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Fiscal Pulse

European Climate Change Policy

... Moving Forward Amidst Economic Challenges

Europe continues to look for co-ordinated action, both domestically and internationally, to limit the worst aspects of global climate change and minimize remedial costs. After almost two decades of climate change effort unmatched by other nations, European lawmakers in late 2008 agreed upon a reinforced climate and energy strategy, leaning more heavily on its larger Member States. As the new climate change policies are rolled out, the sharp economic downturn is forcing compromises. Longer-term policy momentum, however, should be sustained given the EU's substantial environmental investments to date and the anticipated economic boost from further greening. As Canada further develops its national climate change policy, the complex evolution of EU climate policy, summarized on pages 4-8, is instructive.

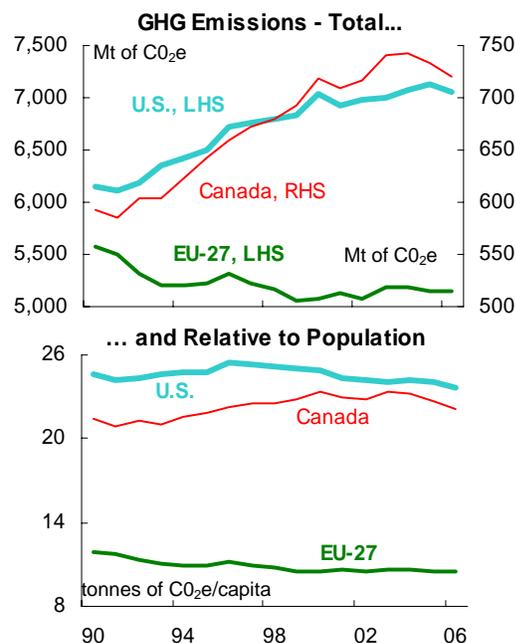
Stepped-Up Climate Change Goals

To prevent the worst impacts of climate change, European leaders concur that global average temperatures must increase no more than 2°C in the long run above pre-industrial levels. This will require that global greenhouse gas (GHG) emissions peak by 2020 at the latest and fall to at least 50% below 1990 levels by 2050, trending steadily lower thereafter. The EU leaders support the assessment of the Intergovernmental Panel on Climate Change that this goal requires developed nations to collectively reduce their GHG emissions, relative to 1990 levels, by 25%-40% by 2020 and by 80%-95% by 2050. For developing nations, a 15%-30% cut in emissions below estimated "business-as-usual" levels is needed by 2020, apart from deforestation issues. In the spring of 2007, the EU set a post-Kyoto target of trimming its GHG emissions 20% by 2020 from 1990 levels, leaving the option of a 30% cut if other industrialized nations undertook comparable emissions reductions.

To reach this goal, the Council proposed two commensurate 2020 targets — raising the share of EU renewable energy consumption to 20% and reducing primary energy consumption by 20%. The European Commission, the executive body charged with developing policy, presented a climate and energy package in January 2008. It proposed broadening and strengthening the Emissions Trading Scheme (ETS) for large industrial emitters, responding to weaknesses in the 2005-07 trial phase. Carbon dioxide (CO₂) emissions from the facilities covered under the ETS rose almost 2% between 2005 and 2007. While this emissions increase was arguably less than the business-as-usual scenario, the result was particularly disappointing relative to the effort expended. Complementing the ETS, the package's other diverse measures include allocating among Member States emissions reductions for the non-ETS sectors and revised incentives for key developments such as carbon capture and storage.

Economic Woes Spur Compromises

By the fall of 2008, economic and financial market volatility was shadowing Europe's climate change discussions. Each



Source: European Environmental Agency, Environment Canada, U.S. Environmental Protection Agency.

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Member State, with its unique economic and structural challenges, faced heightened near-term economic priorities, and the feasibility of the proposed climate change and energy reforms was questioned. Italy, for example, estimated in September that meeting the 2020 target would cost its industries up to €27 billion, double the Commission's estimate. Poland and several other Eastern European States, dependent upon coal, protested the full auctioning of emissions allowances under the ETS for the power sector starting in 2013. Germany, though a strong proponent of the 2020 environmental targets, feared for its motor vehicle sector in light of the Commission's proposal to trim emissions from new cars to 120 grams of CO₂/km by 2012, 24% below the 2007 average.

The Commission's defence of its climate and energy package partially relies upon the economic growth and job creation anticipated from the new measures. Renewable energy, for example, is forecast to source up to one million jobs by 2020, up from 300,000 positions in 2008. As well, the *Second Strategic Energy Review* in November 2008 demonstrated the benefits of increased renewable power and greater energy efficiency in limiting the EU's dependence on imported oil and natural gas. In 2006, over half of the EU's energy consumption of 1,825 million tonnes of oil equivalent was from external sources.

An essential component of the Commission's climate and energy package was its update of the State Aid rules. These rules allow States to assist their industries, for purposes such as climate change, as long as they do not distort competition within the EU. To minimize the administrative burden, the Commission last summer reduced each State's obligation to seek prior approval before granting this aid. These changes were in line with the *Lisbon Strategy* to transform Europe into a competitive, dynamic, knowledge-based economy while combatting regional and global environmental challenges.

As part of *the Lisbon Strategy*, funds will continue to be apportioned according to the EU's proposed framework for spending each year through 2013 to help the poorest regions and developing States. Some of this funding will likely be directed towards GHG reduction initiatives. Notable is the €70 billion EU Cohesion Fund, designed to narrow disparities amongst Member States by financing transport and infrastructure projects. Currently, investments from this Fund of about €5 billion and €4 billion are planned for renewable energy and energy efficiency projects, respectively.

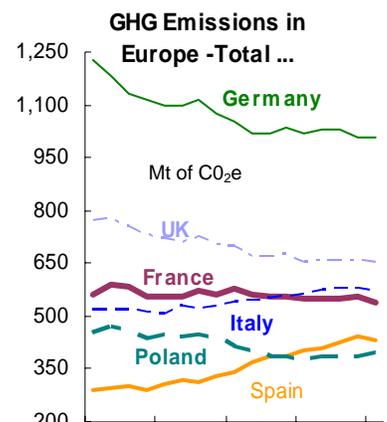
The eventual EU agreement on a climate change strategy in December 2008, while strengthening existing policies, also provided for the Member States most adversely affected. For instance, Poland and other States relying heavily upon coal for power may grant free transitional emissions allowances to their power utilities until 2020. For Germany and other States with significant auto manufacturing, a phase-in period to 2015 replaced the former 2012 deadline for the CO₂ emissions limits on new cars.

For the EU leadership, agreement on the overall strategy was considered imperative to provide sufficient lead time to sort out the remaining issues before Parliament breaks for elections in early June 2009. An agreement also was deemed essential to Europe's credibility in global discussions in the run-up to the UNFCCC meetings in Copenhagen in December 2009 to conclude a post-Kyoto protocol.

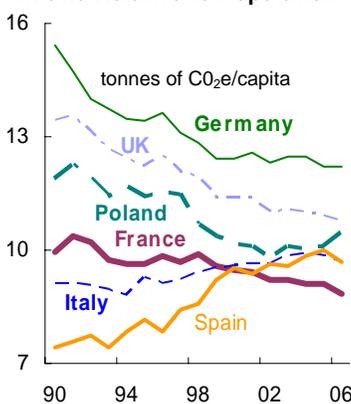
Further Economic and Financial Pressures

In January, the Commission's revised economic forecast for 2009 outlined a sharp real GDP decline of almost 2.0%, the loss of 3½ million jobs and a surge in budget deficits to 4½% of GDP. Subsequent events have further clouded the EU-27's economic outlook and the *European Recovery Plan* calls for timely, targeted and temporary stimulus among States with some fiscal flexibility. Meanwhile, Portugal, Spain and Greece have witnessed credit rating downgrades; Hungary and Latvia have already drawn on IMF support and Latvia's centre-right coalition government collapsed in late February. For Romania, Bulgaria, Estonia and Lithuania, the struggle to service their external deficits continues.

Already in 2009, the Commission has recommended that the considerable unspent funds from the 2009-10 EU Budget be directed towards short-term economic stimulus via strategic energy projects involving carbon capture and storage, offshore wind power, and improved gas and electricity connections. Yet major debate continues, with Poland and several other Eastern European States proceeding with European Court appeals of the Commission's decision to scale back their individual allocations of emissions allowances for the second phase of the ETS, as determined by the Commission's formula.



... and Relative to Population



Source: UNFCCC, Data Insight.

In the EU Commission's *Annual Policy Strategy* for 2010, financial and economic repair remain the focus, though the Copenhagen conference and the potential follow-up to a post-Kyoto agreement receive mention. Under the ETS, the second phase reduction in emissions allowances initially strengthened allowance prices. The recent downturn in industrial production and power demand, however, has spurred firms to sell their excess allowances, dropping their price by about two-thirds from a high last July of €30/tonne of CO₂ emissions. In this respect, the ETS mechanism is effectively responding to the economic downturn, lowering the cost of emissions for firms as overall GHG emissions fall across Europe.

The EU's policy response is pragmatic, rolling out the new climate change strategy for the longer term, while offering near-term compromises and aid to hard-pressed States. To complement the climate package, the 2003 EU-wide *Directive* requiring States to set minimum fuel tax rates (taking into account targeted carbon taxes) will be revised by mid-2009. Following each State's preparation of *National Energy Efficiency Action Plans* since mid-2007, a template is under way for each State to develop *National Action Plans* to meet the 2020 renewable energy target.

The EU's Global Climate Change Proposals

Building upon the Commission's recommendations in January 2009, the EU Council in early March approved a range of recommendations for the post-Kyoto agreement. For developed nations around the world, the EU suggests a commitment by mid-2009 to medium-term GHG emissions reduction targets, offering criteria to assess the comparability of the proposed efforts.

The EU Council maintains that putting a price on carbon through domestic cap-and-trade systems for emissions is the most efficient means of ensuring private- and public-sector investments in all countries to achieve the global climate change goals. Thus the EU welcomes the development of cap-and-trade legislation among OECD countries. It targets a robust OECD-wide carbon market by 2015 by linking national cap-and-trade frameworks, which could be extended by 2020 to the more advanced developing nations. The EU is willing to help developing countries to implement crediting and trading systems for their advanced industrial sectors. A key assumption underlying a global carbon market is more robust and transparent reporting, communication and verification of GHG emission levels and mitigation efforts, including the objective of annual emissions inventories for developing countries by 2011.

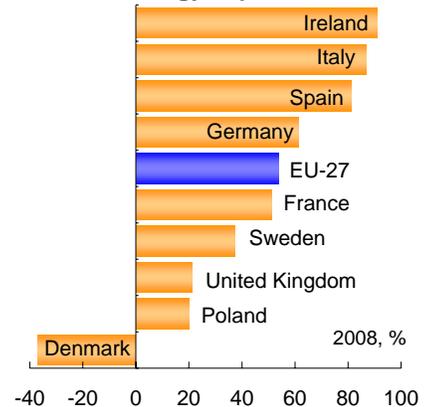
To facilitate the transition to a global carbon market, the EU Council recommends strengthening the three emissions trading mechanisms created under the Kyoto Protocol — the Clean Development Mechanism (CDM)¹, Joint Implementation (JI)² and International Emissions Trading (IET)³. For example, the governance and environmental integrity of the CDM must be improved, with broader participation by developing nations, especially the least-developed countries.

The EU Council strongly urges a comprehensive Framework for Action on Adaptation in the Copenhagen agreement, to be quickly reflected in development planning. Restraining the rise in the global mean surface temperature below 2°C is expected to limit but not prevent adverse climate change effects. The goal is a more climate-resilient society, with support for developing nations and multilateral insurance options to cover climate-related natural disasters.

To achieve the 2°C objective, the EU estimates that additional global climate change investment, from both the public- and private-sectors, must rise to about €175 billion annually by 2020. A second hurdle is the substantial wealth transfer involved in delivering financing to developing countries where more than half of the additional global investment will be required.

¹ The CDM allows developed countries to import emissions reduction credits from projects in developing countries. ² JI allows developed countries to import emissions reduction credits from projects in other developed countries. ³ IET allows nations to trade emissions credits among themselves.

Dependence on Energy Imports*



* Net energy imports/gross energy consumption, measured in Mtoe. Source: Eurostat.

En Route to Kyoto Targets

The EU-15's collective Kyoto target is an 8% cut in GHG emissions from 1990 levels on average over 2008-12. By 2006, the EU-15's GHG emissions were 2.7% below 1990 levels and their aggregate target was still judged achievable. The December 2008 agreement and sharply lower industrial production strengthen this assurance. Before the economic correction, only Denmark, Italy and Spain were doubtful about their individual Kyoto targets.

No collective target exists for the EU-27, but ten of the 12 new Member States (the exceptions are Cyprus and Malta) have committed to trim their GHG emissions 6%-8% below 1990 levels on average over 2008-12. By 2006, aided by heavy industry closures, EU-27 GHG emissions were 7.7% below 1990 levels. The current slowdown further ensures that all new Member States will reach their individual Kyoto targets.

Highlights of the EU's Climate Policy

Climate Change Targets

Europe has three primary 2020 targets to address climate change:

- ❑ To reduce greenhouse gas (GHG) emissions 20% from 1990 levels;
- ❑ To raise the share of renewable energy consumption to 20%, up from 9% in 2008; and
- ❑ To decrease primary energy consumption by 20% based on business-as-usual projections from 2005.

Europe plans on reaching its overall targets through Member States' domestic actions and co-ordinated EU-wide measures, such as the Emissions Trading Scheme (ETS). More than 370 European cities, including Paris, Madrid and Frankfurt, have committed to even steeper GHG emissions reductions through their own *Sustainable Energy Action Plans*.

Splitting the GHG reduction target between sectors

For the entire EU-27, the reduction path towards the 2020 target will be embedded in EU legislation. The overall emissions reduction targets are split between the ETS sectors (power plants and specified industries) and the non-ETS sectors (including transportation, buildings, industrial installations with relatively low GHG emissions, agriculture, and waste). The ETS sectors are to achieve a 21% drop and the non-ETS sectors a 10% decrease by 2020 from 2005 levels¹. While each State is responsible for its share of the non-ETS GHG reduction target, it is not individually responsible for the ETS target.

Allocating the non-ETS GHG emissions reduction target among Member States

Particularly sensitive was equitably determining for each Member State the GHG emission reductions required for its non-ETS sectors. The methodology eventually reflected each State's GDP/capita in 2005, and its growth. Relative to 2005, the allowed changes by 2020 across States range from a 20% decline to a 20% increase, with increases largely reflecting the strong expansion anticipated among developing States. Set out for each State is an emissions reduction path towards its respective 2020 target. States with non-ETS emissions targets below 2005 levels (primarily developed Member States) must ensure that their emissions, starting in 2013, do not exceed their 2009 emissions. States with non-ETS targets above 2005 levels (primarily developing Member States) must ensure that their emissions are not greater than they would have been with linear increases from 2009 to 2020.

Each State has some flexibility in meeting its non-ETS targets. If a State's non-ETS GHG emissions are below the required benchmark, the shortfall may be carried forward to the following year or transferred to other States to help meet their targets. Each Member State will be permitted to use international GHG offset credits from developing countries to a maximum of 3% of their 2005 non-ETS GHG emissions. An additional 1%, from the Least Developed Countries and Small Island Development States, will be permitted for States that must make deeper emissions cuts. Several EU-wide measures also will help lower non-ETS GHG emissions, such as a drop in allowed CO₂ emissions from new cars.

The Emissions Trading Scheme (ETS)

The ETS is the most comprehensive cap-and-trade program in the world. Established in 2005, it presently covers over 10,000 energy and industrial installations in the European Economic Area. The ETS has been divided into three phases — a trial phase from 2005 to 2007, a second phase coinciding with the compliance years of the Kyoto Protocol from 2008 to 2012, and a post-Kyoto third phase from 2013 to 2020. In the first and second phases, the ETS covers about 40% of the EU-27's total GHG emissions, partly because it applies only to CO₂ emissions.

The Trial Phase, 2005-2007

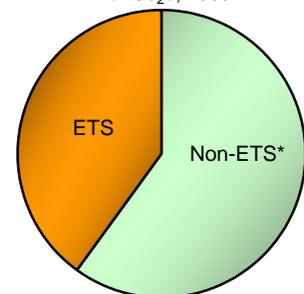
A bottom-up approach to setting the overall EU cap

Member States, by March 2004, were each required to develop *National Allocation Plans* (NAPs), outlining the number of allowances, each equal to one tonne of CO₂, that they planned to distribute to their industries. With the unfamiliar process and the relatively short timeline, many NAPs were not submitted by the deadline and others were only completed by mid-2005 after the ETS had begun. The Commission

¹ For the climate and energy package, a base year of 2005 was selected because it was the year that the ETS began and it had the most reliable and accessible GHG emissions data.

Europe's GHG Emissions Sources

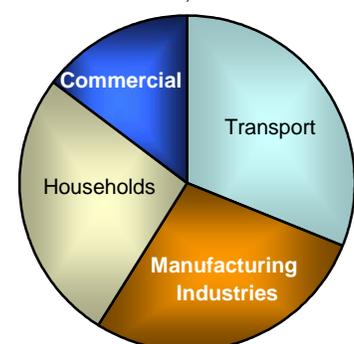
Mt of CO₂e, 2008



* Emissions Trading Scheme.
Source: European Commission.

EU Energy Consumption by Sector

Mtoe*, 2005



* Million tonnes of oil equivalent.
Source: Eurostat.



reviewed the NAPs to ensure their alignment with each State's Kyoto target. After revisions to 15 Plans, the NAPs were aggregated, leading to an average annual allocation for the entire ETS of 2.15 billion allowances (excluding Bulgaria and Romania who started participating in the ETS in 2007). Some of the development problems in the trial phase are summarized below to illustrate the complexities in establishing an effective and consistent cap-and-trade framework.

Distributing allowances

To limit the damage to each industry's competitiveness, Member States were allowed to auction a maximum of 5% of their allowances to their industries. With only four States holding auctions in the trial phase, almost all of the allowances were distributed for free, resulting in windfall profits for a number of sectors, most notably power generation.

Allowed purchase of overseas emissions credits

Facilities under the ETS were allowed to purchase cheaper international offset credits through the Clean Development Mechanism. This included international projects that reduced GHG emissions other than CO₂, but excluded nuclear power projects or investments related to CO₂ sinks (see *Fiscal Pulse* report, "Protecting Global Forests", January 2009). No emissions credits, however, were imported, reflecting the absence of established links between European and international registries to issue and transfer credits.

Accounting for new and expanding firms

Member States established "new entrants" reserves for new and expanding firms. Yet with no harmonised rules, the quantity of allowances set aside by each State and their distribution varied considerably, detracting from industry equity across the EU-27.

ETS allowance prices collapse later in the trial phase

Through 2005, allowance prices traded around €22/ tonne of CO₂ emissions, climbing to over €30 by April 2006. A subsequent announcement, based on 2005 emissions data, of excess allowances relative to the CO₂ emissions from covered facilities, prompted a steep erosion in allowance prices. With companies prohibited from banking allowances for the second phase, the allowance price dropped to almost zero before the second phase began. As a result, CO₂ emissions from covered installations climbed almost 1% in 2007 after a slightly smaller rise in 2006, though the intensity of emissions declined given the stronger growth in output. Almost all of the facilities covered under the trial phase were able to surrender the required allowances to authorities, and the fine for a facility missing its emissions target, set at €40/ tonne of CO₂ emissions, witnessed minimal use.

The Second Phase, 2008-2012

Setting a new ETS cap

The Commission was largely responsible for determining each State's NAP for the second phase according to pre-established criteria. Similar to the trial phase, the Commission's decisions on the number of allowances per State mirrored each State's Kyoto target. After twenty-three revisions to the NAPs (though fewer emissions allowances were affected than in the trial phase) the overall ETS cap set in October 2007 from aggregating the NAPs totalled 2.08 billion allowances annually.

Slight revision to allowance distributions

Member States were allowed to auction up to 10% of their allowances to their industries, leading to a continuation of windfall profits for certain industries. As well, in July 2008 it was decided to include the aviation sector in the ETS as of 2012, and it will receive the majority of its allowances for free.

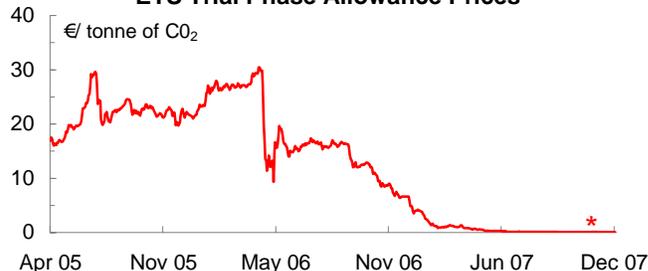
New limits on importing emissions credits

Facilities are allowed to import international emissions credits up to the limit approved for each Member State by the Commission. To ensure sufficient domestic emissions declines, with international credits only a minor supplement, the State limits for international credits range from 0% to 20%. The linking of the international and European registries was completed in October 2008, allowing installations access to these credits.

Several concerns remain in the second phase

A number of issues have been resolved in the second phase, including allowing firms to bank their allowances between phases, establishing more credible emissions data and achieving greater harmonization in setting NAPs. However, practices among the Member States are still inconsistent for the auction of allowances, the treatment of new entrants and procedures for firm closures, including the surrender of their allowances back to authorities.

ETS Trial Phase Allowance Prices



* Less than €0.20 from July to December, 2007.

Source: European Climate Exchange.



A new source of price volatility

Second phase allowance prices rose from about €20/ tonne of CO₂ in January 2008 to almost €30 by early July 2008. With subsequent declines in industrial production and softer power demand, firms have quickly sold their excess allowances, lowering allowance prices to an average of just over €9 by February. The decline is spurring discussions about establishing a price floor. In the second phase, the fine for an installation exceeding its allowed emissions is significantly higher at €100/ tonne of CO₂. With market prices for allowances expected to remain well below €100 through 2012, facilities are expected to pursue other options to meet their emissions targets.

The Third Phase, 2013-2020

A truly EU-wide cap

The ETS cap for the EU-27 for 2013 will be set by the Commission, and Member States will not be required to develop new NAPs. Calculation of the annual caps for the third phase begins with the aggregate number of allowances issued across Member States in mid-2010, and then declines by 1.74% per year to an estimated 2013 cap of 1,974 million allowances and 1,720 million allowances by 2020. In fact, this estimate for the 2013 cap is low because it excludes the three States in the European Economic Area (Norway, Liechtenstein and Iceland) covered under the ETS since 2008 and the aviation sector which will not be under the ETS until 2012. In the third phase, the ETS will cover several additional industries such as petrochemicals, ammonia and aluminum. As well, greenhouse gases with a higher global warming potential than carbon dioxide, such as nitrous oxide and perfluorocarbons, will be covered under the ETS for certain industries. To support growth, one-tenth of the total auctionable allowances each year shall be used to aid developing Member States. A further, albeit smaller number or allowances shall be directed to developing States who have achieved large GHG emissions reductions with respect to their Kyoto targets.

Auction requirements

Member States will be required to auction a minimum of 20% of their allowances in 2013, rising to 70% in 2020 and 100% in 2027. This includes full auctioning for the electricity sector from 2013 onwards. In light of some Member States' concerns, transitional free allowances (based on 2005-07 emissions) or allowances generated through efficiency benchmarks (based on weighted emissions levels for the different fuels used for electricity generation) may be provided to power stations from 2013 to 2019, but these adjustments will be phased out by 2020. For States choosing either of these options, the number of free allowances provided for power generation must be deducted from the quantity of free allowances available for other sectors. As well, a new entrants reserve for the entire EU-27 will be established with 5% of the total allowances available each year.

Support for vulnerable industries

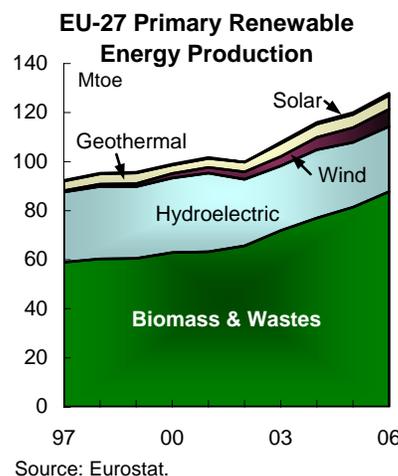
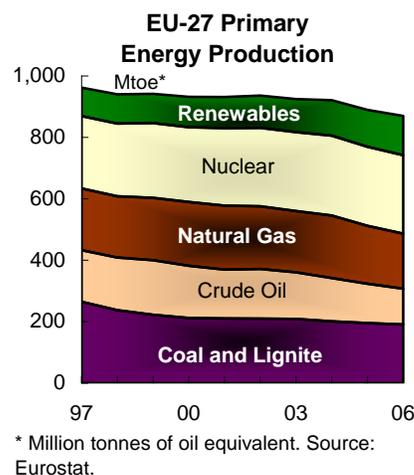
Sectors or sub-sectors may still receive all of their allowances for free after 2012 if they are deemed unduly sensitive to international competition and unable to pass on ETS costs without loss of market share. This provision will be reviewed by mid-2010 in light of any global targets set for specific sectors under a new post-Kyoto agreement. International offset credits also will provide some flexibility to facilities, with the ceiling set at the amount a State allowed them to use in the second phase, or a minimum 11% of the allowances they used during the second phase, whichever is higher.

Providing States with flexibility

Given the higher auctioning requirements, if a State's emissions fall below its cap, a State will be allowed to bank these excess allowances up to 5% of its total allotment for the following year, or transfer the unused allowances to another Member State. If extreme weather conditions in 2013 or 2014 raise energy demand, a State may request an increase in its 5% limit.

The use of auction revenues

With the auctioning of allowances generating substantial revenue from 2013 onwards, Member States have agreed to use up to half of these receipts for environmental initiatives. The expectation is that a portion of the environmental





allocation will be directed towards developing countries for adaptation to climate change, though Hungary and Poland are now refusing to contribute to this use of funds in light of their own financial difficulties.

Capturing and storing CO₂ underground

In March 2007, the EU Council announced a plan to build 10-12 full-scale CCS demonstration plants by 2015. As projected carbon prices will be insufficient to overcome financing constraints, lawmakers approved the allocation of 300 million free ETS allowances to successful public- and private-sector CCS demonstration projects from 2013-2015, issued from the new entrants reserve.

Climate Initiatives for Non-ETS Sectors

Increasing taxes on fossil fuels

With several Member States introducing targeted carbon taxes in addition to their general fuel taxes in the early 1990s, the Commission's 1992 proposal for a general carbon-energy tax on fuels was defeated because of several States' concerns that it would start a shift in fiscal policy to the Commission, infringing upon their sovereignty. Nevertheless, a major effort towards co-ordinated EU-wide environmental fuel taxation was agreed upon with the 1992 *Mineral Oils Directive* (mineral oils are by-products of petroleum). It was expanded with the 2003 *Directive on Taxation of Energy Products and Electricity* to include additional fuels and to establish common minimum levels of taxation on fuel consumption. While ETS allowances prices are uniform across the EU, Member States were given the option of raising their fuel taxes above the minimum levels. Currently, there are more than ten States that have implemented targeted carbon taxes, thereby raising their overall taxation on domestic fuel consumption.

As with the ETS, the 2003 *Directive* allows Member States to provide vulnerable energy-intensive industries with refunds of up to 100%. Exemptions for specific industries also were made by States that chose to implement carbon taxes. Revenues from carbon and fuel taxes have commonly been used to lower health and pension contributions, personal and corporate income taxes, as well as to promote renewable energy and energy efficiency. The Commission will propose a revision to the 2003 *Directive* in mid-2009, pre-empting the increase slated for 2010, to complement the climate and energy package.

Reducing GHG emissions from transport fuels

By the end of 2020, lifecycle GHG emissions per unit of energy in transport fuels in each State must be trimmed by up to 10% from 2010 levels. This decrease will be accomplished through the entire production and distribution process, with over half of the decline required from suppliers. Similar to other emissions reduction objectives, the ability to import international emissions trading credits will provide some flexibility.

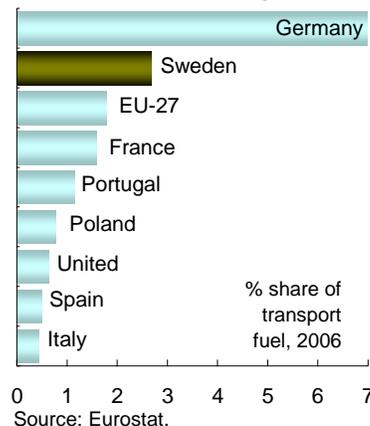
Increasing renewable energy in transport fuels

As part of the 2020 target to raise the share of renewable energy consumption to 20%, transport fuels must have a 10% renewable energy share. A fuel will qualify as renewable if the GHG emissions over its lifecycle are at least 35% less than conventional fossil fuels. From 2017 onwards, the threshold defining 'renewable' will climb to at least 50% for fuel from existing production facilities and at least 60% for fuel from new facilities.

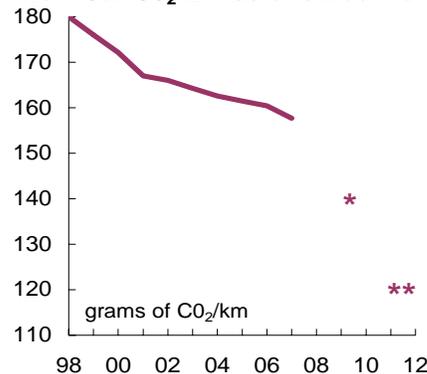
Limiting CO₂ emissions from new cars

New regulations, replacing the prior voluntary 2012 goal, require each auto manufacturer to lower average emissions from its new cars to a maximum of 120 grams of CO₂/km by 2012, down from 158 grams in 2007, with a further decline to 95 grams slated for 2020. To ease the transition for several States with auto sectors, only 65% of their manufacturers' fleet must average to the 2012 target, rising to 100% by 2015. For the 2012 target, engine enhancements are expected to lower emissions to 130 grams, with other adjustments such as improved tires or air conditioning plus biofuel usage accomplishing an additional 10 grams. From 2013 to 2018, fines for manufacturing a car producing CO₂ emissions above the limit will be €5 for one gram, €15 for two grams, €25 for three grams and €95 for four or more grams. From 2019 onwards, each gram

Select Countries' Biofuels Consumption



New Car CO₂ Emissions Decline¹



* Interim voluntary target. ** Final target .

¹ Includes technical improvements such as usage of biofuels. Source: Eurostat.

over the limit will be fined €95. Regulations are being developed to restrict emissions for new vans and minibuses to 175 grams by 2012, relative to 201 grams in 2002, with a 160 gram limit proposed for 2015.

Promoting Renewable Energy

With the goal of raising the renewable share of final energy demand from 9% in 2008 to 20% by 2020, Member States have been assigned renewable energy targets (as a share of total energy consumption) from 10% to 49% depending upon their per capita GDP, their situation in 2005 and their renewable energy potential. The UK has the largest targetted increase of almost 14 percentage points, double the rise required by the Czech Republic. Sweden, with the highest renewable target of 49% reflecting a 46% share for nuclear power generation, is planning to remove its ban on building new nuclear reactors to allow older reactors to be replaced with modern, more secure units, constructed without government subsidy.

The primary policy tools to promote renewable power are feed-in tariffs and premiums in 18 States, tax exemptions in two States and a requirement in seven States for suppliers to purchase specified quantities of power from renewable energy producers. Imported electricity may count towards a Member State's renewable energy target if shipments begin after the renewable electricity *Directive* becomes law, likely before the EU Parliament dissolves in June. The *Strategic Energy Technology Plan*, approved in March 2008, will bring together the major research centres, institutes, governments and the Commission to co-ordinate and develop renewable energy technologies under the umbrella of a new European Energy Research Alliance. The Alliance's mandate will extend to carbon capture and storage, nuclear fission and a smart electricity grid.

In recent years, progress in establishing an efficient EU market for power has been hampered by a number of factors. For example, network operators of vertically integrated power utilities had little interest in developing interconnection capacity because increased cross-border flows might trim the market share of their own power generating facilities. Efficiency also was discouraged by traditional network regulation which based network operators' revenues on the number of electricity units transported. In December 2008, however, the creation of the European Network of Transmission System Operators for Electricity was announced. Its mandate in securing energy supply is to improve energy efficiency through decentralized production and allow greater access for renewables on the grid, including cost-effective distribution of offshore wind power while preserving the reliability of the grid.

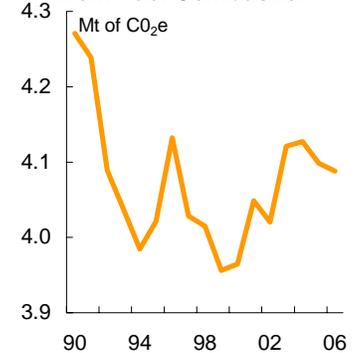
Improving Energy Efficiency And Conservation

The EU's goal to trim primary energy consumption 20% by 2020 is measured relative to a business-as-usual scenario that assumes growth in energy consumption of more than 10% over the fifteen years to 2020. Measures outlined before the December 2008 agreement, if they had all been implemented by the Member States, were expected to achieve a 13% improvement in energy efficiency by 2020.

The *European Energy Efficiency Action Plan* of 2006 proposed 85 actions to be completed by 2012 such as energy performance and labelling requirements for products, building efficiency standards and efficiency savings related to the transportation sector. One-third of the actions are in place, and the *Plan* will be re-evaluated this year.

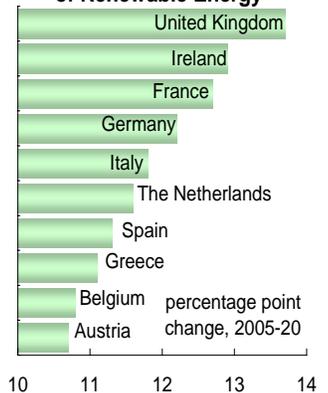
As many of the efficiency initiatives are implemented at the national level, Member States were asked for a voluntary commitment to shave final energy consumption by 9% from 2006 to 2016. States were requested to submit *National Energy Efficiency Action Plans* to provide details of how this goal would be met.

Europe's GHG Emissions from Fuel Combustion



* Includes fugitive emissions from fuels. Source: UNFCCC.

Targeted Increases in Shares of Renewable Energy



Source: European Parliament.

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