% going to developing countries; this would have meant that in 2020, €37 bn would have been earmarked for developing countries.<sup>10</sup> The final compromise between EU negotiators is a non-binding commitment to allocate 50% of revenues for climate action, but it is unclear how much will be available to developing countries.

## 6. Carbon Capture and Storage (CCS)

Even with delivery of the EU's ambitious renewables targets, a large percentage of new EU power generation capacity to 2035 will be fossil fuel-based. Germany and Poland have committed to coal at the highest level. The UK, Netherlands, Denmark, Italy, Greece, Romania, Hungary, Czech Republic, Greece and Bulgaria are also all building or expanding coal plants. Such expansion of conventional coal-fired power plants threatens the achievement of the 2020 target and is completely incompatible with the 2050 EU target unless plants are retired early. Use of CCS can potentially reconcile these moves to expand coal generation, which are driven by energy security fears, with climate change targets. The rapid demonstration of CCS will allow the next generation of European power investment to be consistent with both energy and climate security goals. In recognition of this, in 2007 EU leaders decided to build up to 12 CCS demonstration plants by 2015. Delivering such a programme requires additional financing of up to €1 bn per plant over a conventional fossil fuel installation.<sup>11</sup> Under proposals initiated by the European Parliament, the Commission will grant 300 million ETS permits to CCS projects in Europe at a total estimated worth of €9 bn. These permits will be awarded to eligible CCS projects based on their actual storage of CO<sub>2</sub> (the "pay for performance" principle) making companies bear the technical risk of project performance. To be eligible for support, projects will need to agree to stringent criteria on public knowledge sharing, public engagement and environmental monitoring. Projects will compete for funding against strategic portfolio criteria designed to deliver a programme which tests all key technologies, covers all major fuel

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<sup>10</sup> Muller, B. (2008). *To Earmark or Not to Earmark? A far-reaching debate on the use of auction revenue from EU Emissions Trading*. Oxford Institute for Energy Studies EV 43, November 2008.

<sup>11</sup> McKinsey (2008). *Carbon Capture & Storage: Assessing the Economics*.

types and delivers projects across a representative range of geographical locations in Europe. Funding is also likely to preferentially support the building of “CCS Hubs” where infrastructure is oversized and capable of serving other major sources of CO<sub>2</sub> from the power sector and industry. These CCS Hubs are envisaged to be the first stage of a future pan-European CO<sub>2</sub> pipeline network.

As part of the package the EU also agreed a comprehensive regulatory package on the geological storage of carbon dioxide covering permitting procedures, environmental integrity and long term liability rules. Defining the process for delivering the demonstration programme will be a major priority for 2009 in order to meet the 2015 goal.

The EU CCS regulation also mandates a review in 2015 to assess whether it is “needed and practical” to establish mandatory emission performance standards for new power plants which would outlaw the construction of coal plants without CCS.

## **7. Strategic Energy Technology Plan**

In November 2007, the European Commission proposed a strategic plan on energy technology (SET-Plan) which aims to increase European R&D in the medium term (reducing the costs of existing technologies and expanding markets by 2020) and long term (encouraging the emergence of new technologies by 2050). The plan introduces new technology platforms and will result in significant funds for climate and energy projects. The current total EU Research Framework 7 (FP7) budget of over €50 bn includes specific funding for climate (€1.8 bn) and energy (€2.3 bn), all of which is open to bids by third countries. Importantly, the level of demand for research into energy and climate solutions is highly dependent on the level of ambition of the EU targets.

In June 2009 the EU will begin decision-taking on draft “Low Carbon Finance” measures to fund implementation of the SET-Plan and other low carbon priorities (e.g. strengthening European grid infrastructure and interconnections, investment in a new super-smart grid). These proposals will feed into discussions in 2009/10 on the review of the European budget which will look to allocate a much higher proportion of its €120bn per annum to energy and climate change priorities, both inside and outside the EU, together with a review of the EU’s Lisbon Agenda for Growth and Jobs.