



Delivering energy savings and efficiency

By Stephen Tindale

★ EU countries have agreed to reduce the amount of energy they consume by 20 per cent by 2020. This target is not binding – unlike the other two in the EU’s climate change package (to reduce greenhouse gas emissions by 20 per cent and increase energy from renewables to 20 per cent, both by 2020).

★ The EU should not spend too much time arguing about whether the energy efficiency target should be made binding. Instead, it should use its new ‘energy efficiency action plan’ to tighten up existing laws, and spend more of its existing budget on energy efficiency programmes.

★ Europe wastes massive amounts of energy because most power stations do not capture and use the heat they produce when they generate electricity. EU countries should quickly move to combined heat-and-power systems.

★ The EU should tighten standards for the use of energy in buildings, electronic appliances and cars. And it should have the power to set minimum standards and remove the most energy inefficient vehicles from the market – as it has already done for products like washing machines and refrigerators.

European households and companies throw away billions of euros every year by wasting energy. The inefficient use of energy is not only a drag on European economies. It also undermines the EU’s climate change policies. That is why EU countries added a non-binding energy savings target to their climate change package. The aim is to reduce total energy use by 20 per cent by 2020.

The economic and environmental benefits of greater energy efficiency are potentially enormous. The European Commission estimates that measures to save 20 per cent of energy could create up to 2 million jobs in EU countries by 2020. Member-states would also

save massively on the amount they spend importing energy – to the tune of €100-150 billion a year, according to European Commission estimates.¹

¹ European Commission, ‘Doing more with less: Green paper on energy efficiency’, 2005.

EU countries will find it easy to identify measures to reduce energy use. The Commission is working on a

new ‘energy efficiency action plan’, scheduled to be published early in 2011. And successes in individual countries, such as Austria, Germany and Sweden, mean that there is much that EU member-states can learn from each other.

The EU’s energy commissioner, Günther Oettinger, has said on many occasions that energy efficiency is one of his priorities. But he is not the first one to make energy efficiency a priority – so did his predecessor, Andris Piebalgs, without much noticeable impact. EU governments have often been reluctant to follow Commission proposals. Rules that force companies and consumers to supply and use energy more efficiently usually have upfront costs. Governments will struggle to find the money to invest in energy savings schemes at a time when they need to get public deficits under control. Measures that can curb energy use and bring in public funds, such as energy taxes, tend to be unpopular with business and voters. Many politicians are simply less interested in measures that achieve energy savings

than in those having to do with energy security, which often provide election-winning headlines and photo opportunities.

Since energy efficiency programmes have little political appeal, non-governmental organisations (NGOs) and other voices in the energy and climate change debate have mostly focused on the need to set strict and binding overall targets. They are right to argue that a binding target – instead of the current indicative one – could focus the minds of politicians and provide some certainty for businesses and consumers. However, the

² *European Commission, 'Directive on the promotion of co-generation based on a useful heat demand in the internal energy market', 2004.*

EU should not expend too much political energy trying to make its 20 per cent target binding. Instead it should focus on tightening up existing rules. First it should give the 'combined heat and power' (CHP) directive some teeth.²

When fuel is burnt to generate electricity, heat is also produced. CHP (also known as co-generation), which captures this heat and enables the plant operator to use or sell the heat, is a well-established and cost-effective technology. But at present most of the heat that power plants produce simply goes up cooling towers. The scarcity of CHP is the greatest waste of energy across Europe.

Second, the rules that govern building standards need to become stricter, in order to reduce the amount of energy that seeps through windows and walls. Third, EU rules for the energy efficiency of household products such as refrigerators and boilers must also be made stricter. And the Commission should also be given powers to remove the least efficient vehicles from the market.

All these improvements will cost money. The pay-back period of most energy efficiency investments is usually only a few years. But any kind of investment may look daunting at a time when governments are struggling to bring public finances under control, companies feel uncertain about the economic outlook and individuals fear unemployment and rising taxes.

The limits of targets

The EU's climate change policy has three headline targets. Two of them are legally binding, namely a 20 per cent reduction in greenhouse gas emissions from 1990 levels and the increase in the share of renewables in final energy use to 20 per cent, both by 2020. The third target, on energy efficiency, is so far only for guidance. This proposes a 20 per cent reduction in energy use by 2020 compared to a business as usual trend. As the business as usual trend predicted an increase in energy use, a 20 per cent reduction from the trend would translate into an

³ *European Commission, 'Second strategic energy review', 2008.*

actual reduction of energy use of around 5 per cent compared with 2005 levels.³

Unfortunately, there is disagreement over how to measure progress. Is the aim to use energy more efficiently, or to use less of it? Member-states such as Spain, Italy and the UK have a target to reduce energy use by a specified amount. In contrast, Germany, Bulgaria, the Czech Republic and Hungary have a target to reduce the amount of energy used per unit of GDP, usually referred to as energy intensity. An informal Council discussion among energy ministers in September 2010 was supposed to clarify this debate. The discussion took place, but no decision was reached.

Energy intensity has declined steadily in most member-states. This is part of a global trend. The amount of energy used per unit of GDP declined on average by 1.6 per cent a year between 1990 and 2006.⁴ However, within the EU large differences in energy intensity between member-states remain.

⁴ *World Energy Council, 'Energy efficiency policies around the world: Review and evaluation', 2008.*

Member-state	Energy use per unit of GDP (USA = 100)
Denmark	57%
Italy	57%
UK	62%
Germany	75%
Sweden	98%
Finland	109%

Improvements in energy intensity have not led to a reduction in overall energy use. Instead, they have led to greater economic activity, because energy usage per unit of output has declined, lowering energy costs. Before the recession, energy use was increasing in most member-states (with the notable exception of Germany, where it was declining). Using energy more efficiently makes good economic sense, but if the result is that more energy is used, this does not help the climate. This 'rebound' effect is well-established at the level of individual behaviour. A more efficient car becomes cheaper to run, leading to an increase in its use.

The increase in overall energy use has led many NGOs to call for a binding cap on overall energy use.⁵ They argue that the objective should be 'doing more with less', not 'doing even more with more'. The other clear advantage of such a target would be that it is easy to measure: readily available consumption statistics can be monitored against the cap.

⁵ *European Climate Action Network, 'Demand management must be at the heart of new EU energy policy', October 2010.*

The EU's existing 20 per cent energy saving target is officially defined as a cap – a 20 per cent reduction in primary energy consumption. This is to be measured against a 'business as usual' baseline: what energy use

would have been without policies to reduce it. However, this baseline is not set in stone – it requires the Commission to project business as usual on energy at a time when economic circumstances are anything but usual.

The EU also has an indicative cap in the ‘energy services directive’ (ESD): each member-state should cut final energy consumption in sectors not covered by the Emissions Trading Scheme (ETS) by 9 per cent (from the average consumption over the previous five years) by 2016. This target is not adjusted for differences in temperature (more fuel is used for heating in extremely cold winters and more electricity for air conditioning in hot summers) or industrial changes such as shifts from manufacturing to services. Generally, services sectors use a lot less

⁶ *Energy efficiency policies around the world: Review and evaluation*, World Energy Council, 2008.

energy per unit of output than those in manufacturing. Most member-states’ economies have shifted towards less energy intensive sectors.⁶

Whatever the attractions of the cap approach, it has little chance of being adopted as a binding target by the EU. Energy is central to economies and lifestyles, so few politicians will want to put a mandatory cap on its use. Furthermore, there is not in fact any

⁷ *David MacKay, ‘Sustainable energy – without the hot air’*, 2009.

shortage of energy. Enough solar energy arrives every day on a small part of the Sahara to power the whole of Europe.⁷

However, the fact that there is plenty of renewable energy available does not mean that the EU should stop worrying about using energy more efficiently. The lack of confidence in indicative targets and the consequent calls for the energy efficiency target to be made legally binding are understandable. The EU’s Lisbon Agenda for economic reform had an aspirational commitment to improve energy efficiency, but this had very little impact. The ESD’s indicative targets have also had no clear effect on performance.

In June 2010, a group of businesses, professional associations and NGOs sent a joint letter to the EU leaders in advance of their discussion on the EU 2020 strategy, the Lisbon Agenda’s successor, arguing that new impetus was needed to overcome the barriers to energy saving, and that binding targets would help to

⁸ *European Environmental Bureau, June 2010. www.eeb.org/EEB*

establish this impetus, as they had on renewable energy and air quality.⁸ They are correct that a new impetus is needed, and that binding targets have helped on

renewables and air quality. A binding target has more effect than an aspirational one. However, it does not guarantee achievement.

A clear example of the limits of legally-binding targets is the failure of several member-states to meet their commitments under the Kyoto Protocol. In 2008, the most recent year for which verified data is available

from the European Environment Agency, Spain’s total greenhouse gas emissions were 40 per cent above the 1990 level; its target is to be only 15 per cent above in 2008-2011 (the average of the four years). Austria’s target is a reduction of 13 per cent, but in 2008 its emissions were almost 10 per cent above 1990 levels. Ireland, Italy and Denmark also had virtually no chance of meeting their Kyoto targets, despite them being binding. The Commission will be able to fine them, but the prospect of fines has not spurred the governments to take the targets seriously.

That is not to say that targets have no value; they focus political and business attention on some specific policies. Sectoral targets are particularly helpful in this respect: the targets in the ‘renewables directive’, for example, are helping to attract investment into renewables. Binding efficiency targets could do the same for energy savings programmes. Oettinger has said that he will decide whether to make the EU’s goal of improving energy efficiency by 2020 legally binding in 2012, only after evaluating progress made towards the voluntary target.

Although binding targets would have more impact than indicative targets, the EU should not spend too much time or negotiating capital on this issue. A better approach would be for governments, businesses and NGOs to focus on regulations and funds that would help to deliver improved energy efficiency – which, to be fair, they are starting to do.

The waste of heat

The EU needs to focus on increasing not only the efficiency with which energy is consumed, but also the way it is supplied. The biggest room for improvement exists in power generation. It is quite possible to use the heat from coal, gas, biomass (wood or energy crops) and nuclear power stations for industrial or domestic heating. Using the heat for homes requires networks of heat pipes, to form a district heating network. In Scandinavia these networks transport heat up to 100 kilometres. Not all of this is from CHP plants, but a district heating network makes it much simpler to find customers for the heat, a crucial step in making CHP economically attractive to previously sceptical electricity companies. The main argument of electricity companies against CHP is that they often cannot find anyone to use the heat.

Only about a tenth of the electricity and heat used in the EU comes from CHP plants. The 2004 ‘CHP directive’ requires member-states to remove barriers to co-generation. It allows, but does not require them to support co-generation. Some governments have done so, but the leaders in the field – Denmark, Finland, Austria and the Czech Republic – were doing this well before 2004. In 2005, 97 per cent of Denmark’s thermal power capacity (non-wind power) was CHP. Denmark has expanded its district heating network to 50,000 kilometres, meaning that

⁹ Prashant Vaze, 'Why can't we all be more like the Danes?' July 2010. <http://climateanswers.info>.

40 per cent of heat demand is now supplied through district heating as opposed to individual boilers.⁹

Denmark has performed well on CHP in part because local government is fully involved. Local governments in other member-states are beginning to follow the Danish approach. For example, Berlin promotes biomass district heating. The Scottish city of Aberdeen has installed three gas CHP district heating schemes, which have delivered significantly cheaper heat and power, and cut emissions of carbon dioxide by over 50 per cent.

¹⁰ European Commission, 'Seven measures for two million new EU jobs', *Communication from the Commission to the Council and the European Parliament*, October 2009.

¹¹ European Commission, 'Energy 2020: a strategy for competitive, sustainable and secure energy', *Communication from the Commission to the Council and the European Parliament*, November 2010.

The Commission's 2009 draft energy efficiency action plan does cover the potential contribution of CHP to energy efficiency, but says only that the use of heat as well as power should be a "prominent criterion" in the decision by public authorities about whether to grant planning consent for construction.¹⁰ In November 2010 the Commission published a communication in which this formula had been strengthened slightly: CHP should now be an "essential criterion".¹¹

More efficient buildings

If the EU pays greater attention to the efficiency of energy supply, it should not lose sight of the importance of energy use. In this area, the focus should continue to be on buildings. Residential, commercial and public buildings are responsible for 40 per cent of total EU energy use.

In May 2010, the EU agreed on a revised version of its 2002 'energy performance of buildings directive' (EPBD). The changes – due to come into force in 2012 or 2013 – require that all new buildings in the EU must require very little energy by 2021 (public buildings by 2019), and that any energy they use must be 'to a very large extent' from renewable sources. Although laudable, this is only a start. Heating the most efficient new buildings requires less than a tenth of the energy required to heat an old one. However, new buildings account for only a small percentage of the building stock. Most of the houses, shops and factories that will exist in 2050 already exist today, and most of them use energy wastefully. The revised EPBD mandates that all buildings undergoing major renovation will have to meet minimum energy performance requirements, but these are to be set by member-states. Germany already requires that any building undergoing substantial renovation must meet high energy efficiency standards. Sweden has gone further: every

time a building is sold or rented out it must meet high efficiency standards.

The revised EPBD makes the maintenance of heating boilers mandatory. This requirement is definite progress, as badly maintained boilers use much more energy than well maintained ones.

Public procurement

The Commission notes in its 'Energy 2020' communication that each year around €1,500 billion, or 16 per cent of EU GDP, is spent on public procurement. It therefore says that the power of public procurement should be used to increase energy savings, particularly in buildings and transport.¹² However, the European Commission has limited powers to tell national and local authorities how to spend their public budgets.

¹² European Commission, 'Energy 2020: a strategy for competitive, sustainable and secure energy', *Communication from the Commission to the Council and the European Parliament*, 2010.

A big part of public procurement budgets in the EU consist of the energy that governments, local authorities and other public bodies buy for heating, transport and so forth. In this area, at least, public spending will almost automatically become more supportive of energy efficiency because of the expected rise in energy prices. The power sector faces a massive need for new investment (up to €1 trillion by 2020, according to the Commission), to replace old coal and nuclear power stations, extend and improve the electricity grid, as well as expand renewable energy and carbon capture and storage. Most of this investment will have to come from private energy companies. These companies will raise electricity prices to recoup the costs. Faced with higher power prices, public authorities in the EU will have a big incentive to buy and use more energy efficient equipment, and to insulate public buildings.

Energy services

Another tool that the EU has to promote energy saving is the 'energy services directive' (ESD). The ESD is intended to encourage a market in energy services, in which consumers pay energy companies to provide the heat, cooling and lighting functions that they require, rather than paying for fuel use by volume.

The approach promoted by the ESD does not require companies, home-owners or tenants to invest in energy savings measures. An energy services company (ESCO), with no need for up-front investment by the owner of the building. The ESCO guarantees that it will reduce energy costs by a certain percentage every year. It is in charge of financing, installing and, where necessary, operating and maintaining energy saving measures.

The money saved by lower energy use is initially shared between the ESCO and the building owner. Once the cost of installation is recouped – which typically takes ten to 15 years – the saving goes entirely to the owner (unless there are ongoing costs of operation and maintenance).

Under the ESD, energy suppliers are required to promote energy efficiency to their customers and to expand energy metering as far as technically possible and financially reasonable. There is no specific requirement for energy supply companies to become energy service companies. So the ESD has not had a major impact. Indeed, significant developments on

¹³ Stephen Tindale, 'Repowering communities case study: Upper Austria', August 2010. <http://climateanswers.info/2010/08/repowering-communities-upper-austria-case-study/>

energy services pre-dated the directive. In 1998 the regional government of Upper Austria became the first public authority to use the ESCO approach for energy efficiency. More than 100 projects have been implemented, and some have reduced energy consumption by more than a third.¹³

Berlin has also used the ESCO approach successfully. The Berlin government has worked with a publicly-owned bank, the KfW, and energy supply companies

¹⁴ C40 Cities, (Energy Saving Partnership Berlin (ESP) - An effective and innovative model to reduce CO₂ and energy costs without expenses for building owners', 2010. (http://www.c40cities.org/bestpractices/buildings/berlin_efficiency.jsp)

such as Vattenfall. The partnership has created ESCOs to remove the need for up-front investment by consumers. Many buildings have been upgraded, delivering emissions savings of over a quarter and lower energy bills.¹⁴ However, most of the work has been on public and commercial buildings, not residential ones.

More efficient household appliances

The fabric of the building is the key determinant of heat use, but it is the behaviour of inhabitants and the products they use which are the key drivers of electricity use (at least in buildings which are not heated electrically). The trend towards bigger and more powerful electrical products means that the electricity consumption of European households

¹⁵ World Energy Council, 'Energy efficiency policies around the world: Review and evaluation', 2008.

(and North American households) is increasing, and the rate of increase in consumption has actually accelerated since 2000.¹⁵

The EU has sought to encourage consumers to purchase more efficient fridges, televisions and so on. The 1992 'energy labelling directive' requires that most domestic appliances have an energy efficiency label on display at point of sale. This directive has increased the proportion of energy efficient appliances being bought. For example, in 1998 only

10 per cent of washing machines bought were in the most efficient category. By 2005 this had increased to 90 per cent. In May 2010, a new version of the labelling directive was adopted, extending the label to products in the commercial and industrial sectors and to more domestic products such as televisions, water heaters and boilers. In September 2010, the Commission proposed the first energy efficiency labels for televisions.

The EU has also moved beyond labelling and prohibited the most energy-profligate products. The 2005 'eco-design directive' set in train the establishment of minimum product standards. The Commission estimates that by 2020 the minimum performance standards it has set will deliver energy savings equivalent to 12 per cent of the electricity consumption of the EU in 2007. Standards for electric motors will deliver most, followed by televisions, then lighting (both domestic and street).¹⁶

¹⁶ European Commission, 'Sustainable and responsible business', 2010. http://ec.europa.eu/enterprise/policies/sustainablebusiness/ecodesign/product-groups/index_en.htm.

However, there have been numerous delays in setting standards for crucial product groups. The standards for boilers and water heaters have been repeatedly delayed, despite the Commission having identified them as a priority for action in 2006. Boilers and water heaters are responsible for the same amount of carbon dioxide emissions as the whole transport sector.

Industrial energy efficiency

The EU should also do more to promote industrial energy efficiency. The Emissions Trading Scheme (ETS), the main policy tool, was intended to encourage companies to use energy more efficiently, as well as to increase the use of low-carbon energy. Those sectors covered, such as electricity generation and heavy industries, are allocated permits to emit carbon. If they exceed their allocation, they have to purchase additional permits from those whose emission levels are below their permitted levels. The ETS was the first international emissions trading scheme, so the EU can rightly claim credit for taking a lead. But so far the ETS has had little impact on emissions.

In the first two phases (2005-07 and 2008-12) of the ETS, it was governments that allocated permits. Since most EU countries allocated too many permits in the first phase, the Commission has used its powers and influence to reduce allocation for the second phase. However, the decline in industrial activity due to the recession means that there are still too many permits, so carbon prices are too low to have a significant effect on either energy use or investment in low carbon electricity generation.

In addition, in phases one and two, permits have been given out for free rather than auctioned off. From 2013 the Commission will have control of allocation and permits will be auctioned to some sectors, including electricity generators. These are sensible improvements in the operation of the ETS, and in line with recommendations made previously by the CER.¹⁷

¹⁷ Simon Tilford, 'How to make EU emissions trading a success', CER report, May 2008.

However, industrial activity will not reach pre-recession levels for many years, so emissions will be lower than anticipated in the baseline scenarios used to decide allocation levels. So the total number of permits allocated is still likely to be too generous, driving the price of permits down and undermining firms' incentives to cut emissions. So the EU should take additional measures to strengthen the ETS.

Finance for energy efficiency

Investing in the renovation of the building stock, the expansion of co-generation and the upgrade of the electricity network will be cost effective, with a payback period of only a few years. But this does not mean that it will be cheap. Much of the money can be mobilised through low interest loans to households, as KfW's programmes in Germany have demonstrated. But some public money is also required, to help poorer member-states and to pay for larger infrastructure, such as expanded district heating networks or more efficient electricity grids.

In 2008 the EU allocated €4.8 billion from cohesion policy funds to expand renewables, decentralised energy production (that is, many small power stations rather than a few large ones, which makes CHP much easier) and district heating. An additional €4 billion was allocated in the EU's 2009 stimulus package for energy interconnections. Since 2009 member-states have been able to use up to 4 per cent of the money they receive from the European regional development

¹⁸ European Commission, 'Seven measures for two million new EU jobs', Communication from the Commission to the Council and the European Parliament, 2009.

fund for energy efficiency. This could theoretically lead to €8 billion being spent on domestic energy efficiency and €9 billion on public and commercial energy efficiency.¹⁸ In practice few governments have significantly increased the amount of regional development fund money they spend on energy efficiency. The Commission and European Parliament have agreed that €146 million of unspent money from the stimulus package should be allocated to energy efficiency and decentralised renewables.

Despite the growing availability of EU funds, member-states will have to provide or mobilise most of the money. The energy services directive states that member-states are allowed to establish energy efficiency funds without falling foul of the EU's strict state aid rules. The requirement in the EPBD is merely to list existing and proposed financing

schemes. Because of the need to bring fiscal deficits under control, most governments are not considering spending more on energy efficiency. This is a pity because money spent on energy efficiency will create jobs immediately and strengthen future economic performance.

Two sources of revenue that could be used to fund energy efficiency programmes are auctioned ETS permits and energy taxes. Member-states are permitted by the Commission to use up to half the revenue raised from auctioning ETS permits for energy efficiency and renewables. Carbon or energy taxes are an important lever to increase energy efficiency in industry, commerce and homes, and can also raise substantial amounts of money. Some of this revenue could be spent on improving energy efficiency. Sweden and Norway fund energy efficiency programmes through a general energy tax.

However, public funds will not be enough to finance all the energy efficiency work that should be done, so increasing activity by banks, companies and individuals is also essential. Germany has demonstrated that providing low interest loans to households is an effective way of improving existing buildings. The KfW bank has offered low interest loans for refurbishment since 1990. From 2001, loans have been available specifically for energy efficiency improvements. In 2008, KfW lent a total of €5.6 billion for residential energy efficiency construction and renovation.¹⁹ Local banks implement the scheme, offering loans to owner-occupiers, landlords, housing companies, housing co-operatives and local government. Up to €50,000 can be borrowed for each housing unit. Since 2007, the KfW has offered direct grants to non-profit organisations, local authorities and associations of local authorities, alongside the loans.

¹⁹ Regulatory Assistance Project, 'A comparison of energy efficiency programmes for existing homes in eleven countries', 2010.

The overall results of the KfW programmes are impressive. More than 1.5 million houses and flats have been renovated over the last two decades. The largest redevelopment project in the German housing sector, Gesobau in Berlin, was carried out as part of the KfW programme. An extra layer was added to the outside of several tower blocks to improve insulation. Around 13,000 flats have been improved in this way, at almost no cost to tenants, and connected to a district heating network.

Vehicle fuel efficiency

The draft energy efficiency action plan which the Commission sent to the Council and Parliament in 2009 covered transport as well as domestic and commercial energy use.²⁰ The forthcoming version must do the same. Transport

²⁰ European Commission, 'Seven measures for two million new EU jobs', Communication from the Commission to the Council and the European Parliament, 2009.

accounts for over 20 per cent of the EU's energy use, and oil is still by far the most widely used fuel.

By 2020 10 per cent of transport fuel will be from renewable sources, and most of this will be biofuel derived from crops. The trouble is that biofuels can be worse for the climate than oil – partly because of the direct impact of the chemicals used on intensively-grown energy crops, and partly because of the indirect effect of using land to grow energy crops (which forces food to be grown elsewhere, and consequently drives deforestation). Surface transport can be run on electricity, which helps to decarbonise transport, but it would take decades to convert the whole transport sector to electricity. So an increase in the fuel efficiency of petrol and diesel vehicles is essential if climate objectives are to be met.

In policy discussions, vehicle fuel efficiency is measured by emissions of carbon dioxide per kilometre, rather than kilometres per litre or miles per gallon, a measure which most members of the public would find easier to understand. The EU has agreed that by 2015 car manufacturers must achieve an average across all the vehicles they sell of 130 grammes of carbon dioxide per kilometre, falling to 95 grammes by 2020. Vehicles sold in Europe are becoming more fuel efficient, though it is impossible to say how much this is due to the target and how much to oil price rises.

There is also an EU fleet-wide target for vans under 3.5 tonnes. The Obama administration has gone further than Europe in this respect, having also set standards and targets for heavy trucks and buses. The American government needs to act on vans and trucks because fuel is relatively cheap in the US. In Europe, the price of fuel means that those using vehicles for commercial purposes already buy fuel efficient vehicles, so an EU target for vans and trucks is less important.

Conclusion and recommendations

The Commission is due to publish a new energy efficiency action plan in early 2011, though the date of publication is not yet fixed. President Herman Van Rompuy has called a summit for heads of government to discuss energy on 4 February 2011, so the energy efficiency plan should be published before then.

As well as proposals to improve the energy efficiency of existing buildings, the plan should include specific and ambitious proposals for much stronger regulation of energy supply. The plan should therefore propose that:

- ★ The EU should require member-states to implement measures to ensure that whenever fuel is burnt to generate electricity, the heat is also used. This should be achieved by strengthening the CHP directive.

- ★ Member-states should require local governments to enforce strong building regulations whenever a building is renovated, sold or rented. This should be achieved by strengthening the energy performance of buildings directive.

- ★ The Commission should announce that the energy standards requirements set under the eco-design directive will be progressively made tighter and extended to new products such as food-producing equipment and data centres.

- ★ The Commission should introduce measures to ensure that products which use more energy than the standards in the eco-design directive are removed from the market in all 27 member-states.

- ★ The EU should create an ETS floor price. The Commission and member-states should state that from 2013 no permits will be sold at less than €30 per tonne. This would give greater price certainty to companies considering investment in low-carbon energy sources, and increase the financial incentives for all sectors covered to use energy more efficiently.

- ★ The EU should adopt stronger targets for car fuel efficiency for 2020, and new targets for 2025 and 2030. Vehicle manufacturers would benefit from greater long-term planning security if a 2030 target was adopted. Given that it takes time to change production patterns, it is too late to change the target for 2015.

- ★ The EU should phase out subsidies for fossil fuels – as it has promised in the G20 – and use that money for energy efficiency programmes. Lastly, EU governments should follow the example of Norway and Sweden and use an energy tax to finance energy savings.

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