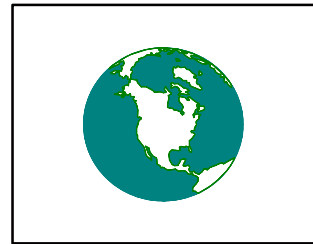


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EUROPE

1. EU Proposes New Euro 6 OBD Limits

The EU Commission has submitted on-board diagnostic (OBD) limits to the Council of Ministers; these limits are required before cars and light commercial vehicles complying with Euro 6 pollution standards can be type-approved. The OBD 'threshold' limits will be used to determine when on-board pollution control devices should indicate a fault.

The Commission proposes OBD limits for carbon monoxide, non-methane hydrocarbons and particulate matter that are less stringent than limits suggested in a 2008 policy paper on the implementation of Euro 6 rules due to "technical difficulties". The commission initially considered aligning EU OBD limits with those already in place in North America but concluded instead that "OBD requirements in the US are technically challenging for vehicle manufacturers not exporting [there]". As a result, industry will be given more time to prepare for more stringent limits.

The commission has not proposed limits for the number of particles emitted, citing technical reasons. A feasibility study on this issue will be conducted at a later stage.

Another change consists of applying the same Euro 6 limit on the number of particles emitted to gasoline direct injection engines as for diesel engines; this limit would not apply until September 2017 at the request of the carmakers' association ACEA.

2. Stakeholders Debate EU Air Quality Law Review

EU air quality legislation should pay more attention to ultra-fine particles and black carbon, according to the preliminary findings of a consultation ran last year as part of an ongoing legal review. The results were presented at a recent stakeholder meeting, the second meeting held by the European Commission since the air quality law review kicked off last year. A final analysis of stakeholders' responses to the consultation will be published by consultancy TNO in May.

TNO said other important issues included providing more consistency between EU air quality standards and requirements and other pieces of legislation such as Euro norms for vehicles. Another recurring demand was that air quality legislation should continue to provide some degree of flexibility, particularly through derogations. Several calls were also made for more stringent standards, mainly from environmental groups.

But the most pressing issues for member states are improving integrated assessments, policy coherence and tackling ultra-fine particles and black carbon. Several also said the fourth daughter directive on arsenic, cadmium and other toxic pollutants should be integrated into the main framework directive on ambient air quality.

During the debate, the EU executive was asked to outline how it intends to revise existing law. Thomas Verheye, head of DG Environment's unit on industrial emissions and air quality, said it was too early to determine the commission's view on the subject because it is still collecting feedback from stakeholders and conducting studies. EEB noted the consultation's focus on ambient air quality and asked why source emissions were not mentioned. Mr Verheye said this

was not a sign that this aspect of the legislation would not be addressed but rather that action in this area will be considered as part of an impact assessment.

3. UK To Hand Out Most Airline ETS Allowances

Airlines regulated by UK authorities will receive around a third of all the free allowances given to the aviation sector under the EU's emissions trading scheme (ETS) this year. Lufthansa, Air France and British Airways look set to be the biggest recipients. Member states had until 26 December to inform airlines of their allocation, based on their revenue-ton-kilometer figures for 2010 and according to the Commission they all met this deadline and most of the big states have now published the figures.

The data show that UK-regulated airlines will receive the most allowances (56.7 million), followed by companies administered by authorities in Germany (42.8 million), France (22.5 million) and the Netherlands (14.1 million). In all, the Commission believes about 182.6 million allowances will be distributed next year, worth about €1.3bn at today's prices. Of these, 6.9% will go to Lufthansa, 6.6% to Air France and 5.7% to British Airways.

The sector as a whole will be given enough allowances to cover 85% of its emissions cap; the remaining 15% will be auctioned. The volume of allowances each member state will be allowed to sell is based on the emissions of flights leaving its airports. The UK, for example, expects to sell seven million allowances, equivalent to about 3% of the total aviation cap. At current prices, this would generate approximately €49m.

Since airlines were officially included in the ETS at the start of this month, several have said they plan to put up ticket prices to cover the additional cost. An academic study published late last year suggests US airlines could make windfall profits by overcharging passengers for the cost of the scheme.

4. EU Draft Concludes That Cost Of 30% Carbon Cut Less Than Thought

Raising the European Union's 2020 emission reduction target to 30 percent would be considerably less costly than originally thought and the effort could be shared fairly among EU governments, according to a draft EU document. The analysis by the European Commission could reignite the debate over whether the EU should boost its climate ambitions, after the economic downturn made emission cuts easier to achieve, but also reduced the ability of governments and companies to make the necessary investments.

The EU currently has a binding target to reduce emissions 20 percent from 1990 levels by 2020 but has been debating pushing the level to 30 percent. The financial crisis has virtually guaranteed that the bloc will meet the 20 percent target, said the document and ensured that "the 30 percent reduction scenario has also become considerably less costly." However, the additional cost of going to 30 percent, previously estimated by the Commission at 33 billion euros (\$42 billion), would hit the bloc's poorer member states in central and Eastern Europe proportionally harder than richer EU countries, the analysis showed. That creates a political obstacle, with opposition strongest in newer EU states such as Poland.

In response, the Commission analysis sets out ways in which the costs of going to 30 percent could be spread more evenly across the bloc. One way would be to adjust the bloc's Emissions Trading Scheme (ETS), under which member states are allocated carbon allowances, which they can sell on to their industries. The analysis suggests reducing the number of carbon

allowances rich countries can sell to their industries by 38 percent, equivalent to removing 341 million allowances from the ETS in 2020, while leaving unchanged the number for poorer countries.

Moving to a reduction target of 30 percent would also require an extra 6.5 percent cut in emissions from sectors not included in the EU ETS, such as ground transport and buildings, the analysis showed.

Emissions last year were already down 17 percent on 1990, and expected increases in energy efficiency mean the EU is on course to achieve a 25 percent reduction by 2020, the Commission has said. The bloc has offered to go to 30 percent if other countries commit to deeper cuts as part of a global climate deal. But some EU governments such as Britain and Denmark believe Europe should raise its target unilaterally to create green jobs and boost growth. Green campaigners agree, adding that raising the EU target would help revive Europe's struggling carbon allowance market.

5. Danish Presidency to Push Low-Carbon Road Map, Energy Efficiency

Denmark holds the rotating chair of the EU Council from January 1st through June 30th. It will use its six-month term as president to persuade other EU governments to endorse a low-carbon road map that calls for overall emission reductions of 40 percent by 2030 and 60 percent by 2040, the Danish climate and energy minister Martin Lidegaard announced on January 24th. Denmark also will seek to make progress on revising EU energy efficiency legislation as proposed in June 2011 by the European Commission.

Endorsement of the low-carbon and energy efficiency plans is needed because “we need to set clear milestones” for 2030 and beyond to create a more stable situation for low-carbon investment, he said.

The European Commission published the low-carbon road map in March 2011. According to the road map, if the European Union is to cost-effectively reduce its overall greenhouse gas emissions by up to 95 percent by mid-century compared with 1990 levels, it should work toward 2030 and 2040 milestones of 40 percent and 60 percent reductions. The bloc currently has a binding target to cut emissions by 20 percent from 1990 levels by 2020.

The road map added that the European Union could cut emissions by 25 percent by 2020 without introducing new targets if it meets a nonbinding objective of achieving 20 percent energy efficiency savings by 2020. Without additional energy efficiency measures, the European Union expects to achieve only a 10 percent energy efficiency gain by 2020. “The current gap to the 20 percent [energy efficiency] target must be closed,” Lidegaard said. “We need progress on the energy efficiency directive.”

Proposed energy efficiency legislation would not set binding energy-saving goals for EU countries, but would create other obligations, such as a requirement for power companies to save 1.5 percent of their annual energy sales by volume by helping their customers to reduce energy consumption. He said Denmark believes it can get the support of other governments because fuel and other commodity prices are rising, and energy efficiency would lead to savings in a period of government austerity. The European Union's bill for oil imports in 2011 was €315 billion (\$410.3 billion), up 40 percent compared to the previous year, he said.

Lidegaard played down the idea that Denmark would seek a revision of the European Union's 20 percent emissions reduction goal for 2020, though the bloc's top climate official, Connie Hedegaard, has called for reopening the discussion on a higher target. (She previously held Lidegaard's job in the Danish government.) However, Lidegaard said that although Denmark, Sweden, and the United Kingdom support a higher target, other countries, such as Poland, resist it.

Lidegaard also downplayed a call by lawmakers to cancel about 1.4 billion carbon allowances granted to EU Emissions Trading System participants in an effort to boost the carbon price and provide more incentive for emissions-cutting investments. The current carbon price of about €7 (\$9) is "not sustainable" and too low to persuade companies to invest in cutting emissions, he said. However, the idea of canceling carbon allowances could be raised once "we have made the road clear" through agreement on the low-carbon road map and energy efficiency measures.

The European Parliament environment committee is due to vote on the low-carbon road map at a meeting on January 30-31st. The full Parliament is scheduled to vote on it in March. A parliamentary vote on the revised energy efficiency directive is scheduled for April 17th.

European environment ministers will tackle several contentious issues in their next two meetings, according to a provisional agenda for the first half of 2012 released by the Council of Ministers. These include a long-awaited – and yet to be published – proposal from the European Commission for a directive to address the indirect land-use change (ILUC) effects of biofuels, which is due to be discussed at the ministers' first meeting on 9 March. The commission was due to publish an ILUC assessment last year. Leaked reports suggested it was considering introducing new legislation but these were not officially confirmed. The commission met with stakeholders in November to present its findings.

Denmark also hopes an agreement can be reached at the 9 March meeting on the thorny question of national bans on genetically modified crops and the commission's low-carbon roadmap. The same March meeting should see the council adopt conclusions on the EU's position ahead of the UN Rio+20 sustainable development conference in Brazil in June and debate plans for the next LIFE+ program.

The council's second meeting in Luxembourg in June is due to see agreements reached on the sulfur content of shipping fuels, new chemical standards for water and the framework for a seventh EU environment action program (7EAP). Also scheduled is a debate on new rules on emissions from land use, land-use change and forestry (LULUCF), which is due to be proposed by the commission shortly.

Other environmental issues on the Danish presidency's agenda include discussion of a planned renewables strategy by EU energy ministers in June. Their competitiveness colleagues will also discuss the proposed Horizon 2020 research program in February.

6. EU Consultation Starts Process to Regulate Carbon Emissions from Shipping

In 2012, the European Union will consider proposals on how best to regulate greenhouse gas emissions from international shipping, the European Commission said in a consultation document published on January 19th.¹ The proposals, which the Commission will publish before the end of 2012, are likely to mirror the inclusion of international aviation in the European

¹ See: http://ec.europa.eu/clima/consultations/0014/index_en.htm.

Union's Emissions Trading System (ETS), under which airlines must surrender carbon allowances for all flights into, out of, or within the European Union.

Similarly, a market-based measure targeting shipping would apply to “emissions of ships from their last port of call before calling to an in-scope [i.e. EU] port ... and those to the next port of call after [departing] an in-scope [port],” according to the consultation document.

However, the consultation document said measures other than the inclusion of shipping in the ETS would be considered, including a tax on fuel or emissions, mandatory emissions caps for ships, or establishment of a “compensation fund” for environmental damage from greenhouse gas emissions, into which shipping companies would pay.

Public comments are due by April 12.

The consultation was triggered by clauses in EU legislation adopted in 2008 that require the 27 EU countries to collectively reduce their emissions by 20 percent by 2020 compared to 1990. The legislation stated that unless the International Maritime Organization (IMO) agreed by the end of 2011 on emissions reduction commitments for shipping, the European Union should act to ensure that the shipping sector contributes to the overall EU emissions reduction goal. The Commission said in a statement accompanying the consultation document that “while energy efficiency requirements for certain categories of new ships have been set by the IMO ... no international regulation aiming to reduce GHG emissions from existing ships has been adopted.”² Although it was starting a process that could lead to EU regulation of shipping emissions, the Commission said it would “continue to support further works in [the IMO] for the development of global measures.”

Most of the measures considered would apply to individual vessels, rather than ship owners or operators, and to the entirety of any journey made to or from an EU port. In the case of shipping, there is concern that operators could try to lower their exposure by stopping briefly in ports near the EU or using distribution hubs just outside the region. The commission is asking how this could be avoided. The EU executive is also asking whether journeys to and from the least developed nations, and some types of ships and activities, should be exempted.

It is considering four main policy options to reduce shipping emissions:

- *One or more compensation funds could be established to collect charges from shipping and redistribute the revenue. Charges would be fixed by the EU or competing funds could be left to decide how to levy and spend them as long as an underlying emissions target is met. Ships that do not participate would be fined.
- *A new emissions trading scheme could be set up or shipping could be included in the existing EU system. The consultation does not provide many details on this option but asks whether ships should initially be given free allowances and whether they should surrender allowances at the end of the year or after each visit to port.

² IMO adopted energy efficiency measures for ships weighing 400 metric tons or more at a July 2011 conference, billing them as the “first ever mandatory global greenhouse gas reduction regime for an international industry sector.” The measures will come into force in 2013. An IMO report released in November said the measures could reduce shipping emissions by almost a quarter by 2030 compared to 2010 levels.

- *A tax could be levied on fuel sold in the EU or on carbon emissions, with revenues potentially spent on supporting emission reductions. A fuel-based charge seems to be the simplest option but it would be very easy to dodge.
- *Binding emissions reduction targets could be set for each ship based on a historical baseline or an index such as the EEDI. The downside is that early movers would not be rewarded and there would be no incentive to go further than the target.

Environmental group T&E has also suggested the EU develop measures to reduce black carbon emissions from ships, especially with growing activity in the Arctic. This option was discussed by a high-level group on shipping emissions convened by the commission last year, but has not been included in the consultation at this stage.

The Commission said shipping accounts for 3 percent of global carbon dioxide emissions, and that measures to reduce emissions would reduce “ships’ fuel bills by many billions of euros each year” because of efficiency savings.

7. Norway Sets Out Its Nordic Council Agenda; Black Carbon to Be a Priority

Norway will prioritize several environmental issues during its chairmanship of the Nordic Council in 2012, the country's government has announced, with a particular focus on climate change, green growth and chemical products.

Work on climate change will center on black carbon, with each country developing its own emissions accounting system and action plan. The council as a whole will consider which international mechanisms can be used to address the pollutant, which is not being tackled as part of international climate negotiations.

Nordic leaders made a commitment to green growth in 2010 and commissioned a task force to look at possible action. Member countries will follow up on this effort in 2012, focusing on attempts to green public procurement, improve the energy efficiency of buildings and encourage greater resource efficiency.

Norway will also lead a new effort to assess the combined effect of the range of chemicals that end up in the Arctic, including mercury and PCBs, and hopes to address the higher level of chemicals often found in clothes imported from Asia.

8. New UK Program to Prepare For Hydrogen Fuel Cell Vehicles

A new project to ensure the UK is well positioned for the commercial roll-out of hydrogen fuel cell electric vehicles has been launched, the Business Minister Mark Prisk has announced. The new program – UKH2Mobility – will evaluate the potential for hydrogen as a fuel for Ultra-Low Carbon Vehicles in the UK before developing an action plan for an anticipated roll-out to consumers in 2014/15. It aims to:

- Analyze in detail the specific UK case for the introduction of hydrogen fuel cell electric vehicles as one of a number of solutions to decarbonize road transport and quantify the potential emissions benefits;

- Review the investments required to commercialize the technology, including refueling infrastructure; and
- Identify what is required to make the UK a leading global player in hydrogen fuel cell electric vehicle manufacturing thereby paving the way for economic opportunities to the UK, through the creation of new jobs and boosting of local economies.

The group brings together the Government and industrial participants from the utility, gas, infrastructure and global car manufacturing sectors. All of the participants have signed a Memorandum of Understanding to agree to share their knowledge and expertise.

UKH2Mobility will deliver its evaluation of the potential of hydrogen as a transport fuel by the end of 2012. If the results are positive, an action plan will be developed to work through the steps needed to get the UK ready to be one of the first markets for the global commercial roll out of Hydrogen Fuel Cell Electric Vehicles.

There are 13 industry participants (below) in UKH2Mobility together with three UK Government Departments – The Department for Business, Innovation and Skills, The Department for Transport and the Department for Energy and Climate Change in addition to the European Fuel Cells & Hydrogen Joint Undertaking. Industry signatory parties to the Memorandum of Understanding are:

Air Liquide, SA	Nissan Motor Manufacturing (UK) Limited
Air Products PLC	Scottish and Southern Energy plc
Daimler AG	Tata Motors European Technical Centre plc
Hyundai Motor Company	The BOC Group Limited
Intelligent Energy Limited	Toyota Motor Corporation
ITM Power PLC	Vauxhall Motors
Johnson Matthey PLC	

Hydrogen fuel cell electric vehicles themselves share a large proportion of the electric motor and drive train technology with other electric and plug-in hybrid vehicles; it is the energy storage/conversion devices that are different. The fuel cell is an electrochemical device that can be refueled quickly and will continue to generate power so long as it is fed with hydrogen fuel. They are highly efficient devices (50-60 per cent compared to an average of around 20 per cent for internal combustion engines) that produce no emissions or pollutants at the tail-pipe and much reduced overall well-to-wheel emissions when compared with today's petrol and diesel engines.

Hydrogen Fuel Cell Electric vehicles are seen as part of the portfolio of solutions that will be required to decarbonize road transport. The Automotive Council Roadmap identifies a pathway where fuel cell electric vehicles will complement hybrid and battery electric vehicles and more efficient internal combustion engines.

9. Air Pollutant Emission Limits Exceeded In Twelve EU Member States

Twelve Member States exceeded one or more of the emission limits set by the EU National Emission Ceilings (NEC) Directive, according to recent official data for 2010 reported to the European Environment Agency (EEA). In some instances the limits were exceeded by significant amounts. These pollutants contribute to health problems and can also lead to economic losses and environmental damage. The EEA data shows that many EU Member

States missed the 2010 limits, so these countries will need to make further efforts to help reduce air pollution in Europe.



For the first time, preliminary data recently reported to the EEA by Member States allow a comparison with the legally binding emission limits for 2010 set in the [EU NEC Directive](#). The directive covers four main air pollutants: sulfur dioxide (SO₂), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs) and ammonia (NH₃). These pollutants can cause respiratory problems, contribute to the acidification of soil and surface water, and damage vegetation. The ceilings set in the NEC directive were designed to reduce such adverse impacts by an agreed amount.

"These pollutants contribute to health problems and can also lead to economic losses and environmental damage," EEA Executive Director Prof. Jacqueline McGlade said. "The EEA data shows that many EU Member States missed the 2010 limits, so these countries will need to make further efforts to help reduce air pollution in Europe."

The pollutant for which most exceedances were registered was NO_x. Preliminary analysis shows eleven Member States exceeding their respective NO_x ceilings (Austria, Belgium, Denmark, France, Germany, Ireland, Luxembourg, Malta, Netherlands, Spain and Sweden) (see Table 1).

The road transport sector is one of the main contributory factors behind the large number of NO_x exceedances, contributing approximately 40% of total EU-27 NO_x emissions. Reductions of NO_x from this sector over the last 2 decades have not been as large as originally anticipated. This is partly because the sector has grown more than expected and partly because vehicle emission standards have not always delivered the anticipated level of NO_x reductions.

Spain was the only Member State to have exceeded three of its four emission ceilings under the NECD; followed by Germany with two exceedances. Finland exceeded its ammonia ceiling.

Table 1 Progress by EU Member States in meeting the 2010 emission ceilings set in the EU NEC Directive³

NB: based on preliminary data.

Member State	NO _x	NMVOCs	SO ₂	NH ₃
Austria	x	√	√	√
Belgium	x	√	√	√
Bulgaria	√	√	√	√
Cyprus	√	√	√	√
Czech Republic	√	√	√	√
Denmark	x	√	√	√
Estonia	√	√	√	√
Finland	√	√	√	x

³ '√' indicates that the emission ceiling has been achieved; 'x' indicates the ceiling has not been met.

France	x	√	√	√
Germany	x	x	√	√
Greece	√	√	√	√
Hungary	√	√	√	√
Ireland	x	√	√	√
Italy	√	√	√	√
Latvia	√	√	√	√
Lithuania	√	√	√	√
Luxembourg	x	√	√	√
Malta	x	√	√	√
Netherlands	x	√	√	√
Poland	√	√	√	√
Portugal	√	√	√	√
Romania	√	√	√	√
Slovakia	√	√	√	√
Slovenia	√	√	√	√
Spain	x	x	√	x
Sweden	x	√	√	√
United Kingdom	√	√	√	√
√	16	25	27	25
x	11	2	0	2

Other European countries

Three EEA member countries which are not part of the EU (Liechtenstein, Norway and Switzerland) have similar emissions ceilings for 2010 set under the Gothenburg Protocol of the UNECE (United Nations Economic Commission for Europe) [Long-range Transboundary Air Pollution \(LRTAP\) Convention](#). Liechtenstein reports it has missed its NO_x and NH₃ emissions ceilings, Norway its NO_x emission ceiling, while Switzerland has achieved its four ceilings (see Table 2).

Table 2 Achievements by other EEA countries in meeting the 2010 emission ceilings set in the UNECE LRTAP Convention's Gothenburg Protocol.

Country	NO _x	NMVOCS	SO ₂	NH ₃
Liechtenstein	x	√	√	x
Norway	x	√	√	√
Switzerland	√	√	√	√

NB: Liechtenstein has signed but not ratified the Gothenburg Protocol.

NEC Directive – next steps

In mid-2012, the EEA will publish two reports further analyzing the data reported by the EU Member States and assessing how far original objectives for health and the environment defined in the NECD have been achieved.

The current review of EU air policy may lead to a revised NEC Directive containing stricter emission ceilings for 2020 in order to improve protection of health and the environment. For the first time, a ceiling for fine particulate matter (PM_{2.5}) could be introduced. In the absence of new legislation, however, the NEC Directive remains in force and requires countries to keep emissions below national ceilings in future years.

The new assessment of compliance with national emission limits set by the 2001 NEC directive, published by the European Environment Agency (EEA), is more accurate than the organization's previous report from last June because it is based on actual air emissions data rather than predictions.

The data also show that nearly all member states are complying with the other three air pollutants covered by the NEC directive. Spain, which also missed its ceilings for ammonia and volatile organic compounds (VOCs), was one of the few exceptions. Germany and Finland also exceeded their VOC and ammonia ceilings respectively.

The EU is considering setting new national emissions limits for 2020 as part of a revision of the NEC directive, but the plan has been delayed for years over fears about its economic impact on sectors such as transport. However, environment commissioner Janez Potočnik is keen to press ahead and consultations have now begun.

10. Russia Delays New Vehicle Emission Standards

The Russian government has again delayed the implementation of stricter emission standards for new passenger vehicles, saying the supply of cleaner fuel is inadequate to support a fleet of more advanced vehicles. The deadline to transition to Euro 4 standard gasoline and diesel engines was extended an additional year to Jan. 1, 2013, under an order published Feb. 1. The government delayed the transition to Euro 5 standards until Jan. 1, 2015.

The delays point to more fundamental problems in the Russian regulatory system, carmakers and analysts said at a conference in St. Petersburg on February 7th that focused on diesel emissions. They cited a lack of regulation of the types of fuels sold at fueling stations and a lack of enforcement to ensure compliance with car and fuel standards.

The energy minister attributed the delay to refiners' inability to produce enough lower sulfur fuel to support introduction of higher performance engines this year and marked a further departure from the timeline to switch to Euro 4 standards as laid out in the original rules that came into force in 2005.

The European Union currently follows Euro 5 requirements, which include stringent standards for particulate matter.

Motor vehicles are a major source of air pollution in Russia, and the fleet is old with a slow renewal rate, according to speakers at the conference. Cleaner cars at the Euro 4 level are available from Russian vehicle manufacturers, but inadequate supplies of the lower sulfur fuel they require is hampering the domestic market for the vehicles, according to several speakers. The higher quality engines are mostly exported for sale in other markets.

The situation is of particular importance as Russia's car market is one of the world's fastest growing, at about 4 percent per year.

Some speakers cited domestic refiners' lack of technical capacity to produce cleaner fuels as the main problem. Others said data show Russian refiners are exporting high quality fuel, so the problem lies more in poor distribution to areas with demand, such as along major traffic corridors.

If European transporters operating in Russia cannot find cleaner fuel for their higher performance engines, cross-border trade suffers, according to Vadim Donchenko, research manager at the Scientific and Research Institute of Road Transportation. Donchenko said such on-road transporters represent a small but important share of trade in Russia. "They are transporting the most valuable and expensive cargo. They pay taxes. They give the most to the budget. They are the most logistically organized transporters, and they are the ones with the newest vehicles," he said.

In addition, he said the scarcity of cleaner fuel is violating road traffic agreements between Russia and Europe.

Requirements for oil refineries lag behind the standards for vehicle emissions, said Tamara Mitsova, head of the Diesel Fuels Department at the All Russian Research Institute for Petroleum Refining. However, she said new excise tax rules that lower taxes on refinement of cleaner fuels are helping to stimulate production of cleaner fuels since 2011. In addition, some petroleum companies, such as Lukoil, are beginning to market themselves as providers of higher quality fuels.

11. London Allegedly Not Complying With Air Quality Rules

When the Olympic Games were awarded in 2005, the capital signed a contract with the International Olympic Committee, which said it had to comply with European Union regulations. The European Commission has confirmed that it had not done so. A spokesman said: "There is widespread PM10 and NO2 non-compliance."

Mayor of London, Boris Johnson, and the Coalition Government are jointly responsible for meeting air quality rules. London has been able to avoid EU and IOC regulations by exploiting a loophole. Regions within the European Union are allowed to defer compliance for a period of time if they have an 'action plan' in place. London took out a deferment in 2010, which ran out in June last year, so it was allowed to pollute more than it should have. But because air quality is measured on a calendar year, London was permitted to say it was unable to meet the required targets for the whole year, because of the deferment. This meant London could claim it had met the EU directive, even though it had not hit the targets set out in the legislation.

The IOC has told London to clean up its air, or face losing 20 per cent of broadcasting revenue from the Olympics. Andrew Mitchell, IOC spokesman, said that officials were working with London to solve the problem. He explained: "Safe and healthy competition conditions for athletes are a top priority for everyone involved in the Games as at previous editions of the Games.

Pollution in London is comparable to excessive levels in Beijing during the run up the 2008 Games. That's the claim from The Clean Air for London (CAL) campaign group, who said scientists had only recently come to terms with the long-term dangers of air pollution.

They are backed by a Parliamentary investigation and European Commission officials who are concerned about levels of PM10 particulates from diesel vehicles and Nitrogen Dioxide (NO₂) from petrol vehicles and household heaters.

CAL director, Simon Birkett, said: "There were 4,075 early deaths due to short term exposure to visible air pollution during the Great Smog of 1952. "It seems extraordinarily that 4,000 early deaths in 1952 changed the world whereas 4,000 now is considered 'room for improvement' by some.

"London has comparable levels of NO₂ to Beijing in the run up to the 2008 Olympics."

Transport for London – one of the governmental bodies responsible – reacted to the criticism by claiming emergency measures were being implemented. A spokesman said: "A range of significant measures stemming from the Mayor's air quality strategy are due to come into effect. These are specifically targeted at the main contributors of road pollution to reduce levels of PM10 and NO₂.

The European Commission is currently investigating evidence submitted by the UK relating to NO₂ levels. A spokesman said: "The Commission has a duty to implement the decision to ask for extensions, also in the light of very significant adverse effects to public health due to air pollution.

12. Nations Fighting Against Including Airlines in EU Carbon ETS

As of Jan. 1, 2012, all airlines are required to calculate their greenhouse gas emissions for flights into, out of, and within the European Union. Starting in 2013, airlines must then surrender by April 30 of each year enough carbon allowances to cover those emissions. Most carbon allowances are given to airlines for free based on a calculation of their historic emissions, but operators will be required to buy a portion of their allowances at auctions run by EU member state governments. Additional allowances to cover any excess emissions must be bought on the carbon market.

The United States, China, Japan, and Russia were among 29 nations that formally declared opposition to the European Union's inclusion of global airlines in its greenhouse gas Emissions Trading System, vowing to undermine the rule and challenge it in the International Civil Aviation Organization. Country officials gathered in Moscow February 21–22 to agree to a package of measures to respond to the EU rules. Response measures included the option for each country to prohibit its airlines from paying any fees under the rules and filing a complaint with ICAO, Russian Deputy Transport Minister Valery Okulov said in a statement following the February 22nd meeting, according to a transcript. The agreement also opened the possibility of countries crafting their own specific retaliatory measures.

Russia may seek to undermine European airlines by limiting European flights over Siberian air space, Okulov said. In addition to limiting flights, the Russian government is once again declaring it will make it illegal for Russian airlines to comply with the European rules, following in the footsteps of China. The Civil Aviation Administration of China instructed Chinese airlines not to comply with the ETS. According to a notice published on the Chinese government's website, the State Council authorized the decision to tell airlines to boycott the EU emissions trading scheme. Inclusion of non-EU airlines in the ETS contravenes the terms of the U.N. Framework Convention on Climate Change and "the relevant principles" of ICAO, China's Civil Aviation Administration said in a statement.

The implications of the retaliatory measures are leading to speculation of a trade war over the issue, with Okulov urging the European Union to take measures to prevent such an outcome in an address following the meeting.

The group of countries plans to meet in the summer in Saudi Arabia to continue discussions.

The International Civil Aviation Organization has a last chance to forestall the dispute if it can agree on concrete emissions-cutting measures within six to eight months, according to EU officials. Jos Delbeke, director general of the European Commission's climate department, said on February 7th that countries that have protested the inclusion of their airlines in the ETS could use the next 13 months to develop a "multilateral regime" within ICAO to limit aviation greenhouse gas emissions. Under the ETS, airlines have until April 2013 to surrender their carbon allowances.

If the Commission by late 2012 could see that ICAO is ready to take appropriate action, it could go to the European Parliament and EU Council, which represents the governments of EU member states, and ask them to reopen the 2008 EU Directive that includes aviation in the ETS, Delbeke said. However, Delbeke also noted that the European Union would consider reopening legislation on aviation and the ETS only if ICAO proposed a system that would be "better for the environment" than the ETS, if the proposal were nondiscriminatory, and if both targets and measures to achieve the targets were included.

He added that the European Union would assess after the summer if sufficient progress was being made in ICAO; if it is not making enough progress the European Union would stand firm on implementing its legislation.

Delbeke spoke at a conference on global measures to tackle aviation emissions, organized by the advocacy group Transport & Environment.

13. Mia Electric on Track for May Launch; Eligible For Government Subsidies

Mia Electric has welcomed news from the government that its three upcoming vehicles will benefit from the Plug-In Car and Plug-In Van grants when they launch in the UK later this year. As a result of close cooperation between the Franco-German company and the government's Office for Low Emissions Vehicles, the three planned launch vehicles have been deemed suitable for the UK having met all the required safety, reliability, performance and warranty standards required.

As a result, those picking up a Mia Electric vehicle when they go on sale later this year will be entitled to a government-sponsored discount of around £5,000. This makes pricing of the standard short wheelbase Mia-U sit at around £21,000 and the Mia-L and Mia Box Van sit at around £22,000 with final pricing yet to be confirmed.

Mia might be an unknown name in the UK car industry, but it has plenty of experience: its three electric vehicles were created by former head of Volkswagen's design department Murat Günak, while the company was purchased after being spun off from renowned developer Heuliez.

The most conspicuous feature of all three Mia models is the central driving position, allowing the driver to enter and exit the vehicle from either side. According to Mia, this arrangement provides the driver with the perfect view of traffic and the passengers in the back with the maximum

possible amount of legroom, along with an interesting 'office-style' layout that includes a display with space to mount a tablet computer and smartphone.

All three models are powered by an 18kW electric motor at the rear, giving them a top speed of 68mph and a range of around 75 miles per five-hour charge of the standard lithium iron phosphate battery pack.

All three models are due to launch in the UK this May, Mia has confirmed.

14. Sustainable Energy Is Answer to Wider Crisis Says EU's Hedegaard

Energy efficiency offers one of the best tools for tackling the world's debt and social crises as sustainable development comes in from the margins to the mainstream of economic debate, the European Union's climate chief said recently. EU Climate Commissioner Connie Hedegaard was speaking after the summit of EU leaders sought ways to create jobs as well as to deal with massive amounts of debt.

"When we want to adjust our economics and make them more resilient, can anyone come up with a better proposal than to address energy efficiency?" Hedegaard asked. "We must bring sustainable development from the margins of the economy to the mainstream of the global economic debate," she said. "It sounds easy, maybe even logical, but everybody knows it's a very different kind of thinking."

An example would be adapting buildings with better insulation in Europe, which could create up to half a million jobs in the years to 2020, Hedegaard has said.

It would also cut Europe's energy import bill, which for oil alone rose to 315 billion euros (\$413 billion) last year. Such a figure equates to a significant chunk of Greece's debt, estimated to reach 420.6 billion euros this year, nearly 200 percent of its gross domestic product. "How do we want to spend our money? Do we want to continue to pour it into Saudi Arabia and elsewhere?" Hedegaard asked.

She was speaking at a roundtable session to discuss a new report by the U.N.'s high-level panel on Global Sustainability. Hedegaard is one of the 22 members of the panel, which was set up to formulate a blueprint for sustainable and low carbon development. The report cited the urgent need to tackle shortfalls of food, water and energy as the world's population continues to grow.

The U.N. report includes 56 recommendations, but Hedegaard said there was a need to focus on priorities in the run-up to the United Nations conference on sustainable development in Rio de Janeiro in June. One real target was working out how to ensure sustainable energy for all by 2030, she said, as well as to double the rate of improvement in energy efficiency and doubling the share of renewable energy in the global energy mix.

The conference on sustainable development, named Rio+20, will mark the 20th anniversary of the Earth Summit, which was regarded as a step on the way to the Kyoto process on tackling climate change.

15. EU Tar Sands Pollution Vote Ends In Deadlock

The European Union failed to label oil produced from tar sands as highly polluting recently, with a key vote by member states ending in deadlock. The issue is seen as a key test of the EU's ability to implement its climate change policies while under heavy pressure from the Canadian government and oil companies who want to prevent billions of barrels of tar sands oil from being designated as especially harmful to the environment. The lobbying has been intense, with Canada secretly threatening a trade war with Europe if the proposal is passed, while the NASA climate scientist James Hansen has said full development of the tar sands would mean it was "game over" for the climate. Under the draft EU proposal, tar sands are assigned a default greenhouse gas value of 107 grams of carbon per megajoule, showing buyers it has more environmental impact than conventional crude with 87.5 grams.

Canada's vast tar sands are the second largest reserve of oil after Saudi Arabia and many of Europe's largest oil companies have major interests in the fields, including BP, Shell, Total and Statoil. The EU proposal is to label tar sands oil as causing 22% more greenhouse gas emissions than conventional oil on average, because of the extra energy needed to blast the bitumen from the bedrock and refine it. This would make it unattractive to Europe's fuel suppliers who have to cut the impact of their products on global warming and would also set a very unwelcome international precedent for Canada. The law obliges EU fuel suppliers to reduce the life-cycle greenhouse gas emissions of road fuels by 6% by 2020.

The vote by officials needed a majority of about three-quarters to be approved, which would have led to the proposal passing quickly into law. In the event, there were 89 votes for the proposal, 128 against and 128 abstentions. The impasse means the decision will be referred to ministers, who will send a proposal to the European parliament for passing into law.

The proposal came from the European commission and Connie Hedegaard, the EU commissioner for climate action, said: "With all the lobbying against the proposal, I feared member states would reject the proposal. I am glad that this was not the case. I hope ministers will realize that unconventional fuels need to account for their considerably higher emissions through separate values."

The Canadian government argues it is unfair to single out tar sands when some other crude oils are also highly polluting but its opponents, including Hedegaard, argue those can be dealt with in due course and that the scientific case against tar sands is clear. Canada convened a high-level private summit in 2011 to discuss winning the tar sands argument in the EU, to protect the "huge investments from the likes of Shell, BP, Total and Statoil".

The Canadian government has lobbied hard against the introduction of separate figures for oil sands. In letters leaked recently it warns the European Commission that it is considering legal action through the World Trade Organization. Some politicians and environmentalists fear this could sway EU decision-making.

A group of Nobel peace prize winners urged European leaders in a letter to support an EU Commission proposal to class fuel from oil sands as highly polluting. "Tar sand development is the fastest growing source of greenhouse gas emissions in Canada, and threatens the health of the planet," eight Nobel Peace Prize laureates, including Archbishop Desmond Tutu of South Africa and Iranian human rights activist Shirin Ebadi, said in the letter. "As the tar sands have contributed to rising emissions, Canada recently stepped away from the Kyoto Protocol. Europe must not follow in Canada's footsteps." The laureates said that the EU fuel quality directive could move Europe away from dependency on oil, coal and natural gas to renewable energy sources if the policy was implemented properly.

They also praised U.S. President Barack Obama's rejection of a proposal to build the Keystone XL pipeline, which would have increased the amount of tar sands oil produced and transported from Canada to the United States.

Vote on proposal to label tar sands oil as highly polluting, by nation

- For: Austria, Denmark, Finland, Greece, Ireland, Latvia, Luxembourg, Malta, Romania, Slovakia, Slovenia, Sweden
- Against: Spain, Italy, Poland, Bulgaria, Czech Republic, Estonia, Lithuania, Hungary
- Abstained: UK, Germany, France, Netherlands, Portugal, Belgium, Cyprus

16. MEPs Vote to Extend Marine Pollution Rules

Environment committee MEPs want to see the EU apply stringent new limits on the sulfur content of marine fuels more widely and to a broader range of ships than the European Commission proposed last year. Voting on Finnish Green MEP Satu Hassi's draft report, the committee backed the commission's plans to lower sulfur limits for fuels used in designated sulfur emission control areas (SECAs) from 1.5% to 0.1% in 2015. This will bring the EU in line with International Maritime Organization (IMO) rules on SECAs.

"Urgent action is needed to stem the rapid growth in pollution from shipping, with air pollutant emissions from shipping expected to outstrip land-based emissions by 2020," Satu Hassi said. Air pollution from ships is estimated to cause 50,000 premature deaths per year in Europe, the parliament said, and the bloc's executive has estimated the new limits could reduce EU healthcare costs by up to 30 billion euros (\$39 billion).

The committee also wants the commission to consider setting up new SECAs beyond the existing ones in the English Channel, North and Baltic Seas.

The commission suggested the 0.1% limit should also be applied to passenger ships from 2020 but the committee went further backing an extension to all ships by 2020, with an interim 0.5% limit for 2015, and to any ship operating within 12 nautical miles of a member state's coast from 2015.

However, Ms Hassi's recommendation that the 0.1% limit apply to passenger ships from 2015 was dropped. The committee also rejected an amendment from the Greens calling for more action to tackle particulate and NO₂ emissions from berthed ships – especially from cruise ships, which use more electricity than cargo vessels.

The full parliament is due to vote on the resolution in May.

The IMO standards have restricted sulfur in marine fuel to 3.5 percent since Jan. 1, 2012, and will tighten the limit to 0.5 percent in 2020, except for sensitive "sulfur emission control areas" (SECAs), where a 0.1 percent limit will go into effect in 2015.

The legislation must be agreed on between the European Parliament and EU member states represented in the EU Council before it can be finalized. The law would take the form of a directive, meaning EU countries would have to adopt it in their own codes of law once agreement is reached at the level.

17. Italian Government Launches Green Fund

Italy's environment ministry has launched a green fund that will primarily finance energy efficiency projects. The fund will provide loans worth a total of €600m over the next three years. It will start lending money on 15 March. The fund will be run by Cassa Depositi e Prestiti (CDP), a partially state-owned financial institution. Each year, it will receive €200m from the ministry. Project developers will be able to borrow money at a below-market interest rate of 0.5%.

If successful, the 'Kyoto fund' could be extended for one or more years, a ministry spokesman told the press. In this case, additional funding might come from the auctioning of carbon allowances, which starts in 2013.

The fund will target specific projects, such as micro-combined heat and power (CHP) systems, small renewable energy installations and measures to improve building energy efficiency and cut nitrous oxide emissions from agriculture.

The fund, which has been planned since 2007, was initially intended to help meet Italy's Kyoto carbon reduction target for 2012. It has now been launched but with a totally different purpose. An EEA report from 2010 showed that Italy would need to make further carbon reduction efforts to meet its Kyoto target.

18. Industrial Air Pollution Cost Europe up to €169 Billion in 2009, EEA Reveals

The 10,000 largest polluting facilities in Europe allegedly cost citizens between €102 and €169 billion in 2009 according to a 2011 report by the European Environment Agency (EEA)⁴ of the analysis of the effects of industrial pollution on human health and the environment, and particularly the financial cost of managing those effects.

Half of the financial cost was incurred by only 191 of the facilities, and it is an estimated €51 to €85 billion.

“Our analysis reveals the high cost caused by pollution from power stations and other large industrial plants,” Professor Jacqueline McGlade, EEA Executive Director, said.

“The estimated costs are calculated using the emissions reported by the facilities themselves. By using existing tools employed by policy-makers to estimate harm to health and the environment, we revealed some of the hidden costs of pollution. We cannot afford to ignore these issues,” added Professor McGlade.

The facilities studied include large power plants, refineries, manufacturing combustion and industrial processes, waste, and some agricultural activities.

The environmental damage caused by the facilities cost each citizen €200-330, and 3/4 of the costs were incurred by only 622 of the industrial facilities, which is only 6.2% of the 10,000 studied. CO₂ (carbon dioxide) emissions contributed the most to the costs incurred.

Pollutants such as SO₂ (sulfur dioxide), NO_x (nitrogen oxides), and ammonia, which contribute to respiratory problems, factored into the study as well and were claimed to incur a cost of €38-105 billion annually.

⁴ “Revealing the costs of air pollution from industrial facilities in Europe.”

NORTH AMERICA

19. California Adopts Landmark Auto Emission Rules

The California Air Resources Board has unanimously approved sweeping auto emission standards that include a mandate to have 1.4 million electric and hybrid vehicles on state roads by 2025, i.e., one in seven of the new cars sold in the state in 2025 must be an electric or other zero-emission vehicle. But the program also looks ahead to 2050, laying groundwork for a goal of having 87 percent of the state's fleet of new vehicles fueled by electricity, hydrogen fuel cells or other clean technologies. The plan also mandates a 75 percent reduction in smog-forming pollutants by 2025 and a 50 percent reduction in greenhouse gas emissions from today's standards.

"Today's vote ... represents a new chapter for clean cars in California and in the nation as a whole," said Mary Nichols, the board's chairman.

Automakers worked with the board and federal regulators on the greenhouse gas mandates in an effort to create one national standard for those pollutants. Companies including Ford, Chrysler, General Motors, Nissan and others submitted testimony supportive of the new standards.

Some of the companies protested the inclusion of a system that will give some automakers credit toward their zero-emission vehicle mandate for exceeding federal greenhouse gas emissions standards in other cars. These credits, which can be used to reduce the number of clean vehicles made, can be used from 2018-2021. Some called it a loophole that will take hundreds of thousands of clean cars off the road, hurting the emerging market for these vehicles. "This is a temporary way station," Nichols said about the credits. "But by 2021 all companies will be producing the full complement of zero-emission vehicles."

California's auto emissions standards are influential and often more strict than federal rules. The state began passing regulations for cleaner cars in the 1960s to help ease some of the world's worst smog, and has since helped spur the auto industry's innovations in emissions-control technology. Currently 14 other states - including New York, Washington and Massachusetts - have adopted California's smog emissions rules as their own. California has also previously set zero-emissions vehicle mandates, which 10 other states have also currently adopted.

Trade groups representing auto dealers worried that the new regulations would increase the costs of vehicles for consumers and stifle the industry's growth. The California New Car Dealers Association and other industry groups representing those who sell cars said the board is overestimating consumer demand for electric vehicles and other so-called "zero-emission vehicles." Dealers are concerned that the regulations will lead to higher costs in all cars, and say consumers have been slow to warm to electric and other zero-emission vehicles.

The board's research staff disputes the argument from dealers that the mandates for new technology will increase costs for cars. They point to steady increases in hybrid and other sales and argue that fuel cost savings will make up for any vehicle price increase.

One of the nation's foremost consumer groups, the Consumers' Union, the policy and advocacy division of Consumer Reports, supported the changes. The rules will "protect consumers by

encouraging the development of cleaner, more efficient cars that save families money, help reduce the American economy's vulnerability to oil price shocks and reduce harmful air pollution," according to a letter from the group.

20. California May Explore New Black Carbon Rules to Help Reduce GHGs

California air board chief Mary Nichols is calling for her agency to explore potential ways to reduce the greenhouse gas (GHG) black carbon -- or the "soot" portion of particulate matter (PM) -- beyond newly adopted rules imposing tighter PM limits for passenger vehicles, to help the state achieve GHG reductions more quickly. Nichols also said there may be "opportunities to focus on this issue" beyond vehicle standards.

While it remains to be seen where the California Air Resources Board (CARB) may be heading with regard to its review of black carbon, Nichols appeared to embrace the results of a study released last month by international researchers suggesting that regulators put a new focus on reducing black carbon and methane emissions as a way to battle climate change in the short-term, while maintaining a longer focus on carbon dioxide (CO₂) emission reductions.

According to a CARB staff document accompanying the new vehicle rules adopted last week, black carbon is "the light-absorbing carbonaceous fraction of PM that results from incomplete combustion of fossil fuels and biomass."

CARB last week adopted an "advanced clean cars" package of regulations that includes new PM emission limits from passenger vehicles. For the past several years, CARB staff has tried to craft a new black carbon emissions limit for vehicles but has run into a number of technical problems, including how to establish appropriate measurement methods.

"Our goal is to assure that cars have the lowest possible PM emissions to minimize public exposure to PM, especially for those that live near freeways," says a CARB spokesman this week. "In addition, reduction in black carbon (part of PM) helps reduce global warming."

During CARB's January 27th board meeting at which the new vehicle PM standards were approved, Nichols said she has asked board staff for a report about "what's going on [regarding] this issue of measurement" of black carbon particles, in relation to climate change, adding "I think it's time for a technical review here on whether our programs are adequately focusing on the right thing."

While also highlighting the need to "look at methane too," Nichols said "there will be other opportunities to focus" on the black carbon issue beyond the newly approved vehicle standards.

Last month, the magazine *Science* published a study by a group of scientists from around the world that concluded governments should focus more on reducing black carbon and methane emissions to achieve near-term successes in combating global warming.

However, the document points out that there are a "number of issues that may impede policy action" on reducing black carbon emissions, including "the fact that black carbon emissions are not covered in the Kyoto Protocol and the co-emission of black carbon with cooling pollutants, namely organic carbon, complicates accounting and development of effective interventions."

CARB staff is also "seeking specific input" on how to select an appropriate global warming potential value for black carbon, according to the document.

In California, the major source of black carbon emissions in 2006 was wildfires, making up 29 percent of the total. Black carbon emissions from on-road mobile sources accounted for 20 percent, with these being dominated by diesel exhaust, the document adds.

21. EPA GHG Proposal Receives Broad Support: ZEV Credits Challenged

The proposal would limit light-duty vehicle GHGs and boost fuel economy to an average of 54.5 miles per gallon by 2025. The rule reflects an agreement between the Obama administration, most automakers and California, which has authority under the Clean Air Act to pursue more stringent vehicle air rules than EPA's rules.

Initial comments were received at three public EPA hearings on the proposal, starting with a January 17 hearing in Detroit, followed by a January 19 hearing in Philadelphia and a final hearing January 24 in San Francisco. EPA is taking comment through February 13 on the rules, which it proposed jointly with the Department of Transportation's National Highway Traffic Safety Administration (NHTSA).

Most speakers at the hearings praised the overall proposal, which includes a "mid-course" review provision. The new proposal follows the agencies' first vehicle GHG/fuel economy rules for model years 2012-2016 in place now.

Still, some officials pressed the agency to make some changes to the rule before finalizing it -- expected later this year -- in order to address alleged inequities impacting some automakers.

For example, some auto groups are urging EPA to revise its proposal by scrapping a policy that credits electric vehicles (EVs) as emitting zero GHGs, saying it fails to account for GHGs resulting from power plant electricity generation necessary to charge the vehicles. At the hearing, American Honda Motor Co. -- represented by Senior Manager of Environment and Energy Robert Bienenfeld -- echoed many of these concerns. Honda, which backs the overall agreement, noted that assigning EVs a GHG level of zero in the first rule was intended to incentivize their development. "These constraints have been weakened by their extension through 2025. Honda believes that this policy is misguided and creates significant, incorrect perceptions about the relative merits of these technologies," Bienenfeld argued. "It is clear that there are no special virtues to be associated with zero tailpipe greenhouse gas emissions if the well-to-tank emissions are high." Such an approach "will improperly favor or signal 'preferred technologies,' rather than providing technologically-neutral standards," he added.

Honda also asks that the special full-size pickup truck concessions -- which EPA says is to recognize "their significant load-carrying and towing capabilities that make it particularly challenging for manufacturers to add fuel economy-improving technologies in a way that maintains the full functionality of those capabilities" -- be extended to all large vehicles. Sport-utility vehicles "and minivans, for example, are often fully loaded by families, resulting in expectations of seven or eight passenger seating capabilities, while maintaining payload and towing functionality. Similarly situated vehicle types ought to be treated the same."

However, Michael Robinson, vice president for sustainability and global regulatory affairs for General Motors, warned against changing the existing system for crediting EVs in the rule. "[A]utomakers control neither the feedstocks nor the conversion processes for creating electricity. Suggesting that at some point we could (or should) be 'responsible' for these emissions is worrisome. To the degree that these emissions need to be addressed, legislators

and regulators need to create a program that can do so directly -- not indirectly through further restrictions on vehicles. With due respect, our task is difficult enough," he said.

GM and other automakers, along with Rep. John Dingell (D-MI) also offered strongly support for the "mid-course" review.

22. EPA To Propose 'Tier 3' Rule by March According To Agenda

According to newly released documents, the EPA will soon propose standards to cut emissions from fuels and light-duty vehicles despite the agency's reticence to discuss the issue. In the agency's newest regulatory agenda, dated January 20th, the EPA once again identifies its "Tier 3" rule as in the works - now saying the EPA will propose the rule in March and finalize it in October. That's the same final end date the EPA listed in an earlier version of its regulatory agenda last July, when it said it would propose the rule in December 2011.

Despite promises to release the rule, the agency has been mum recently in the face of calls from environmentalists, health advocates, state environment commissioners and others who have grown increasingly impatient, sending a steady stream of letters asking the EPA why it has not proposed the rule. For example, in a January 25th letter, environmental commissioners from Connecticut, Maryland, Massachusetts, New York, Rhode Island, Vermont and the District of Columbia say EPA's modeling shows current rules are insufficient to help those states meet the agency's 2008 ozone standard. They say the new rule will help them meet the limit while also cutting acid rain and toxic air pollution.

The officials say light-duty vehicles are the largest source of NOx in their region, emitting more than 700,000 tons of NOx per year. "Lowering the sulfur content of gasoline to 10 parts per million (ppm), as EPA is considering, would immediately reduce NOx from this sector by more than 25 percent. Over time, the vehicle standards will dramatically reduce harmful pollutants as the Tier 3 vehicles replace older cars and trucks in the fleet," the regulators argue.

"Without Tier 3 and other federal measures, more costly emission reductions will have to be accomplished by controlling local sources in our states beyond what otherwise would be needed, in order to compensate for the foregone national measure," they add.

In a January 11 letter, the Natural Resources Defense Council, Sierra Club, Environmental Defense Fund and Union of Concerned Scientists urge Jackson "to immediately propose Tier 3 emissions and gasoline standards for passenger vehicles and to finalize these protections by the summer of 2012." The groups argue that the implementation of the program would improve public health at minimal cost and also allow manufacturers "to efficiently align technology upgrades with pending fuel efficiency and greenhouse gas emissions standards."

"A timely Tier 3 program is critical to protect human health from transportation sector pollution and one of the single most cost-effective solutions our nation can deploy to help states achieve and maintain healthy air in communities out of compliance with health-based national air quality standards. We cannot afford to delay these vital clean air protections for millions of Americans," the groups say in the letter, noting as well that President Barack Obama in May 2010 "announced his intention to finalize a Tier 3 program by 2012. . . . Proposing this program now will help ensure that the President's commitment is kept."

The Tier 3 rule in part would require the refining industry to cut the amount of sulfur in gasoline to 10 parts per million from 30 ppm. Gasoline sold in California, the European Union and Japan

already achieves that level. The state environment commissioners argue that a 10-ppm level would allow them to meet the ozone standard without imposing additional controls on local businesses and that it would cost less than 1 cent a gallon, even under conservative estimates that would allow an additional profit return for refiners.

But industry groups and some in Congress worry that meeting the lower sulfur limits would be too costly. However, Margo Oge of EPA's Office of Transportation and Air Quality, the office that drafted the proposal is criticizing an industry-backed study predicting high gas price increases and other significant costs, saying the study assesses regulatory options EPA is either not considering or that would be far more stringent than it plans to propose.

Speaking on January 26th at the Washington Auto Show in Washington, DC, Ms. Oge disputed the findings of an oil industry sponsored study by the energy consulting firm Baker & O'Brien, which predicted that the so-called "Tier III" revised fuel and vehicle emissions standards would raise the cost of gasoline as well as close refineries by dramatically lowering the cap on sulfur in fuel and imposing other stringent controls. The study predicted that fuel costs would increase 12 to 25 cents per gallon depending on how strictly EPA proposes to tighten limits in several areas, including Reid Vapor Pressure (RVP), a measure of fuel volatility. The cost prediction also factors in predictions that EPA could ratchet the existing sulfur cap of 30 parts per million (ppm) down to as strict a level as 5 ppm. Based on this misinformation, a bipartisan group of senators has urged EPA to halt the rule in part due to their concern about the potential for the tightened standards to result in gas price increases. But Oge said that the Baker & O'Brien study is based on costs of a program "EPA is not planning to propose," specifically saying that the agency is "not planning to propose" the "very low levels" of RVP assumed in the study.

Oge also criticized the study's assumptions about sulfur limits, saying that it made assumptions about EPA's sulfur cap that are "very different" than what EPA is planning to propose. While the Baker and O'Brien study includes in its strictest sensitivity case a level of 5 ppm, EPA appears to be weighing a 10 ppm limit. A 10 ppm standard would also be consistent with Oge's previous comments on the rule. She told a November 2nd hearing of the House Science Committee's energy panel that an October 2011 National Association of Clean Air Agencies (NACAA) study outlining options for reducing fuel sulfur content is "more close . . . to what EPA is planning to do" with the standards -- the NACAA study finds that a 10 ppm sulfur cap could produce significant reductions in nitrogen oxides and sulfur dioxide at a cost of less than one cent a gallon of fuel.

In the new regulatory agenda, the EPA says the Tier 3 rule is needed because states are working to meet air quality standards for ozone, particulate matter and nitrogen oxide. Without future controls, the agenda said, "by 2014 light-duty vehicles are projected to contribute 25 percent of nationwide mobile-source [nitrogen oxides], 40 percent of nationwide mobile-source [volatile organic compounds] and 10 percent nationwide mobile-source [particulate matter]." EPA added that it has a mandate under 2005 and 2007 energy laws to address potential air pollution caused by renewable fuels. Without the Tier 3 standards, "the sizable population living, working and going to school near roads will continue to be exposed to higher levels of air toxics, which is a current environmental justice and children's health concern," the EPA said.

The rulemaking proposal will include an evaluation of regulatory alternatives, as well as a detailed examination of the "economy-wide cost impacts, emissions reductions and societal benefits," the agency said.

23. Automakers Back EPA Tailpipe Proposal

A coalition of automakers urged U.S. EPA last week to proceed with stricter standards for tailpipe emissions, highlighting a divide within industry over the potential new regulations. Global Automakers -- which includes Ferrari, Honda, Nissan and others -- told EPA the "Tier 3" standards would help the industry by making emission regulations uniform nationwide.

Currently, they said, California has stricter standards, which creates problems for automakers. "We need to harmonize the vehicle criteria emissions programs," Global Automakers President Michael Stanton wrote in a letter for EPA Administrator Lisa Jackson. "Neither automakers nor the agencies have the resources to duplicate efforts." Stanton added that a carmaker "should be required to develop and produce only one version of a vehicle for the U.S. market."

EPA is scheduled to propose rules this year to crack down on tailpipe emissions. Among the most controversial aspects of the regulations is an expected reduction in the amount of sulfur allowed in gasoline -- a move that is expected to result in steep reductions in nitrogen oxide (NOx) emissions.

The rules have created a rift between the oil industry and automakers. The oil industry is strongly pushing back because its members would likely be saddled with the cost of the new regulations. They argue that it would cost companies billions to install new technologies at their refineries. Those costs, industry has said, could result in several refineries closing and gas prices rising by up to 25 cents per gallon.

A 2011 National Association of Clean Air Agencies study concluded that a 10 ppm limit on sulfur in gasoline would cost less than one cent per gallon, and in combination with tighter tailpipe standards reduce vehicle emissions of NOx by 60 percent, carbon monoxide by about 38 percent and other volatile organic compounds by close to a third. Those reductions would result in significant health benefits.

The agency has said it plans to issue a proposed rule by March and final rule by October. EPA is expected to lower the limit on sulfur from 30 parts per million to 10 ppm, which would put it in line with California's standard and satisfy Stanton.

"Gasoline quality improvements, such as reducing sulfur in gasoline to 10 parts per million or lower, will not only assist auto manufacturers in achieving more stringent Tier 3 standards for future vehicles," he wrote, "they will also result in significant emissions reductions from the current fleet."

EPA's current Tier 2 standards date back to 1999.

24. Judge Denies CARB Bid to Stay LCFS Injunction; 9th Circuit Next

On January 23rd, a federal district court judge denied a January 20th request by the California Air Resources Board (CARB) to stay a preliminary injunction of the state's low carbon fuel standard (LCFS) that the judge had issued last month, ruling that the court does not have the authority to issue a stay because CARB has already appealed the ruling to the Ninth Circuit Court of Appeals.

In a January 20th motion for a stay of the injunction, CARB attorneys had cited irreparable harms to California that would result if the LCFS is not reinstated. The LCFS regulation, adopted by CARB in late 2009, requires fuel providers in the state to reduce the carbon intensity of gasoline and diesel 10 percent by the end of 2020.

CARB is challenging the December 29th rulings by district court Judge Lawrence O'Neill of the U.S. District Court for the Eastern District of California that found the board had violated the Commerce Clause when it approved its LCFS, which the judge concluded penalizes out-of-state ethanol blends for additional greenhouse gas (GHG) emissions, in favor of California ethanol blends. The judge also found that the LCFS discriminates based on types of crude oils used in the regulated fuels. O'Neill ordered an injunction halting implementation and enforcement of the LCFS.

For a number of reasons relevant under the Commerce Clause, CARB did not favor California ethanol producers over Midwest competitors, state attorney general's office representatives argue in the January 20 motion filed with the court, in the consolidated cases, Rocky Mountain Farmers Union, et al. v. James Goldstene and National Petrochemical & Refiners Association (NPRA), et al. v. Goldstene.

But O'Neill, in his January 23rd ruling on the CARB motion, says the federal district court "lacks jurisdiction to grant defendants' motion to stay the injunction and judgments pending appeal. Defendants' motion to suspend the preliminary injunction is based on defendants' arguments that they are likely to succeed on the merits of their claims on appeal and that they -- and not plaintiffs -- will experience irreparable harm pending appeal if the preliminary injunction is not stayed. Defendants' arguments are based on issues that this Court resolved in its orders, and are the issues that are currently pending appeal. Thus, Defendants' motion improperly seeks to relitigate issues this Court resolved in its order granting the preliminary injunction and orders on the summary judgment motions."

CARB now turns to the Ninth Circuit Court of Appeals to stay the LCFS injunction, and is expected to file its full appeal soon and request an expedited answer from the court. In addition to claiming O'Neill misapplied the Commerce Clause in the case, CARB attorneys are arguing that California would suffer irreparable harm if the LCFS is shelved, noting that likely millions of tons of GHG emissions would not be reduced in a timely manner and the state would not meet its GHG-reduction targets established under the 2006 global warming solutions law, AB 32. The law calls for the state to reduce its GHG emissions to 1990 levels by the end of 2020.

"Each ton of avoided emissions places California closer to its goals under AB 32 and is a crucial step to prevent the threats of climate change," the CARB motion states. "The lost incremental reductions in emissions from transportation fuels that are being caused by this Court's injunction constitute a real and irreparable injury to California."

25. U.S. CO2 Emissions to Stay Below 2005 Levels as Coal Use Shrinks

U.S. energy-related CO2 emissions will be 7 percent lower than their 2005 level of nearly 6 billion metric tons in 2020 as coal's share of electricity production continues a steady descent over the next two decades, according to new government data. The Energy Information Administration (EIA) recently released an early version of its annual energy outlook, which predicted a slowdown in growth of energy use over the next two decades amid economic recovery and improved energy efficiency.

The report highlights the fact that carbon-intensive coal generation will see a major decline in the power sector in the coming decades, which will ensure energy-related CO2 emissions will not exceed 2005 levels at any point before 2035. The report also showed that emissions per capita would fall an average of 1 percent per year from 2005 to 2035 as the new federal

standards, state renewable energy mandates and higher energy prices would temper the growth of demand for transportation fuels.

"Over the next 25 years, the projected coal share of overall electricity generation falls to 39 percent, well below the 49-percent share seen as recently as 2007, because of slow growth in electricity demand, continued competition from natural gas and renewable plants, and the need to comply with new environmental regulations," it said. The retirement of old, inefficient coal-fired power plants will outpace new construction, and the report added that gas-fired plants - which are cheaper to build - will generate 13 percent more power in 2012 than they did last year.

Meanwhile, the share of electricity generation from renewable fuels is expected to grow from 10 percent in 2010 to 16 percent by 2035, according to the EIA.

The Obama Administration has set a target under the U.N. for the U.S. to reduce its greenhouse gas emissions 17 percent below 2005 levels by 2020. Congress has not passed comprehensive energy and climate change legislation that would help ensure the target is met, but the administration hopes a combination of federal regulations and state emission-reduction programs can achieve the cuts.

The report said that the U.S. will remain an importer of oil while it becomes for the first time a net exporter of natural gas within the next 25 years.

26. 2010 Greenhouse Gas Emissions Data from Large Facilities Now Available

For the first time, comprehensive greenhouse gas (GHG) data reported directly from large facilities and suppliers across the country are now easily accessible to the public through EPA's GHG Reporting Program. The 2010 GHG data includes public information from facilities in nine industry groups that directly emit large quantities of GHGs, as well as suppliers of certain fossil fuels.

"Thanks to strong collaboration and feedback from industry, states and other organizations, today we have a transparent, powerful data resource available to the public," said Gina McCarthy, assistant administrator for EPA's Office of Air and Radiation. "The GHG Reporting Program data provides a critical tool for businesses and other innovators to find cost- and fuel-saving efficiencies that reduce greenhouse gas emissions, and foster technologies to protect public health and the environment."

EPA's online data publication tool allows users to view and sort GHG data for calendar year 2010 from over 6,700 facilities in a variety of ways—including by facility, location, industrial sector, and the type of GHG emitted. This information can be used by communities to identify nearby sources of GHGs, help businesses compare and track emissions, and provide information to state and local governments.

GHG data for direct emitters show that in 2010:

- Power plants were the largest stationary sources of direct emissions with 2,324 million metric tons of carbon dioxide equivalent (mmtCO₂e), followed by petroleum refineries with emissions of 183 mmtCO₂e.

- CO₂ accounted for the largest share of direct GHG emissions with 95 percent, followed by methane with 4 percent, and nitrous oxide and fluorinated gases accounting for the remaining 1 percent.
- 100 facilities each reported emissions over 7 mmtCO₂e, including 96 power plants, two iron and steel mills and two refineries.

Mandated by the FY2008 Consolidated Appropriations Act, EPA launched the GHG Reporting Program in October 2009, requiring the reporting of GHG data from large emission sources across a range of industry sectors, as well as suppliers of products that would emit GHGs if released or combusted. Most reporting entities submitted data for calendar year 2010. However, an additional 12 source categories will begin reporting their 2011 GHG data this year.

27. CNG Vehicle Incentives May No Longer Be Needed Says FedEx CEO

Frederick Smith, CEO of shipping giant Fedex, says federal subsidies for heavy-duty natural gas vehicles, as proposed in legislation introduced last year, are no longer necessary for major fleets to transition to natural gas-powered heavy-duty trucks even as President Obama is calling for some federal encouragement for the sector. The differing approaches suggest continuing hurdles for supporters of the so-called NATGAS Act, a bill that seeks to provide a host of incentives for the natural gas vehicle sector. Rep. John Sullivan (R-OK) introduced the bill, H.R. 1380, last April but it has faced opposition from conservative opponents of government subsidies, among others.

Smith, during a January 24th conference call on a report released by the Energy Security Leadership Council (ESLC) at Securing America's Future Energy (SAFE) -- an influential energy security think tank made up of business leaders and retired military commanders - he co-chairs, said the cost of the large truck engines as well as the natural gas has dropped significantly in recent months in response to exponential growth in shale gas development and the low cost and stability of the natural gas fuel market compared to other fossil fuels.

Smith and other shipping industry officials say that natural gas prices in the U.S. have provided price stability to the fuels market, where other fuels like diesel have not. Because of these recent developments, subsidies like those included in Sullivan's NATGAS Act are no longer needed, said Smith.

ESLC's charter calls for the U.S. to work "to sever oil's dominant relationship with the transportation sector through alternatives like the electrification of the U.S. light-duty vehicle fleet and the use of natural gas to fuel heavy-duty trucks."

While Smith said the sector could advance without subsidies, President Obama's recently announced clean energy agenda includes some new incentives for medium- and heavy-duty natural gas vehicles and related infrastructure. During his January 24th State of the Union address, and during a Jan 26 event at a UPS facility in Las Vegas, Obama vowed to encourage development of the industry as a way to "take advantage" of the booming shale gas sector.

He said policymakers should help local governments upgrade their natural gas vehicle fleets -- much as the federal government has -- and called for tax incentives to help companies purchase more clean trucks.

Obama also vowed to work with the private sector to develop five natural gas refueling corridors along the lines of one that UPS, South Coast Air Quality Management District and Clean Energy Fuels opened on January 26th between Los Angeles and Salt Lake City. The project was funded in part by federal economic stimulus funds. A White House fact sheet says the administration is also launching a competitive grant program to help communities overcome barriers to natural gas vehicle deployment and is also working to develop new ways to convert and store natural gas.

Other policymakers are also seeking to provide incentives for the sector even as FedEx and other shipping companies are stepping up their use of natural gas vehicles. For example, Oklahoma, one of the top five natural gas-producing states, is spearheading a multi-state coalition that would aggregate state vehicle fleets and create a large new market for natural gas-powered passenger vehicles.

But Smith appears to be downplaying the need for such incentives in large part because of the abundant supply of cheap natural gas. "I believe that the economics of the gas itself and the new technologies in these engines makes it feasible to deploy this type of equipment, in lieu of diesel powered vehicles, without subsidies," said Smith, in responding to questions asked by reporters during the call. "But it has taken both of those developments to make that a reality," he said. Smith added that "when the subsidies were being promoted for the natural gas-powered vehicles, the cost of the engines was much, much higher than the projected cost of the [equipment] manufactured now," he said.

Smith said Fedex will begin experimenting with natural gas heavy-duty vehicles in the near future because of the economics. Last year, the company began incorporating more electric vehicles (EVs) into its medium-duty delivery fleet, as well as using more biofuels in its aviation division -- in part due to European climate regulations for the airline industry as well as increased liquid fuel prices and increased availability of EVs.

"So, with the compelling economics of natural gas," said Smith, "I think you'll see a lot of companies like Fedex begin to at least experiment with over-the-road vehicles." He also expects municipal heavy-duty fleets, like garbage trucks and buses, to begin shifting more over to natural gas power.

Other large shippers also see the benefits of natural gas vehicles and are stepping up their purchases of heavy-duty trucks that run on the fuel. Freightliner, for example, which is owned by Daimler, last year announced an expanded line of natural gas heavy-duty truck offerings. Other truck makers and original equipment manufacturers have also begun to shift production to more natural gas-powered drive trains. An official with Cummins says it is developing the natural gas version of its new Hedge Hog engine, "the largest engine we've ever built." The Mack Truck Company, owned by Volvo, is also marketing natural gas truck models in the United States.

28. General Motors Teams with Grid Operator on Renewables

General Motors and PJM Interconnection, the largest transmission operator in the country, are touting a technological development that allows electric vehicles (EVs) to become a demonstrable source of demand for renewable energy -- driving a market for wind and solar generation. The development could be a boon to the Obama administration's efforts to double clean energy generation over 25 years and deploy one million EVs in the next few years.

GM announced the collaboration with PJM on January 23rd at an energy trade conference in Texas. The collaboration would provide real-time pricing data to owners of the GM Volt plug-in EV. "This demonstration shows that in the near future customers will have a real signal of demand for renewable energy," said Nick Pudar, GM vice president for OnStar, the carmaker's in-vehicle telecommunications system that provides the PJM renewable energy data. "As customers configure their Volts to favor renewable energy for their charging cycle, this real demand signal will influence utilities to tap into renewable sources," said Pudar.

"The technology is enabled as OnStar receives a signal from PJM Interconnection that shows the percentage of available renewable energy on the grid," according to a GM statement. "OnStar uses this signal to simultaneously manage the charging of many Volts and to match the renewable energy availability. A mobile app could also be used to alert customers when renewable energy is available."

29. GAO Affirms DOE's Advanced Research Projects (ARPA-E's) Role

The Government Accountability Office (GAO) in a new report on the Department of Energy's Advanced Research Projects Agency-Energy (ARPA-E) concludes that most of the projects the program has funded in a drive to find "breakthrough" clean energy technologies would not have been funded by the private sector, a conclusion that affirms the program's pivotal role at a time when federal budgets are facing intense scrutiny.

Since its beginning in 2009, ARPA-E has awarded \$521.7 million to fund 181 projects "that attempt to make transformational -- rather than incremental -- advances to a variety of energy technologies, including high-energy batteries and renewable fuels," according to the January 24th GAO report, "Department of Energy: Advanced Research Projects Agency-Energy Could Benefit from Information on Applicants' Prior Funding." The report provided the basis for GAO testimony before the House Committee on Science, Space, and Technology's subcommittee on investigations and oversight.

The report assesses "the extent to which ARPA-E-type projects could have been funded through the private sector" and finds, based on interviews with venture capital firms and project funding data, that "most ARPA-E-type projects could not be funded solely by private investors."

Among other factors, venture capital firms generally don't fund projects that rely on "unproven technological concepts" or that "lack working prototypes demonstrating the technology," GAO notes. Looking at ARPA-E data on award winners, GAO concludes that 91 out of 121 ARPA-E projects from the program's first three funding rounds "had technological concepts that had not yet been demonstrated in a laboratory setting."

In its recommendations to ARPA-E, GAO says that the program should "require that applicants provide letters or other forms of documentation from private investors that explain why investors are not willing to fund the projects proposed to ARPA-E" to help ensure that it is not funding projects that might otherwise be funded privately.

30. EPA: Palm Oil Flunks the Climate Test

The Environmental Protection Agency will publish data showing that biofuels made from palm oil won't count towards the nation's renewable fuels mandate because they're not climate-friendly. Environmentalists will welcome the conclusion because the growth of palm oil plantations has driven tropical deforestation in Indonesia and Malaysia.

The national Renewable Fuels Standard (RFS) mandates increasing amounts of renewable energy in the nation's motor fuel mix. A 2007 law that expanded the mandate requires that the fuels have at least 20 percent fewer "lifecycle" greenhouse gas emissions than conventional gasoline and diesel — although most corn ethanol was exempted.

EPA's analysis of the two types of biofuel shows that biodiesel and renewable diesel produced from palm oil have estimated lifecycle greenhouse gas (GHG) emission reductions of 17% and 11% respectively for these biofuels compared to the statutory baseline petroleum-based diesel fuel used in the RFS program. This analysis indicates that both palm oil-based biofuels would fail to qualify as meeting the minimum 20% GHG performance threshold for renewable fuel under the RFS program.

Biofuels opponents argue that forest-clearing to enable production of biofuels crops creates a long-term carbon "debt" that overwhelms any emissions benefits at the tailpipe.

The conclusions that palm-oil-based fuels fare slightly better than traditional fuels but are not good enough to meet the 20 percent requirement stems from EPA's "mid-point" estimate. The EPA notice states that actual emissions may be higher.

From the notice:

A majority of the areas of uncertainty that we have identified, and discussed above, would lead to higher actual lifecycle GHG emissions than estimated in our midpoint results. Some of these areas of uncertainty appear to be fairly likely to result in greater actual emissions and in some cases by a substantial amount. In comparison, we identified a smaller number of uncertainties which could result in less actual emissions, but these factors appear less likely to reduce emissions by an equivalent amount.

31. Obama Administration Rejects Keystone Oil Pipeline

The Obama administration has rejected the Keystone crude oil pipeline project, a decision welcomed by environmental groups but blasted by the domestic energy industry. U.S. President Barack Obama said TransCanada's application for the 1,700-mile (2,740-km) pipeline was denied because the State Department did not have enough time to complete the review process.

"This announcement is not a judgment on the merits of the pipeline, but the arbitrary nature of a deadline that prevented the State Department from gathering the information necessary to approve the project and protect the American people," Obama said in a statement.

With environmental groups concerned about carbon emissions from oil sands production, the administration in November delayed a decision on a presidential permit for the project until 2013. But lawmakers that support the project attached a measure to a tax-cut law passed at the end of last year that set a February deadline for a decision.

32. Court's Stay of EPA's Cross-State Air Rule Roils Regulators, Markets

The federal appellate court decision to stay EPA's Cross-State Air Pollution Rule (CSAPR) for power plants is resulting in significant legal and regulatory uncertainty for states and industry given that the rule's expected emissions cuts are not available to comply with other requirements and some proposed revisions are now in legal limbo. Among other things, many

states were hoping to use expected emissions reductions achieved under CSAPR to craft plans for attaining air quality standards for ozone and fine particulate matter (PM2.5), as well as for revising areas' air quality attainment status.

The court delay of CSAPR has also created significant uncertainty for a host of pending rules, including revisions to emission allowances proposed by EPA, as well as states' revised state implementation plans (SIP) intended to implement CSAPR in 2013. Sources say EPA is still determining if and how to continue implementing these measures in part because it does not want to create the impression that it is implementing CSAPR even though it is stayed.

Some sources also say the court's ruling has roiled emissions trading markets as some players had already made trades for delivery of CSAPR credits in 2012.

In its December 30th order in *EME Homer City Generation L.P. v. EPA*, the U.S. Court of Appeals for the District of Columbia Circuit stayed CSAPR pending a review on the merits, finding that the litigants had met the legal bar to grant such a request. While the order is a win for states and utilities that had called for such a move, the court also set a speedy path to hear arguments in the case -- by April 2012 -- a provision environmentalists and other proponents of the rule are citing to argue that they expect the rule will later be upheld on its merits.

EPA's CSAPR created a set of cap-and-trade programs for power plants in 28 states to reduce nitrogen oxides (NOx) and sulfur dioxide (SO2) that was set to go into effect January 1. During the stay, the DC Circuit ordered that EPA put back into place the Bush EPA's Clean Air Interstate Rule (CAIR), a rule which the DC Circuit remanded in 2008.

While CAIR is also a cap-and-trade program that aims to reduce NOx and SO2, the states covered under the two programs are slightly different, and the agency has said that CSAPR is intended to address many of the failures of CAIR that the court cited when it remanded the Bush-era rule.

EPA faced a host of similar problems when the DC Circuit initially indicated it would vacate CAIR because many states were relying on emissions reductions that rule would have achieved. In that case, one step EPA took was to ask states to reinstate their NOx budget trading programs so that the summertime ozone reduction program known as the NOx SIP call, which was to have been replaced by CAIR, would have been in place for the 2009 ozone season.

33. GM May Cut Volt Output If Sales Falter

General Motors will cut production of its Chevrolet Volt if sales of the plug-in hybrid fall short of estimates in the first half of the year, GM vice chairman Steve Girsky said recently. "It's about matching supply and demand," Girsky said at an auto industry event. "I think it will be May or June before we really know if this thing has legs," he added. "We are prepared for it if it does."

Girsky declined to offer a sales forecast for the Volt in 2012. Last year, sales of the plug-in hybrid fell short of GM's expectations. The largest U.S. automaker sold about 8,000 Volts last year, a little more than half of its annual target.

Slow sales of the Volt would hardly make a dent in GM's overall U.S. sales, which rose 13 percent to 2.5 million last year. Even so, the Volt has become a symbol of GM's effort to transform itself with a focus on fuel-efficiency after the automaker emerged from a U.S.-funded bankruptcy in 2009.

34. Maersk Line Changes Its Dockside Fuel in Virginia

Maersk Line is switching to a less polluting fuel to run its ships docked at the port of Hampton Roads. While berthed to load and unload cargo, Maersk ships will run on auxiliary engines that use low-sulfur marine gas oil, the company said in a statement. The low-sulfur fuel contains up to 95 percent less sulfur than typical marine fuel.

Air emissions from activities at the nation's roughly 360 commercial sea and river ports contribute to air-quality problems in the areas surrounding them, according to a 2009 report by the Environmental Protection Agency.

Maersk Line, the Denmark-based operator of the world's largest shipping line, will be the first ocean carrier to take advantage of incentives offered by the Virginia Port Authority that encourage more environmentally friendly practices. Specifically, it is offering payments to defray the cost of burning low-sulfur marine fuel or using batteries to power ships docked at the port, the authority announced recently. The program starts next month. The incentives are part of an expansion of the Port Authority's "Green Operator" program, which offers financial support to replace older, more polluting trucks that serve mid-Atlantic ports.

"In three years there will be a federal mandate requiring all vessels plying North American waters to burn this low-sulfur fuel," the authority's director of environmental affairs, said in a statement. "This is the beginning of our effort... to help ocean carriers get ahead of that mandate, but we're doing it with an eye on the positive effects for air quality in Hampton Roads."

Through the Port Authority's "fuel-switch" program, Maersk Line will get a \$300,000 subsidy to fund its purchase of low-sulfur fuel for a year. The authority is contributing \$75,000; the state Department of Environmental Quality, \$75,000; and the federal Congestion Mitigation and Air Quality grant program, \$150,000.

The 13-month fuel-switch program will involve 41 Maersk Line vessels scheduled to make more than 210 calls in the port. Norfolk-based Maersk Line Limited, a sister unit of A.P. Moller-Maersk Group, will have 18 ships in the program, the Port Authority said.

The Port Authority also is offering a one-time, \$500,000 incentive to an ocean carrier that allows the installation of a battery-powered system on one of its berthed vessels. The funds would offset the cost of installation.

35. Canada to Fund Shore Power Facilities at Ports

The Canadian government will provide C\$27.2 million (\$27.2 million) to support the installation of shore power facilities at ports to reduce emissions of air pollutants and greenhouse gases, the Transport, Infrastructure, and Communities Minister said January 25th. The initiative will install leading-edge technology allowing ships to connect to an electrical power supply rather than running their diesel engines while docked, he said in a prepared statement. The program expands on a Transport Canada demonstration project, scheduled to end in March that provided C\$2 million to support shore power for cruise ships in Vancouver and C\$1.8 million to support shore power for container ships in Prince Rupert, British Columbia. Funding will be allocated to port authorities and private operators of ports and terminals, including foreign-owned entities, based on responses to a call for proposals to be issued this spring.

36. EPA To Allow Nonconformance Penalties for Non-Conforming Engines

The Environmental Protection Agency is proposing to allow manufacturers to pay nonconformance penalties to produce certain diesel engines that exceed nitrogen oxide limits, according to a proposed rule published on January 31st in the Federal Register. Under the program, EPA would issue certificates of conformity for heavy-duty diesel engines for model years 2012 and later in both the medium and heavy weight classes that do not meet the emissions standard of 0.20 gram of nitrogen oxides per horsepower-hour, as long as the emissions do not exceed 0.50 gram per horsepower-hour.

The penalties are meant to alleviate concerns that manufacturers would be forced out of the marketplace if they cannot meet strict emissions standards, EPA said.

The agency has been issuing nonconformance penalty regulations since 1985, and it issued the rules pursuant to Section 206(g) of the Clean Air Act. EPA can make a nonconformance penalty available for a given model year if a manufacturer meets three criteria: the emissions standard has become more difficult to meet; substantial work is required to meet the emissions standard; and a manufacturer is noncompliant because of technological reasons. For model year 2012 and later, EPA has determined the three criteria apply to the manufacturers of heavy-duty diesel engines in the medium and heavy weight classes.

The penalties are based partly on money that nonconforming manufacturers save during production, which ensures that conforming manufacturers are not at a competitive disadvantage, EPA said.

The penalties vary by pollutant and class or category of vehicles or engines. EPA specified that the proposed rule does not apply to the so-called light heavy-duty diesel nitrogen oxides standard; heavy-duty gasoline engine standards; heavy-duty diesel engine non-methane hydrocarbon, carbon monoxide, and particulate matter standards; and heavy-duty carbon dioxide standards.

Also on January 31st, EPA published an interim final rule that would allow an unidentified manufacturer to pay nonconformance penalties to produce model year 2012 and 2013 so-called heavy heavy-duty diesel engines that exceed nitrogen oxide limits. That rule is effective immediately and is expected to apply to one manufacturer that is running out of emissions credits, according to the agency. EPA said it issued an interim final rule without a prior proposal because a notice-and-comment rulemaking would take several months, during which time the manufacturer likely would run out of emissions credits.

37. Study Reveals Southern Californians at Risk Due To Air Pollution

A new environmental study reveals that people living in Southern California and the Midwest are most at risk of death due to air pollution than any other place in the United States. According to a report by the US Environmental Protection Agency published on the Risk Analysis Journal, it states, "Southern California is estimated to experience the largest percentage of total mortality attributable to fine particulate matter across all ages, while the greatest percentage of mortality attributable to ozone is the highest in the industrial Midwest."

The study was done to highlight "the size and location of public health risks associated with recent levels of fine particles and ozone, allowing decision-makers to better target air quality policies," the EPA said in a statement.

Though Southern Californians are most at risk, the EPA said there are important air quality management programs set to be implemented in the near future that will improve the air quality in California and across the United States. “US EPA projections of future air quality indicate that overall ambient levels of fine particulate matter (PM2.5) and ozone will decline significantly compared to those levels estimated here,” the EPA wrote.

38. Refiners Say Vehicle GHG Proposal Is ‘Unlawful’

US refiners and manufacturers signaled they may take the Environmental Protection Agency (EPA) to court if it finalizes a proposal for fuel economy and greenhouse gas (GHG) emissions standards for model year 2017-2025 cars and trucks. In comments filed on the proposal, industry groups said they believe it would be “unlawful” for EPA to finalize the proposal, which calls for increasing the fuel economy and GHG standards to an equivalent of 54.5 miles per gallon by 2025, unless the agency backs off its position that regulating GHG emissions from automobiles triggers similar requirements for industrial sources such as refineries and factories. EPA used that interpretation of the Clean Air Act to require GHG limits in permits for new sources starting in January 2011, after model year 2012-2016 GHG standards took effect.

But that position is “is inconsistent with the” Clean Air Act, the groups said in their comments. The comments were filed jointly by the American Petroleum Institute (API), American Fuel & Petrochemical Manufacturers and National Association of Manufacturers.

Many of the issues the groups raised will be considered by a federal appeals court later this month when it hears oral arguments in numerous lawsuits against EPA's endangerment finding for GHG emissions, its tailoring rule for air permits and the 2012-2016 vehicle rule. (See below)

EPA and the Department of Transportation issued a joint proposal in November that calls for setting a corporate average fuel economy standard of 49.6 miles per gallon and a tailpipe emissions limit of 163g CO₂/mile by 2025. The CO₂ limit is equivalent to 54.5mpg if met entirely through fuel economy limits, but the proposal allows for partial compliance through other measures such as improvements in air conditioning technology.

The auto industry generally supports the new fuel economy and GHG proposal, though it also asked EPA to tweak its proposal. The Alliance of Auto Manufacturers said it is concerned the proposal leaves open the possibility that automakers may have to account for upstream emissions from electricity generation to power electric vehicles, unless Congress passes legislation regulating utility GHG emissions. “In other words, automakers may now be called on to not only make an unprecedented investment into vehicles with lower GHG emissions, but to also fill the void between this rulemaking and a comprehensive national energy policy,” the alliance said.

API, in separate comments it filed on its own, said it supports adding upstream emissions to the automakers' compliance obligations. Ignoring “significant” upstream emissions “defies principles of transparency and sound science and distorts the market for developing transportation fuel alternatives,” API said.

39. Court Says It Cannot Review White House Decision to Delay Smog Rule

The American Lung Association, Natural Resources Defense Council and other groups filed the lawsuit challenging the delay, arguing that EPA failed to protect public health by failing to issue

a tighter rule. Those groups also are plaintiffs in the challenge to the 2008 Bush-era rule, arguing it is too lax and not in line with recommendations from the agency's science advisers. Industry groups and states also are challenging the Bush rule, saying it inappropriately tightened a smog standard that had last been updated in 1997.

The decision is the latest development in a long-running dispute over where the US Environmental Protection Agency should set its national ambient air quality standard for ground-level ozone, the main ingredient in smog.

The Clean Air Act requires air quality standards to be reviewed and updated if needed at least every five years, but at the outset of the Obama administration, EPA Administrator Lisa Jackson ordered her staff to begin preparing a new ozone rule, siding with environmentalists who said the Bush standard was too weak. President Barack Obama halted that work in September, after months of intensive lobbying from utilities, oil companies and others who worried that a tougher standard would harm the economy. The White House told EPA to promulgate a new standard as part of its normal, five-year review in 2013.

40. Crude Oil Costs, Taxes Still Key Gasoline Price Components, Says API

Crude oil costs and taxes are still bigger influences than refinery production and product exports in gasoline price increases, American Petroleum Institute Chief Economist John C. Felmy said. "Together, they account for over \$3, or about 84%, of what people are paying at the pump today," he told reporters. "Talk about refinery production and exports is a misleading distraction."

Continued strong refined product output and consumer conservation measures are the best short-term responses to higher motor fuel prices, but the most effective longer-term strategy would be to produce more crude oil domestically, Felmy maintained.

"The [Obama] administration understands that the rise in crude oil prices is driving gasoline price increases, but it hasn't responded with favorable policies," he said. "It has consistently held back oil and gas development onshore and offshore, and refused to approve the Keystone XL pipeline's permit. We think Americans understand that producing more oil at home will improve our situation, and we're encouraging them to express this as they vote later this year."

Felmy's Feb. 22 teleconference came a day after the US Energy Information Administration reported that US retail regular gasoline prices averaged \$3.59/gal, 40¢ more than a year earlier, and the nationwide diesel fuel average price was \$3.96/gal, 39¢ higher year-to-year. Prices were highest on the West Coast, driven by California specifications, followed by the East Coast than along the Gulf Coast and in the Midwest and Rocky Mountains.

Rising gasoline prices also have grown more political. "I am extremely concerned by recent reports that oil and gasoline prices continue to rise, and gas could reach an average of \$4.25/gal by April," Virginia Gov. Robert F. McDonnell (R) said on Feb. 21. "Even more than that, I am concerned that the Obama administration's ongoing lack of a comprehensive energy policy leaves us vulnerable to continued future energy price spikes and uncertainty in this critical area."

Citing antitrust concerns, Felmy declined to make any forecasts. He noted, however, that US refiners' average acquisition costs have been driven more in recent months by Brent crude prices than those for West Texas Intermediate. Efforts also are under way to address a pipeline bottleneck at Cushing, Okla., which is limiting the flow of crude from Canada to US Gulf Coast refineries, he said.

Felmy said he was encouraged by the Obama administration's Feb. 20 Gulf of Mexico transboundary agreement with Mexico, but added that it also should immediately approve the Keystone XL pipeline project's permit, which would add another 700,000 b/d of supplies, and move forward with a more aggressive 5-year US Outer Continental Shelf program for 2012-17.

"If it showed that it was serious about increasing domestic supplies, markets would take notice," he suggested. "At a minimum, it would encourage producers and provide more revenue for federal, state, and local governments."

41. Mexican Bill Would Boost Agency Powers to Enforce Policies on Climate Change

Mexico's Secretariat of the Environment and Natural Resources (Semarnat) would have full responsibility for managing the country's climate change policies under a bill pending in the Chamber of Deputies, or lower house, according to agency Sub secretary Fernando Tudela. He said that the Chamber of Deputies is expected to approve the bill soon. The Senate approved the measure in December.

While Semarnat has been coordinating climate change policy for a few years, the bill would strengthen the agency's power to enforce policies, Tudela said. "Without the law we had limitations," Tudela said. "We could establish policy goals but these were more voluntary and did not apply to the whole country. Now we can obligate the private sector or individual corporations to follow our directions to ensure our goals can be met." Semarnat would be able to issue sanctions under the new law, according to Tudela.

The measure also would ensure that Semarnat's climate change policies would remain in place after elections this summer, he said. "If the next administration doesn't show as much interest in climate change, we will still be able to pursue our goals. In other words, our work will continue uninterrupted," he said.

Under the bill, Semarnat would have three main tasks: to coordinate all governmental agency programs to fight climate change, to oversee the National Institute of the Environment's climate change research efforts, and to negotiate for Mexico in international meetings.

One agency initiative to reduce greenhouse gas emissions is the Secretariat of Energy (SENER) program to replace incandescent light bulbs with more efficient ones, with a target to exchange 40 million bulbs by 2015. Another SENER program encourages consumers to swap older appliances for ones that consume less electricity by financing up to 50 percent of a new appliance purchase, depending on household income.

"Our job is to make sure these different agencies are meeting their campaign goals," Tudela said, adding that Semarnat meets with them every two months to track their progress. "We are also using nongovernmental agencies to carry out independent verifications. We need to know if the measures are being implemented, to what extent, and if they are being efficient or not."

Mexico has set a goal to reduce its carbon dioxide emissions 30 percent by 2020 compared to business-as-usual levels.

Tudela said renewable energy development will continue to be managed by the Secretariat of Energy.

42. U.S. Army Unveils World's First Military Fleet of Fuel Cell Vehicles

The U.S. Army has unveiled a fleet of 16 hydrogen fuel cell vehicles that the military services in Hawaii are testing in an effort to research efficient, clean and renewable energy sources and reduce the U.S. military's dependence on petroleum. "The Army continues to investigate technologies and partnerships that give the United States a decisive advantage," said Lt. Gen. Francis J. Wiercinski, commanding general of U.S. Army, Pacific. "These fuel cell vehicles will move the U.S. Army in the Pacific toward a sustainable path that reduces energy security challenges and strengthens our energy independence."

During a February 22nd ceremony, officials from the services comprising U.S. Army, Pacific, U.S. Pacific Fleet, U.S. Pacific Air Forces and U.S. Marine Corps. forces, Pacific – government leaders including U.S. Sen. Daniel Inouye, Lt. Gov. Brian Schatz and Honolulu Mayor Peter Carlisle, and industry partners demonstrated the use of the 16 General Motors hydrogen fuel cell vehicles.

The zero-emission vehicles, funded by the U.S. Army Tank Automotive Research, Development and Engineering Center (TARDEC), Office of Naval Research and Air Force Research Laboratories, are being tested in Hawaii's ideal climate for real-world conditions reflecting each service's needs.

The military fleet of hydrogen fuel cell vehicles serves as the test platform powered by renewable hydrogen. Each vehicle travels up to 200 miles on a single tank, refuels in five minutes and produces only water as emissions.

The Army actively seeks and supports industry partnerships to increase compatible renewable energy development. Fielding of military fuel cell vehicles with the Army, Navy, Air Force and Marines is the latest effort of the Hawaii Hydrogen Initiative, a partnership among 13 agencies, companies and universities.

43. Canada Pleased With EU Vote, Will Defend Oil Sands

Canada hailed the European Union's failure to classify tar sands crude as particularly dirty, but Ottawa made it clear it would take trade action if the EU did end up singling out Canadian oil. A meeting of EU technical experts failed to approve a proposal to label fuel from Alberta's vast tar sands as more polluting than other sources of crude. Canada had campaigned against the idea, saying it was unjustified and could help discriminate against its oil.

"We're very pleased. This was certainly a resounding win ... it was a victory for science and good policy," Natural Resources Minister Joe Oliver told reporters. Oliver said Ottawa would maintain its lobbying efforts against the so-called Fuel Quality Directive (FQD) on the grounds that "I don't think we can take anything for granted". European ministers are expected to make a decision on in June.

Canada has stressed in the past that it is ready to take its case to the World Trade Organization if necessary. Under the FQD, fuel classified as being dirty would cost more to import.

"I think some (EU nations) were clearly worried about the impact of this directive on their own costs and on their own companies, who are invested in a variety of countries, including Canada, with a number of them having invested tens of billions of dollars in the oil sands," said Oliver. Big European firms with stakes in the oil sands include Royal Dutch Shell and Total of France.

The FQD is designed to cut the carbon intensity of transport fuels by 6 percent by 2020 as part of the EU's wider goals to cut carbon emissions by 20 percent by 2020.

ASIA-PACIFIC

44. Guangdong to Cut Carbon Intensity 19.5 Percent by 2015, 45 Percent by 2020

Guangdong province in southern China plans to cut its carbon intensity 19.5 percent from 2005 levels by the end of 2015, the official newspaper of the Communist Party of Guangdong reported on January 11th. The National Development and Reform Commission (NDRC), the country's top planning body, has approved the low-carbon development blueprint for the province, which will soon begin implementing the plan, Guangdong Development and Reform Commission Deputy Director Lu Xiulu said in the Nanfang Daily report. By 2020, the province hopes to reduce its carbon intensity by 45 percent compared to 2005 levels, according to the report.

Guangdong is the first of five provinces and eight cities chosen to pilot low-carbon development in the 12th Five-Year Plan period (2011–2015) to have its draft plans approved by NDRC.

Guangdong is China's most populous province and has a GDP comparable to that of Indonesia. The province will also aim to have 20 percent of its consumed energy come from non-fossil fuel sources by 2015, Lu said.

To achieve these goals, the province will put controls on greenhouse gas emissions in certain industries and establish carbon market mechanisms, the report said. Guangzhou, the capital of the province, has set up an emissions exchange that could begin pilot trading by the end of the 12th Five-Year Plan, recent state media reports have suggested.

Shenzhen, a major city in Guangdong near Hong Kong, is one of the eight pilot low-carbon cities and has set up an emissions exchange, though trades have so far been only trials and the city has yet to announce that its plans have been approved by NDRC.

Further measures, such as the promotion of low-carbon industries, restructuring industry (which includes moving high-polluting companies out of a province), improving energy efficiency, and developing cleaner transportation networks are part of the Guangdong plan, though details have not been announced.

As part of the Guangdong provincial pilot, the cities of Guangzhou, Zhuhai, Heyuan, and Jiangmen and districts of the cities of Foshan, Shunde, Meizhou, and Xingning have been designated low-carbon areas, the Guangdong DRC said on November 29, 2011. Four other counties have been selected for certain low-carbon pilot projects. All of these areas are expected to craft low-carbon pilot plans for submission to the Guangdong DRC, according to the commission's website.

Other areas that expect to have pilot plans approved by NDRC in the coming months include the provinces of Liaoning, Hubei, Shaanxi, and Yunnan provinces; the state-level municipalities of Tianjin and Chongqing; and the cities of Xiamen, Hangzhou, Nanchang, Guiyang, and Baoding.

45. China's Proposed Carbon Tax Less Ambitious Than Previously Predicted

A carbon tax of 10 Yuan (\$1.58) per metric ton under consideration by China's Ministry of Finance is lower than previously floated amounts in part because of economic pressures, according to analysts. The proposal would target emissions from companies that use large amounts of coal, crude oil, or natural gas. It was drafted by the National Development and Reform Commission's Energy Research Institute and the Institute of Fiscal Science at the Ministry of Finance. It has been submitted to the ministry for approval and could be implemented toward the end of the current 12th Five-Year Plan (2011–2015) period, a newspaper owned by the state-run Xinhua news agency reported on January 5th.

Su Ming, deputy director of the Institute of Fiscal Science, told the newspaper, Economic Information Daily, that the tax would be “gradually increased” after its introduction.

In May 2010, the newspaper reported that Ministry of Finance officials envisioned a carbon tax of 20 Yuan (\$3.17) per metric ton to be imposed by the end of 2012, increasing to about 50 Yuan (\$7.91) by 2020. It now appears that the introduction has been delayed and scale of the tax dramatically reduced.

According to a report on January 5th from the state-run newspaper China Daily, the Ministry of Environmental Protection has been pushing for the tax to start at 20 Yuan.

46. Seven Carbon Trading Tests to Inform Choice for China's Nationwide System

China's top planning body has approved the establishment of varied pilot carbon emissions trading platforms for seven geographical areas to help it determine which model can work best nationally. Beijing, Tianjin, Shanghai, and Chongqing—China's four state-level municipalities, which function almost as provinces—the provinces of Guangdong and Hubei, and the southern city of Shenzhen will start hiring employees, arranging funding, and ironing out details for managing regional trading, the National Development and Reform Commission (NDRC) said on its website on January 13th.

The localities also are tasked with “measuring and determining the area for greenhouse gas emission control targets” and setting rules for supervision and registration systems, NDRC said.

The state-run Xinhua news agency reported on January 16th that basic models for the pilot trading systems will be established by the end of 2012. Australian, European, and Japanese models are being studied to determine the best course of action for the individual markets, it said. NDRC officials said the pilots will be required to start trading by the end of 2013, according to Xinhua.

One option is a fixed price for carbon during a first phase and a carbon market-determined price in a later phase, or combination of these depending on the locality, the report said.

Xinhua reported January 5 that a carbon tax of about 10 Yuan (\$1.58) per metric ton of carbon dioxide emissions could be set nationally by the end of the 12th Five-Year Plan (2011-2015). (See above.)

Yang Fuqiang, senior adviser on energy, environment, and climate change at the Natural Resources Defense Council in Beijing, expressed some caution about thinking that carbon markets would be established quickly in China and wondered if the pilot projects' varied

approaches would create more confusion than clarity if the national government does not set standards and regulations for them. Yang predicted that any trading system in China would need at least five years and possibly 10 to function properly.

"China's legal system is not ready yet," Yang said. "We have to have strong trading rules, regulations, and policy." This includes establishing reliable methodologies, emissions inventories, and enforceable trading rules and regulations, he said, as well as eventual third-party involvement.

Li Yuqi, director and chief engineer of the Demand Side Management Center of the Natural Resources Defense Council in Beijing, said China tends to set up pilot projects as a way of introducing a new policy and then to scale them up by introducing laws and implementing regulations on a broader scale. "The purpose of such pilots is to get a sense of the lessons learned and help to popularize the concepts," Li said.

All the selected localities already have set up fledgling trading platforms that have engaged in trial trades of a variety of emissions. All are part of the five-province, eight-city, low-carbon pilot program outlined under the national 12th Five-Year Plan blueprint.

China has set a goal to reduce its carbon intensity, or emissions per unit of gross domestic product, by 17 percent by 2015 and 40 percent to 45 percent by 2020, based on 2005 levels. The pilot trading systems are seen as a way to reach those goals.

Besides the seven official pilot projects, there are more than 100 entities across the country trying to establish their own regional CO₂ emissions trading platforms, including the coal-rich province of Shaanxi and the northeast port city of Dalian.

47. Beijing Begins Measuring and Disclosing PM_{2.5}

Beijing has begun disclosing the amount of tiny pollution particles in the air, in a move that could improve disclosure but alarm a public barely resigned to the capital's choking smog. The new measurement of particles of 2.5 micrometers or less in diameter, or PM_{2.5}, comes after growing attention to air quality in Beijing, one of the world's most heavily polluted capitals, from Chinese as well as foreigners.

"So that the people can form a relatively complete understanding of the Beijing air quality, the Beijing Municipal Environmental Monitoring Center will publish hourly 2.5 data from January 21," the center said on its website.

On Saturday, a clear crisp day that contrasted with the thick smog earlier in the week, the Beijing Center reported between 0.003 micrograms - 0.062 micrograms per cubic meter of PM_{2.5} particles in the air, Xinhua said. The data will be collected from a monitoring station in the Chegongzhuang area of the second ring road, which encircles the center city, the Xinhua news agency said. Chinese experts had earlier criticized as "unscientific" a single monitoring point on the roof of the U.S. Embassy, which releases hourly air quality data via a widely followed Twitter feed.

China previously disclosed readings only of pollutant particles that are 10 micrometers in diameter or larger. Doctors warn that the tiny floating PM_{2.5} particles can settle in the lungs more easily and cause respiratory problems and other illnesses.

Earlier in the week, the U.S. Embassy labeled the air pollution in Beijing as hazardous after its PM_{2.5} reading topped its maximum reading of 500 micrograms per cubic meter. A reading of 250 or above over a 24-hour period is hazardous, according to the U.S. Environmental Protection Agency.

Environment Minister Zhou Shengxian said in December that China would begin nationwide collecting of PM_{2.5}

48. China IV Diesel Emissions Legislation Further Delayed

January 1, 2012 marks the official implementation date for tougher heavy-duty diesel emissions legislation in China. According to the country's Ministry of Environmental Protection (MEP) the emission standard China IV (equivalent to Euro IV) should be applied to all heavy-duty diesel vehicles from this month onwards. However, the deadline will be delayed again.

This is not the first time that Chinese emissions legislation has been delayed. China III (equivalent to Euro III) was implemented in January 2008, applying to all heavy-duty trucks. The next step, China IV, was supposed to follow in January 2010 for new vehicle types and one year later in January 2011 for all vehicles. By last January it became clear that the legislation had to be delayed. In a response to a request by the China's Association of Automobile Manufacturers (CAAM), the MEP consequently announced a delay of one year and set the new implementation date for January 2012. Now it seems likely that a further delay will occur.

Delays in the implementation of emissions legislation are not unique to China. Other countries such as Brazil and Russia have all seen similar delays. The reason for the delay in each case is a recurring theme: the lack of low sulfur fuel. The successful implementation of advanced diesel aftertreatment technologies relies on the availability of low sulfur diesel.

China is no exception in this matter. It was originally agreed that 350 ppm sulfur diesel should be made available nationwide in 2010. However, implementation of low sulfur fuel was delayed until summer 2011. Six months later 350ppm is still not available nationwide.

The problem is not technical. Chinese refining companies are currently able to produce low sulfur fuel. Some refineries are already producing diesel with 50ppm of sulfur for cities such as Beijing and Shanghai. The main issue lies with the costs associated to the upgrade of diesel refineries and the distribution of this type of diesel. Diesel prices in China are still regulated by the state. Introducing 350ppm nationwide would require an increase in diesel prices or similar financial incentives to match the costs to the manufacturers.

In a communication of the Chinese State Council published in October last year a preferential tax treatment for companies producing low sulfur fuel was suggested. Such measures could provide an incentive to the major fuel companies such as Sinopec and CNPC to produce and market lower sulfur diesel. The question now remains as to when such measures will come into force and 350ppm diesel will ultimately become available nationwide. The Chinese government has set a new target of July 2013 but there has been no assurance that the required fuel will be available at that time. Thus the new implementation date of China IV remains unclear.

49. Chinese Manufacturer to Pay \$680,000 Penalty for CAA Violations

The U.S. Environmental Protection Agency (EPA) announced a settlement with recreational vehicle manufacturers, Loncin (USA), Inc., Longting USA LLC, and Chongqing Longting Power

Equipment Co., Ltd., to resolve violations of the Clean Air Act (CAA) related to the importation of 7,115 uncertified recreational vehicles into the United States. Engines that are not certified may be operating without proper emissions controls, which can emit emissions and cause respiratory illnesses, aggravate asthma and contribute to the formation of ground level ozone, or smog.

“EPA is committed to enforcing vehicle emission standards under the Clean Air Act,” said Cynthia Giles, assistant administrator for EPA’s Office of Enforcement and Compliance Assurance. “By taking action to deter the importation and sale of non-compliant engines, EPA is ensuring a level playing field for manufacturers and protecting Americans from illegal air emissions.”

EPA alleges that Loncin (USA), Inc. and Longting USA LLC held certificates of conformity that were voided by EPA following an investigation of MotorScience, Inc., a California-based certification services consulting firm that allegedly used false or incomplete information to certify vehicles under the Clean Air Act for four of its clients, including Loncin. The certificates allowed the importation and sale of more than 24,000 recreational vehicles in the U.S. that did not meet Clean Air Act standards. More than 7,000 of these vehicles were manufactured by Chongqing Longting Power Equipment Co., Ltd. and imported by companies such as The Pep Boys – Manny, Moe & Jack, Baja, Inc., and BMS Motorsports, Inc.

The Clean Air Act prohibits any vehicle or engine from being imported and sold in the United States unless it is covered by a valid, EPA-issued certificate of conformity indicating that the vehicle or engine meets applicable federal emission standards. The certificate of conformity is the primary way EPA ensures that imported vehicles and engines meet emission standards. This enforcement action is part of an ongoing effort by EPA to ensure that all imported vehicles and equipment comply with the Clean Air Act’s requirements.

Loncin (USA), Inc. and its affiliates have cooperated with EPA in this settlement.

50. Hong Kong to Tackle Air Pollution with Cleaner Buses, Taxis

Cleaner air tops the agenda for Hong Kong as the government aims to introduce or strengthen policies to reduce roadside air pollution and possibly move forward on setting long-awaited air quality objectives. The government also is considering ways to improve energy efficiency and manage electricity demand in an attempt to lower greenhouse gas emissions.

In a 2011-2012 policy address delivered in October, Donald Tsang, chief executive of the Hong Kong Special Administrative Region, said improving air quality tops the environmental agenda for 2012. He outlined initiatives to achieve that goal.

The main thrust is to reduce pollutant emissions from buses and taxis. The government plans to make \$23 million available to help bus companies to purchase 36 electric buses. It also plans to provide \$19 million to help replace catalytic convertors in liquefied petroleum gas (LPG) taxis and small buses, and to install remote sensing equipment and emissions tests to gather data for controlling emissions from such vehicles.

The government has been conducting trials on retrofitting public buses that meet Euro II and Euro III emission standards with nitrogen oxide emission reduction technology. All such buses will be retrofitted if results are positive, according to Tsang. If the electric bus trial program is successful, the government plans to explore ways to adopt such buses on a wider scale, he said.

Hong Kong has been updating its Air Quality Objectives (AQOs) over the past two years to bring them closer to World Health Organization standards, though environmental groups say the government has been dragging its heels on releasing the new objectives. Tsang said the government plans to submit its final recommendations to the Legislative Council by midsummer. But, as in mainland China, a new government will be taking over in the middle of the year after elections, meaning new initiatives might be delayed during the transition.

Along with Guangdong province in mainland China, the mainland city of Shenzhen, and neighboring Macau Special Administrative Region, Hong Kong is considering lower-sulfur-content standards for fuels used in marine vessels in regional waters, though an established Emission Control Area under the International Maritime Organization is likely five to 10 years away.

The Hong Kong government is seeking public comment on ways to improve energy efficiency and manage electricity demand so it can reduce carbon intensity—or emissions per unit of production—by 50 percent to 60 percent by 2020 compared to 2005 levels, Tsang said.

51. Hong Kong Air Pollution at Worst Levels Ever: Report

Air pollution levels in Hong Kong were the worst ever last year, the South China Morning Post reported recently, a finding that may further undermine the city's role as an Asian financial center as business executives relocate because of health concerns. Worsening air quality in Hong Kong caused by vehicle emissions and industrial pollution from the neighboring Pearl River Delta is reportedly already forcing many in the financial community to move to Singapore.

Readings at three roadside monitoring stations in Hong Kong's Central, Causeway Bay and Mong Kok commercial districts showed that pollution levels were above the 100 mark more than 20 percent of the time, the newspaper said, citing the city's Environmental Protection Department. This was 10 times worse than in 2005, when very high readings were recorded only 2 percent of the time, it said. The station in Central business district, home to the Asia headquarters of global banks such as HSBC Holdings Plc and Goldman Sachs Group Inc, showed the worst figures, with excessive readings a quarter of the time, the report said.

Hourly readings are taken at the roadside stations throughout the year on major pollutants such as respirable suspended particles and nitrogen oxides. A reading above 100 means at least one pollutant fails air quality objectives.

The department blamed the figures on unfavorable weather conditions, worsening background pollution and the number of ageing vehicles on streets.

The newspaper quoted the government as saying a number of measures were being considered to help improve air quality, and new air quality objectives would be discussed by Hong Kong's legislature soon.

52. Clean Air Targets Disappointing in Hong Kong, Say Environmentalists

Hong Kong pollution targets will be revised for the first time since 1987 according to authorities, but critics say the government's approach to clean air is still disappointing. More than 20 measures were endorsed by the Legislative Council recently, aimed at improving air quality in

one of the world's most polluted cities, home to 7 million people. The targets are set to be implemented no earlier than 2014.

Secretary for the Environment Edward Yau Tang-wah said there was an urgent need to update air quality objectives, which had not changed in 25 years.

Last week the Environmental Agency reported that road-side pollution levels were the highest on record, believed to be fuelled by diesel vehicle emissions and industrial pollution from factories.

For the first time, the air quality standards will include a measure of airborne particles smaller than 2.5 microns in diameter (PM_{2.5}), which are more harmful than larger particles as they can penetrate deep into people's lungs, reports the South China Morning Post.

A total of 22 measures are to be implemented, including phasing out heavily polluting vehicles, promoting hybrid or electric vehicles, and increasing the use of natural gas.

Hong Kong has struggled to improve air quality for decades and blames neighboring Mainland China for part of its smog problem. The government admits that the new guidelines fall short of the World Health Organization (WHO) requirements, but argues that the global targets are unachievable. "But we have to understand that the ultimate WHO guidelines are a distant target. Even the European Union cannot fully adopt all of them," Yau said, according to South China Morning Post. "Given the surrounding environment of Hong Kong, we cannot set a goal that is unachievable."

53. China Tests 500 KPH Super High-Speed Train

China recently launched a super-rapid test train which is capable of travelling 500 kilometers per hour, state media announced, as the country moves ahead with its railway ambitions despite serious problems on its high-speed network. The train, made by a subsidiary of CSR Corp Ltd, China's largest train maker, is designed to resemble an ancient Chinese sword, the official Xinhua news agency reported. It "will provide useful reference for current high-speed railway operations," it quoted train expert Shen Zhiyun as saying.

But future Chinese trains will not necessarily run at such high speeds, CSR chairman Zhao Xiaogang told the Beijing Morning News. "We aim to ensure the safety of trains operation," he said.

China's railway industry has had a tough year, highlighted by a collision between two high-speed trains in July which killed at least 40 people. Construction of new high-speed trains in China has since been a near halt.

54. Diesel Cars Could Burn Bigger Holes in India's Pockets

The finance ministry is considering raising the excise duty on diesel cars in Budget 2012-13. "There is a proposal to increase the duty on diesel cars. We are looking into it," said a finance ministry official.

While the overall automobile market has not been witnessing its once robust growth since mid-2011, the demand for diesel-run cars has surged. In fact, buyers are increasingly ready for waiting periods running into months, as the gap between petrol and diesel prices has widened.

Diesel cars now constitute nearly 40 per cent of car sales, compared with less than 20 per cent a few years ago.

Car sales by market leader Maruti Suzuki, which focuses mainly on petrol variants, fell about 16 per cent in the first nine months of the financial year. On the other hand, Mahindra & Mahindra, which only makes diesel vehicles, and Tata Motors, which predominantly makes diesel cars, have seen strong growth.

Several companies are awaiting a clear picture on the excise duty before finalizing plans to invest more in diesel capacity. "In the absence of any clear policy, we are in a dilemma," news agency Reuters quoted Mayank Pareek, head of sales and marketing of Maruti Suzuki, as saying. Slackening demand compelled Maruti to reduce production of petrol models in August, while there is a waiting period of several months for its diesel vehicles.

However, some companies are trying to be flexible in their plant usage, depending on the requirement for petrol or diesel variants. For example, the Chennai plant of Nissan Motor Co has this option. A Nissan official said recently the plant could be suitably molded to offer diesel or petrol versions.

The government is looking at various options to increase its tax proceeds in the light of a higher expenditure on subsidies, the expected burden of the proposed food security law and moderating economic growth.

At present, the government levies 10 per cent excise duty on small cars and 22 per cent plus Rs 15,000 on big cars, whether on petrol or diesel. However, there is a difference in the definition of small and large cars run on petrol and diesel for the purpose of excise duty. The government will have to decide the manner in which a higher duty on cars running on subsidized fuel could be passed to the oil marketing companies, suffering from a hit in profitability because of high crude oil prices.

In the last 15 years, with the exception of 1996-97 and 2004-05, petrol consumption growth has been more than diesel. But, in April-November 2011, diesel growth stood at 7.4 per cent, as against petrol growth of 4.3 per cent.

The ministry may create a new rate slab for increasing the duty on diesel cars or add a specific amount over and above the duty. The industry is against a specific amount, as it may lead to distortions. There is also an option to levy surcharge.

55. Toyota Reportedly Finds Way to Avoid Using Rare Earths

Toyota Motor Corp has developed a way to make hybrid and electric vehicles without the use of expensive rare earth metals, in which China has a near-monopoly, Japan's Kyodo News reported. Toyota, the world's top producer of fuel-saving hybrid cars such as the Prius, could bring the technology to market in two years if the price of rare earths does not come down, Kyodo said, citing a source familiar with the matter.

A Toyota spokeswoman said the company continues to research ways to reduce rare earth usage and has no time frame yet for commercialization.

Rare earth metals like neodymium and dysprosium are used in the powerful magnets in motors that power hybrid and electric cars, and demand is expected to surge as more of the environmentally friendly cars hit the market.

China produces more than 95 percent of the world's rare earth metals. Its efforts to limit exports, citing resource depletion and environmental degradation, have alarmed its customers and trading partners and have sent prices soaring.

Japan accounts for a third of global rare earth demand and is aiming to cut consumption, providing subsidies for recycling and investing in new ways to limit their use.

56. China Tightens Air Quality Standards; Notes Most Cities Fail To Meet Them

Under pressure from a worried Chinese public, the Chinese government has issued revised air-quality targets based on the smallest particulates, which make up much of the country's air pollution. Cities will have four years to get their pollution levels down to the new limits, which cover levels of ozone and PM_{2.5}. The new standards are in line with the World Health Organization's recommendations for lowering pollution in developing countries, but are more than three times higher than the body's internationally recommended goals.

China noted that two-thirds of its cities currently fail to meet the new air-quality standards. "After the new standard is implemented, two-thirds of our nation's cities will not meet the air quality requirements," Wu Xiaoqing, vice minister of environmental protection, told a news conference in Beijing. "This shows we are facing a more serious challenge."

Wu said the new requirements would be implemented nationwide by 2016 as China seeks to control the sources of particulates, such as coal burning and auto emissions.

The new limits come after authorities in Beijing this year bowed to a vocal online campaign for a change in the way air quality is measured and pledged to start publishing figures showing PM 2.5. The Chinese capital previously based its air quality information on particles of 10 micrometers or larger, and regularly ranked the city's pollution levels as low, even when thick smog could be seen.

Public anger was exacerbated by the discrepancy between the official data and that issued online and on Twitter by the US embassy in Beijing, which conducts its own measures of PM 2.5.

57. Beijing's Air Quality: A Matter of Location?

An official with the Municipal Environmental Protection Bureau (EPB) said recently that the location of the US embassy's air quality monitoring station is too close to pollution sources, which is part of the reason why its AQI (air quality index) readings are always higher than Beijing's official air pollution data. "The embassy's station is about 15 meters away from the road, but a monitoring station should be at least 50 meters away from pollution sources according to international common practice," said Yu Jianhua, chief of the EPB's atmosphere section, speaking on a Beijing Public Service Radio program.

Monitoring stations should not be too close to pollution sources such as car emissions, he said, and the location should be representative, "not in the most polluted place and not the least

polluted place either." It requires a lab and a professional team to do equipment maintenance and to ensure the accuracy of the data, Yu noted.

The US embassy is fairly close to the Third Ring Road, although it is not clear if this is what Yu was referring to.

"We believe that promoting clean air and environmental transparency is in the interest of all our citizens. Our data has always been publicly available," said Richard Buangan, US embassy spokesman, in an e-mail reply to the Global Times. He did not comment on the EPB official's public statement about the station's location.

The difference between air quality data from the US embassy and the EPB has been a source of increasing debate among the Chinese public. In October last year, the embassy rated the air in Beijing as "dangerous" during especially foggy days, while the EPB's pollution index showed it was only "slightly polluted." Criticism and doubts over the EPB's data and its credibility followed, with the public urging the government to release PM2.5 data.

The center started releasing hourly updates of PM2.5 data (particulate matter smaller than 2.5 microns) from a Haidian district station on its website, bjmemc.com.cn, from January 21. Currently, only this station at Chegongzhuang Xilu releases PM2.5 data, but the bureau plans to install at least 30 stations in Beijing to provide PM2.5 data in the future, Yu said.

58. Hong Kong's Killer Pollution

With its iconic skyline, world-class infrastructure and China's giant economy at its doorstep, Hong Kong has long been an attractive choice to those looking for a perch in Asia. But there's a not-so-hidden catch: Its toxic air pollution is killing people at a rate worse than in mainland China.

Air pollution can be blamed for 43 out of every 100,000 deaths in Hong Kong, the 8th highest mortality rate in the world, according to a new report by local lobby group Clean Air Network (CAN). That would make Hong Kong's air more than 20% deadlier than the air in mainland China on average, though the comparison doesn't pit Hong Kong against China's densest urban areas.

An earlier study by the University of Hong Kong found air pollution was responsible for 3,200 local deaths a year. Even short-term exposure to heavy air pollution can trigger heart failure, arrhythmias and stroke.

Hong Kong residents are already the world's most pollution-addled population, according to a Gallup survey last year, with 70% reporting high levels of dissatisfaction with the quality of the air they breathe. (Next up was Chad, at 59 %.) One out of four residents has considered leaving Hong Kong because of its smoggy skies according to a 2010 survey by CAN, while three-quarters of business managers surveyed by the office services firm Regus in 2011 said air pollution hurts HK's ability to attract and retain talent.

"This is embarrassing," says Mike Kilburn, who heads environmental strategy at the think tank Civic Exchange. "Hong Kong is the richest city in China."

A noxious cocktail of toxic air floating over from factories just over the border in China's Pearl River Delta has long been blamed, but CAN chief executive Joanne Ooi says that from a public

health perspective, Hong Kong's notoriously jammed streets are the real problem. "Traffic pollution is the biggest issue for public health," she says, citing the thousands of diesel-burning lorries whose emissions keep residents coughing.

Hong Kong ranked second-to-last among China's 32 largest cities in nitrogen dioxide levels, an important indicator of roadside pollution, CAN said last month, citing official Chinese statistics.

The government says it's working hard to fix the issue. Carlson Chan, the Environmental Protection Department's deputy director, cites efforts like offering subsidies to buses and taxis to upgrade to cleaner technologies, with at least HK\$700 million (US\$90 million) spent on similar endeavors since 2007.

To put that sum in perspective, air pollution cost the city HK\$462 million (US\$60 million) in health care costs and lost productivity in the first two months of 2012 alone, according to Hong Kong University's Hedley Environmental Index.

"There's been good progress," Ms. Ooi says. Still, "we consider it too little, too late."

Environmentalists say the government's air quality measures haven't been updated since 1987, though the government unveiled new proposed standards last month. The earliest those improved standards can go into effect is 2014 because it has to work its way through the legislative process, the government says, but activists argue that Hong Kong's air pollution regulations allow environment authorities to establish objectives w/o going through the Legislative Council.



Short of moving to someplace cleaner, Dr. Chit-Ming Wong of Hong Kong University's School of Public Health says the best way to avoid exposure minimize time spent outdoors. "Don't walk too long outside, particularly during traffic," he says. "Of course you can't sit at home all the time. Though it would be much better."

Some masks can block the pollution particles less than 2.5 micrometers in diameter – sometimes referred to as PM2.5 — that health experts say do the most damage, but Ms. Ooi argues that, worn properly, such masks restrict breathing so much that they are an impractical solution.

59. India's Air the World's Unhealthiest, Study Says



New Delhi memorial India Gate, glimpsed through the haze in a December, 2011 photograph. Saurabh Das/Associated Press

India has the worst air pollution in the entire world, beating China, Pakistan, Nepal and Bangladesh, according to a study released during this year's World Economic Forum in Davos.

Of 132 countries whose environments were surveyed, India ranks dead last in the 'Air (effects on human health)' ranking. The annual study, the Environmental Performance Index, is conducted and written by environmental research centers at Yale and Columbia universities with assistance from dozens of outside scientists. The study uses satellite data to measure air pollution concentrations.

India's high levels of fine particulate matter are one of the major factors contributing to the country's abysmal air quality. Levels of $PM_{2.5}$ are nearly five times the threshold where they become unsafe for human beings.

Particulate matter is one of the leading causes of acute lower respiratory infections and cancer. The World Health Organization found that Acute Respiratory Infections were one of the most common causes of deaths in children under 5 in India, and contributed to 13% of in-patient deaths in pediatric wards in India.

When it comes to overall environment, India ranked among the world's "Worst Performers," at No. 125 out of the 132 nations, beating only Kuwait, Yemen, South Africa, Kazakhstan, Uzbekistan, Turkmenistan and Iraq. Neighboring Pakistan, in contrast, ranked 120th and Bangladesh was listed as No. 115 on overall environment.

It is not just India's big cities which are grappling with air pollution, said Anumita Roychowdhury, executive director of India's Centre for Science and Environment, a non-profit organization which was not involved in the study. Air pollution also is worsening in smaller cities, she said. The main culprit, Ms. Roychowdhury said, is the growing number of vehicles in India. While the country still has far fewer vehicles per capita than developed nations, India's cars are more polluting, Ms. Roychowdhury said. Other air pollution experts also cite India's reliance coal and polluting industries like brick-making that are located close to densely-populated areas.

Emission standards are nearly "10 years behind European standards," Ms. Roychowdhury said, and these standards are not legally enforceable, unlike in countries like the United States which has the Clean Air Act. India has an Air (Prevention and Control of Pollution) Act, 1981 which is supposed to be enforced by the Central Pollution Control Board. This act lacks teeth, Ms. Roychowdhury said. "We need to take big steps or the problem will overwhelm us," she said.

D. Saha, a scientist in the "Air Lab" at India's Central Pollution Control Board said the study's findings were not a matter of huge concern. "We should not compare our country with others," Dr. Saha said. "India has a different terrain." He cited seasonal rainfall, deserts and dusty conditions as being responsible for the particulate matter. "Can we put water sprinklers across the country?" he asked.

Particulate matter comes from boilers, thermal power plants and cars, as well, he said, but India would not have development if these activities were curbed, he said. "The diseases mentioned in the report are caused by many factors not just particulate matter, we are raising undue alarm," Mr. Saha said. His advice? "It is a non-issue, we have other pressing problems like poverty, focus on them."

60. Sri Lanka's Air Quality Improving, Ranked As a Modest Performer

Sri Lanka's overall environmental performance is improving and the country has been ranked as a modest performer according to a study on global environment released during this year's World Economic Forum in Davos, Switzerland.

Sri Lanka has been ranked at the 55th place, six places below the United States ranked at 49th, in the 2012 Environmental Performance Index (EPI) prepared by the Yale University in the United States.

According to authors of the study, conducted by Yale in association with the World Economic Forum, the Environmental Performance Index (EPI) and Pilot Trend EPI (Trend EPI) rank 132 countries on 22 performance indicators in ten policy categories and two overarching objectives that reflect facets of Environmental Health and Ecosystem Vitality.

In Environmental Health, Sri Lanka ranked at the 71st and at 60th place in Ecosystem Vitality. However, the country fared poor in the indoor air quality (113th) drinking water (80th) and forest cover (108th).

Elsewhere in the region, the Himalayan nation Nepal fared better than Sri Lanka at the 38th place while Bangladesh at 115th and Pakistan at 120th were poor performers.

Switzerland was at the top of the list with the best environment.

61. Taiwan to Issue Fines for Lengthy Idling of Vehicles

Motor vehicle drivers who unnecessarily leave their engines idling for more than three minutes can be fined as much as 60,000 Taiwan new dollars (\$2,028) beginning June 1, the Environmental Protection Administration said on February 16th. The fines, which will start at TWD\$1,500 (\$51), are designed to limit emissions of air pollutants in exhaust. The measure authorizing them will take effect March 1, but drivers will be subject to only warnings during a three-month grace period. Certain types of vehicles, including ambulances, tow trucks, broadcast vans, police cars, and school buses, will be exempt while drivers are on duty. Bus drivers will be allowed to turn on their engines 15 minutes prior to picking up schoolchildren, tourists, and others who might have health problems. According to the EPA, motor vehicles are significant sources of air pollution that not only compromises environmental quality but also poses public health risks. The measure also aims to remind people of the importance of energy conservation.

62. Decontrol Diesel Prices; Raise Excise Duty: PMEAC

Amid a widening fiscal deficit, the Prime Minister's economic advisory panel has suggested aligning diesel prices to the global market in a phased manner and also raising excise and service taxes to pre-crisis level of 12 per cent. Releasing the Review of the Economy: 2011-12, the Chairman of Prime Minister's Economic Advisory Council (PMEAC) Mr. C. Rangarajan also pitched for deregulation of urea prices.

Expressing concern over high fiscal deficit which is expected to overshoot the target of 4.6 per cent of GDP this fiscal, he said the government "must try" to contain and improve efficacy of subsidies. "It will be necessary during 2012-13 to make some adjustments on the diesel prices in a phased manner. We have not done this for quite some time and international crude prices have gone up ... It is not possible for us to subsidize this sector beyond a level," Rangarajan said.

Diesel price was last hiked in June 2011. However, the government had cut excise and customs duties to cushion the impact of the price rise, thus sacrificing annual revenue of Rs 38,000 crore.

Rangarajan further said that "partial reforms in the fertilizer subsidy regime of introducing nutrient-based subsidization will not be effective unless the price of urea is decontrolled or at least raised substantially".

The government expects that its subsidy bill would increase by Rs 1 lakh crore (1 trillion) to Rs 2.34 lakh crore, mainly on account of higher outlay towards fertilizer, food and oil.

On improving the tax to GDP ratio, Rangarajan said the excise duty and service tax should be increased to pre-crisis level, a move which will bring in additional Rs 35,000 crore. Before the economic crisis, service tax and excise duty rates were at 12 per cent, but as a stimulus the government had brought them down to 10 per cent in 2008-09.

63. Warning Up On Metro Manila Air Pollution

In Metro Manila, 15 million residents are exposed to polluted air every day, adversely affecting their resistance. Experts from the Philippine Medical Association (PMA) aired a warning that a big number of these residents may be suffering from diseases caused by air pollution or worse—may already have acquired such diseases that eventually will lead to lung cancer, the third leading cause of death in the Philippines, next to heart disease and vascular diseases.

The PMA warned residents of Metro Manila they may have a shorter life expectancy because of the dust particles they inhale from the air every day. In a press conference, Mardave Martinez, vice president of PMA, said dust particles, once inhaled by a person are embedded in his/her lungs, which cause various ailments that could lead to lung cancer.

The Department of Environment and Natural Resources-Environmental Management Bureau (DENR-EMB) said Metro Manila's air quality was improving, but still "not healthy." Total suspended particulates or TSP in Metro Manila are pegged at 117 unit gram per normal cubic meters (Ug/Ncm). This is way above the Philippine standard of 90 Ug/Ncm to be described as "safe to breathe."

According to Juna Miguel Cuna, officer-in-charge of the DENR-EMB, based on the 10 air-quality monitoring station reports that the bureau gathers, Caloocan City and Manila have the worst air

quality. In 2011, Caloocan City recorded an average TSP of 170 Ug/Ncm while Taft Avenue, Manila, recorded an average of 130 Ug/Ncm. Both recordings fall in the category of “unhealthy” air quality.

The group of medical practitioners and health advocates said those suffering from lung diseases, particularly the poor, eventually become a burden to the government. According to Martinez, the average cost of hospitalization for a patient with lung cancer or lung disease is P10,000 a day, and part of it, subsidized by the government, could reach up to P240 billion a year.

The PMA is launching a campaign to promote clean air, particularly in Metro Manila, and will hold a summit before the end of the month to tackle the problem of air pollution. Martinez said there should be more plants and trees in Metro Manila to help convert carbon dioxide, 80 percent of which is emitted by motorized vehicles, into oxygen. But he said more trees and plants will not solve the air pollution problem in Metro Manila. “We need to prevent the cause of air pollution,” he said.

Loida Alzon of the Metropolitan Manila Development Authority said the agency is strictly enforcing the Unified Vehicle Volume Reduction Program that aims to reduce air pollution by as much as 20 percent. But she said despite the program, the annual increase in the number of vehicles in Metro Manila is pegged at 5.9 percent. In 2011 alone, 6.7 million vehicles were registered nationwide by the Land Transportation Office; 1.9 million of them were registered in Metro Manila. Alzon reiterated the call for Metro Manila mayors to help implement the Clean Air Act by activating anti-smoke belching units in their respective localities.

64. China Says Ready to Defend Its Rare Earth Policies

China's Commerce Ministry said it was prepared to defend its rare earth export policies at the World Trade Organization, days after the global trade body ruled against its export restrictions on raw materials exports. A WTO panel decided that China had violated global trading rules by curbing exports of raw materials such as bauxite, coke, magnesium, manganese and zinc, which inflated prices and gave domestic Chinese firms an unfair competitive advantage.

Rare earth metals were not part of the ruling, but users of the crucial group of 17 elements used in the renewable and high-tech sectors hope China will also scrap export limits on these commodities, leading to higher volume and lower prices.

A number of U.S. lawmakers have urged the United States to use the WTO decision to launch a new case to force China into lifting its rare earth export restrictions.

"Regarding WTO members' possible similar actions over China's rare earth policies, we're ready to respond at any time in line with WTO rules and procedures," Li Chenggang, the head of the ministry's legal and treaty department, told China's official Xinhua news agency.

Li said that the raw material case "might have some reference value" for a potential rare earth case, but that the country's rare earths policy no longer solely relied on trade restrictions, and instead rested more on regulation of domestic production and consumption. The raw materials ruling left open a loophole for export quotas if they were imposed for environmental reasons, so long as they were matched with restrictions over domestic production or consumption.

China produces about 95 percent of global rare earth supplies, but says that excessive production is depleting its reserves and damaging its environment.

Some analysts have said its policies are designed to give priority of supply to domestic consumers and encourage foreign consumers, mostly in high-tech strategic sectors, to move their operations to China. China has rejected this, saying nationwide output caps - which comply with WTO rules - have also raised domestic prices and forced local users to scale back operations.

China capped production at 93,800 tons in 2011, up only 5 percent from the year before despite soaring demand, and began a nationwide inspection at the end of August to stop rare earth miners from breaking the cap.

65. ACT Welcomes First Electric Vehicle

The Australian Capital Territory (ACT) Government has rolled out the first of its 10 electric vehicles across the ACT Government. The Mitsubishi iMiEV was selected following a short trial and replaces a conventional petrol driven pool car. It travels up to 100 km between charges.

Chief Minister and minister for Territory and Municipal Services, Katy Gallagher said territory and municipal services (TAMS) has welcomed a new Mitsubishi iMiEV electric car into its fleets. It also demonstrates the ACT Government's commitment to working towards reducing the environmental impacts associated with conducting business through the use of sustainable transport. "This includes reducing the number of vehicles in its fleet and replacing vehicles with fuel efficient, four cylinder and environmentally friendly models including hybrid Vehicles," she said.

While the vehicle will use standard electricity, the trial will be used to determine how we can use 100 per cent renewable energy to power the fleet in the future.

Charge points are being installed within the Macarthur House car park where TAMS is located. These will provide convenient daytime recharging when the car is not in use. Overnight charging facilities are provided at the TAMS depot where the car is garaged to ensure it is ready for use each day.

"Implementing vehicle selection practices based on fuel efficiency and environmental performance is essential to decreasing our carbon footprint," the chief minister said. "The use of electric vehicles as one way of promoting a clean and sustainable future for Canberra and helping to achieve a 40 per cent reduction in greenhouse gas emissions from 1990 levels by 2020," she said. "The ACT Government is also a foundation member of the Better Place Australia electric car network which is being rolled out across Canberra and will play a key role in the transition from petrol to electric driving in the region. This trial will also be used to inform our use of that network."

66. China May Withhold Carbon Offsets After 2015 to Meet Own Goals, ADB Says

China may decide to withhold emission-reduction offsets to comply with its own climate targets after 2015, limiting supply to the European Union, said an official at the Asia Development Bank. "The establishment of domestic emissions-trading systems in China will provide a market for domestically issued emission credits if China decides not to offer Certified Emission Reductions to international buyers," said Pradeep Perera, senior energy specialist in ADB's East Asia Department. "China has already started a domestic process for issuing emission credits for

emission-reduction projects closely following the Clean Development Mechanism procedures,” Perera said January 27th in a phone interview with reporters.

A surging supply of offsets from the so-called CDM helped drive prices in the European Union to four-year lows recently. That market, the world’s biggest, banned supply from new projects in most emerging nations including China after 2012. Still, China has supplied 59 percent of all credits issued since 2005, and based on projects already registered may maintain that portion of the market through this year, according to United Nations data and forecasts.

Certified Emission Reduction credits for December have plunged 66 percent in the past year as Europe’s sovereign-debt crisis curbed demand. They were down 5.3 percent recently at 3.78 euros (\$4.96) a metric ton on the ICE Futures Europe exchange in London as of 5 p.m. EU allowances for December fell 5.1 percent to 7.77 euros a ton.

At the UN climate talks in December 2010, China promised to lower the amount of carbon pollution created per unit of output, or its carbon intensity, 40 percent to 45 percent by 2020 from 2005 levels. A program to curb the increase of greenhouse gas emissions in China’s Guangdong province will probably be the largest of the nation’s seven test climate-protection systems, according to press reports.

Guangdong is seeking to cut the carbon intensity of its economy by 19.5 percent in the five years through 2015, New Energy Finance said January 24th in a research note. Other regions have looser targets.

“For the purpose of pilot provincial emissions trading systems, it is likely that an absolute emission cap will be set for the economic sectors in the geographical areas covered,” Perera said. “Based on the experience and lessons learned from these pilot ETS, a national ETS is likely to be established after 2015.”

ADB is providing a \$750,000 equivalent grant to lay the groundwork for cap-and-trade in Tianjin municipal area which could begin operation as early as 2013, the ADB said on January 25th in a statement on its website. That followed a request from China, Perera said. ADB will help design the platform, including the trading rules and regulatory framework, as well as support the commissioning of the platform, the development bank said at the time.

SOUTH AMERICA

67. Stricter Emissions Limits Take Effect for Brazil's Diesel-Fueled Trucks, Buses

New diesel-fueled trucks and buses sold in Brazil must comply with more stringent limits on emissions of nitrogen oxide, carbon monoxide, hydrocarbons, and particulate matter as of January 1. Manufacturers have to equip their 2012 model trucks and buses with more efficient catalytic converters and engine technology to help reach the new limits; in most cases Selective Catalytic Converters (SCR) will be needed.

The new standards were required by a 2008 National Environmental Council (CONAMA) resolution (No. 403).

To meet the new emissions standards, 2012 model trucks and buses must use low-sulfur S-50 diesel (50 parts per million of sulfur). Under an October 2008 agreement, the state oil company Petrobras was required to provide S-50 diesel nationwide by January 2012 and to replace S-50

diesel with S-10 ultra-low-sulfur diesel nationwide by January 2013. Previously, S-500 diesel was available in Brazil's 14 largest cities, with S-2000 available elsewhere.

Tougher emissions limits will go into effect January 1, 2013, for lightweight, diesel-fueled vehicles, mainly pickup trucks and four-wheel-drive vehicles, and January 1, 2014, for all new gasoline- and ethanol-fueled cars and vans under a 2009 CONAMA resolution, Noronha said.

68. Brazilian Bank Offers Credit to Cane Farmers to Increase Ethanol Output

Brazil's Development Bank (BNDES) has announced a 4 billion real (\$2.2 billion) credit line that agribusinesses can use to expand or renew sugar cane plantations to produce more ethanol. Brazil's ethanol industry expects sales to the United States to soar in future years thanks to the expiration of a stiff duty on ethanol imports. The U.S. Congress completed its legislative work for 2011 without extending a 54-cent-per-gallon tax on imported ethanol or a 45 cent-per-gallon Volumetric Ethanol Excise Tax Credit offered to U.S. companies that blended ethanol with gasoline, causing them to expire Dec. 31.

The loans could help Brazil increase annual ethanol output by 2 billion to 4 billion liters (528.3 million to 1.06 billion gallons) by 2014, BNDES said in a statement. Brazil is the world's second-largest ethanol producer/exporter after the United States. In 2011 it turned out an estimated 25 billion liters (6.6 billion gallons) of ethanol, according to the Brazilian Association of Sugarcane Producers (UNICA).

The BNDES loans carry a below-market 7.8 percent interest rate plus a risk spread, mature in five years, and have an 18-month grace period.

Cane plantation and ethanol-mill investments started drying up in 2008–2009 during the global financial downturn. Tight credit and low cane productivity were main reasons Brazilian ethanol production fell 17.2 percent and exports dropped by 9.2 percent in 2011, compared to 2010. About 30 percent of Brazil's exported ethanol—a total of 1.76 billion liters (464.9 million gallons) in 2011—is shipped directly to the United States, the largest importer, according to UNICA.

The U.S. Energy Independence and Security Act (Pub. L. No. 110-140) of 2007 requires the nation's fuel supply to include 36 billion gallons of ethanol or other renewable fuel by 2022. Of that, 21 billion gallons must be advanced biofuels, which produces at least 50 percent fewer greenhouse gas emissions than gasoline. In 2010, the U.S. Environmental Protection Agency classified sugar cane-based ethanol as an advanced biofuel. EPA classifies ethanol made from corn as a "conventional" biofuel, one that produces at least 20 percent fewer greenhouse gas emissions than gasoline.

The United States is the world's biggest producer of ethanol, followed by Brazil, together accounting for 90.8 percent of the world's production of the fuel.

69. Chile's Tax Reforms to Include Incentives to Limit Pollutant Emissions

An upcoming reform of Chile's tax system will include incentives to reduce emissions of atmospheric pollutants, President Sebastian Piñera said in an interview published Dec. 31. The reforms "will include systems of taxation and subsidies related to the environment ... meaning it will award good acts and punish bad ones," the president told the La Tercera newspaper.

Piñera said the changes would target atmospheric emissions in particular, without further detailing the measures. The proposed reform will be presented in the coming weeks, he said.

"If it had been done before, we would not have the disaster we have in Ventanas, where thermoelectric plants were installed without any reasonable standard to protect the life and health of the people," he said. Following a series of environmental incidents at the industrial port of Ventanas in 2011, government authorities in December signed a Clean Production Agreement with 11 companies with operations in the area to invest \$100 million to reduce and mitigate the impact of emissions on the local community.

Environment Minister Maria Ignacia Benitez recently highlighted air pollution as a priority for the government's environment policy, with new standards for atmospheric levels of particulate matter set to come into force in January as well as atmospheric emissions standards for smelters, foundries, and wood stoves due to be published later in the year.

70. Brazilian Bank to Offer \$325 Million in Loans for Global Warming Projects

Brazil's Development Bank (BNDES) will make 560 million reais (\$325 million) in loans available in 2012 to finance climate change mitigation projects. The lowest rates will be offered for solar energy projects in hopes of financing them for the first time. The loans, announced on February 13th, will come from the National Climate Change Fund (FNMC) created by a December 2009 law (No. 12,114) to finance projects that mitigate greenhouse gas emissions. The fund is capitalized with 60 percent of the money the Environment Ministry receives annually from concessions that companies pay to work high-production-volume oil fields.

FNMC loans and grants will assist a variety of projects, including solar, wind, and biomass energy generation; public transportation; flaring of landfill-captured methane or its conversion into electricity; work to curb desertification in Brazil's drought-plagued northeast; and Reduction of Emissions from Deforestation and Forest Degradation (REDD) programs, which provide incentives for communities to maintain their forests and prevent the carbon dioxide emissions that arise from deforestation.

BNDES is offering its least expensive loans, with interest rates as low as 2.5 percent, for solar, ocean tide, and wave energy projects to stimulate a demand for those programs, especially solar energy projects. Rates start at 4.4 percent for urban transport projects and 6.4 percent for biomass and wind energy projects.

AFRICA

71. Computerized Vehicle Inspections Set to Begin in Ethiopia

Computerized vehicle inspections and technical investigation are set to begin in Ethiopia. It is expected that the new form of inspections will enhance transport service and prevent deaths and material damage caused by vehicular accidents.

The new system will better inspect the technical performance of a vehicle and its assorted parts according to Kasahun Hailemariam, Director-General of the Ethiopian Transport Authority. The new system will also eliminate the subjective and inconsistent manual inspection system that was previously in place and associated corrupt practices explained Kasahun.

Computerized inspection of vehicles will include checks on the movement of steering wheels, hand and foot brakes, shock absorbers, and head lights. Testing will also encompass exhaust emission as well as the authenticity of the chassis and the overall condition of the car body.

The standards are being modeled on those established by other countries such as Indonesia and Kenya and customized to fit the realities in Ethiopia according to officials at the authority.

Nineteen inspection sites are expected to commence operation this fiscal year with twelve becoming operational during January in Addis Ababa and three other locations in Amhara Regional State according to Kasahun.

Some technicians express concern that the standards are set too high for many cars in Ethiopia. A particular cause for concern is the test for emissions which may incur high maintenance costs on some vehicles. The Ethiopian Transport Authority claims that the new standards are based on random inspections it carried out.

MIDDLE EAST

72. Israeli Groups Ask Supreme Court to Force Government Pollution Action

Two environmental advocacy groups are asking Israel's Supreme Court to compel the government to move forward on a comprehensive air pollution prevention program prepared and released by the Environmental Protection Ministry in December. Israel's Clean Air Law, adopted in 2008, required the government to approve a national air pollution plan by January 1, 2012, the date the law came into effect. The ministry completed its tasks on schedule, but the government has not advanced the program "for unknown reasons," according to a petition submitted on February 5th by the Israel Union for Environmental Defense (IUED) and Israel Coalition for Public Health.

The Cabinet must approve the plan before it can be submitted to the Knesset, or legislature, for passage into law.

"The government's failure to approve the national program for reducing air pollution is unreasonable and constitutes an infringement of the rule of law, as this violates the Clean Air Law," the petition said. The petition said adoption of the national air pollution prevention program would save some 1.5 billion shekels (\$404.7 million) in health expenses that result from air pollution, while costing the government less than half of that sum.

"As one of the bodies which wrote and advanced the Clean Air Law during eight years, the IUED has the duty to act persistently against the violation of Israel's Clean Air Law," IUED Executive Director Amit Bracha said. "It is important to understand that, because of the government's impotence in not approving the national air pollution prevention program, millions of residents of the State of Israel are being exposed to diseases and even death as a result of air pollution."

Also on February 5th, the city of Tel Aviv reported that its air quality has been greatly improving, with up to 80 percent reductions in measured concentrations of nitrous oxides and particulate matter. The number of days in which air pollution exceeded the maximum standard at any of the city's monitoring stations declined from 90 to 19 days per year during the last decade, it said.

The municipality's release of data, which showed a particularly sharp decline in air pollutants during the past year, came in response to the Environmental Protection Ministry's announced intention to declare Tel Aviv and several adjoining municipalities officially polluted. The declaration would strengthen the ministry's authority to order the adoption of anti-pollution measures in these areas.

GENERAL

73. BP Forecasts Robust Global Energy Demand to 2030 Despite Efficiency Gains

Global energy demand will continue to grow over the next twenty years, albeit at a slowing annual rate, fuelled by economic and population growth in non-OECD countries. Increased energy efficiency and strong growth for renewable energy are also forecast in BP's latest Energy Outlook 2030, which has recently been published.

Global energy demand is likely to grow by 39 per cent by 2030, or 1.6 per cent annually, almost entirely in non-OECD countries; consumption in OECD countries is expected to rise by just 4 per cent in total over the period. Global energy will remain dominated by fossil fuels, which are forecast to account for 81 per cent of global energy demand in 2030, BP forecasts, down about 6 per cent from current levels. The period should also see increased fuel-switching, with more gas and renewables use at the expense of coal and oil.

The gradual switching should see renewables, including biofuels, to continue to be the fastest growing sources of energy globally, rising at an annual clip of more than 8 per cent, much quicker even than natural gas, the fastest growing fossil fuel at about 2 per cent a year over the period to 2030.

The growth of unconventional supply, including US shale oil and gas, Canadian oil sands, and Brazilian deep waters, against a background of a gradual decline in oil demand, will see the Western Hemisphere become almost totally energy self-sufficient by 2030. This means that growth in the rest of the world, principally Asia, will depend increasingly on the Middle East in particular for its growing oil requirements.

Oil, the world's leading fuel today, will continue to lose market share throughout the period although demand for hydrocarbon liquids will still reach 103 million barrels per day (b/d) in 2030, up by 18 per cent from 2010. This means the world will still need to bring on enough liquids - oil, biofuels and others - to meet that forecast 16 million b/d of extra demand by 2030 and replace declining output from existing sources.

While coal is expected to continue gaining market share in the current decade, growth will wane in the 2020-30 decade; gas growth will remain steady and non-fossil fuels are likely to contribute nearly half of the growth after 2020.

Power generation is expected to be the fastest growing user of energy in the period to 2030, accounting for more than half the total growth in primary energy use. And it is in the power sector where the greatest changes in the fuel mix are expected. Renewables, nuclear and hydro-electric should account for more than half the growth in power generation.

This year's Energy Outlook 2030 examines in more detail several important facets of the global energy story: the pathways for economic development and energy demand in China and India;

the factors impacting the energy export prospects of the Middle East; and the “drivers” of energy consumption in road transportation.

In China, growth of energy use is expected to slow significantly after 2020 as the economy matures. Although India’s population is on track to exceed China’s, its energy growth path is unlikely to replicate China’s energy intensive growth path. It will more than double its energy use to 2030, heavily based on coal, but this will still result in consumption of some 1.3 billion tons of oil equivalents (toe), or just over one quarter of China’s total.

There will remain a heavy reliance on higher oil exports from Middle East OPEC countries to meet demand. BP’s analysis suggests that the Middle East countries have the capability to bring on the required new production to meet global demand, even though the region’s energy use per capita is expected to remain more than three times as high as the rest of the non-OECD world.

BP says it expects to see steady progress in longstanding efforts to displace oil with gas and to improve the efficiency of energy use within the region. Saudi Arabian, Iraqi, and regional production of gas-related liquids will dominate supply growth as the region’s share of global oil supply rises to 34 per cent by 2030.

Transportation is likely to be the slowest growing sector for global energy consumption; significant improvements in fuel efficiency, including hybridization of vehicles will partly offset continued strong growth in vehicle sales in emerging markets. Hybrid vehicles (including plug-ins) offer consumer flexibility and appear capable of meeting anticipated fuel economy targets in 2030; oil is likely to account for 87 per cent of transport sector energy use, down from 95 per cent today, with biofuels filling most of the gap, and accounting for seven per cent of transport sector energy use.

Global CO₂ emissions are likely to rise by about 28 per cent by 2030—slower than the current rate of energy demand growth due to the rapid growth of renewables and natural gas. If more aggressive policies than currently envisioned are introduced, global CO₂ emissions could begin to decline by 2030.

By 2030 today’s energy importers will need to import 40 per cent more than they do today, but the experience will vary by region. In North America, efforts to reduce dependence on foreign supplies should show impressive results in the next couple of decades. Bolstered by supply growth from biofuels as well as unconventional oil and gas, North America’s energy deficit will turn into a small surplus by 2030.

In contrast, Europe’s energy deficit remains at current levels for oil and coal but will increase by some two thirds for natural gas, supplied by LNG and pipelines from the Former Soviet Union.

China’s energy deficit across all fuels will widen by more than a factor of five and India’s, mainly of oil and coal, will more than double in the period to 2030.

BP’s work on the Energy Outlook 2030 supplements BP’s Statistical Review of World Energy which will next be published in June 2012.

74. UNECE to Adopt New Emissions Ceilings for Trucks and Buses

On 19 January 2012, the Working Party on Pollution and Energy approved a proposal for an amendment to Regulation No. 49, concerning more stringent emission requirements for heavy duty vehicle engines. The proposal will be submitted to the World Forum in June 2012 for its final adoption. It will enter into force gradually as of the first quarter of 2013, with full application in January 2014.



The new ceilings introduce a reduction in emissions of 50% or more for Hydrocarbons, Non-methane hydrocarbons, Methane, Nitrogen oxides and Particulate matter. Some of these pollutants are contributing to global warming while others have adverse effects on human health.

This modification is aimed at aligning the requirements on emissions of pollutants from engines used on heavy duty vehicles to the Euro VI legislation (EC Regulations 595/2009 and 582/2011), which will enter into force in the European Union in January 2013. It will allow all Parties to the 1958 Agreement, including the Member States of the European Union, Albania, Belarus, Bosnia and Herzegovina, Croatia, Malaysia, Montenegro, Norway, the Russian Federation, Serbia, Switzerland, the Former Yugoslav Republic of Macedonia, Turkey and Ukraine to apply these new ceilings.

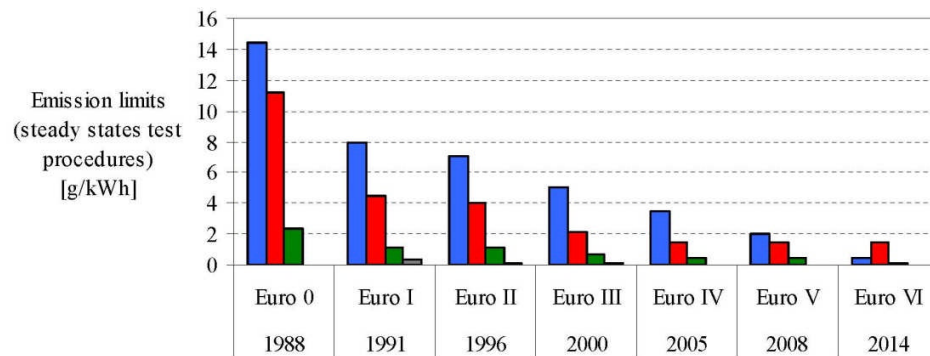
The maximum emission limits allowed for engines used on heavy duty vehicles have been the object of several legislative initiatives since the 1980s, which have resulted in massive reductions in emissions of pollutants (see Table 1 below and [Figure 1](#)).

Table 1

Emission level and year of enforcement	Test procedure (operating conditions)	Carbon monoxide	Hydrocarbons	Non-methane hydrocarbons	Methane	Nitrogen oxides	Particulate matter
		CO (g/kWh)	HC (g/kWh)	NMHC (g/kWh)	CH4 (g/kWh)	NOx (g/kWh)	PM (g/kWh)
Euro VI	2014 steady states	1.5	0.13	-	-	0.4	0.01
	transient	4	-	0.16	0.5	0.46	0.01
Euro V	2008 steady states	1.5	0.46	-	-	2	0.02
	transient	4	-	0.55	1.1	2	0.03
Euro IV	2005 steady states	1.5	0.46	-	-	3.5	0.02
	transient	4	-	0.55	1.1	3.5	0.03
Euro	2000 steady	2.1	0.66	-	-	5	0.1

III		states transient	5.45	-	0.78	1.6	5	0.16
Euro II	1996	steady states	4	1.1	-	-	7	0.15
Euro I	1991	steady states	4.5	1.1	-	-	8	0.36
Euro 0	1988	steady states	11.2	2.4	-	-	14.4	-

Figure 1



75. 2011 Was Ninth-Warmest Year Since 1880: NASA

The global average temperature last year was the ninth-warmest in the modern meteorological record, continuing a trend linked to greenhouse gases that saw nine of the 10 hottest years occurring since the year 2000, NASA scientists said recently. A separate report from the U.S. National Oceanic and Atmospheric Administration (NOAA) said the average temperature for the United States in 2011 was the 23rd warmest year on record.

The global average surface temperature for 2011 was 0.92 degrees F (0.51 degrees C) warmer than the mid-20th century baseline temperature, researchers at NASA's Goddard Institute for Space Studies said in a statement. The institute's temperature record began in 1880. The first

11 years of the new century were notably hotter than the middle and late 20th century, according to institute director James Hansen. The only year from the 20th century that was among the top 10 warmest years was 1998. These high global temperatures come even with the cooling effects of a strong La Nina ocean temperature pattern and low solar activity for the past several years, said Hansen, who has long campaigned against human-spurred climate change.

The NASA statement said the current higher temperatures are largely sustained by increased concentrations of greenhouse gases in the atmosphere, especially carbon dioxide. Carbon dioxide is emitted by various human activities, from coal-fired power plants to fossil-fueled vehicles to human breath. Current levels of carbon dioxide in the atmosphere exceed 390 parts per million, compared with 285 ppm in 1880 and 315 by 1960, NASA said.

Last year was also a year of record-breaking climate extremes in the United States, which contributed to 14 weather and climate disasters with economic impact of \$1 billion or more each, according to NOAA. This number does not count a pre-Halloween snowstorm in the Northeast, which is still being analyzed.

NOAA's National Climatic Data Center said the average 2011 temperature for the contiguous United States was 53.8 degrees F, which is 1 degree above the 20th-century average. Average precipitation across the country was near normal, but this masks record-breaking extremes of drought and precipitation, the agency said.

76. Study Finds Aerosol Particle Increase Linked To More Rainfall

A rise in the atmosphere of aerosols - miniscule particles which include soot, dust and sulfates - has led to more rainfall in certain parts of the world and could provide vital clues for future climate predictions, a new scientific study shows. A deeper understanding of rainfall patterns would aid scientists' ability to predict changing trends in the climate.

Aerosols can be produced from burning coal or gas, industrial and agricultural processes or by the burning of forests. As well as being harmful for human health, they are blamed for causing air pollution such as smog and smoke.

"For a range of conditions, increases in aerosol abundance are associated with the local intensification of rain rates," said the study published in Nature Geoscience by scientists from Israel's Weizmann Institute, NASA, and other institutions. "The relationship is apparent over both the ocean and land, and in the tropics, sub-tropics and mid-latitudes," it added, which would include large parts of continents such as Africa, South America and Asia.

The scientists said further work was needed on how aerosols influence regions with lower rainfall rates.

A separate study last November also found that aerosols increase the frequency of rainfall. It is thought that large volcanic eruptions, which release sulfur dioxide into the atmosphere, have led to increased rainfall.

Another uncertainty in future climate prediction is over the role of aerosols in cloud formation. It is thought clouds can be changed by aerosol particles which act as seeds in cloud droplet and ice formation, influencing the way clouds are formed. Heavier cloud formation could cool the earth's surface temperature by reflecting light back into space. "A prerequisite to predicting

rainfall variability is an understanding of how rain-producing clouds will respond to a changing environment," the study said.

Using satellite data, the scientists found evidence that aerosols do intensify clouds. "We also find that increases in aerosol levels are associated with a rise in cloud-top height," they said.

77. Asthma Rate and Costs from Traffic Pollution Higher Than Past Estimates

A research team led by University of Massachusetts Amherst resource economist Sylvia Brandt, with colleagues in California and Switzerland, have revised the cost burden sharply upward for childhood asthma and for the first time include the number of cases attributable to air pollution, in a recent study released in the early online version of the *European Respiratory Journal*.

The total cost of asthma due to pollution is much higher than past traditional risk assessments have indicated and there is growing evidence that exposure to traffic-related air pollution is a cause of asthma and a trigger for attacks, so it should be included, say the authors. They conducted the study in Long Beach and Riverside, California, communities with high regional air pollution levels and large roads near residential neighborhoods.

Total additional asthma-specific costs there due to traffic-related pollution is about \$18 million per year, almost half of which is due to new asthma cases caused by pollution, they report. Brandt worked with researchers at the University of Basel, Switzerland, Sonoma Technology, Inc. and the University of Southern California.

Using updated techniques that count asthma cases attributable to air pollution for the first time and including a broader range of health care costs such as parents' missed work days, extra doctor visits and travel time along with prescriptions, the researchers found that a single episode of bronchitic symptoms cost an average \$972 in Riverside and \$915 in Long Beach. Bronchitic symptoms (daily cough, congestion or phlegm, or bronchitis for three months in a row) are a critical outcome for children with asthma.

Further, people who live in cities with high traffic-related air pollution bear a higher burden of these costs than those in less polluted areas, they say.

Brandt and colleagues say the total annual cost for a typical asthma case was \$3,819 in Long Beach and \$4,063 in Riverside, and "the largest share of the cost of an asthma case was the indirect cost of asthma-related school absences." School absences are an important economic consequence, they add, because "they often lead to parents or caregivers missing work."

Overall, Brandt points out that the results are relevant and applicable to many settings and "families with children who have asthma are bearing a high cost. The total annual estimate between \$3,800 and \$4,000 represents 7 percent of median household income in our study in these two communities. This is troublesome because that is higher than the 5 percent considered to be a bearable or sustainable level of health care costs for a family."

Riverside and Long Beach account for about 7 percent of the total population of California, the authors say, which suggests that state-wide costs of asthma related to air pollution are "truly substantial."

For this work, Brandt and colleagues analyzed several surveys on health care visits by children with asthma and their previous estimates of the number of asthma cases attributable to pollution

to estimate the annual costs of childhood asthma. They also estimated the cost of asthma exacerbation due to regional air pollutants. They feel the new method does a better job of accounting for the full impact of traffic-related pollution and will be widely applicable in urban areas. She points out, "Traditional risk assessment methods for air pollution have underestimated both the overall burden of asthma and the cost of the disease associated with air pollution. Our findings suggest the cost has been substantially underestimated and steps must be taken to reduce the burden of traffic-related pollution."

This work was supported by California's South Coast Air Quality Management District and its settlement funds from BP, as well as by the U.S. National Institute for Environmental Health Sciences, the U.S. Environmental Protection Agency and the Hastings Foundation.

78. Study Finds Air Pollution Measures Could Limit Warming

A group of international researchers has identified 14 air pollution control measures they say would have significant global benefits, including reducing global warming in the near term. The scientists' study, Simultaneously Mitigating Near-Term Climate Change and Improving Human Health and Food Security, published January 13 in Science magazine, considered about 400 emission control measures to reduce ozone and black carbon. The set of strategies selected could reduce global temperature by 0.5 degree Celsius (0.9 degree Fahrenheit) by 2050, as well as avoid up to 4.7 million premature deaths annually and increase annual crop yields by up to 135 million metric tons, according to the study. The strategies include installation of particle filters on diesel vehicles; removal of high-emitting vehicles from roadways; upgrading cook stoves, boilers, brick kilns, and coke ovens; banning agricultural burning; and capturing landfill methane.

79. Rio+20 Organizers Select 15 Priority Topics for U.N. Conference

Fifteen topics will be prioritized at the U.N. Conference on Sustainable Development to be held in Rio de Janeiro in June, according to a document published by organizers on January 10.⁵ The "zero draft" document, The Future We Want, said the June 20-22 Rio+20 conference will focus on food security, water, energy, cities, green jobs/social inclusion, oceans and seas, natural disasters, climate change, forests and biodiversity, land degradation and desertification, mountains, chemicals and waste, sustainable development and production, education, and gender equality.

Organizers based their topic selection on suggestions submitted in November by the 94 nations that will take part in Rio+20. Those suggestions took into account the views of private-sector groups in each country.

The original Rio summit, in 1992, created U.N. conventions on climate change, desertification, and biodiversity. Rio+20 will reassess the three and work on ways to make them more effective.

80. IMO Meeting Wrestles with Black Carbon

An International Maritime Organization (IMO) sub-committee has made limited progress on a work plan for consideration of the impact on the Arctic of emissions of black carbon (BC) from international shipping. The IMO's Marine Environment Protection Committee (MEPC) agreed on

⁵ The "zero draft" document of priority topics for Rio+20 is available at <http://bit.ly/zSx1mz>

the work plan for the Sub-Committee on Bulk Liquids and Gases at its 62nd session in July 2011.

Early in the week, the 16th session of BLG heard one presentation on a proposed definition and measurement of BC in international shipping submitted by the Institute of Marine Engineering, Science and Technology (IMarEST), and another presentation on the link between fuel quality and BC emissions based on a review of 19 currently available studies. Later in the week, five new BLG submissions were outlined and debated in plenary, including the definition proposed by IMarEST and another definition proposed by Norway.

Norway suggested that the following definition could be appropriate for IMO: "Black carbon is a component of particulate matter (PM) emissions in the engine exhaust." It said this definition "would not aim to quantify this fraction of the exhaust, however, it would be implied that BC can be reduced through reduction of PM emissions from ships."

Several delegations suggested alternative definitions. Most stressed the need for "light-absorbing properties" to be included in a definition, and dismissed Norway's proposed definition as "too simplistic" and would prefer a definition that is distinct from PM.

Canada, meanwhile, said the definition of BC should not be specific to the marine sector, and should align with pan-sectoral definitions in order to allow for a comparison of emission levels, mitigation efforts, and results. The impact of shipping emissions of BC in the Arctic should be set in context with impacts from shipping activities outside the Arctic and impacts from other sectors, Canada said.

Cook Islands, on the other hand, wanted the work plan to address the impact on the Arctic of black carbon emissions from "shipping in the Arctic" only, and not the impact from "international shipping."

It soon became clear that the debate was too complex to be resolved at BLG 16, and that there was a need for intersessional work. The chairman of BLG, Sveinung Oftedal, suggested that a correspondence group should be set up to develop a definition of BC, consider measurement methods and collate information on possible control measures. Although several delegations said it was premature to discuss control measures at this stage, this will be on the agenda for the correspondence group.

It was also clear from the debate at BLG 16 that industry organizations and several countries have a number of questions about the need for controlling BC from shipping. IPIECA, the global oil and gas industry association for environmental and social issues, and the Oil Companies International Marine Forum (OCIMF) put a joint submission to BLG 16 containing only questions they said needed to be considered.

BLG has been asked to submit a final report on the first steps of the work plan to MEPC 65, meaning that it needs to finalize the report on a definition, measurement methods and appropriate control measures at its next session in a year from now.

81. GEO-5 Summary Highlights Continued Deterioration of the Global Environment

The UN Environment Programme (UNEP) has released the Global Environment Outlook-5 (GEO-5) Summary for Policy Makers, which was negotiated and endorsed by governments on 31 January 2012. The summary was released as a prelude to the full report, which will be

released in June, in advance of the UN Conference on Sustainable Development (UNCSD, or Rio+20).

The Summary warns of the continued deterioration in the state of the global environment, highlighting that internationally-agreed environmental goals have only been partially met. It notes specifically: the adverse effects of climate change as a serious challenge that threatens overall development goals; the rate of forest loss; the threats to water security facing 3.4 billion people; coastal zone eutrophication; and the fact that up to two thirds of species are currently threatened with extinction.

The Summary calls for a focus on the underlying drivers of environmental change – including population growth, consumption and production, and urbanization. It further recommends: the use of timely and accurate data to inform decision making; reversal of policies that generate unsustainable outcomes; incentives to advance sustainable practices; urgent, ambitious and cooperative action by governments to meet internationally-agreed goals; the strengthening of access to information; and the engagement of civil society, the private sector and other relevant actors in policy-making processes.

The GEO-5 Summary was launched on the sidelines of the 12th Special Session of the UNEP Governing Council/Global Ministerial Environment Forum (GCSS-12/GMEF), taking place from 20-22 February 2012, at the UN Office in Nairobi, Kenya.

82. New Studies Cast Dark Cloud Over Air Pollution

Evidence of the damaging health effects of air pollution is building after the publication of new studies linking pollutants to stroke, cognitive decline, and heart attack. Even levels of air pollution deemed safe by agencies such as WHO can contribute to higher rates of cognitive decline, stroke, and heart attack, according to three studies published in the past week.

A rise in solid or liquid pollutants suspended in the air, including nitrates and sulfates emitted from road traffic, construction, and industry, was found to adversely affect health in both the short and long-term. Evidence of the epidemiological effects of air pollution was likely to spur calls for more research and a tightening of regulation, said researchers.

“Air pollution is difficult but we can regulate it because we've done it in the past and we're now seeing evidence of problems at current levels”, Jennifer Weuve, assistant professor at the Rush Institute for Healthy Ageing, Chicago, IL, USA, and lead author of the study linking pollution to dementia, told *The Lancet*. “The EPA [Environmental Protection Agency] made its last round of setting standard levels of particulate matter in 2006 but with new evidence of cognitive decline, we're hoping our and other studies will be considered and influence regulation.”

Studies linking air pollution with dementia and stroke add to those on heart attacks, including research published in February, 2011, in *The Lancet*, which showed air pollution to be an important trigger of myocardial infarction and of a similar magnitude to physical exertion, alcohol, and coffee.

Weuve and her colleagues found that coarse as well as fine particles that are smaller than 2.5 µm in diameter, or a thirtieth of the width of a human hair, could enter the body possibly through the nasal passage and into the brain. Their study, published in the February 13th issue of the *Archives of Internal Medicine*, followed 19,409 women in the USA aged between 70 and 81 years for a decade and checked their cognition about every 2 years. They found that women

with higher levels of long-term exposure to air pollution had “significantly” faster declines in cognition than those with less exposure. The 2-year decline on a global cognitive score grew worse for each annual exposure to a concentration of particulate matter of 10 µg/m³ of air. Air quality standards set by the EPA and WHO only focus on daily and yearly mean concentrations of particulate matter.

“Ours was the first study to look at cognitive decline over time and it confirmed what we were thinking but we were surprised to find that coarse particles also matter”, Weuve said. “The belief was that coarse matter got stuck in the back of the throat so this type of air pollution needs following up.” Interventions that could delay by 2 years the onset of Alzheimer's disease could reduce the number of prevalent cases in the USA by 2 million during a 40-year interval, she said.

The short-term effect of air pollution and stroke was studied in a second study led by Gregory Wellenius, associate professor of epidemiology at Brown University, RI, USA, and was also published in the same issue of the Archives of Internal Medicine. The study examined the medical records of 1705 patients admitted to Beth Israel Deaconess Medical Center, Boston, MA, USA, between 1999 and 2008 with acute ischemic stroke. These were compared with the hourly measurements of ambient air pollution recorded by the nearby Harvard School of Public Health.

The researchers found the increased risk of stroke peaked between 12 and 14 hours after levels of air particles went up, a shorter time period than previously found.

“Even on days when air pollution was moderate, according to the EPA, and Boston is always in compliance with federal levels and is a relatively clean city, the risk of stroke was 35% higher”, Wellenius told The Lancet. If air pollution was reduced by 20%, some 6000 of the 184 000 hospital admissions for stroke in the north-eastern USA would have been prevented in 2007, he said.

The team said it was able to estimate within an hour when the first stroke symptoms occurred and to cross-reference that with hourly air pollution measurements of 90 percent of the stroke patients. Researchers concluded that the peak risk to patients from air pollution occurs between 12 and 14 hours before a stroke.

The researchers also said they found that black carbon and nitrogen dioxide, two pollutants typically found in auto exhaust, were “closely linked” to stroke risk. They suggested EPA may need to revise and strengthen the language it uses to describe the risk posed by moderate or “yellow” air quality.

The third study found that a rise in concentrated pollutants of 10 µg/m³ of air was linked to a 1—3% increase in the risk of having a heart attack. Such an increase could account for up to 4•5% of all heart attacks in an exposed population. The study, by researchers from the Paris Cardiovascular Research Centre, Paris, France, looked at 34 previous studies comparing the risk of having a myocardial infarction at various levels of inhaling pollutants.

“Even if the relative risks are low compared with traditional risk factors such as smoking status or hypertension or diabetes, [the problem is that] everybody is exposed to air pollution in industrialized countries”, said Hazrije Mustafic, who led the study published in the Feb 15 issue of the Journal of the American Medical Association.

83. U.S. Leads Low-Cost Bid To Curb Global Warming Pollutants

The United States has announced that it will contribute \$12 million to a six-country initiative to fight against climate change by low-cost programs, such as promoting clean cooking stoves. Sweden also joined the international coalition which aims to cut emissions of black carbon, methane and HFCs. The group, which also includes Canada, Mexico, Bangladesh and Ghana, says it expects more countries to join shortly.

The coalition has no formal targets but intends to implement recommendations made in a recent UNEP report on short-lived 'climate forcers'. UNEP believes these could prevent 0.5 degrees of warming by 2040 and save 2.5 million lives a year.

UNEP will act as its secretariat.

As she introduced the initiative, US secretary of state Hilary Clinton noted, "There is no way to effectively address climate change without reducing carbon dioxide". "So this coalition is intended to complement, not supplant, the other actions we are, and must be, taking."

Unlike carbon dioxide emissions, which remain in the atmosphere for a century, "short-lived" pollutants stay in the atmosphere for a few days to years. Curbing black carbon, methane and HFCs, gases used in refrigerants and aerosols, can help the world achieve the U.N. goal pledged by nearly 200 countries of limiting the rise in global temperatures to 3.8 degrees Fahrenheit (2 degrees Celsius) by 2050, Clinton said.

The United States is the world's second biggest emitter of greenhouse gases blamed for global warming, behind China. Several attempts to pass legislation to limit such emissions have failed in the U.S. Congress.

The new initiative will combine existing programs that address the pollutants, such as a global clean cooking stove initiative that tackles black carbon, or soot; and a global partnership led by the U.S. Environmental Protection Agency to tackle emissions from methane in coal mines, agriculture and natural gas and oil systems.

The six countries launching the initiative will hold their first meeting in Stockholm in April.

84. Insight: Oil Industry Sees No Threat from Electric Car

The biggest oil companies in the world have calculated that few, if any, of today's drivers will see electric cars outnumber gasoline and diesel models in their lifetimes.

While politicians and green lobby groups insist the future of transport is electric, in the past two months BP and Exxon have released data which points to electric cars making up only 4-5 percent of all cars globally in 20-30 years. Meanwhile some governments are targeting as much as a 60 percent market share for electric vehicles over a similar period.

The oil company forecasts may appear self-serving, but if they are widely accepted could provoke a policy shift that offers greater incentives for electric cars to end our addiction to oil. And unlike more optimistic predictions from consultants like McKinsey, these forecasts are backed by cash. They guide tens of billions of dollars in long-term investment in oil production and refining and it is oil that stands to lose if they get it wrong.

They don't, of course, take into account a major breakthrough in battery technology that could give electric cars a cost and performance edge over the internal combustion engine.

In its Energy Outlook for 2030, released earlier this month, BP predicted that electric vehicles and plug-in hybrids will make up only 4 percent of the global fleet of 1.6 billion commercial and passenger vehicles in 2030. "Oil will remain the dominant transport fuel and we expect 87 percent of transport fuel in 2030 will still be petroleum based," BP Chief Executive Bob Dudley said as he unveiled the BP statistics on January 18th. The balance is seen coming from biofuels, natural gas and electricity.

Plug-in hybrids can be powered from the mains and only rely on their small gasoline engines when the battery dies. Standard hybrids are principally driven by an internal combustion engine whose efficiency is boosted by the recycling of energy generated from braking.

Exxon Mobil, the biggest oil and gas company in the world, says the continued high cost of electric vehicles compared to petroleum cars, means take-up won't even increase much during the 2030s. In its 2040 Energy Outlook, released in December, the Texas-based company said electric vehicles, plug-in hybrids and vehicles that run on natural gas would make up only 5 percent of the fleet by 2040.

Peter Voser, Chief Executive of Royal Dutch Shell, the industry number two, sees a rosier future for electric vehicles. He predicts they will account for up to 40 percent of the worldwide car fleet, although only by 2050.

The statistics published by Exxon and BP, Europe's second-largest oil company by market value, are perhaps the most detailed long-term forecasts on electric vehicle take-up. These Energy Outlooks guide how the oil groups allocate their annual investment budgets - among the biggest in the world, at over \$50 billion combined for BP and Exxon.

The expected continued dominance of petroleum partly explains the scaling back in BP and Shell's solar, hydrogen and wind power ambitions in recent years, and Exxon's continued reluctance to get involved in renewable energy. Insofar as the companies are active in green energy, it is mainly in the production and blending of biofuels. This is driven by U.S. and European governments' insistence that a percentage of motor fuels sold must come from plant-based sources.

If the oil companies are wrong about electric cars they will find their investments in big and expensive new oil production projects, which increasingly need crude prices around \$80 per barrel to be profitable, not paying off.

The companies do see an easing in the addiction to oil, though. Despite increased car ownership in China and India, Exxon predicts "global demand for fuel for personal vehicles will soon peak" due to an increase in average fuel efficiency. BP expects the efficiency of combustion engines to double by 2030, with a third of vehicles on the road being hybrids. This trend will be driven by more stringent fuel economy standards in the U.S., CO2 reduction legislation in Europe and an end to oil subsidies in developing countries.

Increased airline and commercial vehicle traffic will counterbalance some of the efficiency gains from cars but BP predicts that, helped by increased use of biofuels, demand for oil for transport overall will plateau in the mid-2020s.

Big Oil's pessimistic outlook for electric cars is at odds with many governments' plans. Electric vehicles barely register on the statistics of car sales at the moment.

- Nonetheless, China is targeting 5 million electric vehicles on its roads by 2020, according to media reports. This would represent around 3 percent of its predicted fleet.
- The Australian government's main energy adviser, the Australian Energy Market Commission, has predicted electric vehicles will make up 20 per cent of new car sales in Australia by 2020 and 45 per cent by 2030.
- The UK's Committee on Climate, which advises the government, has predicted electric vehicles will reach around 60 percent of new cars and vans by 2030.
- And New Zealand hopes to get to 60 percent by 2040.
- The U.S. has more muted ambitions. President Barack Obama said he wants to put 1 million electric vehicles on U.S. roads by 2015, a figure that would represent less than half of one percent of the total fleet.

Many U.S. experts and officials predict a tipping point in the uptake in electric vehicles in the latter part of this decade, as technology improves economies of scale kick in and consumer fears about being stranded when their batteries run flat, or "range anxiety," eases.

However, data compiled by the U.S. Energy Information Administration may explain the lack of an official U.S. target. Last week, the agency released an 'abridged version' of its Annual Energy Outlook 2012, due to be released in full in the Spring. Tables used in formulating the outlook show electric vehicles and plug in hybrids are expected to account for only 1.3 percent of the U.S. fleet in 2030.

Furthermore, the agency predicts that neither consumers, nor carmakers, will get over 'range anxiety'. By 2035, the agency sees few, if any, electric vehicles on U.S. roads that can travel for 200 miles without recharging.

Many of the headlines out of auto shows in the past couple of years have been captured by the launch of electric cars such as Nissan's Leaf, the Tesla sports car, plug-ins like General Motors' Chevrolet Volt, and the latest incarnation of the Toyota Prius. Other manufacturers including BMW, Rolls-Royce and Porsche have presented electric-powered prototypes. On the basis of this, one could be forgiven for thinking the auto industry is betting big on electric power.

Yet few auto executives share the optimism of Renault and Nissan chief executive Carlos Ghosn who has repeatedly said he sees electric vehicles making up 10 percent of all sales in 2020. A survey of 200 auto industry executives conducted by KPMG released earlier this month gave an average forecast for electric vehicles to account for 6-10 percent of global auto sales in 2025 - more bullish than Exxon and BP but hardly a revolution.

85. Air Pollution Can Cause Alzheimer's



A postmortem study suggests that children and young adults who are exposed to air pollution experience brain changes similar to those seen in Alzheimer's patients. A team of North American

researchers examined brains of 43 children and young adults who died in accidents in Mexico to study the potential changes in gene expression, immune markers and physical indicators similar to those associated with Alzheimer's disease.

According to the report published in the *Journal of Alzheimer's Disease*, 37 of the studied cases were living in urban, highly polluted Mexico City areas while the eight others who were examined as the control group were from the rural and unpolluted areas.

The gene expression analysis showed that over 100 genes were changed in the brains of subjects who lived in urban areas. Over half of the brains from the urban areas showed deposits of the destructive protein called beta-amyloid, which is a major clinical hallmark or precursor of the Alzheimer's disease. In contrast, none of those living in unpolluted areas had the brain changes before death, researchers wrote.

Since the APO-E gene is linked with early-onset Alzheimer's disease, authors also examined whether the risk version of this gene was linked with similar Alzheimer's pathology. The results disclosed that people with the APO-E risk genotype were more likely to have the plaques commonly linked with Alzheimer's in their brains.

Findings were surprising for scientists because Alzheimer's is a disease for older ages and its related changes were not supposed to occur in the brains of young people.

Although the study could not show that pollution was the main cause of the observed changes, it provided further evidence that air pollution can affect the brain.

Long-term and comprehensive studies may be able to show how environmental factors including air pollution can possibly cause nervous system damage.

86. New Zeolite Material May Solve Diesel Shortage

World fuel consumption is shifting more and more to diesel at the expense of gasoline. A recently published article in *Nature Chemistry* by a research team at Stockholm University and the Polytechnic University of Valencia in Spain presents a new porous material that evinces unique properties for converting gasoline directly into diesel.⁶ The material has a tremendously complex atomic structure that could only be determined with the aid of transmission electron microscopy.

The aluminosilicate, which has been named ITQ-39, belongs to the zeolite class and has a porous structure that enables sufficiently small molecules to pass through it. On their way through, they can react with other molecules and create a desired product. The new material has channels of varying size and shape in different directions. These variously shaped channels entail that a molecule that is transported inside the material can be limited in different ways, depending on the direction it travels.

ITQ-39 is the most complex zeolite material ever discovered. Its structure was determined by a research team at Stockholm University headed by Professor Xiaodong Zou, with the help of electron crystallography. On an electron microscope, extremely small crystals can be studied, in this case down to a couple of nanometers. What makes ITQ-39 such a complicated material is

⁶ "Structure and catalytic properties of the most complex intergrown zeolite ITQ-39 determined by electron crystallography" *Nature Chemistry* 2012 (DOI: 10.1038/NCHEM.1253)

that, unlike most other crystalline material, it is not perfectly ordered. The material studied has a type of chaotic order. To be able to understand the material in the smallest detail requires both a model of how the atoms are arranged in the minimal ordered areas and a model of how these domains are then linked together into crystals. This disorder can be studied with the aid of high-resolution images taken with an electron microscope that can then serve as a basis for creating a model of the atomic structure of the material. This is what researchers Tom Willhammar, Junliang Sun, Wan Wei, Peter Oleynikov, Daliang Zhang, and Xiaodong Zou at Stockholm University present in the latest issue of the scientific journal Nature Chemistry.

The material, which was produced by a research team headed by Professor Avelino Corma in the Polytechnic University of Valencia, has proven to be an excellent catalytic converter for turning gasoline into diesel. This is a process that has become ever more important with the marked growth in the demand for diesel in recent years.

The project is funded by the Swedish Research Council, VINNOVA, the Göran Gustafsson Foundation, and the Knut and Alice Wallenberg Foundation.

Zeolite means 'boiling stone' in Greek. Zeolite is a collective name for a group of natural and synthetic minerals with an open crystal structure. They mainly consist of aluminum silicate and comprise some 60 naturally occurring minerals and about a hundred synthetic counterparts.

Zeolites contain masses of nanometer-sized pores and channels and can be used as catalytic converters, ion-exchangers, and adsorbents. Because zeolites have so many pores and intersecting channels, they have a huge internal surface area; one gram of a zeolite can have a surface about the size of half a football field.

87. THE World's First Diesel Electric Car Is About To Go On Sale

Add to that no road tax and the flexibility of four-wheel-drive when needed and it seems Peugeot is setting the standard for others to follow.

The new Peugeot 3008 HYbrid4 uses a 2.0-litre, 163bhp diesel engine to drive the front wheels and a 37bhp electric motor to power the rear, ensuring both economy and the sporting response of a 200bhp performance hatchback.

Until now all hybrids have used petrol engines, but mating an electric motor to a diesel engine gives the potential for bumper economy and low running costs. The 3008 HYbrid4 has a drive system which determines when the car should be operating on the diesel engine only, the electric motor only or a combination of both to give the best economy or performance – depending upon how the individual drives.

There are four modes to select from but if you leave the system in auto this car achieves the best all-round compromise for normal driving. If, however, you need that extra grip in bad weather you can switch to 4WD so both diesel and electric motors work permanently in tandem to power all four wheels. The same happens when you switch to Sport, for maximum power.

It's also possible to drive this vehicle on electric power only, which is ideal for towns and cities although you are limited to 40 miles per hour and a range of three to four miles.

The car uses an electronically-controlled six-speed manual gearbox which allows you to change gear using the gear shift or paddles behind the steering wheel.

On the move the dashboard display screen shows you exactly where the power is coming from at any given time and just how much charge there is in the battery. Should the battery get low, however, the alternator force feeds it using power from the diesel engine so you never have a situation where the battery is completely flat.

The Peugeot 3008 HYbrid4 boasts a top speed of 118mph and will accelerate from 0-62mph in just 8.5 seconds.

88. Ozone Pollution Damage Crops Across Continents

Man-made air pollution from Southeast Asia causes the loss of 6.7 million tons of wheat and about 11.6 million tons of rice globally each year, while pollutants from North America reduce wheat yields in Europe by 1.2 million tons each year, according to a new study.⁷ The study shows that ozone pollution causes millions of tons of crop losses not just in the regions where it's emitted, but also across continents. On a global scale, pollution from Southeast Asia has the biggest impact.

The research, led by the University of Leeds and co-authored by researchers from the Stockholm Environment Institute at the University of York, shows for the first time the extent of the Northern Hemisphere's intercontinental crop losses caused by ozone – a chemical partly produced by burning of fossil fuels.

Dr Lisa Emberson, a senior research associate from Stockholm Environment Institute at the University of York, says: "This study highlights the need for air pollution impacts on crops to be taken more seriously as a threat to food security. Given the sizeable yield losses of staple crops caused by surface ozone, there should be greater coordinated international efforts focused on reducing emissions of ozone-forming gases across the globe."

The study also suggests that increasing levels of air pollution from one continent may partly offset efforts to cut carbon emissions in another. The findings have important implications for international strategies to tackle global food shortages, as well as global climate and human health strategies.

The paper shows how ozone pollution generated in each of the Northern Hemisphere's major industrialized regions (Europe, North America and South East Asia) damages six important agricultural crops (wheat, maize, soybean, cotton, potato and rice) not only locally, but also by travelling many thousands of kilometers downwind.

Of the yield losses to Europe caused by ozone, pollution originating from North America is responsible for a 1.2 million tons annual loss of wheat. This is the biggest intercontinental ozone-related impact on any food crop. The scale of the impact of North American pollution on European wheat has previously been unknown.

Dr Emberson says: "Currently air quality is often overlooked as a determinant of future crop supply. Given the sizeable yield losses of staple crops caused by surface ozone, coupled with

⁷ Intercontinental trans-boundary contributions to ozone-induced crop yield losses in the Northern Hemisphere by Michael Hollaway, Dr Steve Arnold, Prof Andy Challinor and Dr Lisa Emberson was published on 16 January 2012 and is available at: <http://www.biogeosciences.net/9/271/2012/bg-9-271-2012.html>

the challenges facing our ability to be food secure in the coming decades, further coordinated international efforts should be targeted at reducing emissions of ozone forming gases across the globe.”

Researchers calculated projected levels of surface ozone concentration, a powerful air pollutant that is not only harmful to human health (particularly to the respiratory system) but also damages vegetation by damaging plant cells and inhibiting plant growth.

The scientists used a computer model to predict reductions in global surface ozone if man-made emissions of nitrogen oxide from the three continents were eliminated. Using crop location and yield calculations, the research team was able to predict impacts on staple food crops, each with their own unique sensitivity to ozone pollution.

Dr Steve Arnold, a senior lecturer in atmospheric composition at the University of Leeds’s School of Earth and Environment, who led the study, said: “Our findings demonstrate that air pollution plays a significant role in reducing global crop productivity, and show that the negative impacts of air pollution on crops may have to be addressed at an international level rather than through local air quality policies alone.”

Other findings are:

- In terms of global crop losses, Asian pollution dominates worldwide losses of wheat (50-60 per cent) and rice (more than 90 per cent).
- North American pollution contributes the most to worldwide losses of maize (60-70 per cent) and soybean (75-85 per cent).
- The impact of Europe’s pollution on other continents is minor due to fewer low pressure systems and weather fronts, which are responsible for transporting pollution across continents.

Dr Arnold added: “With future emissions of ozone-forming chemicals from Europe and North America expected to reduce, and emissions from Asia to increase, the findings suggest that increasing pollution from Asia may partly offset crop production benefits gained in Europe and North America through local emission reduction strategies.”

The study was jointly funded by the Natural Environment Research Council and the Met Office in the UK.

89. Exposure to Diesel Exhaust 'May Increase Death Risk from Lung Cancer'

Heavy diesel exhaust (DE) exposure in humans may increase the risk of dying from lung cancer, two new papers have revealed. Starting in the 1980s, studies have investigated a possible causal relationship between exposure to diesel exhaust and lung cancer.



Diesel-powered equipment used in underground mining

In 1989, the International Agency for Research on Cancer (IARC) classified diesel exhaust as a probable carcinogen.

To determine the association between diesel exhaust exposure and the risk of dying from lung cancer, Michael D. Attfield formerly of the National Institute for Occupational Safety and Health, in Morgantown, West Virginia, Debra T.

Silverman, Sc.D., of the National Cancer Institute, and colleagues, conducted a cohort study of 12 315 workers in eight underground nonmetal mining facilities, called the Diesel Exhaust in Miners Study.

Information was collected on workers starting in the year of introduction of diesel-powered equipment in each facility (between 1947 and 1967) to the end of the follow-up period on Dec. 31, 1997.

The authors estimated the exposure of each worker to respirable elemental carbon (REC), a surrogate for diesel exhaust exposure, from a variety of sources including a 1998-2001 survey of diesel exhaust exposure at each facility, data from the US Mine Safety and Health Administration Mine Information Data Analysis System compliance database, data on diesel equipment usage over time at each facility, and historical mine ventilation data.

The researchers found a statistically significantly increased risk of lung cancer with increasing REC exposure among underground workers. Some evidence of increased risk was also shown for longer-term workers above ground who were exposed to elevated levels of REC.

Other workplace exposures such as silica, asbestos, non-diesel exhaust-related polycyclic aromatic hydrocarbons, respirable dust, and radon, had little or no effect on the findings.

Silverman, lead author of the study, and her colleagues conducted another study, a nested case-control study of lung cancer deaths in 198 workers, drawn from the same cohort of workers in the original study. In the nested case-control study, the researchers also found a statistically significantly increased risk of lung cancer mortality with increasing levels of exposure to REC, after adjusting for smoking history, employment in high-risk occupations for lung cancer, and history of nonmalignant respiratory diseases.

"Our findings are important not only for miners but also for the 1.4 million American workers and the 3 million European workers exposed to diesel exhaust and for urban populations worldwide," Silverman said.

"Because such workers had at least a 50% increased lung cancer risk, our results suggest that the high air concentrations of elemental carbon reported in some urban areas may confer increased risk of lung cancer.

"Thus, if the diesel exhaust/lung cancer relation is causal, the public health burden of the carcinogenicity of inhaled diesel exhaust in workers and in populations of urban areas with high levels of diesel exposure may be substantial," she said.

Silverman and colleagues point out certain limitations of their study, namely the uncertainty in retrospective exposure assessment and information on workers' hazardous exposures before and after the study job, and the fact that certain lifestyle factors, such as smoking, were obtained from next of kin.

The study has been published in the Journal of the National Cancer Institute. (ANI)