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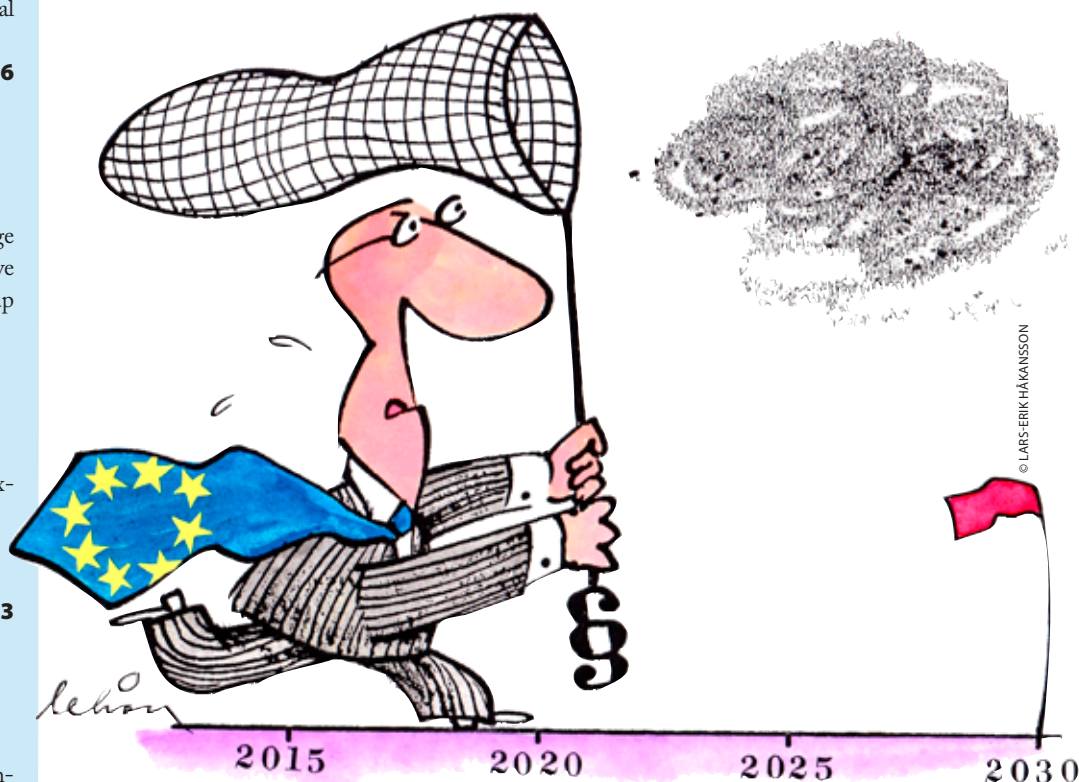
The health and environmental benefits for eight non-EU countries to comply with EU emission limit values for large combustion plants are on average 17 times the costs.

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## EU climate and energy targets for 2030

To keep its international climate pledges, the EU must adopt three ambitious, binding targets for greenhouse gas reductions, renewable energy and energy savings.

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# A new EU clean air strategy up to 2030

At the very end of the EU's "Year of Air" the European Commission finally presented its long-awaited new clean air policy package, including a proposal for member states to further cut their national air pollutant emissions up to 2030.

On 18 December environment commissioner Janez Potočnik announced the Commission's plan for how to improve air quality in Europe over the next one and a half decades. The new strategy and the proposed measures are a follow-up to the 2005 Thematic Strategy on Air Pollution. They are based on the conclusions of a comprehensive two-year review of existing

EU air policy, which also included extensive consultations that found broad support for EU-wide action to further reduce air pollutant emissions.

The new actions proposed are motivated by the fact that more than 400,000 people in the EU currently die prematurely from air pollution, and almost two-thirds of the

# Acid News

A newsletter from the Air Pollution & Climate Secretariat, the primary aim of which is to provide information on air pollution and its effects on health and the environment.

Anyone interested in these matters is invited to contact the Secretariat. All requests for information or material will be dealt with to the best of our ability. Acid News is available free of charge.

In order to fulfil the purpose of Acid News, we need information from everywhere, so if you have read or heard about something that might be of general interest, please write or send a copy to:

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## The Air Pollution and Climate Secretariat

The Secretariat has a board consisting of one representative from each of the following organisations: Friends of the Earth Sweden, Nature and Youth Sweden, the Swedish Society for Nature Conservation, and the World Wide Fund for Nature (WWF) Sweden.

The essential aim of the Secretariat is to promote awareness of the problems associated with air pollution and climate change, and thus, in part as a result of public pressure, to bring about the needed reductions in the emissions of air pollutants and greenhouse gases. The aim is to have those emissions eventually brought down to levels that man and the environment can tolerate without suffering damage.

In furtherance of these aims, the Secretariat:

- \* Keeps up observation of political trends and scientific developments.
- \* Acts as an information centre, primarily for European environmentalist organisations, but also for the media, authorities, and researchers.
- \* Produces information material.
- \* Supports environmentalist bodies in other countries in their work towards common ends.
- \* Participates in the lobbying and campaigning activities of European environmentalist organisations concerning European policy relating to air quality and climate change, as well as in meetings of the Convention on Long-range Transboundary Air Pollution and the UN Framework Convention on Climate Change.

## Editorial

In its **White Paper** on climate and energy, presented on 22 January, the EU Commission declares that it wants to see cuts in greenhouse gas emissions of 40 per cent by 2030, compared to 1990 levels (see page 22). At the same time it proposes scrapping national targets for renewable energy and not imposing specific targets for energy efficiency. Reference is made to the member states' right to determine their own energy mix.

Experience shows that overall objectives are rarely sufficient to translate ambitions into action. A notable example is carbon dioxide emissions from cars. The EU declared its first targets in the early 1990s, but it was only when automakers were faced with actual legal requirements that reductions in emissions really occurred. And they came about without killing the European automotive industry, which was an often-mentioned threat before the rules were introduced.

So in the case of EU climate policy it is not very likely that member states will actually achieve the required emission reductions in the energy sector unless there are also specific targets for renewables and efficiency.

**There is a saying** that "what you lose on the swings, you gain on the roundabouts". If member states are not willing to take on specific emissions reductions targets in the energy sector, measures will have to be taken elsewhere. This is evident from the impact assessment accompanying the White Paper. In the scenarios with more ambitious policies for renewable energy and energy efficiency, less effort is needed in other sectors to achieve the overall 40

per cent reduction target, and vice versa.

For example, non-CO<sub>2</sub> emissions from agriculture need only be cut by 19 per cent between 2005 and 2030 in the scenario with an ambitious energy policy, but by 28 per cent without one. So when member states claim "the right to determine their

own energy mix", are they aware that this actually may imply an increase in their climate ambitions for agriculture by 50 per cent?

Clearly, such reductions in greenhouse gas emissions from agriculture are possible – the calculations in the impact assessment are based solely on what can be achieved by technical solutions, such as adapting the feed for ruminants. But it also mentions the

potential for reductions through behavioural change, such as changes in our diet. It has been estimated that the introduction of policies that encourage healthier food choices could reduce GHG emissions from agriculture by approximately eight per cent (AN4/12).

**Finally it should** be noted that the proposed reduction of 40 per cent by 2030 is far from enough to safely reach the target of staying below 2°C warming, and totally insufficient to limit global warming to a maximum of 1.5°C. With this knowledge, it may appear unjustified to offset emission reductions in different sectors against each other. We should rather ask ourselves how we can ensure a clear framework with ambitious and explicit targets, preferably at both sectoral and national levels, to implement the emission reductions that are necessary for our common future.

Kajsa Lindqvist

**"With this knowledge, it may appear unjustified to offset emission reductions in different sectors against each other."**

# A new EU clean air strategy up to 2030

Continued from front page

EU ecosystem area is exposed to excess nitrogen emanating from air pollution. The damage to health has huge economic costs for society – for 2010 these were estimated to amount to between €330 and 940 billion, equalling 3–9 per cent of EU GDP.

There are four main components in Commission's clean air policy package:

- A Commission communication on a "Clean Air Programme for Europe", which is a strategy document with measures aimed at meeting already existing targets in the short term (up to 2020), and new air quality objectives for the period up to 2030. It includes supporting measures to improve air quality in cities, support to research and innovation, and the promoting of international cooperation;
- A main legislative proposal to revise the National Emission Ceilings (NEC) directive, setting new country-by-country emission reduction requirements up to 2030 for six main air pollutants;
- A proposal for a new directive to reduce pollution from medium-sized combustion

plants (MCP), such as local heating plants for smaller districts and small industrial installations; (see page 9) and,

- A proposal to transpose into EU law the international emission reductions for 2020 that the EU has committed to under the 2012 Gothenburg Protocol of the Convention on Long-Range Transboundary Air Pollution (LRTAP).

To explain the analysis underpinning the strategy and proposals, the Commission in December also published a 360-page Impact Assessment report. In February–March, the impact assessment was supplemented by two additional reports with updated information – one describing the policy scenarios and another providing a cost-benefit analysis.

**In the short term**, up to 2020, the Commission's main aim is to achieve compliance with existing air quality legislation. Many member states are failing to enforce existing EU air quality standards, and the Commission wants to address this by two types of measures:



## Fix the light-duty diesel emissions problem:

Real-world emissions of nitrogen oxides from Euro 5 diesel cars (as from 2009) have been shown to be much higher than expected, actually even higher than those of Euro 1 cars from 1992. A stricter type approval procedure and new "not-to-exceed" limit values should be in place as from 2017 to ensure that new cars will not exceed the Euro 6 emission limits under normal real-world driving conditions.

## Support and improve air quality management:

Local, regional and national air pollution control programmes will be able to get EU funding to implement actions to reduce air pollution. Guidelines for retrofit programmes and for promoting the use of advanced technology options will be developed, as will new tools to improve public information.

**Despite the fact** that the EU's existing ambient air quality standards are still in some cases much less strict than recommended by the World Health Organization, there is no proposal to revise and strengthen these standards. The Commission only says that they will be revised "once the NEC directive has set background concentrations on the right downward track." No year is given when this is expected to happen.

The emission reductions proposed in the NEC directive for 2020 are identical to those in the 2012 Gothenburg Protocol and are very modest, to say the least. These 2020 targets actually allow 10–25 per cent higher emissions of sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and non-methane volatile organic compounds (NMVOCs) than are expected to result solely from implementing existing legislation.

While the Commission's Environment

## Air pollution impacts and objectives

More than 95 per cent of the EU's urban citizens are exposed to harmful levels of PM<sub>2.5</sub> and ozone, i.e. higher than the reference values recommended by the World Health Organization (WHO). Air pollution is the number one environmental cause of death in the EU, with over 400,000 premature deaths in 2010 – more than ten times the annual deaths from traffic accidents. For that same year, the external costs of health damage due to air pollution have been estimated to amount to €330–940 billion.

On top of these huge health impacts comes the damage to ecosystems, biodiversity, agricultural crops, cultural heritage and modern materials. Deposition of airborne nitrogen compounds in the EU exceeds the critical loads – the limits of nature's tolerance – for eutrophication of vulnerable ecosystems over a total area of more than one million square kilometres. The critical

loads for acidification are exceeded over vast areas of vulnerable forest and freshwater ecosystems, and elevated levels of ozone harm crops and natural vegetation, including forest trees.

For air pollution, the EU's long-term objective is "to achieve levels of air quality that do not give rise to significant negative impacts or risks to human health and the environment." For health this implies achievement of WHO health guidelines, and for the environment it means that the critical loads and levels should not be exceeded.

These objectives are not new, they have been in place since the EU's 5th Environmental Action Programme (EAP), dating back to 1992, and were again confirmed in the 7th EAP, adopted on 20 November last year. Environmental groups want the long-term objectives to be achieved as soon as possible, at the latest by 2030.



# A new EU clean air strategy up to 2030

Continued from page 3

Directorate was originally pushing for binding emission reductions for 2025, internal negotiations with other Commission services resulted in a five-year postponement of the target year, to 2030, as well as a lowering of the overall ambition level.

So the final ambition level of the strategy – as set in the proposed revised NEC directive – is to cut EU-wide emissions of SO<sub>2</sub> by 81 per cent; NO<sub>x</sub> by 69 per cent; NMVOCs by 50 per cent; ammonia (NH<sub>3</sub>) by 27 per cent; particulate matter (PM<sub>2.5</sub>) by 51 per cent; and, methane (CH<sub>4</sub>) by 33 per cent by 2030, compared to the emission levels in the base year 2005 (see Table 1).

By 2030, and compared to business as usual, these emission reductions are estimated to avoid 58,000 air-pollution-related premature deaths, save 123,000 km<sup>2</sup> of ecosystems from eutrophication by excess nitrogen pollution, of which 56,000 km<sup>2</sup> are protected Natura 2000 areas, and save 19,000 km<sup>2</sup> of forest ecosystems from acidification (see Table 2).

As a result, health benefits alone will by 2030 save society €40–140 billion per year in external damage costs and provide about

€3 billion per year in direct benefits due to higher productivity of the workforce, lower healthcare costs, higher crop yields and less damage to buildings.

Compared to the additional cost of pollution abatement resulting from the proposed actions, which is estimated to reach €3.3 billion per year in 2030, the health benefits alone outweigh this cost by up to 41 times. In addition, there will be substantial environmental benefits from reduced ecosystem damage – these are however difficult or in many cases impossible to monetise.

According to the Commission, the proposal will also add the equivalent of around 100,000 additional jobs due to increased productivity and competitiveness because of fewer workdays lost, and it is estimated to have a positive net impact on economic growth.

## The NEC directive

Achieving the new strategy's overall policy targets for health and environment by 2030 will require all member states to further cut their air pollutant emissions, and the principal legal instrument to ensure such reductions is the National

Emissions Ceilings (NEC) directive. The main elements of the proposed new NEC directive are given below.

## Reduction commitments

The proposed new NEC directive replaces the existing one from 2001 by keeping the current 2010 emission caps in place up to 2020, after which they will be replaced by percentage emission reduction commitments (ERCs) for 2020, in line with those already adopted in 2012 under the LRTAP Convention's Gothenburg Protocol.

In addition, the new directive establishes more far-reaching legally binding ERCs to be achieved by 2030, as well as intermediate reduction targets for 2025. The latter are defined by a linear trajectory between the emission levels in 2020 and 2030. The country-by-country ERCs for 2020 and 2030 are contained in Annex II of the directive.

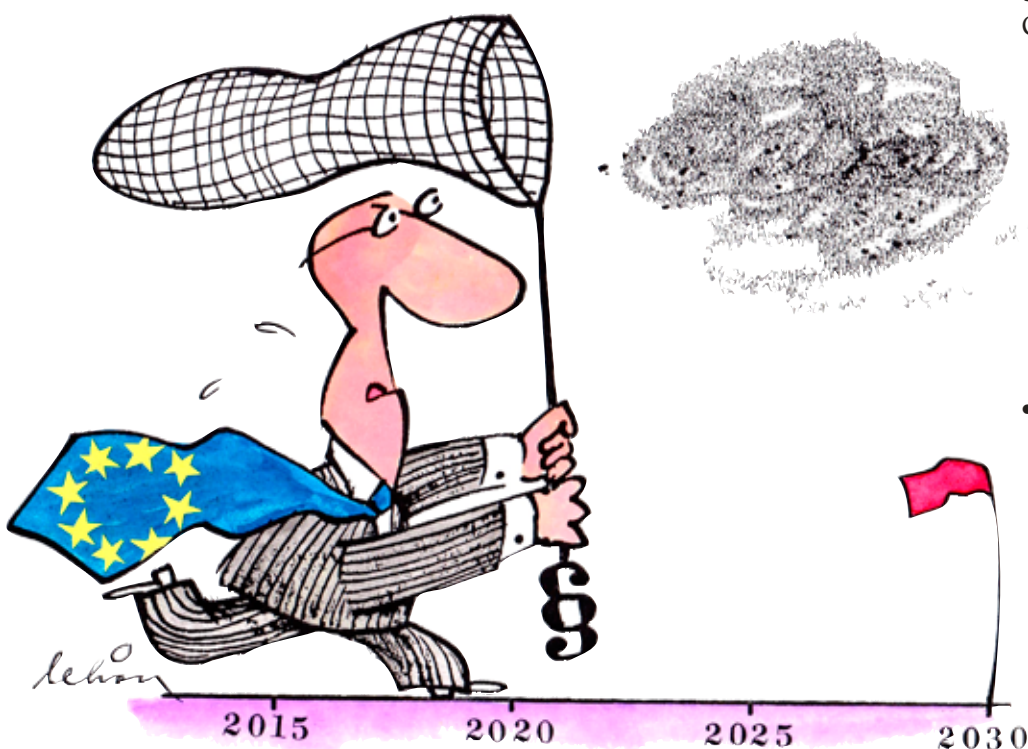
## More pollutants

While the 2001 NEC directive covered four pollutants – SO<sub>2</sub>, NO<sub>x</sub>, NMVOCs and NH<sub>3</sub> – the new one is also extended to cover fine particulate matter (PM<sub>2.5</sub>), with ERCs from 2020, and methane (CH<sub>4</sub>), with ERCs from 2030.

## New flexibilities

A new feature is the introduction of certain flexibilities. Provided that the Commission does not object, member states will be allowed to:

- Offset up to twenty per cent of emission reductions achieved by international shipping within their territorial seas or exclusive economic zones (up to 200 nautical miles from shore), if those ship emissions are lower than would result from compliance with EU standards;
- Implement jointly their ERCs for methane;
- Establish adjusted national emission inventories when non-compliance with an ERC results from applying improved emission inventory methodology.



### Air pollution control programmes

Member states will be required to adopt, implement and regularly (every two years) update national air pollution control programmes, describing how they intend to meet their ERCs. In these programmes, member states shall include measures to cut emissions of NH<sub>3</sub> and PM<sub>2.5</sub> from agriculture and prioritise reduction measures for black carbon when achieving their national reductions of PM<sub>2.5</sub>. Moreover, member states shall subject their draft programmes to public consultation before finalisation.

Annex III of the directive lists the minimum content of the national control programmes, as well as a number of available cost-effective measures to control ammonia emissions from agriculture.

### Reporting and monitoring

Every year member states shall update and report national emission inventories, not only for the pollutants covered by ERCs but also for other air pollutants covered by protocols of the LRTAP Convention. Projections of future emissions up to 2030 of the pollutants covered by ERCs shall be reported every two years. Reporting requirements are listed in the directive's Annex I and IV.

Member states are also requested to systematically monitor air pollution impacts, using indicators – as specified in the directive's Annex V – for eutrophication, acidification and ozone damage to terrestrial and freshwater ecosystems, and to apply methodologies established under the LRTAP Convention.

### Five-yearly progress reports

At least every five years the Commission shall report to the European Parliament and the Council on the progress made towards implementing the directive, including an assessment of its contribution to achieving its objectives. However, in contrast to the 2001 NEC directive, there are no environmental objectives specified in the articles of the directive – instead they are referred to only in the preambular text.

While the directive itself does not set down any deadline for when the first

Table 1: EU air pollutant emissions (in kilotons) in 2005 and projections for 2020 and 2030 assuming implementation of existing legislation (CLE) and compliance with emission reduction commitments (ERC) under the proposed new NEC directive.

|                   | 2005  | 2020 CLE | 2020 ERC | 2020 NEC | 2030 CLE | 2030 ERC | 2030 NEC |
|-------------------|-------|----------|----------|----------|----------|----------|----------|
| SO <sub>2</sub>   | 8172  | 2685     | -59%     | 3351     | 2211     | -81%     | 1530     |
| NO <sub>x</sub>   | 11538 | 5591     | -42%     | 6692     | 4051     | -69%     | 3599     |
| VOCs              | 9259  | 6152     | -28%     | 6667     | 5460     | -50%     | 4598     |
| NH <sub>3</sub>   | 3928  | 3693     | -6%      | 3692     | 3663     | -27%     | 2871     |
| PM <sub>2.5</sub> | 1647  | 1370     | -22%     | 1285     | 1200     | -51%     | 804      |
| CH <sub>4</sub>   | 20487 | 16349    | n.a.     | n.a.     | 15504    | -33%     | 13676    |

Source: TSAP report No 11 (February 2014)

Table 2: Health and ecosystem impacts of air pollution in the EU in 2005 and under projected emission levels for 2030. CLE = assuming implementation of existing legislation; NEC = according to the proposed new NEC directive; MTR = assuming implementation of current readily available technical emission control measures.

|          | Million years of life lost due to PM <sub>2.5</sub> | Average loss of statistical life expectancy due to PM <sub>2.5</sub> (months) | Annual cases of premature deaths due to O <sub>3</sub> | Ecosystem area with excess nitrogen deposition (1000 km <sup>2</sup> ) | Natura 2000 areas with excess nitrogen deposition (1000 km <sup>2</sup> ) | Forest area with excess acid deposition (1000 km <sup>2</sup> ) |
|----------|---|---|--|--|---|---|
| 2005     | 358   | 8.5   | 24614  | 1148   | 427   | 161   |
| 2030 CLE | 212   | 5.0   | 17239  | 871  | 329   | 42.0  |
| 2030 NEC | 173   | 4.1   | 16160  | 748  | 273   | 22.7  |
| 2030 MTR | 152   | 3.6   | 14461  | 665  | 239   | 17.9  |

Source: TSAP report No 11 (February 2014)

Commission report is to be finalised, the Commission's communication states that the first review of the "Clean Air for Europe Programme" will be done by 2020.

### Access to information

Both member states and the Commission are obliged to "ensure the active and systematic dissemination to the public" by publishing information, such as the national air pollution control programmes and emission inventory reports, on publicly accessible internet sites.

### Entry into force

The directive will enter into force on the day of its publication in the Official Journal of the European Union, and member states shall transpose the laws and regulations necessary to comply with the directive at latest 18 months after the entry into force.

**A more ambitious** climate policy would significantly lower the costs for air pollution control measures. The new climate policy targets of a 40-per-cent greenhouse reduction, as proposed by the Commission in January, would cut the annual costs of implementing the NEC directive in 2030 by more than one third, from €3.3

to €2.1 billion. In addition, the costs for implementing already existing air pollution legislation would come down by some €5 billion per year in 2030.

Because of the European elections this summer, the Parliament is expected to start its first reading of the air quality package only after the summer break. As a result, adoption of the new NEC and MCP directives is not expected until late 2014 or early 2015, at the earliest. If a second reading is required, adoption may be delayed until late 2015.

Christer Ågren

The policy package, including the communication, the legal proposals, the impact assessment and the Commission's press release, can be downloaded from: [http://ec.europa.eu/environment/air/clean\\_air\\_policy.htm](http://ec.europa.eu/environment/air/clean_air_policy.htm)

The two additional reports with updated policy scenarios and cost-benefit analysis can be found at: [http://ec.europa.eu/environment/air/review\\_air\\_policy.htm](http://ec.europa.eu/environment/air/review_air_policy.htm)

Reactions from environmental groups EEB and HEAL: <http://www.eeb.org/index.cfm/news-events/news/air-package-welcomed-but-no-early-christmas-present-for-air-pollution-victims/>

<http://www.env-health.org/resources/press-releases/article/heal-welcomes-health-objective-in>



# Banking on coal – undermining our climate

A new study reveals the top twenty international banks that are financing the coal mining industry and the hot spots of global coal production.

**Coal is the** single greatest source of carbon emissions endangering our climate. Yet never before has so much coal been mined on the planet as today. Since 2000, global coal production has grown by 70 per cent and has now reached a staggering 7.9 billion tons annually. And what's more, the industry is still expanding. Who on earth is financing the enormous production increases in the world's dirtiest fossil fuel?

The answer can be found in the new report "Banking on Coal". Over the last eight years, 89 commercial banks poured a total of 118 billion euro into the coal mining industry. Nearly three quarters of this finance was, however, provided by only 20 banks. Together, these banks financed enormous coal mine expansions around the world.

At the top of the list are three US banks: Citi (€7.29 billion), Morgan Stanley (€7.23 billion) and Bank of America (€6.56 billion). Also among the top twenty are Swiss, German, Chinese, British, French and Japanese banks. Commercial lending to and investment banking services for 70 coal mining companies, which collectively account for over half of global coal production, was investigated in the study.

It was found that financial institu-

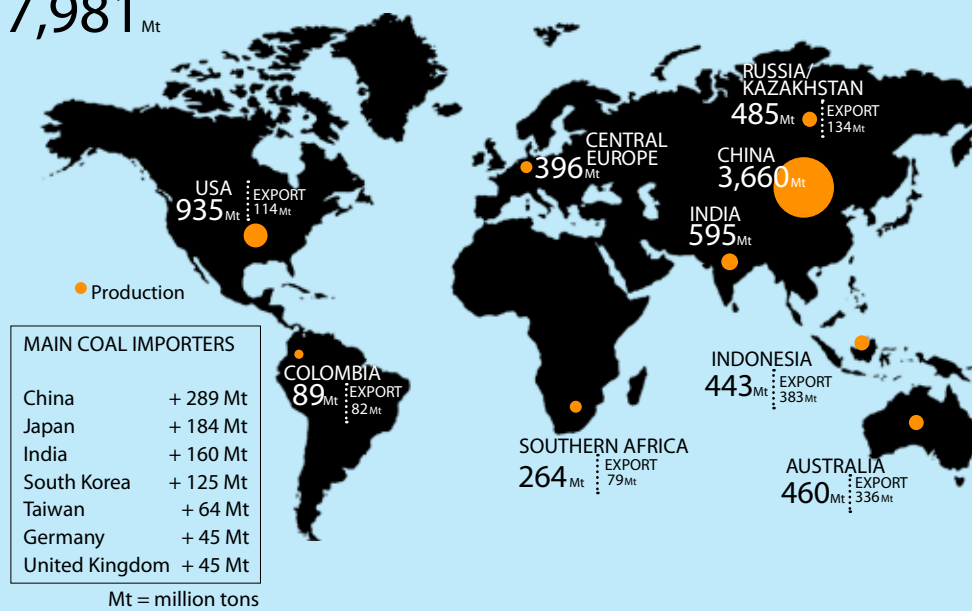
Coal workers in Shizuishan, China.



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7,981 Mt



The "Hot Spots" according to the report.

tions from only three countries – the US, UK and China – collectively account for 57 per cent of coal mining finance. "It's mind-boggling," said Heffa Schücking, director of German Urgewald, one of the organisations that published the study, "to see that less than two dozen banks from a handful of countries are putting us on a highway to hell when it comes to climate change. Big banks already showed that they can mess up the real economy. Now we're seeing that they can also push our climate over the brink."

Coal finance has increased tremendously over the past few years. Since 2005 – the year the Kyoto Protocol came into force – bank finance for coal mining companies increased by 397 per cent. "This is a real danger," said Kuba Gogolewski, of the CEE Bankwatch Network. "While policymakers are far too slow to regulate the mining and burning of coal, banks are speeding ahead with investments that are totally inconsistent with a stabilized climate."

The investments of the top twenty banks contrast with their own statements and policies on climate change. Yann Louvel of BankTrack, who analysed these policies, pointed out that Bank of America claims to be "financing a low carbon economy", Credit Suisse "cares for climate" and BNP Paribas thinks it is "combatting climate change". Louvel said: "It's as if banks have a split personality disorder. When they finance companies that blow up mountaintops

or destroy jungles to extract coal, they have a responsibility for these impacts."

**The report also** examines the "hot spots" of global coal production and the vastly destructive impacts that coal mining is having on India's last tiger forests, on indigenous communities in Colombia or on scarce water resources in South Africa. For each of the global "hot spots" of coal production, the report reveals which financial institutions have played the lead role in financing the expansion of the industry.

Central Europe is one of the coal hot spots featured in the report, as Germany and Poland are among the world's major lignite producers. Together they account for almost one quarter of the world's lignite production.

If unchecked, the coal industry will continue to turn the heat up. According to the World Coal Association (WCA), 1,199 new coal-fired power plants are on the drawing board and global coal demand is expected to increase by 50 per cent by 2035. Major new coal mine developments are underway in many places throughout the world and global coal reserves are still growing, due to the industry's aggressive exploration activities.

Source: Press release and report, 15 November 2013.

The report is published jointly by four organisations: Urgewald, Polish Green Network, BankTrack and CEE Bankwatch Network. [www.banktrack.org/show/news/banking\\_on\\_coal\\_undermining\\_our\\_climate](http://www.banktrack.org/show/news/banking_on_coal_undermining_our_climate)

## EEA report on black carbon

Black carbon is an air pollutant that harms human health and can contribute to climate change, so cutting emissions may have many benefits. The new European Environment Agency (EEA) report, "Status of black carbon monitoring in ambient air in Europe", looks at the monitoring networks currently measuring black carbon, their measurement methodologies and how this data is used.

Black carbon is the sooty part of particulate matter (PM) formed by the incomplete combustion of fossil fuels and biomass. Emission sources include motor vehicles, non-road mobile machinery, ships, residential coal or wood burning and open biomass burning, including forest fires and agricultural waste burning. As the effects of this pollutant have become better understood in recent years, it is increasingly seen as an important target of environmental control.

Source: EEA press release 10 December 2013.

Report: <http://www.eea.europa.eu/publications/status-of-black-carbon-monitoring/>

## Activists worldwide say 'No' to coal

In December, the Sierra Club released its annual "Move Beyond Coal" report, highlighting communities and activists around the world that are organising to defeat power plants and mines that pollute air and water and cause harm to the health and safety of the environment.

From the aquamarine waters off Cirebon, Indonesia, to the historic Appalachian mountains of the United States, to the lush biodiversity of the Konkan coast of India, communities have issued a call to end the coal industry's wanton destruction and to seize the opportunity that clean energy presents. Grassroots activism is empowering people and protecting the planet. The report presents case stories from this growing movement.

Sierra Club: <http://content.sierraclub.org/coal/>

The report: <http://sc.org/MoveBeyondCoal2013>



# Ships should use advanced emissions monitoring

Advanced emissions monitoring of large ships calling at EU ports could help save owners and operators of large ships up to €9 million per year.

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**Using automated systems** such as fuel flow meters or continuous emissions monitoring, which are already used by many of the world's largest shipping companies, could save ship owners and operators up to €9 million per year, according to a new study.

The cost savings arise from the electronic collection and reporting of data, which doesn't require man-hours, as well as the accuracy and verifiability of the data, which significantly reduces verification costs by third parties.

Aoife O'Leary, clean shipping officer at Transport & Environment, said: "The study clearly shows that the best way to monitor shipping emissions is also the cheapest in the long run. When GPS systems became available to massively improve the accuracy of ship navigation, no ship owner turned a blind eye to the technology just because of an upfront capital cost. So, why should the Commission favour the use of inaccurate old-fashioned paper receipts when they could promote an accurate, real-time fuel monitoring system, enabling real emissions reductions?"

Using these modern monitoring systems also has the potential to enable fuel savings and therefore lower emissions

significantly more than the two per cent CO<sub>2</sub> cut claimed by the Commission in its proposal.

The Commission estimates that CO<sub>2</sub> emissions from ships sailing in European waters amounted to 180 million tonnes in 2010. If these emissions were reported as a country, maritime transport would be Europe's 8th largest emitter.

**Last summer**, the Commission issued a legislative proposal to establish an EU system for monitoring, reporting and verifying (MRV) CO<sub>2</sub> emissions from large ships using EU ports. The proposal said that all ships calling at EU ports should be required to measure and report their annual fuel burn and emissions. As it stands, the proposal goes no further than requiring ship owners and operators to report fuel consumption based on fuel sales receipts, which ships already carry. Advanced, electronic consumption measuring methods, which provide ship owners with the necessary information to capture real emissions reductions, are mentioned, but not mandated by the proposal.

An additional advantage of advanced measuring technologies is that they are also able to monitor and report air pollutants such as sulphur dioxide (SO<sub>2</sub>) and

nitrogen oxides (NO<sub>x</sub>). Air pollution from international shipping, of which SO<sub>2</sub> and NO<sub>x</sub> emissions are a big part, accounts for about 50,000 premature deaths per year in Europe.

**Due to synergies** between the EU and International Maritime Organization air pollution laws, the CE Delft study suggests that investing in these modern systems could also lower the cost of complying with international shipping air pollution standards, such as the 2015 sulphur limits.

John Maggs of Seas at Risk said: "As the shipping industry pushes back against new laws to make shipping greener, this study shows that it makes perfect environmental and economic sense to use modern technologies and consolidate reporting requirements into one regulation. We therefore call on the European Parliament and the Council to strengthen the proposal to ensure that all harmful pollutants can be more effectively controlled."

Source: T&E press release, 9 January 2014

The study: **Economic impacts of MRV of fuel and emissions in maritime transport** (January 2014). By D. Nelissen & J. Faber, CE Delft. Commissioned by Transport & Environment and Seas At Risk. Available at: [www.transportenvironment.org](http://www.transportenvironment.org)



# Emission controls for medium combustion plants

EU-wide application of the most stringent standards now used in member states would reduce NO<sub>x</sub> emissions from these plants by nearly 80 per cent by 2025, but the new directive will deliver less than half of this reduction.

**As part of** its air quality package from December 2013, the Commission has proposed a new directive to limit air pollutant emissions from combustion installations with a thermal input between 1 and 50 megawatts (MW).

Emissions from large combustions plants (>50 MW) are covered by the industrial emissions directive (IED), and there are currently discussions about setting emission standards for the smallest combustion installations (<1MW) in the Ecodesign Directive.

The current proposal covers nearly 143,000 medium-sized combustion plants (MCPs) now in operation in the EU, which in 2010 together emitted some 554 thousand tons (kt) of nitrogen oxides (NO<sub>x</sub>), 301 kt of sulphur dioxide (SO<sub>2</sub>) and 53 kt of particulate matter (PM).

Even without additional measures, by 2025 these emissions are expected to come down somewhat (by respectively 18, 42 and 9 per cent), primarily as a result of changes over time in the fuel mix and activity levels. But the potential to further reduce these emissions is significant.

Many member states already regulate emissions from MCPs through permit systems or emission limit values. The impact assessment shows that EU-wide application of the most stringent emission legislation now used in member states (for the different fuel types and size classes) would reduce emissions of NO<sub>x</sub>, SO<sub>2</sub> and PM by 79, 88 and 94 per cent, from 2010 to 2025.

The Commission's proposal introduces binding emission limit values that are differentiated according to plant capacity, age and type of installation, with the strictest standards for new plants bigger than 5 MW.

The limits would apply to all new plants as from two and a half years from the date of adoption, which may take place in 2015. Existing installations would be given a long transition period, up to 2025 for the larger (5–50 MW) plants and up to 2030 for the smaller ones.

**In its proposal**, the Commission has chosen less strict emission limit values compared to those already in place in some member states, especially regarding NO<sub>x</sub> control. The proposed emission standards can be achieved solely by using cheaper

primary emission abatement measures – more expensive exhaust gas after-treatment systems will generally not be required. Overall, the Commission's proposal is expected to achieve similar reductions for SO<sub>2</sub> and PM as those indicated above, but the NO<sub>x</sub> emissions would only be reduced by about 37 per cent.

In order to further reduce the cost of implementing the proposed directive, operators will not require permits, as is the case for large combustion plants. Instead they need only notify the competent authorities, which in turn will ensure registration. The monitoring and reporting obligations have also been set at a minimal level, only requiring periodic measurements once every three years for the smaller (up to 20 MW) plants and annually for the bigger plants.

**Moreover, member states** can exempt plants that do not operate for more than 500 hours per year from compliance with the emission limit values.

Member states are however expected to apply more stringent emission limit values (called benchmark values) to individual plants in zones that do not comply with the EU's air quality standards. These benchmark values are said to reflect the best available techniques (BAT) and are set out in a separate annex.

Christer Ågren

The proposed new directive and the impact assessment can be downloaded from: [http://ec.europa.eu/environment/air/clean\\_air\\_policy.htm](http://ec.europa.eu/environment/air/clean_air_policy.htm)



Natural emission control.

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# Hamburg commits to fossil fuel beyond 2050

The city of Hamburg's climate ambitions are overshadowed by a new Vattenfall coal power plant, which will emit 8.7 million tons of CO<sub>2</sub> annually when it comes into operation.

**Visitors to the** city of Hamburg may be surprised to learn that this "European Green Capital of 2011" now hosts Germany's second largest hard coal power station. The 1,640 megawatt (MW) Moorburg plant on the Elbe River will be commissioned in autumn 2014 by Vattenfall Europe to generate 12 billion kilowatt-hours (12 TWh) of electricity per year, nearly equivalent to the city's total power demand.

Although renewable energies presently account for almost one fourth of grid power in Germany, coal-fired generation is holding its own. After the Fukushima catastrophe of March 2011, a nuclear phase-out programme was agreed by German parliament with the aim of retiring the country's 17 reactors by the year 2022. The resulting 22 per cent loss in base load power is not being fully replaced by wind and solar generation within the same time frame, leaving fossil fuels to fill the gap.

As renewable energy usage continues to rise, however, the output capacity of the Moorburg plant can be reduced by up to two thirds to avoid exceeding total electricity demand. Natural gas and decentralized motor generators respond even more effectively to the increasing availability of wind and solar power on the grid. However, imported gas is priced at six times the cost of domestic lignite and four times seaboard coal per unit of thermal energy. Wind, solar and biogas generation are cost-competitive and unaffected by fuel market trends. The contribution of natural gas to German power production consequently fell from 12.1 to 10.5 per cent last year due to the proliferation of lower-cost alternatives.

The United States is increasing coal exports to Europe, although most shipments consist of Appalachian metallurgical grades used for steelmaking. The 12,000 tonnes of steam coal required each day by Moorburg may be imported from Poland,

Indonesia, South Africa, and Australia according to the Vattenfall website. Local environmental advocates suspect Columbia instead, where working conditions may be irreconcilable with German mining standards.

**The new power station** is intended to remain in operation past 2050, when Hamburg has committed to reducing carbon dioxide emissions to four million tonnes (Mt). Moorburg will release twice that amount of CO<sub>2</sub> – up to 8.7 Mt annually. Hamburg's total greenhouse gas inventory by mid-century could therefore reach three times the level originally targeted.

That prospect was not taken into consideration when the city was selected for the 2011 Green Capital Award. There was no mention of Moorburg in the Expert Panel evaluation report, while the city's Municipal Climate Act was specifically commended.

Industrial-scale installations may justifiably qualify as phantom facilities when municipal policies are compared, but Hamburg once had far greater climate ambitions. In Germany's Upper House of parliament, its government voted in support of carbon capture and storage (CCS) under EU Directive 2009/31/EC. At that time, Moorburg neatly meshed with prevailing aspirations for a trans-European CO<sub>2</sub> pipeline network.

At the beginning of 2010, the regional newspaper *Hamburger Abendblatt* reported that the plant would be equipped for carbon capture after completion of CCS pilot testing in eastern Germany. While an implementation date was not set, Vattenfall declared that 60 million tonnes of CO<sub>2</sub> emissions from fossil fuel generation would be reduced by half within twenty years, and eliminated entirely by 2050. Moorburg had clearly been intended as a capture-ready plant

under EU "decarbonisation" objectives. It was later determined, however, that no adjacent land had been reserved for an installation as large as an airplane hanger, which is needed to extract and compress flue gas CO<sub>2</sub>.

It has been necessary to replace 10 per cent of the T24 boiler steel at Moorburg to avoid disruptive thermal stresses from highly pressurised steam. Repeated scheduling delays and cost overruns are now compounded by environmental restrictions.

Dissipating the heat of combustion imposes immense cooling water demands. Original planning called for sluicing 64 cubic metres of water per second through the Moorburg plant, constituting about half the flow of the Elbe River. To avoid overheating aquatic ecosystems, restricted water withdrawal hours were imposed. Vattenfall ultimately redesigned the plant to use self-contained cooling towers. These closed-cycle evaporation systems diminish net plant power by only about one per cent compared with flow-through cooling.

A CCS retrofit could boost cooling requirements by another 25 per cent, however. The grid output capacity would be diminished by nearly a third due to the power demands of CO<sub>2</sub> capture and pipeline compression.

Elbe water withdrawal by the plant was prohibited altogether by court order at the beginning of 2013. The increased temperatures of cooling system discharges would have diminished the survival rates of microscopic organisms within aquatic food chains.

**Additional revenues had** originally been expected from dedicating 650 MW of thermal capacity at Moorburg for heating 180,000 dwellings in the city of Hamburg. Deploying dissipated thermal energy would have raised coal utilisation from 46.5 per cent, solely for power





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Above: Moorburg Power Plant will be put into operation in October.



FLICKR.COM/RAINER ZIMMERMANN/CC BY-NC-SA

Right: Hamburgers protesting against Vattenfall.

generation, to 61 per cent for combined heat and power. Since the Moorburg site is on the southern Elbe shore, however, a 4.4 kilometre tunnel beneath the river – extolled by the chamber of commerce as the “artery” of the plant – would have been required to connect with the borough of Altona. Excavation could have necessitated uprooting 300 trees in greenway parks. Public opposition to the loss of city landscapes motivated Vattenfall to cancel the project, substituting a new gas-fired plant in Wedel, to the west of Altona.

However, a city referendum in September 2013 revoked Vattenfall’s power grid concession, restoring municipal ownership for about half a billion euro. The heat distribution network may also be taken over by the Hamburg Senate as late as 2019 for an additional 1.15 billion euro charge.

In all cases, Moorburg will be superfluous to the municipal heating infrastructure. Decentralised power and heating plants could hypothetically be situated throughout

the city to eliminate the plant entirely. However, this concept would only be cost-effective if heating services from Wedel could also be precluded. Under present circumstances, by contrast, additional greenhouse gases will be emitted from the second plant to the detriment of climate strategies. From that perspective, the city referendum has been a Pyrrhic victory.

**When first proposed**, the Moorburg power station represented an advanced technological realisation. The necessary substitution of Elbe water withdrawal by hybrid cooling towers has since lowered plant efficiency. Water vaporisation from these structures now raises the danger of airborne Legionella microbes being wafted over nearby residential areas.

The abandonment of heat production has reduced coal utilisation and contradicted the environmental arguments originally made for constructing the plant. A similar 533 MW power station in the Baltic city

of Rostock achieves a coal utilisation figure of 62 per cent using combined heat and power.

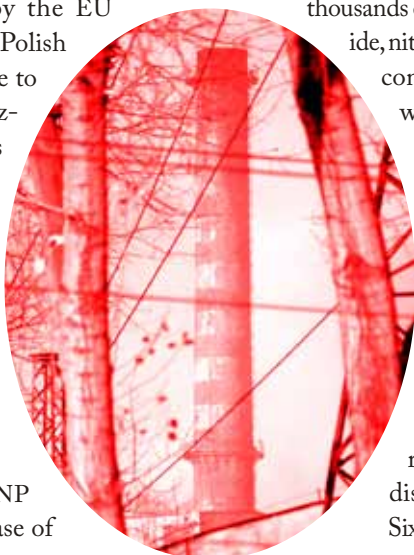
A study commissioned by Friends of the Earth (BUND) Hamburg predicted in 2007 that the Moorburg project would not be competitive under the EU Emissions Trading Scheme. Vattenfall has relinquished the two essential options – CCS and district heat – capable of lowering the climate risks of coal generation. If carbon emissions are heavily taxed in the future, and if renewable energies continue to diminish the market share remaining for conventional generation, the economic viability of Hamburg’s Moorburg power station will be seriously degraded. For the present, however, the plant endures as a monument to the incompatibility of coal power with municipal climate strategies.

Jeffrey H. Michel

# Polish power plant pollution puts health of citizens at risk

**A recent decision** by the EU Commission to grant Polish power plants more time to reduce emissions of hazardous air pollutants has upset health groups. The Polish government had requested a three-year time extension under a so-called Transitional National Plan (TNP), which was given the go-ahead by the EU this week.

For Poland, the TNP translates into the release of



thousands of tons of sulphur dioxide, nitrogen dioxide and dust, compared to a scenario without a TNP. These additional emissions amount to external health costs of €2.4 - 6.8 billion over the course of three years. More importantly, people in Poland will be paying for these costs through a high rate of heart and lung disease.

Six Polish cities are among

the ten most polluted locations in Europe, where the EU's limits for particulate matter (PM) are exceeded on average on one out of three days. It is estimated that up to 86 per cent of the Polish urban population is exposed to dirty air that does not meet the EU's air quality standards. Of the 73 power plants listed for exemption to pollute more, 59 are in zones where EU air quality standards are being breached.

Source HEAL: press release, 19 February 2014  
[www.env-health.org/](http://www.env-health.org/)

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# Cutting emissions from heaters and wood-fired stoves

**From 2015, new residential wood-fired stoves and heaters in the US should be less polluting and more efficient.**

**In early January**, the United States Environmental Protection Agency (EPA) proposed new air pollution standards for new woodstoves and heaters, beginning in 2015. The existing emission standards date back to 1988.

The proposal would make the next generation of stoves and heaters significantly cleaner than those manufactured today, leading to important air quality and public health improvements in communities across the country. It will not affect installations already in use in homes or currently for sale.

Smoke from residential wood heaters can increase toxic air pollution, volatile organic compounds (VOC), carbon monoxide (CO) and particulate matter (PM<sub>2.5</sub>), to levels that pose serious health concerns. In some areas, residential wood smoke makes up a significant portion of the PM<sub>2.5</sub> pollution problem.

The proposal covers several types of new wood-fired heaters, including woodstoves, fireplace inserts, indoor and outdoor wood boilers (also called hydronic heaters), forced air furnaces and masonry heaters. Many residential wood heaters already

meet the first set of proposed standards, which would be phased in over five years to allow manufacturers time to adapt emission control technologies to their particular model lines. It does not cover fireplaces, fire pits, pizza ovens, barbecues and chimineas.

**Emissions of PM<sub>2.5</sub>** pollution from new wood-burning installations are expected to be cut by 4,825 tons a year – an 80 per

cent reduction over estimated emissions without the rule. Emissions of VOCs and CO would be 76 and 72 per cent lower.

When fully implemented, EPA estimates that for every dollar spent to comply with these standards, there will be between US\$118 and 267 in health benefits. Consumers will also see a monetary benefit from efficiency improvements in the new woodstoves, which use less wood to heat homes.

The total health and economic benefits of the proposed standards are estimated at US\$1.8 - 2.4 billion annually, while the costs are estimated at US\$15.7 million per year. These estimated benefits do not include the value of the carbon monoxide, VOC, air toxics (including formaldehyde, benzene and polycyclic organic matter), and black carbon emissions that would be reduced along with PM<sub>2.5</sub> emissions.

EPA expects to issue a final ruling in 2015.

For more information: <http://www2.epa.gov/residential-wood-heaters>



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The proposed standards could lead to important air quality and public health improvements.



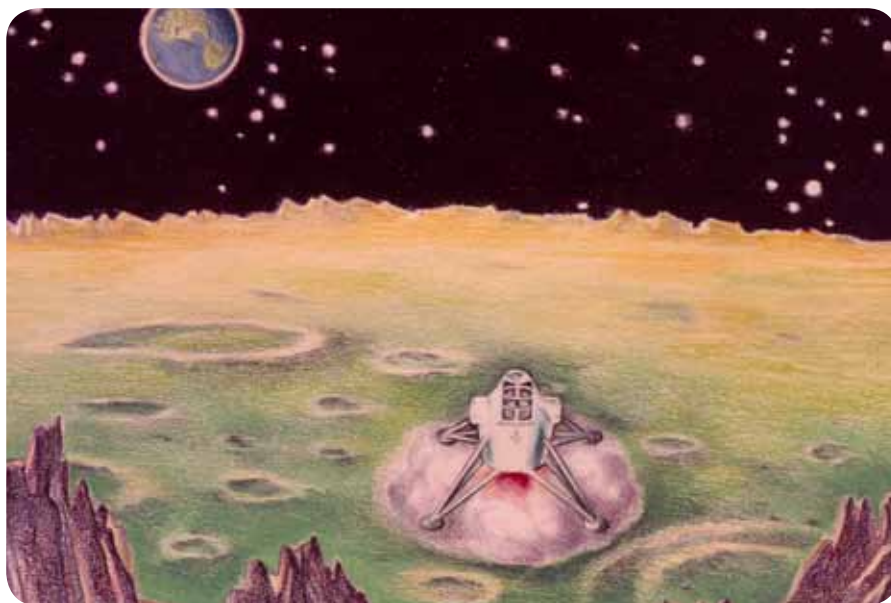
# CCS no more in Norway

A full-scale CCS plant would be too expensive, that is the explanation given as Norway abandons its originally ambitious plans for the technology.

**“Norway’s moon landing** has crashed – Mongstad CCS dropped” – this was the headline in Norwegian newspapers and media around 20 January 2014. The headline referred to a speech on TV 1 in January 2007 by the then Norwegian Prime Minister Jens Stoltenberg. Talking about the Carbon Capture and Storage (CCS) project at Mongstad in Norway he said: “This is the big project for our country. It is our moon landing.” The CCS plant at Mongstad was going to separate one million tons of CO<sub>2</sub> from the exhaust gases of a gas-fired power station. The CO<sub>2</sub> would then either be used for increased oil production or stored underground for hundreds of thousands of years. In August 2013, his government decided to abandon the project.

On 20 January this year, former Prime Minister Stoltenberg appeared at a public hearing about the project in the Norwegian Parliament. Why did his government stop the Mongstad CCS project before it resigned in 2013? What had the project achieved since 2006 at a cost of 870 million euro? These were the questions directed at Mr. Stoltenberg by the members of Parliament. He explained that a full-scale CCS plant, including a pipeline for transporting the CO<sub>2</sub> and storing it underground, would cost around three billion euro. The high cost of a full-scale CCS plant was the reason for stopping the project. The technological difficulties of building a CCS plant linked to an existing gas-fired power station had proved to be greater than expected. Building the plant at Mongstad would not lead to a cost reduction for the technology, which was a central aim of the project. The high cost would not inspire others to build CCS plants, which was another goal. The test facility built at Mongstad for CCS linked to gas-fired power stations was the real achievement, according to Mr. Stoltenberg.

Experts and representatives from government research organisations and



Carbon Capture and Storage in Norway still belongs in fiction.

government directorates mostly supported the government’s decision to stop the project based on the estimated high cost

**The Norwegian environmental** foundations Bellona and Zero argued that the government could have chosen to build a full-scale CCS plant based on amine technology, without testing different technologies first. Amines are the term used for a number of related compounds commonly used in chemical plants, refineries and other industrial activities to remove among other substances carbon dioxide (CO<sub>2</sub>) from gases. The amine solution is used as solvent, which absorbs the CO<sub>2</sub> from the gas. The amine solvent is regenerated by removing the CO<sub>2</sub>, and the amine solvent is then reused. Norway would then have had a full-scale CCS plant up and running by now, even if it would have to rectify eventual problems while running the plant. Bellona and Zero also argued that the cost estimate was too high.

The experts did not support the view that the plant could have been built with amine technology without testing first. However, several experts were also critical of the cost estimate for a full-scale CCS

plant. Several thought it was of poor quality, and probably too high.

In defence of the decision, several participants pointed out that no other CCS plants had been built in Europe in the same period. Between 10 and 12 demonstration plants supported by the European Union were supposed to be running by 2015. Of these, none have been built so far.

**The present minister** for oil and energy, Mr. Tord Lien, was also questioned. His government, which took over from Mr. Stoltenberg after the elections in 2013, had not shelved the plan to build a full-scale CCS plant for good. He promised to present a report on a follow-up study of the Mongstad project in June 2014. Whether this report will contain plans for another CCS project in Norway, or outside Norway, remains to be seen. One guess is that no Norwegian politicians will risk their necks in the future by making statements about “moon landings” and CCS.

Tore Braend ,  
Norwegian energy  
and climate policy expert

## Finland and Denmark working on climate bills

The Finnish government has had a new climate change bill out for consultation and hopes to submit a final proposal to Parliament for a vote in late April. The proposal will enshrine the target of 80 per cent reductions in greenhouse gas emissions by 2050 in law. The bill will also require greenhouse gas reduction plans for non-ETS sectors and a long-term mitigation plan every ten years.

The Danish government is also working on a similar bill. The ultimate target here is a low-carbon society by 2050, to be achieved by adopting five-year targets for the decade ahead. A climate council will be formed to advise future governments.

Source: ENDS Europe, 18 February 2014

## Arctic temperature increase of 13°C

The climate in the Arctic is changing faster than in mid-latitudes, as shown by increased temperatures, loss of summer sea ice, earlier snow melt, impacts on ecosystems, and increased economic access.

NOAA-led research using climate model projections concludes that the Arctic climate will continue to show major changes over the coming decades, but that carbon emission mitigation could slow temperature changes in the second half of the century, according to "Future Arctic Climate Changes: Adaptation and Mitigation Timescales", published by AGU's Earth's Future.

Climate model projections show an Arctic-wide end-of-century temperature increase of +13 degrees Celsius in late autumn and +5 degrees Celsius in late spring if the status quo continues and current emissions increase without a mitigation scenario. In contrast, the mean temperature projection would be +7 degrees Celsius in late autumn and +3 degrees Celsius in late spring by the end of the century if a mitigation scenario to reduce emissions is followed, the paper concludes.

Source: <http://www.arctic.noaa.gov/>

# Most corals will bleach at 1.5°C

**A quarter of marine biological diversity depends on coral reefs. Now researchers estimate that only 10 per cent of the reefs might survive at a temperature increase of only 1.5°C.**

**Coral reef ecosystems** are one of the first global ecosystems whose existence is threatened if temperatures rise over 1°C due to global warming.

A study published in *Nature* gives the first comprehensive global survey of coral bleaching to express results in terms of global mean temperature change. The study shows that preserving more than 10 per cent of coral reefs worldwide would require warming to be limited to less than 1.5°C relative to pre-industrial levels.

The study was conducted by scientists from Potsdam in Germany, the University of British Columbia in Canada and the Universities of Melbourne and Queensland in Australia. To project the cumulative heat stress at 2160 reef locations worldwide, they used an extensive set of 19 global climate models. By applying different emission scenarios covering the twenty-first century and multiple climate model simulations, a total of more than 32,000 simulation years were examined. This allowed for a more robust representation of uncertainty than any previous study according to the authors.

**The introduction to** the study says that corals derive most of their energy, as well as most of their spectacular colour, from a close symbiotic relationship with a special type of microalgae. "The vital symbiosis between coral and algae can break down when stressed by warm water temperatures, making the coral 'bleach' or turn pale. Though corals can survive this, if the heat stress persists long enough the corals can die in great numbers. "This happened in 1998, when an estimated 16 per cent of corals were lost in a single, prolonged period of warmth worldwide. At present, reef-building corals persist only within relatively narrow environmental conditions associated with shallow, sunlit and

alkaline waters of tropical coastal areas. The carbonate reef structures that result from their calcium carbonate skeletons commonly build up in regions where temperatures exceed 18°C in winter."

Although corals can re-establish themselves after mass bleaching events, in some cases it takes one to two decades for the ecosystem to return to the pre-bleaching state. An increase in the frequency and severity of mass coral bleaching could overwhelm the ability of coral reefs to recover between events. If this happens, coral reef ecosystems would shift towards systems that are dominated by other organisms such as cyanobacteria and algae, the study argues.

**Coral reef ecosystems** provide habitat for over a million species, almost a quarter of the species in the oceans. They are important for the socio-economic well-being, including coastal protection, tourism and fishing, of approximately 500 million people.

The results of the study indicate "that there would be long-term degradation of coral reef ecosystems in all present coral reef cells without a change in thermal tolerance at 2°C global mean temperature rise, an upper limit agreed to in international climate policy negotiations. Even at 1.5°C global mean warming, an alternative international temperature goal to be reviewed for international policy in 2015, the results suggest that around 89 per cent (63–100%) of coral reef ecosystems would face long-term degradation assuming no change in thermal tolerance. At the present rate of warming (0.2°C per decade), a 1°C warming above pre-industrial levels is going to be surpassed in the coming one or two decades, which might already put 16 per cent (3–29%) of reef locations at risk."





Corals derive most of their energy, as well as most of their colour, from a close symbiotic relationship with a special type of microalgae that breaks down at warm temperature.

The scientists write that: “despite the inclusion of optimistic scenarios concerning rates of evolutionary adaptation, our results confirm that coral reef ecosystems face considerable challenges under even an ambitious mitigation scenario that constrains global warming to 1.5°C above pre-industrial temperatures. The projections suggest that most coral reefs will experience extensive degradation over the next few decades given the present behaviour of corals to thermal stress to protect at least 50 per cent of the coral reef cells, global mean temperature change would have to be limited to 1.2°C (1.1–1.4 °C), especially given the lack of evidence that corals can evolve significantly on decadal timescales and under continually escalating thermal stress”.

**The scientists argue** that there is little doubt from the analysis that coral reefs will no longer be prominent within coastal ecosystems if global average temperatures exceed 2 °C above the pre-industrial period.

“Our findings show that under current assumptions regarding thermal sensitivity, coral reefs might no longer be prominent coastal ecosystems if global mean temperatures actually exceed 2 °C above the pre-industrial level,” says lead author

Katja Frieler from the Potsdam Institute for Climate Impact Research. “Without a yet uncertain process of adaptation or acclimation, however, already about 70 per cent of corals are projected to suffer from long-term degradation by 2030 even under an ambitious mitigation scenario. Thus, the threshold to protect at least half of the coral reefs worldwide is estimated to be below 1.5°C mean temperature increase.”

Only under a scenario with strong action on mitigating greenhouse-gas emissions and the assumption that corals can adapt at extremely rapid rates, could two thirds of them be safe, concludes the study. Otherwise all coral reefs are expected to be subject to severe degradation. Coral reefs house and provide critical services to millions of people worldwide.

Reinhold Pape

Article is based on text from following source:

K. Frieler et al. **Limiting global warming to 2°C is unlikely to save most coral reefs**, *Nature Climate Change* 3, 165–170 (2013)

<http://www.nature.com/nclimate/journal/v3/n2/full/nclimate1674.html>

## Emissions from leisure boats

New air pollution emission limits for leisure boats will apply from 2017 following their publication in the EU’s official journal in late December.

The directive covers vessels between 2.5 and 24 metres in length, including motor boats, sailing yachts and water scooters and includes stricter exhaust emissions limits (Stage II) for carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) for spark ignition (SI) and compression ignition (CI) engines. The latter category also has limits for particulate (PM) emissions. The Stage II requirements will enter into force on 18 January 2017, but small and medium-sized enterprises making outboard SI engines with a power rating equal to or less than 15 kW have until 18 January 2020 to comply.

Directive 2013/53/EU is available at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2013:354:0090:0131:EN:PDF>.

## Air pollution might reduce work capacity

Researchers at UC San Diego and Columbia University have established a link between air pollution and reduced productivity among outdoor and indoor agricultural workers. They found that every 10-microgram per cubic metre increase in PM<sub>2.5</sub> levels decreased worker productivity by 0.6 per cent. Moreover, the effect increased at higher PM<sub>2.5</sub> levels. The levels investigated were all well below the current US air quality standard of 35 microgrammes PM<sub>2.5</sub>/m<sup>3</sup> as a daily mean.

One major implication of the study is that reductions of PM<sub>2.5</sub> can have significant economic benefits. The authors estimate that across the entire US manufacturing sector, reductions in PM<sub>2.5</sub> since 1997 have led to aggregate labour savings of US\$19.5 billion – a previously unrecognised benefit of fine particulate regulation.

Source: Washington Post, 10 March 2014.

# Parliament backs weakened car CO<sub>2</sub> deal

On 25 February the EU Parliament voted in favour of the renegotiated deal on new car CO<sub>2</sub> emissions in 2020.

It was in June last year that Germany intervened at the last moment and demanded a renegotiation of the original agreement. This resulted in a one-year delay in implementation and an extension of super credits. Only 95 per cent of new cars have to meet the 95 gCO<sub>2</sub>/km target in 2020, effectively weakening the target by around 3 gCO<sub>2</sub>/km. The target will apply to all new cars the following year. Super credits intended to promote the introduction of electric cars will apply from 2020 to 2022. Cars that emit less than 50 gCO<sub>2</sub>/km will be

counted as two cars in 2020, as 1.67 cars in 2021 and as 1.33 in 2022.

Greg Archer, clean vehicles manager at Transport & Environment, said: "This one year delay to the car emissions law was an unnecessary weakening to please luxury German carmakers. Nevertheless, the final agreement is still a good deal for the environment, EU economy and drivers – reducing fuel use and CO<sub>2</sub> emissions by 27 per cent over six years."

The deal also means an introduction "as soon as possible" of a new test cycle, which is supposed to better reflect real-world driving conditions than those used

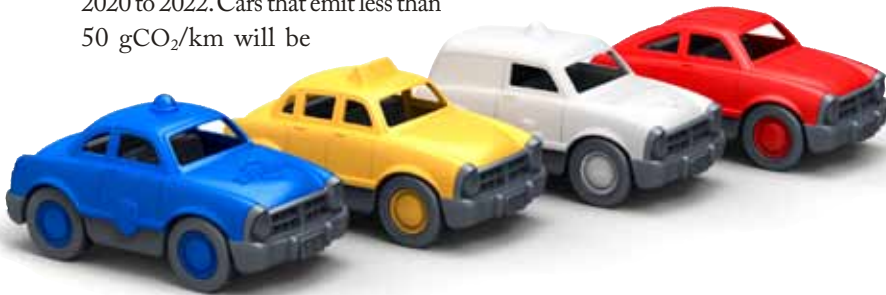
today. The European Commission has indicated its support for a 2017 deadline.

The deal must now be formally approved by the Council of Ministers to enter into force.

Source: EU Parliament press release, 25 February

<http://www.europarl.europa.eu/news/en/news-room/content/20140221IPR36626/html/Parliament-backs-law-to-cut-car-CO2-emissions>

Transport and Environment press release, 25 February <http://www.transportenvironment.org/press/car-emissions-deal-2020-will-reduce-co2-create-jobs-and-lower-fuel-bills>



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## Obama orders CO<sub>2</sub> standards for trucks

US President Barack Obama has ordered the Environmental Protection Agency and the Traffic Department to draft new fuel efficiency standards for heavy trucks by March 2015, to be completed a year later so they are in place before Obama leaves office. Similar standards for cars and light trucks have previously been introduced.

Under the Clean Air Act of 1970, the Environmental Protection Agency can regulate any substance designated as a pollutant that harms or endangers human health. Since 2009, carbon dioxide exhausted from tailpipes and smokestacks has been considered meet this definition. This means that the US president does not need the approval of Congress to introduce these new standards.

Obama describes his initiative as a "win-win-win", since new standards would reduce oil imports, reduce carbon pollution and cut down on businesses' fuel costs.

The European Commission is currently working on a CO<sub>2</sub> strategy for heavy vehicles, which could lead to similar standards in Europe.

Source: New York Times, 18 February 2014

[http://www.nytimes.com/2014/02/19/us/politics/obama-to-request-new-rules-for-cutting-truck-pollution.html?ref=earth\\_r=1](http://www.nytimes.com/2014/02/19/us/politics/obama-to-request-new-rules-for-cutting-truck-pollution.html?ref=earth_r=1)

## New patient information on air quality and heart and lung health

A series of information leaflets aimed at providing individuals, health professionals and heart, lung and asthma patient groups with the latest science-based guidance on how air pollution affects health is now available. Produced by the Health and Environment Alliance (HEAL) and the ESCAPE project, the leaflets aim to inform on new evidence and provide prevention tips for those whose health is most at risk from air pollution.

Greater policy efforts are needed to tackle air pollution. In 2010 alone, air pollution was responsible for 400,000 premature deaths in the EU, with health costs of up to €940 billion.

HEAL hopes the leaflets will help to raise awareness among asthma, heart and other patients, as well as health and medical groups on what they can do to prevent disease, and empower them to become more involved in communicating what needs to be done by decision-makers, as the EU will be debating measures to curb air pollution in the next few months.

The leaflets **Air pollution and lung health – for patients with lung disease** and **Air pollution and health – for patients with cardiovascular disease** can be downloaded at <http://www.env-health.org/resources/press-releases/article/information-release-new-patient>



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# Oceans acidify at unprecedented rate

The rate of ocean acidification is the highest in 300 million years. The predicted effects on food webs and biodiversity will impact aquaculture and societies around the world.

## Atmospheric carbon dioxide

(CO<sub>2</sub>) levels are rising as a result of human activities, such as fossil fuel burning, and are increasing the acidity of seawater. This process is known as ocean acidification. Historically, the ocean has absorbed approximately 30 per cent of all CO<sub>2</sub> released into the atmosphere by humans since the start of the industrial revolution, resulting in a 26 per cent increase in the acidity of the ocean.

The current rate of acidification is over ten times faster than at any time in the last 55 million years. The projected increase in ocean acidity by 2100 compared with preindustrial levels if high CO<sub>2</sub> emissions continue is about 170 per cent. This was concluded in a statement by 540 experts from 37 countries during a symposium on the “Ocean in a High-CO<sub>2</sub> World” in Monterey, California in 2012. The scientists also stated the following selected conclusions from 15 years of research on ocean acidification problems:

- Ocean acidification causes ecosystems and marine biodiversity to change. The ocean continues to acidify at an unprecedented rate in Earth’s history. Latest research indicates the rate of change may be faster than at any time in the last 300 million years.



Shellfish are particularly sensitive to acidification.

- The economic impact of ocean acidification could be substantial and it has the potential to affect food security. Reducing CO<sub>2</sub> emissions is the only way to minimise long-term, large-scale risks.
- As ocean acidity increases, its capacity to absorb CO<sub>2</sub> from the atmosphere decreases. This decreases the ocean’s role in moderating climate change. Species-specific impacts of ocean acidification have been seen in laboratory and field studies on organisms from the poles to the tropics. Many organisms show adverse effects, such as reduced ability to form and maintain shells and skeletons, as well as reduced survival, growth, abundance and larval development. Conversely, evidence indicates that some organisms tolerate ocean acidification

and that others, such as some seagrasses, may even thrive.

- Within decades, large parts of the polar oceans will become corrosive to the unprotected shells of calcareous marine organisms. Changes in carbonate chemistry of the tropical ocean may hamper or prevent coral reef growth within decades.

- The far-reaching effects of ocean acidification are predicted to impact food webs, biodiversity, aquaculture and hence societies.

Species differ in their potential to adapt to new environments. Ocean chemistry may be changing too rapidly for many species or populations to adapt through evolution.

- Multiple stressors – ocean acidification, warming, decreases in oceanic oxygen concentrations (deoxygenation), increasing UV-B irradiance due to stratospheric ozone depletion, overfishing, pollution and eutrophication – and their interactions are creating significant challenges for ocean ecosystems.
- People who rely on the ocean’s ecosystem services are especially vulnerable and may need to adapt or cope with ocean acidification impacts within decades. Shellfish fisheries and aquaculture in some areas may be able to cope by adjusting their management practices to avoid ocean acidification impacts. Tropical coral reef loss will affect tourism, food security and shoreline protection for many of the world’s poorest people.

Reinhold Pape

## Effects on marine organisms

The scientists tried to answer some questions on how marine organisms will respond to ocean acidification and how confident the scientist are on the specific effects.

- ✗ Anthropogenic ocean acidification will adversely affect many calcifying organisms [MEDIUM CONFIDENCE]
- ✗ Molluscs (such as mussels, oysters and pteropods) are one of the groups most sensitive to ocean acidification [HIGH CONFIDENCE]

- ✗ Pteropod (marine snail) shells are already dissolving [MEDIUM CONFIDENCE]
- ✗ If CO<sub>2</sub> emissions continue on the current trajectory, coral reef erosion is likely to outpace reef building sometime this century [HIGH CONFIDENCE]
- ✗ Cold-water coral communities are at risk [HIGH CONFIDENCE], and may become unsustainable
- ✗ Ocean acidification may have some direct effects on fish physiology, behaviour and fitness [MEDIUM CONFIDENCE]

This article is based on the following text: **IGBP report, Ocean Acidification Summary for Policymakers 2013**, which can be downloaded at: <http://www.igbp.net/publications/summaries-forpolicymakers/summariesforpolicymakers/oceanacidificationsummaryforpolicymakers2013.5.30566fc6142425d6c9111f4.html>

# Uncertain future for further emission reductions

**Difficulties with shifting to renewables and rising emissions from aviation are two hurdles that the EU needs to overcome in order to achieve its climate targets in the transport sector.**

**In late 2013** the European Environment Agency released its annual report on indicators showing how well the European transport sector is progressing towards various sustainability targets.

Overall greenhouse gases (GHG) from the transport sector decreased by 0.6 per cent in 2011, despite emissions from aviation rising by 2.6 per cent. This means that the European Union is still on trajectory towards its target of reducing overall transport-related GHG emissions by 20 per cent from 2008 levels by 2030 and by at least 60 per cent from 1990 levels by 2050.

The report warns, however, that it may become difficult to stay on the given path if economic growth recovers in Europe. There is still a strong correlation between GDP and transport, and in the new member states demand for transport is even outstripping economic growth. Car use in Western Europe is the only example in the transport sector of a real decoupling from economic development. The number of passenger kilometres travelled by car increased by only five per cent in the EU-15 between 2000 and 2011, and between 2009 and 2011 it even declined by 1.4 per cent, while preliminary data suggest that the reduction continued in 2012.

But the car's position as the most popular mean for travel is far from threatened. It had a modal share of more than 80 per cent of passenger kilometres travelled on the ground, which can be compared to rail and bus travel with around 10 per cent each.

In the EU's 13 new member states there was a very different situation at the beginning of the 1990s. Train and bus travel then constituted together almost 40 per cent of the journeys made, but since then there has been a steady trend towards a modal split that resembles the EU-15.

Currently the share for rail travel is even lower than in the EU-15.

Passenger transport demand reached an all-time high in 2011, mainly due to a 10 per cent increase for aviation. This is a trend that has continued over the last decade and was only to some extent halted by the economic crisis. Between 1995 and 2011 the demand for air travel increased by 66 per cent. Over the same period demand for car travel increased by 23 per cent.

**Replacing oil** in the transport sector with non-fossil alternatives seems to be difficult for member states. Oil consumption decreased by 0.6 per cent in 2011, but more is needed to reach the target of a 70 per cent reduction from 2008 levels by 2050.

Similarly, the increase in the share of renewable energy in the sector is not adequate. In 2011 it increased to 3.8 per cent from 3.5 per cent, but unless progress is accelerated there is a big risk of missing the target of 10 per cent by 2020. Since the renewable target was adopted, it has been further tightened. Now, only half of the 10 per cent target may be reached through biofuels and these must also satisfy the new sustainability criteria. This mainly has consequences for Finland, France, Czech Republic, Portugal and Slovakia, which have a relatively high share of biofuels, but a small proportion of which meet the criteria. Closest to reaching the target is Sweden, with a share of renewable energy of close to nine per cent.

The share of electrified cars certainly increased in 2012, but from extremely low levels, to a mere 0.04 per cent of the fleet. Among new cars registered, 0.1 per cent were electric. The highest numbers were in France, with 5700 new electric vehicles registered in 2012, followed by Germany, with 2800. Although the renewable en-

ergy sources that power electric cars are counted 2.5 times, this will be of minor importance for achieving the renewable target by 2020.

A brighter story is the development of electric bicycles. Much more affordable and with a typical range of 80 kilometres, recharging overnight is sufficient to keep them rolling.

Western Europe is the second biggest market for electric bicycles after China and is expected to have an annual growth rate of over nine per cent up to 2020.

**This year's report** takes a closer look at urban traffic and its environmental impact. It is noted that one third of the population in cities are exposed to air pollution levels exceeding the EU air quality standards and that urban transport contributes to 25 per cent of the sector's greenhouse gas emissions.

For passenger transport there is a good potential for modal shifts, e.g. travellers who park their cars in favour of cycling, walking or using public transport. Amsterdam is one example that for a long time has had a very high proportion of cyclists and pedestrians. But more interesting is perhaps those cities that managed to achieve great enhancements from very low levels, such as Seville. By building 80 kilometres of new bike paths, the city has managed to increase the modal share of cycling from 0.5 to 7 per cent between 2006 and 2013.

But a large part of urban traffic air pollution and greenhouse gas emissions comes from freight transport. It has been estimated that urban freight comprises 10–18 per cent of the traffic but contributes to some 40 per cent of the pollution.

There are examples of cities that are also working to encourage modal shifts in this segment. Like Utrecht, which has





One third of the population in cities are exposed to air pollution levels exceeding the EU air quality standards.

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introduced an electric boat delivering beer to restaurants along the canals. But it is still reasonable to assume that motorised road vehicles will continue to provide most of the urban freight in the future.

**Much could be gained** by more efficient logistics. However such development is counteracted by two ongoing trends generated by modern information technology. Companies can now easily place more frequent smaller orders. The cost saved on less storage space outweighs the increased expenditure on transport. This has led to the development of more deliveries with smaller vehicles in many urban centres. The second trend is e-commerce. Although the phenomenon replaces many shopping trips, it also generates traffic when the goods are to be delivered to the customer. Systems where the item must be received by a customer who is not always home can be particularly ineffective. The frequency of missed deliveries is estimated to be up to 30 per cent. Many cities, to escape this

problem, have instead introduced local collection and delivery points at railway and bus stations and post offices.

The introduction of Low Emission Zones (LEZ) has been proven effective to promote cleaner vehicles in city centres around Europe. Zones that cover all types of motor vehicles have shown the best results. Improvements concern in particular lower levels of PM<sub>2.5</sub>. Larger particles are not formed to the same extent by combustion, but more from brake and road wear. The substances that form ozone often have a more regional origin and in addition it has been found that emissions of NO<sub>x</sub> in real city driving do not correspond to the emissions measured during the test cycles required for the various Euro standards.

**Congestion charging** has also proven effective to reduce air pollution. When it was introduced in Stockholm, traffic went down by 22 per cent and emissions went down by 12–14 per cent. Increasing parking

fees is another, usually less controversial, way to reduce traffic in city centres, partly because some visitors choose other means of transport. But also because the cars that actually do go into the city do not need to spend as long a time (with their engines running) to find parking.

The report also highlights the need for cities and metropolitan areas to work with Sustainable Urban Mobility Plans that deal with a mix of strategies, like pricing schemes, mobility management, city planning, public transport, charging systems for electric vehicles, etc., to reduce emissions and improve life for city dwellers.

Kajsa Lindqvist

**EEA Report No 11/2013, A closer look at urban transport – TERM 2013: transport indicators tracking progress towards environmental targets in Europe** can be downloaded at: <http://www.eea.europa.eu/publications/term-2013>

# Don't delay NECAs!

**Delaying agreed NO<sub>x</sub> standards would have several extremely negative consequences, including increased emissions and subsequent damage to health and ecosystems.**

**In 2008 the** International Maritime Organization (IMO) unanimously adopted a set of stricter air pollution standards for nitrogen oxides (NO<sub>x</sub>) emissions from international shipping, to be gradually introduced in different steps between 2011 and 2016.

This decision came after three years of negotiations that resulted in amendments to IMO's MARPOL Annex VI. The agreed new global NO<sub>x</sub> standards – known as Tier II – provide only for roughly 20 per cent reductions for new ships as from 2011. More ambitious Tier III standards that require an 80 per cent reduction for new ships as from 2016 were also agreed, but they apply only in designated NO<sub>x</sub> Emission Control Areas (NECA). So far there are only two NECAs, the North American emission control area, which covers the coast of the United States and Canada out to 200 nautical miles, and the US Caribbean area.

Over the last few years, the countries surrounding the Baltic Sea and the North Sea have been preparing submissions to the IMO in a move to get these two sea areas – which are both already designated as Sulphur Emission Control Areas (SECA) – also designated as NECAs. The Baltic Sea submission was finalised last year, but a decision to submit it to the IMO has been blocked by Russia. The North Sea submission is still under preparation.

Last year, a surprise move initiated by Russia resulted in a recommendation to delay the implementation of the Tier III standards from 2016 to 2021. The adoption of this delay will be decided upon at an IMO meeting in early April.

The recommendation was adopted despite the conclusions of an IMO expert group that concluded that a variety of readily available technologies exist to achieve the Tier III standards, and therefore there is no need to delay the 2016 implementation date.

According to the Clean Shipping Coalition (CSC), accepting a delay in the Tier

III standards would have several extremely negative consequences, including:

- Damage to the environment and to the health of millions of citizens in areas that are or may be designated as NECAs;
- Economic harm to engine and after-treatment manufacturers who have in good faith invested substantial sums to design and produce ships that will meet the Tier III standards;
- Damage to the reputation of the IMO as a legitimate, rational and dependable regulatory body, making future negotiations at IMO more difficult and protracted, as negotiators will have no assurance that agreements made today will be respected tomorrow;
- Damage to the reputation of the shipping industry itself, resulting from IMO backtracking and the resultant additional delay in reducing excess shipping emissions that will, for example, cause shipping to be the largest emitter of NO<sub>x</sub> in Europe by 2020;
- In the absence of reliable international regulation, the likely proliferation of various and possible disparate national or regional regulatory requirements

that will be needed to protect health and the environment in coastal areas around the world.

Similar arguments and conclusions have also been set forth in a joint submission by Canada, Denmark, Germany, Japan and the United States, in which they oppose the delay. A submission by EUROMOT, a trade group of ship engine manufacturers, confirms that the technology is available to meet the Tier III standards on schedule.

**To add to the confusion,** Norway and the Marshall Islands in a joint submission propose what they call a “compromise”, which is to keep the 2016 implementation date for the existing North American and Caribbean NECAs, but delay it by five years in any new NECA.

According to the CSC, this proposed compromise should be rejected, because it will jeopardise the expected benefits from the existing NECAs, as well as from potential future NECAs. Furthermore CSC points out that it will not address the environmental concerns of affected countries, primarily because shipowners will be motivated to segregate their fleets, using more polluting pre-2016 non-Tier III ships in NECAs. The proposed compromise will thus substantially reduce demand for Tier III technology on new ships and effectively delay its widespread use.

Moreover, it will signal to shipowners and manufacturers of engines and after-treatment technologies that the IMO rulemaking process is arbitrary and that adopted IMO regulations cannot be relied on but should be treated as provisional only.

A final decision on whether or not to adopt the five-year delay will be taken by the IMO at a meeting of its Marine Environment Protection Committee (MEPC) in London during 30 March and 4 April.

Christer Ågren

Sources: Submissions to the IMO MEPC 66 by the Clean Shipping Coalition; by Canada, Denmark, Germany, Japan and the United States; by EUROMOT; and, by Norway and the Marshall Islands.



Shipping will probably be the largest emitter of NO<sub>x</sub> in Europe by 2020.

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# Stricter emission standards for non-EU power plants

The health and environmental benefits for eight non-EU countries to comply with EU emission limit values for large combustion plants are on average 17 times the costs.

**The Energy Community**, an energy association of Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine, has published a study assessing the costs and benefits of modernising large combustion plants in their countries to comply with EU environmental regulations.

Established in 2005, the Energy Community is an international organisation dealing with energy policy, with a secretariat located in Vienna, Austria. Parties to the Energy Community Treaty (ECT) are the European Union and eight countries: Albania, Bosnia and Herzegovina, Kosovo, Macedonia, Moldova, Montenegro, Serbia and Ukraine. Four more countries – Armenia, Georgia, Norway and Turkey – take part as observers, although Georgia is in the process of joining the Energy Community as a signatory.

Today, the main motive behind the ECT is the import of the EU energy policy into non-EU countries. The implementation of the EU directives on environmental impact assessment, sulphur in fuels, and large combustion plants' emission standards constitute the core of the environmental acquis.

An assessment of the costs and benefits of upgrading large combustion plants in the countries was published by the secretariat last December. According to the study, the monetised benefits would outweigh the costs of compliance with the environmental standards by 17 times on average in the Energy Community region. This means that for every euro spent, there would be a seventeen euro return in terms of environmental and health benefits.

The EU's 2001 Large Combustion Plants (LCP) Directive applies to all combustion plants with a rated thermal input greater



Coal power plant in Kosovo.

than 50 megawatts (MW), irrespective of the type of fuel used. In late 2010, the EU adopted a new Industrial Emissions Directive (IED) that will replace the LCP Directive from 1 January 2016 onwards.

All contracting parties to the ECT have undertaken to implement the LCP Directive by 31 December 2017. This is of high priority politically and technically for these countries as well as for the EU. According to a decision of the ECT Ministerial Council in October 2013, contracting parties must also implement the IED provisions in the case of new plants.

**The purpose of** the secretariat's study was to deliver an overall estimate on the amount of investment necessary for the modernisation of power plants located in the ECT countries, and of the benefits expected from the resulting emission reductions. All ECT countries, except Albania and Moldova, were shown to have high external costs related to emissions from power and heat generation plants, mainly due to the high average age of the plants and the low level of maintenance over the past decades.

Significant investments are required for the upgrades needed to ensure the implementation of the two directives. All in all, there are 183 LCP units, with

a total power capacity of nearly 41,000 MW and with a net power output of 38 gigawatts (GW). The largest capacity is found in Ukraine, with 113 units and a total power output of 29.4 GW.

Investment costs are estimated at €6.7 billion for compliance with the LCP Directive, increasing to €7.8 billion for the IED. Around three quarters of these investments would take place in Ukraine.

According to the cost-benefit analyses, however, the estimated benefits significantly outweigh the costs. On a country-by-country basis, the benefits were found to be between 8 and 51 times higher than the costs for the LCP Directive implementation, and between 4 and 50 times higher in the case of IED implementation. Looking at all countries combined, the benefits were 16–17 times higher than the costs.

**A third, alternative,** scenario was also investigated. This would include the shut-down and replacement of some old plants and upgrading of the remaining ones, where needed. It would result in better overall energy efficiency with consequent fuel savings and lowered greenhouse gas emissions, as well as lower costs for operation and maintenance.

The study also includes a number of country-specific recommendations for achieving compliance with the requirements of both the LCP Directive and the IED.

Christer Ågren

The report **Study on the need for modernization of Large Combustion Plants in the Contracting Parties of the Energy Community in the context of the implementation of Directive 2001/80/EC** (December 2013). By South East Europe Consultants, Ltd. Published by the Energy Community secretariat, Vienna, Austria. Available at: [www.energy-community.org](http://www.energy-community.org)

# EU climate and energy targets for 2030

To keep its international climate pledges, the EU must adopt three ambitious, binding targets for greenhouse gas reductions, renewable energy and energy savings.

**Cutting greenhouse gas** (GHG) emissions by 40 per cent compared to 1990 levels and a share of at least 27 per cent of renewables in the energy mix by 2030 were the two legally binding targets that the European Commission presented in its White Paper on climate and energy, released on 22 January.

The proposed 40 per cent target implies that sectors covered by the EU's emissions trading scheme (ETS) cut emissions to 43 per cent below the 1990 levels. To do this, the annual reduction from these sectors would be increased from the current 1.74 per cent, to 2.2 per cent after 2020. Non-ETS sectors should achieve a 30 per cent reduction, relative to 2005 levels.

No binding target for energy efficiency was proposed. The Commission said that "the role of energy efficiency in the 2030 framework will be further considered in a review of the energy efficiency directive". Moreover, there would no longer be a renewable target for transport fuels.

Climate Commissioner Connie Hedegaard described the 40 per cent target as "the most cost-effective target for the

EU and it takes account of our global responsibility".

Environmental groups however said that the Commission's ambition is not in line with reaching the target of staying below 2°C warming. "This proposal is not in line with science or even the Commission's own analyses of the multiple benefits of swift climate action," said Wendel Trio of Climate Action Network (CAN) Europe. "The EU must adopt three ambitious, binding targets for GHG reductions, renewable energy and energy savings."

The European Environmental Bureau (EEB) described the proposed targets as "barely more than a business-as-usual scenario and most crucially fails to set targets for member states". The EEB is calling for binding EU-wide targets of at least 60 per cent GHG reductions, a 45 per cent renewable energy share and 40 per cent energy savings by 2030, and said that this would put the EU firmly on the path to actually achieving the necessary emission reductions in the longer-term that the EU has already agreed to.

In a non-legislative resolution adopted

on 5 February, the European Parliament endorsed the proposed 40 per cent GHG reduction target, but called for a binding energy efficiency target of 40 per cent. It also called for a slightly stricter binding EU-wide renewable energy target of 30 per cent for 2030, adding that the current system of binding national targets should continue. Moreover, the parliament expressed its support for the continuation of the renewables target under the fuel quality directive to reduce GHG emissions from the transport sector.

Kajsa Lindqvist

#### Sources:

European Commission Press release [http://europa.eu/rapid/press-release\\_IP-14-54\\_en.htm](http://europa.eu/rapid/press-release_IP-14-54_en.htm)

EEB Press release <http://www.eeb.org/EEB/index.cfm/news-events/news/commission-proposal-a-major-setback-for-eu-climate-leadership/>

CAN Europe Press release <http://www.climnet.org/component/content/article/445-the-news/659-is-the-european-commission-walking-away-from-its-2-c-global-warming-promise-2>





## Climate policy brings air quality benefits

The Commission's impact assessment shows that further reducing GHG emissions will also reduce emissions of major air pollutants – particulate matter (PM<sub>2.5</sub>), sulphur oxide (SO<sub>2</sub>) and nitrogen oxides (NOx) – resulting in positive impacts on health and the environment, and that such reductions are significantly larger in scenarios that include ambitious energy efficiency (EE) policies and higher renewable energy (RES) targets, as these have lower fossil fuel use.

While the option with a 40 per cent GHG reduction with moderate EE and RES policies reduces the number of life years lost due to air pollution by some four million in 2030, an alternative option with the same GHG reduction, but supplemented by ambitious EE policies and a 30 per cent RES target, reduces the number of life years lost by 11 million. The option with a 45 per cent GHG target, ambitious EE policies and a 35 per cent RES target reduces impact even further, by 13 million life years lost.

This reduction in mortality can also be valued economically. A 40 per cent GHG reduction with moderate EE and RES policies reduces health damage due to air pollution by €4.8 - 11.1 billion per year in 2030 compared to the reference scenario. In the options with

ambitious EE and RES policies, reductions in health damage are higher: €12.6 - 29.2 billion/year for the 40 per cent GHG target, and €15 - 35 billion/year for the 45 per cent GHG target.

Because of lower air pollutant emissions, costs for controlling them are lower as well, between €0.7 and 7 billion/year depending on the option assessed.

In addition, other health impacts, damage to materials, crops and sensitive ecosystems (due to acidification, excess nitrogen deposition and ground-level ozone) will also be reduced, but these benefits were not quantified in the impact assessment.

In conclusion, all climate policy options investigated bring significant reductions in emissions of SO<sub>2</sub>, while reductions in emissions of PM<sub>2.5</sub> and NOx are much more pronounced in scenarios with ambitious energy efficiency policies. The related health benefits are also present across scenarios, but much bigger in scenarios that include ambitious energy efficiency policies and higher renewable energy shares.

Source: Commission's Impact Assessment to the **Policy framework for climate and energy in the period from 2020 up to 2030**. SWD (2014) 15 final. 22 January 2014.

## EU launches legal action over UK air quality

The European Commission has launched legal proceedings against the UK for its failure to cut excessive levels of nitrogen dioxide (NO<sub>2</sub>). The UK Supreme Court has already declared that air pollution limits are regularly exceeded in 16 zones across the UK. The Court also noted that air quality improvement plans estimate that for London compliance with EU standards will only be achieved by 2025, fifteen years after the original deadline, and in 2020 for the other 15 zones.

Although the original deadline for meeting the limit values was 1 January 2010, extensions have been agreed with member states that had a credible and workable plan for meeting air quality standards within five years of the original deadline, i.e. by January 2015. The UK has not presented any such plans and the Commission is therefore of the opinion that the UK is in breach of its obligations under the Air Quality Directive, and a letter of formal notice has been sent. The UK has two months to respond.

Source: European Commission press release, 20 February 2014. [http://europa.eu/rapid/press-release\\_IP-14-154\\_en.htm](http://europa.eu/rapid/press-release_IP-14-154_en.htm)

## Belgium must act to limit PM pollution

Under EU law, member states have to limit citizens' exposure to pollution from particulate matter (PM<sub>10</sub>). In Belgium, citizens in Brussels, Ghent port zone, Antwerp (including the port zone), Flanders and Liege have been exposed to unhealthy levels of PM<sub>10</sub> since 2005.

The Commission believes that Belgium has not taken measures that should have been in place since 2005 to protect citizens' health, and is asking the country to take speedy and effective action to keep the period of non-compliance as short as possible. If Belgium fails to act, the Commission may take the matter to the EU Court of Justice.

Source: European Commission press release, 20 February 2014. [http://europa.eu/rapid/press-release\\_MEMO-14-116\\_en.htm](http://europa.eu/rapid/press-release_MEMO-14-116_en.htm)



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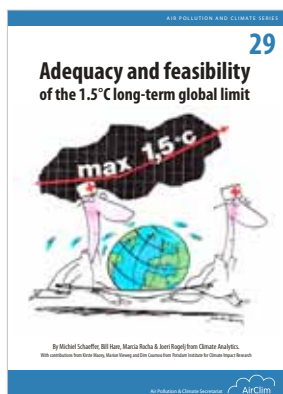


### Ship emissions

Shipping is a major cause of harmful air pollution in Europe and by 2020 shipping emissions of SO<sub>2</sub> and NO<sub>x</sub> could exceed the emissions of these pollutants from all other EU sources.

This pollution must be reduced dramatically to protect health and the environment and to make shipping a more sustainable form of transport.

Technical measures exist that could cut the level of pollution from ships by at least 80-90 per cent and doing so would be much cheaper than cutting the same amount from land-based sources.



### The 1.5°C long-term global limit

Scientific assessments have shown that impacts are projected to worsen significantly above a global warming of 1.5, or 2°C from pre-industrial levels. Such assessments have contributed to the adoption of 2°C as a global goal. In Cancun in 2010 Climate Convention Parties agreed to review the global goal with the perspective of strengthening this to 1.5°C.

This report is an attempt to answer the questions: Does a long-term global goal actually help to streamline global efforts to reduce greenhouse-gas emissions and inspire local initiatives? Is the level adequately low to prevent dangerous interference with the climate system? Is the goal feasible, given socio-economic and technical constraints?



### The 10 best climate measures in the Nordic Baltic Region

A number of national environmental NGOs were asked to describe and rank their ten best climate measures.

There is a great diversity. Hardly any country seems to have noticed what their neighbours are doing. So all climate policymakers should take a look, not only at the ten winners, but at the full smorgasbord of measures in neighbouring nations.

## Coming events

**Air Quality 2014. 9th International Conference on Air Quality – Science and Application.** Garmisch-Partenkirchen, Germany, 24 - 28 March 2014. Information: [www.airqualityconference.org/](http://www.airqualityconference.org/)

**IPCC. Approval and release of AR5 Working Group II report on impacts, adaptation and vulnerability.** Yokohama, Japan 25 - 29 March 2014. Information: <http://www.ipcc.ch/>

**Technical and economic issues of the new EU Air Policy Package.** CITEPA's annual conference. Paris, France, 26 March 2014. Information: <http://www.citepa.org/en/>

**IMO MEPC (Marine Environmental Protection Committee).** London, UK, 31 March - 4 April 2014. Information: <http://www.imo.org>

**IPCC. Approval and release of AR5 Working Group III report on mitigation of climate change.** Berlin, Germany, 7 - 11 April 2014. Information: <http://www.ipcc.ch/>

**World Bioenergy 2014.** Jönköping, Sweden, 3 - 5 June 2014. Information: <http://www.elmia.se/sv/worldbioenergy/>

**FCCC Meetings of Subsidiary Bodies.** Bonn, Germany, 4 - 15 June 2014. Information: <http://unfccc.int/>

**EU Environment Council.** 13 June 2014. Information: <http://europa.eu/newsroom/calendar/>

**EU Sustainable Energy Week (EUSEW).** In Brussels and across Europe, 23 - 27 June 2014, incl. a high-level policy conference in Brussels 24 - 26 June. Information: <http://www.eusew.eu>

**CLRTAP Working Group on Strategies and Review.** Geneva, Switzerland, 30 June - 4 July 2014. Information: <http://www.uncece.org/env/lrtap/>

**20th International Transport and Air Pollution Conference (TAP 2014).** Graz, Austria, 18 - 19 September 2014. Information: <http://www.tapconference.org/>

**UN Climate Summit led by Ban Ki Moon.** New York City, USA, 23 September 2014. Information: <http://www.un.org/climatechange/summit2014/>

**IMO MEPC (Marine Environmental Protection Committee).** London, UK, 13 - 17 October 2014. Information: [www.imo.org](http://www.imo.org)

**IPCC. Approval and release of AR5 Synthesis Report.** Copenhagen, Denmark, 27 - 31 October 2014. Information: <http://www.ipcc.ch/>

**UNFCCC COP 20 (Conference of the Parties).** Lima, Peru, 1 - 12 December 2014. Information: <http://unfccc.int/>

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