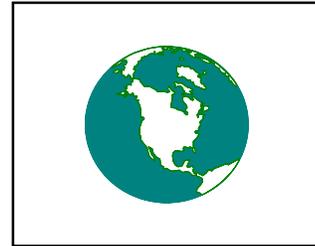


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# CAR LINES

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## EUROPE

### 1. EU Agency Confirms 12 Member States Exceeded Legal Limits on Pollutants in 2010

National emission ceilings for pollutants covered by the Gothenburg Protocol to the United Nations Convention on Long-Range Transboundary Air Pollution were breached in 2010 by 12 European Union countries, according to figures published by the European Environment Agency (EEA). The figures, contained in the EEA's latest status report on the implementation of the European Union's National Emissions Ceiling Directive (NEC, 2001/81/EC), are a confirmation of preliminary data published in March.

The NEC Directive implements the Gothenburg Protocol in the European Union.

The status report, published by the EEA on May 23<sup>rd</sup>, confirms that in 2010, Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Luxembourg, Malta, the Netherlands, Spain, and Sweden breached one or more of the limits for air pollutants covered by the NEC Directive.

The directive requires countries in 2010 and subsequent years to keep their emissions of nitrogen oxides, non-methane volatile organic compounds, sulfur dioxide, and ammonia within national limits set out in the directive. The NEC Directive targets the main pollutants that cause acid rain.

The European Commission, the EU's executive arm, said at the time of the publication of preliminary data in March that it was "quite likely" that proceedings would be opened against countries that failed to comply with their ceilings in 2010, the first year in which mandatory emission ceilings came into effect under the NEC Directive.

The EEA status report also contained preliminary figures for air pollutant emissions in 2011. According to these figures, eight countries continued to exceed their emission ceilings in 2011, the EEA said. The four countries that exceeded the ceilings in 2010 but reduced emissions below the ceilings in 2011 were Denmark, Malta, the Netherlands, and Sweden.

Countries had the most difficulty with emissions of nitrogen oxides, for which 11 countries in 2010 and seven countries in 2011 exceeded their ceilings. However, all European Union countries had emissions below the ceiling for sulfur dioxide, and most countries stayed within the limits for non-methane volatile organic compounds and ammonia.

### 2. The Cost of Air Pollution Impacts on Health

Researchers have developed a new model to assess the health-related external costs arising from air pollution from ten major emission sectors.<sup>1</sup> Applying the model at national and Europe-wide levels, they suggested that the major contributors to costs were industrial power production, agriculture, road traffic and domestic combustion.

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<sup>1</sup> Source: Brandt, J., Silver, J.D., Christensen, J.H., Andersen, M.S. et al. (2013). Contribution from the ten major emission sectors in Europe and Denmark to the health-cost externalities of air pollution using the EVA model system – an integrated modeling approach. *Atmospheric Chemistry & Physics* 13:5871-5922. DOI: 10.5194/acpd-13-5871-2013.

In recent years, policy action to reduce emissions has targeted sources near towns and cities, encouraging measures such as installing filters on power plants and vehicles. However, air pollution can be transported in the atmosphere over thousands of kilometers and harmful compounds can be produced by chemical reactions 'along the way' rather than at source.

This study examined the contribution from ten major sectors that emit pollutants, such as agriculture and road traffic. It investigated their impact at a national level (in Denmark) and at a European level (including EU-27 and parts of Russia and Ukraine). It then quantified their impact on human health and the resulting external costs. External costs are those that occur when a certain activity imposes a cost (in this case through pollution damage) on a third party (the society).

Unlike previous approaches, the model applied a tagging method that considers the transport of emissions and the possible production of other harmful compounds en route. Over 58 chemical compounds were considered and eight classes of particulate matter. Exposure levels were estimated using population data and impacts on human health were measured in 'years of life lost', among other measurements, which were then converted into economic costs.

The study estimated that Danish emissions in 2000 caused approximately 49,000 years of life lost, Europe-wide. Total European emissions resulted in 7.2 million years of life lost yearly. This results in yearly health-related external costs caused by the air pollution from European emissions of €766 billion within Europe, and €3.7 billion in Denmark alone. The total health-related external costs caused by air pollution from Danish emissions were €4.9 billion in Europe and €0.82 billion in Denmark.

Considering European emissions in 2000, the sectors contributing most to the Europe-wide health cost were industrial power production (24% of costs), agriculture (24% of costs) and road transport (18% of costs). The emission sectors within Denmark that contributed the most to costs in Denmark alone were agriculture (39% of costs – caused by the chemical transformation of manure into harmful particles) and road transport (19% of costs), but domestic combustion was also a major contributor (16% of costs).

The results demonstrate that air pollution presents a serious problem to human health and has substantial related economic costs. Emission sources (such as power plants and road traffic) contribute significant health-related problems. The authors note that in Denmark, coal-fired plants are heavily regulated and contribute only around 6% to total national emissions. However, for the whole of Europe (where regulation is not always as restrictive as in Denmark) power plants contribute 24%. This indicates more can be done to reduce emissions from power plants in Europe.

Another important finding is that other less heavily-regulated sources of air pollution, such as agriculture and domestic combustion, also have significant impacts, at both a national and European level.

The authors suggest that future research should expand cost estimates of air pollution to include those related to the environment and climate. In addition, the interactions between emissions from different sources should be assessed.

### **3. Health Impacts of Air Pollution: The Evidence Reviewed**

The damaging health impacts of some key air pollutants can occur at lower atmospheric concentrations than indicated by the most recent World Health Organization (WHO) Air Quality guidelines, set in 2005 and currently used in Europe. This is according to a new WHO report, which assesses scientific evidence to help inform European air pollution policies.<sup>2</sup>

The report highlights key findings of the Review of Evidence on Health Aspects of Air pollution project, part-funded by the EU. It was written by 29 invited experts from a range of scientific fields who reviewed a wide range of scientific research to answer 22 key questions regarding the health effects of three major pollutants: particulate matter (PM), ozone and nitrogen dioxide. The experts drafted answers to each question based on the consensus found in research papers, which were then assessed by an independent scientific advisory committee.

Among the report's highlights, research findings since 2005 have strengthened the evidence to show that PM<sub>2.5</sub> can lead to adverse health effects, such as cardiovascular problems. The authors suggest that the current guidelines for PM<sub>2.5</sub> should be re-examined in the light of recent results from long-term studies that have shown increased rates of mortality at concentrations well below the current guidelines of 10 micrograms per m<sup>3</sup>. In fact, the evidence suggests that there is no 'safe' threshold.

Research has also shown that PM<sub>10</sub> cannot be regarded as a proxy for the smaller PM<sub>2.5</sub>, demonstrating that these larger particles are also dangerous in their own right. Again, evidence shows that there are health effects of long-term exposure to PM<sub>10</sub> even at concentrations below European limits.

When the WHO 2005 review was conducted, only short-term effects of exposure to ozone pollution could be observed. However, subsequent studies, highlighted in this review, now show longer-term effects on respiratory health problems and subsequent mortality.

Living near busy roads has been linked with detrimental health effects and this report explicitly addressed the question of whether these impacts were the result of air pollution, rather than other factors, such as noise or socioeconomic status. Evidence assessed by the report demonstrates that once these other factors have been accounted for, the damaging effects of air pollution remain clear. They are likely to be caused by a number of pollutants, including nitrogen dioxide, a major urban pollutant produced by car exhausts, and other harmful gases, such as carbon monoxide.

The report recommends revising guidelines for nitrogen dioxide, as both short- and long-term studies of communities exposed to the pollutant find an association between exposure and mortality. These studies are supported by laboratory experiments examining the toxicological effects of exposure, such as increased inflammation of the airways of subjects, or changes to lung cells, which provide evidence of a causal link between the two. Again, this evidence points to health effects that occur below the level recommended by the 2005 WHO guidelines, which the authors suggest provides a strong argument for their revision.

#### **4. Newer Diesel Cars Emitting More NO<sub>2</sub>, Study Finds**

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<sup>2</sup> Source: WHO regional Office for Europe (2013). Review of evidence on health aspects of air pollution – REVIHAAP Project. 1-26. See: [www.euro.who.int/en/what-we-do/health-topics/environment-and-health/air-quality/publications/2013/review-of-evidence-on-health-aspects-of-air-pollution-revihaap](http://www.euro.who.int/en/what-we-do/health-topics/environment-and-health/air-quality/publications/2013/review-of-evidence-on-health-aspects-of-air-pollution-revihaap)

Nitrogen dioxide makes up a greater proportion of pollutants emitted from newer types of diesel cars in comparison to older diesel technologies, a DEFRA report has found. Comparing data collected in summer 2012 with information from past DEFRA studies of vehicle emissions, the report also found that nitrogen oxide emissions from petrol cars have fallen over the last 20 years. Furthermore, only very low proportions of emissions from petrol cars were found to consist of nitrogen dioxide.

According to the report, 'Road sensing of NO<sub>2</sub> exhaust emissions from road vehicles', nitrogen dioxide from diesel cars has increased overall from a 10-15% proportion of nitrogen oxide emissions for Euro 3 standard vehicles or older to an average of almost 30% for newer Euro 4 or 5 vehicles.

Nitrogen oxide is made up of both nitric oxide and nitrogen dioxide. However, nitrogen dioxide is considered to have the greater impact on human health.

Published on May 20, the study states that unlike petrol cars, nitrogen oxide emissions from diesel cars peaked around the year 2000 but has overall shown little change during the last 20 years. However, the proportion of harmful nitrogen dioxide in nitrogen oxides has increased over this period, although the study also emphasizes that there are differences between pollutants emitted from different diesel technology manufacturers.

The report states: 'It is clear that some manufacturers adopt emission control approaches that result in a considerably lower nitrogen dioxide/nitrogen oxide fraction than others. These results indicate there would be scope for significant reductions in nitrogen dioxide emissions if the lower emitting technologies were more widely adopted.'

In the study, lead authors David Carslaw of King's College London and Newcastle University's Glyn Rhys-Tyler summarize the key findings from a series of measurements taken during the summer of 2012. These measurements were taken by directly monitoring vehicle emissions from exhaust using a remote sensing detector provided by the University of Denver. According to the report, the direct measurement of nitrogen dioxide has not previously been possible using other remote sensing detector (RSD) equipment available in the UK.

The project, which aimed to quantify emissions of nitrogen oxides from urban road vehicles, was funded by the Department for the Environment, Food and Rural Affairs (DEFRA) with assistance from the City of London Corporation and Ealing borough council.

However, while the study focused in particular on nitrogen oxides, measurements were also taken of carbon monoxide, hydrocarbons, ammonia, sulfur dioxide and particulates.

The study also found that in general, London taxis manufactured before 2000 emitted twice the nitrogen oxide per unit of fuel consumed in comparison to taxis manufactured after 2000.

In order to mitigate the level of air pollution from taxis, the report concludes that 'the Mayor's proposals for a new taxi capable of zero emission (at tailpipe) operation is the most effective way of delivering comprehensive reductions in all taxi emissions'.

The study also looked at Transport for London (TfL) buses fitted with selective catalytic reduction (SCR) systems, which have been designed to pass Euro emissions standards rather than being optimized for urban situations – such as low speed and low engine temperature. However, the study states: 'There is little evidence that original equipment manufacturer SCR

fitted to buses, including hybrid buses, appreciably reduces total nitrogen oxides during urban driving.'

The report states that the remote sensing detector equipment approach of directly monitoring vehicle emissions 'has proved to be extremely valuable'. As a result, the study recommends that this kind of direct monitoring system is deployed in the UK more frequently, as it claims that it provides more detailed vehicle technology information. It adds: 'Such information would serve two main purposes: the identification of the most effective emissions control technologies to reduce nitrogen dioxide, and the information needed for emission inventories to calculate robust emission estimates.' It also recommends that the system is used to monitor the emissions reducing technology retrofitted to 900 London buses in order to 'help confirm the emissions characteristics of these vehicles'.

The four survey sites selected for the survey were Aldersgate Street and Queen Victoria Street in the City of London and Greenford Road and Target Roundabout in Ealing.

A total of approximately 93,000 observations were made during the surveys, resulting in a usable sample of approximately 68,000 data records.

## **5. UK Government Broke EU Air Quality Law, Supreme Court Says**

Britain's highest appeal court, the Supreme Court, said the government was in breach of an EU directive which put limits on nitrogen dioxide (NO<sub>2</sub>) - a colorless, odorless gas produced by burning fuels which can damage people's breathing.

London has the highest levels of NO<sub>2</sub> of any European capital. Around 29,000 early deaths a year in Britain are attributed to air pollution, according to a body which advises the UK government.

Before deciding on further action, the Supreme Court referred a number of legal questions to the ECJ in Luxembourg, which could take up to 18 months to answer. The Supreme Court could eventually force the UK government to take certain steps to improve air quality but does not have the power to issue fines, according to Alan Andrews, lawyer at the firm ClientEarth which brought the case against the government in 2011. The environmental law firm wanted to force the government to come up with an air quality plan to comply with European Union limits on NO<sub>2</sub> concentrations by 2015. The High Court and the Court of Appeal refused to take action on the issue and the case went to the Supreme Court.

Under the EU directive, member states were supposed to comply with limits on NO<sub>2</sub> in 2010 but the deadline could be extended by five years if a plan to deal with high levels of NO<sub>2</sub> was delivered.

Court documents show 40 out of Britain's 43 air quality zones exceeded the limits for 2010 and the government's Department for Environment, Food and Rural Affairs (DEFRA) has said 23 zones might comply by 2015 and 16 between 2015 and 2020, while London is not expected to comply before 2025.

A spokesman for the European Commission said the body could already take legal action against Britain. "It has not been done yet because we're working through a number of countries because it's easier to bring one horizontal action (against them all)," said spokesman Joe Hennon.

In his ruling, Lord Robert Carnwath, heading a panel of five judges, said the United Kingdom was in breach of Article 13 of the EU Air Quality Directive. This provision requires EU member states to prove that their Air Quality Plans can realistically achieve the required cuts in air pollutants such as nitrogen dioxide across all their territories or zones—43 in the case of the United Kingdom—by Jan. 1, 2015.

Carnwath said the Supreme Court's decision "is open to immediate enforcement action at national or European level" but added that he was nevertheless referring the case to the Court of Justice of the European Union (CJEU), as certain provisions of the 2008 EU Air Quality Directive (2008/50/EC) raise "difficult" issues of EU law.

## **6. Spanish Capital Refused More Time to Meet NO2 Limits**

Madrid will not be given more time to comply with EU air quality standards for nitrogen dioxide (NO<sub>2</sub>), the European Commission has decided. Plans to reduce NO<sub>2</sub> concentrations in the Spanish capital are not good enough for the commission to grant time extensions, explains the EU executive.

The decision means Brussels could now begin infringement proceedings against Spain. If launched, this process might end with a fine by the European court of justice.

The NO<sub>2</sub> standards should have been achieved by 2010 but EU law provides for derogations if certain conditions are met. Last summer, Spain submitted an air quality plan in a bid to convince the commission it needed until 2015 to comply with annual and hourly concentration limits on the irritant gas. It submitted further information in October.

In December, the commission agreed to give the city's southern fringe and a neighboring area until the end of the year to comply.

Madrid's plan, adopted a year ago, includes raising car parking charges and introducing hundreds of hybrid and gas-powered buses. In all, it would cut annual average NO<sub>2</sub> concentrations by a maximum of 19 micrograms per cubic meter. But this is unlikely to be sufficient to meet the annual 40µg/m<sup>3</sup> limit. "More stringent abatement action" is needed to achieve compliance by 2015, says the commission.

Transport is responsible for some 70% of local NO<sub>2</sub> emissions. Both annual and hourly average limits are exceeded in locations across the city.

Spain revised its national air quality plan last month.

## **7. Member of the Scottish Parliament Calls for Action over Edinburgh Air Quality**

More needs to be done to tackle the increasing numbers of streets in Edinburgh that are failing air quality standards, according to a Member of the Scottish Parliament (MSP). In a motion put forward in the Scottish Parliament, Scottish National Party MSP for Edinburgh Central, Marco Biagi, called for action to tackle air quality problems in the city.

According to the motion, areas such as Grassmarket, Easter Road and Gorgie Road as well as major streets such as Princes Street and the Royal Mile have been designated Air Quality

Management Areas (AQMA) as a consequence of air pollution. Great Junction Street, Inverleith Row and Glasgow Road in Corstorphine have also been designated as AQMA.

The motion welcomes action taken by Edinburgh city council which has ‘sharply reduced levels of nitrogen dioxide in recent years’, but emphasizes still that ‘more needs to be done to reduce other pollutants to a safe level’.

The motion states: “The Parliament notes with concern the increase in the number of streets in Edinburgh that are failing minimum air quality standards,” adding: “more needs to be done to reduce levels of other pollutants to a safe level and to prevent the spread of the air pollution problem across more of the city, and hopes that Edinburgh’s air quality can be improved so that everyone who lives, works and visits the city can have confidence in the air that they breathe.”

This comes after environmental campaigners published a list of the most polluted streets in Scotland and criticized the Scottish Government and local authorities for not doing enough to tackle the problem (see [airqualitynews.com](http://airqualitynews.com) story).

The motion, on which a vote has not yet been taken, was lodged by Mr Biagi on April 26 and followed by a question in the Scottish Parliament on May 9, in which the MSP asked what action the Scottish Government was taking to tackle air pollution in cities such as Edinburgh.

Mr Biagi said: “What support can Edinburgh—the local authority and citizens—expect from the Scottish Government in addressing the problem?”

Scottish minister for environment and climate change, Paul Whitehouse, answered that the Scottish Government was “working closely with local authorities, the Scottish Environment Protection Agency (SEPA) and other partners to improve air quality in cities”. He pointed to the establishment of a statutory framework for air quality and transport, as well as grant funding for local authority actions and information on the Scottish air quality website as examples of the Scottish Government’s work to tackle air quality – adding that it had provided financial support for air quality monitoring in Edinburgh.

Mr Whitehouse said: “We are committed to improving air quality across the country, and there have been significant reductions in pollution emissions over recent decades through tighter industrial regulation, improved fuel quality, cleaner vehicles and an increased focus on sustainable transport.”

He added: “In addition, through the future transport fund and other measures, we aim to reduce the impact of transport on our environment. That will support a range of initiatives around sustainable transport, including cycling infrastructure and low-carbon vehicle technology. The Scottish green bus fund... will also support the transition to low-carbon public transport.”

In a response to another question from Jamie McGrigor, Conservative MSP for Highlands and Islands, about whether planting trees could help to mitigate levels of some air pollutants, Mr Whitehouse praised Fife council for working to plant 500,000 trees in Lothian and Fife in order to combat emissions. Mr Whitehouse said: “I recognize the important role that tree planting in urban areas can play in that regard.”

## **8. German Automakers Furious About New Emission Standards**

The German Association of the Automotive Industry (VDA) is pressing Chancellor Angela Merkel to reject the proposed new law that would lower CO2 emission standards in Europe from 135 to 95 g/km by 2020, claiming it would greatly harm the industry. "We cannot let our powerful and high-performing premium segment, which accounts for nearly 60% of all jobs at German car manufacturers, be destroyed by arbitrary limitations," the VDA said in a statement.

BMW chairman Norbert Reithofer says the European Union's strict vehicle emissions standards are "impossible to meet".

The EU plan would cut CO2 emission outputs to 95g/km by 2020, followed by a further 25 percent reduction by 2025. These targets can't be met without huge investments — requiring government support — in expensive alternative drivetrain technology, Reithofer told the press. The BMW chairman also called the EU plan "politically motivated and published without conducting any kind of feasibility study" and said Europe, when compared to China and the US, undercredits alternative drivetrains in its efforts to meet fuel emissions standards.

The German automaker says it has invested heavily in its low- and zero-emissions i sub brand, which includes the all-electric i3 coupe and the i8 hybrid sports car. BMW unveiled the i8 roadster open-top electric-hybrid sports car at the Detroit Auto Show earlier this year. The concept vehicle boasts acceleration of 0 to 62 mph in less than five seconds combined with fuel consumption in the European cycle of 2.7 liters per 100 kilometers. A similar i8 goes on sale in late 2014.

Germany is ready to implement ambitious electro-mobility targets, but proposals set by the European Union on electric vehicles must be realistic and support car manufacturers, German Chancellor Angela Merkel told delegates at an e-mobility conference in Berlin on May 27<sup>th</sup>. Both Merkel and her minister for economics, Philipp Rösler, said they will fight for better terms for super credits for the car industry, following a speech by EU Commission Vice President and Commissioner for Transport Siim Kallas in which he called for a properly coordinated EU approach to e-mobility and EU targets for charging stations for electric vehicles.

"Super credits are super important," said Merkel, adding that Germany's strength will lie in building cars of all sizes. "We cannot allow this supply chain in Europe to be destroyed."

Current EU commission proposals regarding super credits would allow manufacturers to count electric cars and other low-carbon vehicles which emit less than 50 grams of carbon dioxide per kilometer as 3.5 passenger vehicles in 2012 and 2013, 2.5 in 2014, 1.5 in 2015 and then 1 from 2016 onward. Germany wants a more generous bonus scheme because car industry representatives said they need large numbers of super credits to keep the costs of low-emissions vehicles down for manufacturers and consumers.

Industry groups applauded Merkel's call for super credits, but Dieter Zetsche, the chairman of Daimler AG, told delegates that the government needs to create more incentives for industry and consumers to boost the development of e-mobility in Germany. "We need a subsidies policy and the legal framework to move forward," Zetsche said.

Despite industry demands for subsidies, Rösler reiterated his belief that these were not the answer. "Policies have to be based on market mechanisms and market principles if e-mobility is to work," Rösler said. "Subsidies are too short-sighted." Germany's economics minister told delegates that research and development, creating Europe-wide standards, and consumer acceptance were the government's three main tasks for e-mobility.

The international conference, “Electric Mobility Going Global,” attended by representatives from politics, business, and the research community, was organized by the German federal government to boost support for its e-mobility targets of bringing 1 million electric vehicles onto German roads and creating 30,000 new jobs in the automobile industry by 2020. With just 7,000 electric cars out of 43 million passenger vehicles currently registered in Europe’s economic powerhouse, the automobile industry is seriously behind on this target, government officials admit. But industry representatives remained optimistic.

Both industry groups and politicians emphasized the need to create the national and Europe-wide infrastructure for recharging electric vehicles as well as bringing down costs by improving battery technology as ways to encourage consumers to make the switch to electric and hybrid cars.

## **9. New Cars in EU Continue Downward Trend in Carbon Dioxide Emissions**

Carbon dioxide emissions from new private cars sold in the European Union continued to decline in 2012 to an average level of 132 grams per kilometer (g/km), the European Environment Agency (EEA) said in a report published April 30. Emissions for about 12 million new cars sold in the European Union in 2012 were on average 2.6 percent lower than the 2011 figure of 135.7 g/km, the report said.

The level of 132 g/km brings the overall average close to 130 g/km (208 grams per mile), the limit that automakers selling vehicles in the European Union were required to start meeting in 2012 under a 2009 law (Regulation (EC) No. 443/2009). The 130 g/km limit is phased in through 2015, when all vehicles on average must comply. In 2012, automakers were required to ensure that 65 percent of their fleets had emissions below the threshold.

Since 2009, average carbon dioxide emissions have fallen by 9.4 percent to 133.7 g/km for gasoline-fueled cars and 131.6 g/km for diesel cars, according to figures in the EEA report.

The report did not include figures per manufacturer. Automakers that miss the 130 g/km target will be required to pay an “excess emissions premium” on a sliding scale from €5 to €95 (\$6.54 to \$124) per new car registered per g/km above the limit. The figures in the report are provisional; the agency will publish in November or December 2013 confirmed figures per manufacturer for 2012, which would be the basis for calculation of any excess emissions premiums to be levied.

EEA said ongoing declines in vehicle carbon dioxide emissions are a consequence of engine technology improvements that reduce fuel consumption, and therefore per-kilometer emissions, and of increased sales of diesel cars relative to gasoline cars. Diesel cars made up 55 percent of new sales in 2012, compared to 45 percent in 2009, according to EEA figures. In addition, “the economic crisis may have increased sales of more [fuel] efficient models in some countries,” EEA said.

New cars sold in the European Union starting in 2020 would be required to emit no more than 95 grams of carbon dioxide per kilometer (152 grams per mile) on average under a proposal endorsed by the European Parliament’s Environment Committee on April 24. In a 47-17 vote, the committee broadly backed a European Commission proposal, published in July 2012, to tighten an existing limit of 130 grams per kilometer (g/km), which is being phased in through 2015. The committee added an amendment to the draft regulation—an EU law that would take

equal effect throughout the bloc—saying that automakers should further aim to reduce the average emissions of private cars to 68 to 78 g/km by 2025. This was not included as a binding limit but as a target that should be considered in detail, the committee said. It called on the European Commission to complete a review of the 2025 target by Jan. 1, 2017.

### **10. EP Committee Backs Long Term CO2 Target for Vans**

CO2 emissions from new vans should be cut to 105-120 grams per kilometer from 2025, says the European Parliament's environment committee. The European Commission would propose a specific figure by 2017, according to a recent resolution. The commission's own plan sets a 147gCO2/km target for 2020 and says post-2020 goals would be considered by 2015.

The committee's proposed range for after 2020 is 18-28% tighter than the 147gCO2/km target, which the MEPs endorsed. Under existing law, manufacturers must comply with a 175g/km limit by 2017, which will be phased in from 2014.

The MEPs followed the same approach for a vote on car emissions two weeks ago. Several other similar amendments were adopted, such as reducing loopholes in test procedures and offering limited rewards for making low-carbon vehicles. The 'super credit' scheme for vans is less generous than the one proposed by rapporteur Holger Krahmer. Sales of vans emitting less than 50g/km would be counted 1.3-times towards meeting manufacturers' CO2 targets, rather than two times. It would apply over 2018-23, capped at 1% of annual sales.

Manufacturers producing less than 1,000 vehicles a year would be exempted from CO2 targets. The commission proposed a 500-vehicle exemption.

From 2014, new vans would not be able to exceed 120km/hour. Chris Davies, the liberal MEP behind this amendment, notes that it would reduce CO2 at a low cost, as it favors fitting smaller engines. Campaign group T&E estimates the restriction would cut the average van's CO2 emissions by at least 6%.

The committee voted 53-4 in favor of the 2020 limit, which was proposed in a regulation published by the European Commission, the European Union's executive arm, in July 2012.

The European Automobile Manufacturers' Association said in a statement that the 2020 objective of 147 g/km "is extremely ambitious, with independent studies showing that it will only be achievable with full hybrid technologies." The association's secretary-general, Ivan Hodac, said any target for the period after 2020 should be "fact based." He said the figure of 105 to 120 g/km settled on by the Environment Committee for 2025 was derived from "political horse-trading" rather than an analysis of what could realistically be achieved.

The European Parliament will now seek agreement on the regulation with the EU Council, which represents the governments of EU member states. If agreement is reached, the draft regulation could be put before the full European Parliament for approval at a session in July.

### **11. UK Could Say No To Long-Term Vehicle Emissions Target**

Lib Dem MEP Fiona Hall proposed to Europe that a target for 2025, which would prevent cars from emitting more than 70g of carbon dioxide per kilometer (CO2/km), should be set. But the government could overlook her suggestions. There are other goals in force: by 2015, cars manufactured should not emit more than 130g CO2/km, while by 2020 the limit will be 95g

CO2/km. However, the Department for Transport has argued that this additional target for 2025 will only delay the agreements for the 2015 and 2020, and cause problems to car manufacturers.

Greenpeace released a leaked document that showed how transport minister Norman Baker was, in the opinion of the campaigners, “blocking the new legislation” to reduce CO2 and save drivers fuel. In the document, Baker allegedly asked ministers to vote against the proposal for a 2025 target on CO2 emissions.

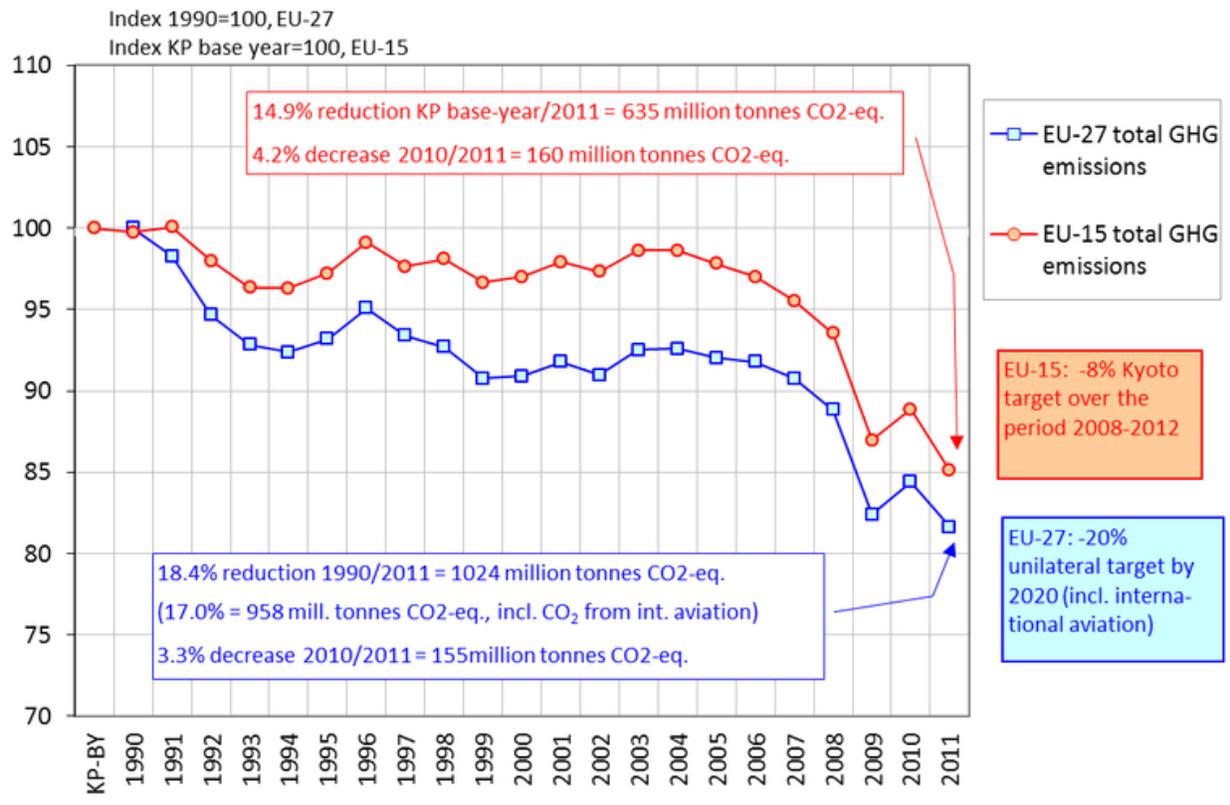
Sara Ayeche, Greenpeace campaigner, said, “Norman Baker should follow the progressive political lead of Fiona Hall and support laws that will help the environment, whilst putting an average of £400 a year back into the pockets of hard pressed motorists.”

However, Baker told the Guardian, “It is quite wrong of Greenpeace to make unfair and inaccurate allegations of this nature. “I am not trying to water down this legislation. On the contrary – as always and as I have throughout my political career, I am trying to get the most sensible result for the environment. “Greenpeace, in their campaigns, should challenge those who don’t care about the environment, rather than those who do.”

## **12. EU Closing in on Emissions Reduction Of 20 Percent since 1990, Figures Show**

The European Union's greenhouse gas emissions in 2011 were 18.4 percent below 1990 levels, the reference year for measuring progress on cutting emissions under the U.N. Kyoto Protocol, according to confirmed data published May 29 by the European Environment Agency (EEA). Emissions were down 3.3 percent compared to 2010, a greater reduction than initially thought, EEA said. Preliminary data published by EEA in September 2012 assessed the 2011 level as being down 2.5 percent from 2010.

The EU submits the confirmed data to the U.N. Framework Convention on Climate Change (UNFCCC) as part of its official submission on compliance with the Kyoto Protocol. For most EU countries, the greenhouse gas reduction target was 8 percent compared to the 1990 base year. EEA Executive Director Jacqueline McGlade said in a statement that the 2011 reduction was “largely due to a warmer winter” and had been achieved despite “an increase in consumption of more carbon-intensive fuels such as coal.” Although EU fossil fuel consumption declined overall by 5 percent in 2011 compared to 2010, coal consumption increased by 2 percent, while oil and gas consumption dropped by 4 percent and 11 percent, respectively.



Separately, the European Union's statistical office, Eurostat, published estimates May 29 of EU carbon dioxide emissions from fuel use during 2012. These emissions declined by 2.1 percent compared to 2011, Eurostat said. The greatest absolute carbon dioxide reductions occurred in Italy and Poland, and the highest percentage cuts were in Belgium, Finland, and Sweden, according to the Eurostat figures.

### CO<sub>2</sub> emissions from energy use

	in 1000 tons CO <sub>2</sub>		Change 2012/2011	
	2011*	2012 estimate	in absolute terms (1000 tons CO <sub>2</sub> )	in %
<b>EU27</b>	<b>3 489 868</b>	<b>3 417 382</b>	<b>-72 486</b>	<b>-2.1</b>
<b>Belgium</b>	97 472	85 939	-11 533	-11.8
<b>Bulgaria</b>	51 410	47 881	-3 529	-6.9
<b>Czech Republic</b>	105 131	99 646	-5 485	-5.2
<b>Denmark</b>	42 961	38 908	-4 053	-9.4
<b>Germany</b>	721 656	728 065	6 409	0.9
<b>Estonia</b>	18 688	18 590	-99	-0.5
<b>Ireland**</b>	36 605	36 132	-473	-1.3
<b>Greece</b>	90 358	90 189	-170	-0.2
<b>Spain</b>	261 523	257 760	-3 764	-1.4
<b>France</b>	335 009	332 295	-2 714	-0.8
<b>Italy</b>	385 365	365 688	-19 676	-5.1
<b>Cyprus</b>	6 919	6 332	-587	-8.5
<b>Latvia</b>	6 563	6 376	-187	-2.8

Lithuania	11 387	11 577	190	1.7
Luxembourg	10 452	10 272	-180	-1.7
Hungary	44 880	43 175	-1 705	-3.8
Malta**	2 558	2 720	162	6.3
Netherlands	162 796	157 115	-5 680	-3.5
Austria	64 338	61 354	-2 984	-4.6
Poland	312 645	296 817	-15 828	-5.1
Portugal	46 217	44 388	-1 830	-4.0
Romania	78 506	74 954	-3 552	-4.5
Slovenia	15 365	14 979	-386	-2.5
Slovakia	32 897	30 758	-2 140	-6.5
Finland	53 248	46 970	-6 278	-11.8
Sweden	41 134	36 974	-4 160	-10.1
United Kingdom	453 785	471 530	17 745	3.9

\* Official 2011 data as reported to the United Nations Framework Convention on Climate Change (UNFCCC)

\*\* Include some Eurostat estimates

Eurostat said in a statement that carbon dioxide levels from fuel use are influenced by “factors such as climate conditions, economic growth, size of the population, transport and industrial activities,” combined with the impact of energy efficiency measures and the use of energy from renewable sources.

### **13. EU Greenhouse Gas Emissions Declined In 2012, Increasing Carbon Allowance Surplus**

Greenhouse gas emissions from power plants and manufacturing installations covered by the European Union's Emissions Trading System (ETS) declined in 2012 by 2 percent compared to 2011, according to verified figures published by the European Commission on May 16<sup>th</sup>. The Commission said the decline was good news, but it also compounded the problem of surplus carbon permits in the ETS. The number of excess allowances doubled during 2012, causing a consequent drop in the EU carbon price. EU carbon allowances currently trade at about €3.70 (\$4.75) per metric ton of emissions, a figure considered too low to provide companies with an incentive to invest in emission-reducing technology.

The Commission's figures showed that the approximately 12,000 industrial installations and power plants covered by the ETS emitted 1.867 billion metric tons of carbon dioxide during 2012, down from 1.905 billion metric tons in 2011. In addition, airlines covered by the ETS in 2012 emitted about 84 million tons of carbon dioxide.

Aviation was included in the ETS for the first time in 2012, though only flights within the European Union were affected. The inclusion of intercontinental flights to and from EU airports has been suspended for one year pending talks in the International Civil Aviation Organization on a global deal to reduce aviation emissions.

Emissions covered by the ETS, a cap-and-trade scheme that started in 2005, make up about 42 percent of total EU greenhouse gas emissions, which stood at 4.6 billion metric tons in 2011, according to the European Environment Agency. The Commission's release of the verified 2012 figures followed publication in April of preliminary figures.

The Commission said the ETS carbon allowance surplus rose to about 2 billion by the end of 2012, double the level at the end of 2011. The increase was caused by a combination of factors including the use by market participants of credits granted for emission reduction projects in developing countries, the auctioning of part of a reserve of allowances to raise funds for renewable energy projects, and the early auctioning of some allowances ahead of the third phase of the ETS, which started Jan. 1, 2013, and runs through 2020.

EU Climate Commissioner Connie Hedegaard said in a statement that “these facts underline the need for the European Parliament and Council to act swiftly on backloading” of allowances. The Commission proposed in November 2012 to backload, or delay, auctions to ETS participants of a portion of the allowances that will enter the ETS between 2013 and 2020 to boost the carbon price. Under the proposal, 900 million allowances would be auctioned in 2019-2020 rather than 2013-2015. The European Parliament voted in April to reject the plan, but will reconsider and amend the proposal, and will likely vote on it again in July.

#### **14. Airlines Fined Millions for Air Pollution**

Eight Chinese and two Indian airlines face fines of up to several million euros for not paying for their greenhouse gas emissions during flights within the bloc, the European Commission has announced. It said member states could fine the firms, among them Chinese flag carrier Air China, under the terms of the EU's Emissions Trading System which is designed to cut the carbon dioxide pollution blamed for global warming.

In a controversial move last year, the EU added airlines to the ETS regime, sparking howls of protest from the United States and China which said the move breached international law. Beijing even went so far as to threaten retaliation against the EU, its biggest single export market, adding to a growing list of trade disputes souring ties.

As the protests mounted, Brussels backed off and suspended the ETS for non-EU airlines flying to and from the bloc, with the aim of negotiating a solution by a September meeting of the International Civil Aviation Organization. It made clear, however, that non-EU airlines were still liable to pay for pollution on flights made within the EU. For example, a Chinese airline may land in Athens first and then fly on to Munich to pick up passengers before returning to the home destination.

It said that almost all airlines had fully complied with their ETS obligations, which were consistent with international law and conventions. However, eight Chinese carriers, including majors such as China Airlines, China Eastern and China Southern, alongside Air India and Jet Airways (India) were at fault, it said.

The eight Chinese companies were liable to fines of some 2.4 million euros combined while the two Indian groups owed much less, at 30,000 euros.

#### **15. EU States under Pressure to Enforce HFC-134a Ban**

MEP Andrea Zanoni has urged Italian authorities to ban sales of Daimler cars using refrigerant HFC-134a in their air conditioning systems. In March, British MEP Chris Davies also urged the UK's transport department to ban sales of these cars, which he believes include models Mercedes-Benz B-Class, Mercedes-Benz SL and Mercedes-Benz A-Class.

The German manufacturer is the only European manufacturer still using the gas in new types of cars. It believes HFC-134a could pose a fire risk during a crash. Most other carmakers have adopted alternative refrigerant HFO-1234yf.

The Mobile Air Conditioning (MAC) directive bans refrigerants with a global warming potential (GWP) of 150 or more. HFC-134a has a GWP of 1,400.

In comparison, HFO-1234yf's GWP is only 4. But limited supplies of this refrigerant led the European Commission to decide not to enforce it until this year.

According to Mr Davies, member state authorities have not yet taken measures to enforce the ban. "The EU single market is hugely important to British jobs and trade, but there must be a level playing field. Companies elsewhere cannot be allowed to pick and choose what regulations they obey," he said.

Mr Zanoni made a similar point in a letter to Italian authorities last month, stating that "the actions of Daimler, as well as the inability of Germany to address the issue to date, have put other producers at a disadvantage and create a disturbing practice." The authorities have not yet replied to the MEP's letter.

An environmental lawyer in Brussels said Daimler could potentially avoid the ban by requesting exemptions available in the MAC directive. But the European Commission would have to approve the arrangement, which would appear unlikely.

The commission has warned that it may launch infringement proceedings against Germany and other member states if they fail to enforce the legislation.

## **16. Ireland Suggests Dropping Limit on Crop-Based Biofuels**

The Irish presidency of the EU has proposed to ditch a 5% limit on biofuels from food-crops after its earlier suggestions on plans to address the indirect land-use change (ILUC) impact of these fuels failed to get member states' backing.

In March, the presidency suggested two options in a bid to secure a compromise in the Council of Ministers on the European Commission's main proposal: either to increase the 5% limit or to apply it to oil crops, for example rapeseed oil used for biodiesel. But a recent progress report states it has had to make new suggestions as "none of these [two] options gained sufficient support among delegations".

Instead of limiting the use of conventional biofuels, the presidency now proposes a mandatory 2% target for advanced ones listed in annex IX of the draft directive tabled by the EU executive in mid-October last year. A group representing producers of advanced biofuels called for such a target in early May.

In addition, the presidency says these biofuels could count double towards the achievement of the EU's 10% target on the share of renewables in transport fuels.

Although the commission and some member states find this 2% target too ambitious, Ireland believes that, of all the options currently on the table, its new suggestions "or at least some of its elements, have so far received the most open reception".

In the parliament however, rapporteur Corinne Lepage of the centrist ALDE group backs the 5% limit for conventional biofuels.

The presidency notes its new suggestions would help protect existing investments in the biofuels sector, adding that an obligation for new installations starting operations on 1 July 2014 to achieve 60% GHG savings would win wider support.

Regarding other aspects of the draft directive, it proposes setting up a traceability scheme to prevent fraud that may arise from incentives for advanced biofuels.

The report builds on ad hoc working party meetings and informal bilateral consultations with member states since February. It will be presented at meetings of EU energy and environment ministers on 7 and 18 June. A council deal on the proposals is not expected under the Irish presidency.

### **17. UK Signals Support for EU Import of Canadian Tar Sands Oil**

Leaked papers show UK rejects proposal to classify oil from tar sands as highly polluting, a label that would deter EU countries from importing it

Britain has given its clearest signal yet that it wants to allow European countries to import carbon-intensive tar sands oil from Canada. Leaked papers seen by the Guardian show that in EU negotiations on laws intended to encourage the use of low-carbon transport fuels, the UK has rejected language that would class tar sands oil as more polluting than conventional crude or other fuels.

The European commission has proposed labeling the oil as "highly polluting" under its fuel quality directive, a move that would deter countries importing it. Studies suggest that oil from tar sands produces more than one-fifth more greenhouse gas emissions than conventional crude.

But of six options put to EU countries in April on how to implement the proposal, the UK chose the two that would make no differentiation between the carbon content of fuels. "Based on the findings so far, it seems clear that [these two] seem to meet the policy aims of the directive with the least risks of unexpected consequences," the UK said in the documents. It firmly rejected others that allowed a difference.

Previously the UK left open the possibility that it would abstain.

The papers were released by Greenpeace as Norman Baker, a minister at the Department for Transport, prepared to meet former NASA climate scientist Jim Hansen in London. Hansen has been an outspoken critic of tar sands, saying last year "it will be game over for the climate if development of the oil sands isn't stopped".

Charlie Kronick, senior climate campaigner at Greenpeace, said: "Labeling oil from tar sands as highly polluting would strongly discourage tar sands imports into the Europe and possibly other markets. It could also discourage planned tar sands extraction projects in other parts of the world, such as Madagascar.

"If you're not serious about keeping tar sands oil out of Europe, then you're not serious about climate change. This could be the biggest decision Norman Baker will make in his entire career, and right now he's on the wrong side of the science and the wrong side of history."

## **18. Commission to Close EU Green Freight Program**

The EU's Marco Polo funding scheme for sustainable freight transport has not met its modal shift targets and will be discontinued next year, according to a report. Future funding is subject to political negotiations on the EU budget for the period 2014-20 and the revised transport infrastructure program (TEN-T). The final triologue talks on TEN-T are scheduled for 29 May.

As the future funding regime is not yet established, the commission is in the early stages of developing new measures to support sustainable freight transport. It began tendering for preparatory studies at the end of March.

Marco Polo funds start-up projects moving road freight onto short-sea shipping, inland waterways and trains, seen as more environmentally-friendly modes of transport. The recent European Commission report indicates that future funding will focus on interoperable and multi-modal freight projects on core transport networks.

Paola Lancellotti of the European Shippers Council said EU funding should move away from modal shift towards 'co-modality' for freight supply chains, as envisioned by a 2011 white paper. This would better fulfill the needs of manufacturers.

The report adds that motorways of the sea will remain a priority and that green freight funding might be extended to ongoing projects as opposed to just start-ups now.

The first series of Marco Polo projects, which first received funding in 2003-06, ended last year. They moved 21.9 billion ton-kilometers of freight off the roads, producing environmental benefits valued at €434m and saving 1.5Mt of CO<sub>2</sub>. But the achievement is less than half of the program's 47.7btkm target.

The economic crisis is partly to blame, as it has cut transport demand and halted some projects, the report explains. But the scheme's funding conditions and complex structure have also limited applications and project approvals.

Market conditions have also hit the second Marco Polo program, which started in 2007. But it is too early to report on its results, as not all projects have begun and will not be completed until 2020, says the commission.

## **19. 2015 Emissions Rules Could Cause Collapse of Ferry Company**

Brittany Ferries officials say the company may fold if the new European Union (EU) limits on sulfur emissions go into effect as scheduled, local newspaper the Portsmouth News reports.

The company, which provides transportation between Great Britain, France, Spain and Ireland, said the requirement for vessels to drop the level of sulfur in their fuel to 0.1 percent by 2015 in Emissions Control Areas (ECAs) would raise its fuel costs by 60 percent.

"Fuel accounts for a huge proportion of our costs – around £65m (\$99.9 million) a year," said Stephen Tuckwell, Brittany Ferries' director of communications and Portsmouth port operations.

The company said it is unclear whether scrubbers would be an effective solution, so it would have to pay for expensive low-sulfur fuel at least until it could find ways to convert its fleet to liquefied natural gas (LNG) bunkers.

"The 2015 deadline will leave insufficient time to invest in alternative technologies," Tuckwell said. "We are already looking at other fuel solutions such as LNG, but there is no supply chain in place and this is only likely to be viable for new ships from 2020."

Tuckwell said the company would have to raise passenger fares and freight rates and might also need to reduce services, which "could well lead to the collapse of the company."

French authorities have agreed to delay the start of the new rules until 2020, providing the British government agrees. In March, European regional leaders called for the EU to delay the rules.

## **20. EU Provisionally Agrees on 2020 Carbon Dioxide Emission Limits for Cars**

On June 24<sup>th</sup>, Representatives from the European Parliament and EU member states struck a provisional deal on a regulation under which carbon dioxide emissions from new cars sold in the European Union starting in 2020 would be limited to a fleet-wide average of 95 grams per kilometer (g/km). This represents a 28 percent reduction compared to the 2012 average of 132 g/km. Under an existing regulation, private cars must reach an average level of 130 g/km by 2015.

Phil Hogan, the environment minister of Ireland who negotiated on the new regulation on behalf of the EU Council, said in a statement that the 2020 limit is "an appropriate balance between environmental ambition and economic considerations." Reduced carbon dioxide emissions from cars would mean lower greenhouse gas emissions, and would also "save consumers money and...boost innovation and competitiveness in the European car industry," Hogan said. Ireland holds the rotating presidency of the EU Council, which represents the governments of EU member states. It will hand the presidency to Lithuania on July 1.

The agreement on the regulation is subject to formal ratification by the European Parliament and EU Council. The Parliament is scheduled to vote on it in November.

Carmakers that fail to meet the 2020 limit would be required to pay an "excess emissions premium" of €95 (\$124.50) per additional g/km per vehicle.

As part of the deal, carmakers will be able to double-count cars with emissions below 50 grams of CO<sub>2</sub> per kilometer towards their targets in 2020. Manufacturers' use of so-called 'super-credits' will be capped at a 2.5gCO<sub>2</sub>/km average increase in emissions across all their new cars as a result of the rule. The multiplier will fall to 1.67 in 2021 and to 1.33 in 2022.

The deal came in spite of a strong push from Germany and its car industry for more lenient rules, which was also backed by some eastern European countries. Germany had initially lobbied for no cap on super-credits, and had later called for significantly higher multipliers, starting with 3.5 in 2020.

The European Commission had proposed a stricter eligibility threshold of 35gCO<sub>2</sub>/km and a lower multiplier of 1.3 for 2020-2023, with each manufacturer allowed to count only 20,000 low-emission cars for super-credits.

The agreement also requires the European Commission to propose by 2015 a carbon dioxide target for 2025.

In addition, the deal on the regulation calls for a new testing standard for car emissions, the World Light Duty Test Procedure (WLTP) established by the United Nations Economic Commission for Europe, to be introduced in the European Union no later than 2017. The WLTP will replace the current EU test, which has been criticized for producing results that do not reflect real-world driving conditions. On June 25<sup>th</sup>, the European Parliament noted in a statement that “recent studies show that manufacturers have exploited weaknesses in the current procedure for testing the environmental performance of cars, with the result that official consumption and emission figures are far from those achieved in everyday driving conditions.”

## **21. EEA Publishes First Data on Vans' Carbon Dioxide Emissions**

Manufacturers of light vans sold in the European Union will need to cut the carbon dioxide emissions of their vehicles by nearly a fifth if they are to comply with targets for 2020 currently being discussed by the EU institutions, 147 g/km. according to preliminary figures published by the European Environment Agency (EEA) on June 18. The EEA figures showed that in 2012, average carbon dioxide emissions from light vans sold in the European Union stood at 180.3 grams per kilometer (g/km). Van emissions varied by country according to the mix of vehicles sold, from 140.8 g/km in Cyprus to 201.2 g/km in Slovakia.

Under a 2011 law, carbon dioxide emissions from vans must be limited on average to 175 g/km by 2017. The 175 g/km limit will be phased in starting in 2014, when 70 percent of new vans on average must conform.

The European Parliament's Environment Committee in May approved the 2020 limit and opted to open negotiations on it with the EU Council. Depending on the outcome of the negotiations, the full European Parliament could vote on the measure in the fall.

The EEA figures are the first release of official data on van emissions that will be used to measure the compliance of manufacturers with the targets. The EEA said in a statement that the data, which do not include a breakdown of emissions per manufacturer, are “provisional and subject to confirmation, [and] final figures will be available by the end of the year.”

Manufacturers that miss their targets will be required to pay an “excess emissions premium” of €95 (\$117) per additional g/km per vehicle.

EEA figures cover about 1.1 million light vans sold in the European Union in 2012, three-quarters of which were sold in France, Germany, Italy, Spain, or the United Kingdom.

Gas-powered and electric vehicles accounted for 1.5% of overall sales.

The EEA has cautioned that the figures do not properly cover Multi-Stage Vehicles (MSVs). These are built in part by a primary manufacturer and completed by another. A tipper van is a typical example. MSVs take up about 20% of the van market.

Under EU law, primary manufacturers are responsible for CO2 but no accounting system is in place for completed MSVs. This has led to uncertainty about their emissions. A monitoring and

verification regime should be introduced in January 2014, from when the 175g/km target will be phased in.

## **22. Clean Transport Targets Win Industry Support**

Proposed EU targets for building electric charging and alternative fuel infrastructure have been welcomed by representatives of Europe's transport sector. Addressing a hearing of the European Parliament's transport committee, Petr Dolejsi of vehicle makers association ACEA said that January's clean power for transport policy package "goes in the right direction."

The European Commission put forward minimum targets for the deployment of clean fuel distribution points in the EU – electricity, Liquefied Natural Gas (LNG) and hydrogen – for road and maritime transport by 2020. It also proposes to build a network of LNG fuelling stations for inland waterways.

"We think that future transport will need different modes and different technologies," Mr. Dolejsi told the committee. But their uptake by consumers will depend on the availability of supporting infrastructure, he said.

The adoption of common standards for electric charging, as sought by the commission, is a key priority, he went on to say. Having separate standards is hindering the market's growth.

EPP group rapporteur Carlo Fidanza said that delivering the targets will require investment "that the public purse is not currently in place to take on board". But many business models are possible, said Mr. Christie.

The MEP's draft resolution on the matter is due to be presented to his colleagues on 16 September. A vote in the committee is scheduled for 14 November.

## **23. Spain's PIMA Air Plan Encourages Renewal of Commercial Vehicles**

Spain's Secretary of State for the Environment, Federico Ramos, has announced that the Ministry of Agriculture, Food and Environment has received nearly 5,000 reservation requests to renew commercial vehicles included in the Plan to Promote Environment (PIMA Air) and committed funds now exceed 7.3 million.

Ramos made the announcement during a speech at the opening of the conference "New measures to improve air quality and atmospheric protection" held at the International University Menéndez Pelayo (UIMP) in Santander.

The Secretary of State explained that the PIMA Air Plan, approved in February, is part of a broader package of measures to boost the environment and has a budget of 38 million euros.

It is, as explained by Ramos, to encourage the renewal of commercial vehicles to also reduce "significantly the emissions of greenhouse gases, mainly particles and reduce CO2 emissions by replacing older vehicles by other models more efficient and less environmental impact." He noted that these vehicles are "very elderly" and that over 70% of those used in commercial distribution of Spanish cities are older than seven years, so they are one of the main causes of air pollution in large cities.

Specifically, with the PIMA Air, Ramos stated would reduce by 94% the particles and 15-20% CO2 emissions per vehicle and at the same time, bring about economic and social benefits important to stimulate production and the market in this sector, in which Spain is the first European producer.

He highlighted that "improving air quality is a fundamental line of environmental policy" of the Ministry, so that, like the PIMA Air, has also launched the National Plan for Air Quality and Protection of the Atmosphere 2013-2016 Plan (AIR), one of the tools "to achieve a high level of ambition in air quality."

AIR Plan includes 78 measures to be used to improve some aspects of air quality, acting on information, awareness, administration, research and taxation. Also, measures are aimed at specific sectors involved in the emission of pollutants, such as industry, construction, transport, agriculture and livestock.

"This whole exercise has enabled consensus that the measures outlined in the Plan are environmentally ambitious but realistic in its execution," concluded Federico Ramos.

#### **24. European Parliament Committee Backs Ban on F-Gases**

The European Parliament's Environment Committee backed a sweeping ban on the use in fridges and air conditioners of fluorinated gases - greenhouse gases that are many thousands of times more damaging than carbon dioxide. The plan, which would have to be approved by a plenary session of the parliament and by EU countries before becoming law, goes much further than a proposal from the executive European Commission.

It seeks a gradual phase-out and ban in new equipment by 2020, and to levy a charge on the use of the gases by producers.

Some two decades after international action led to the phase-out of ozone-depleting chlorofluorocarbons (CFCs), the Commission is trying to eliminate this new generation of climate-harming chemicals, known as F-gases. F-gases, used as coolants in air conditioning and in domestic, supermarket and industrial refrigeration, were introduced as a solution easily acceptable to industry, since their production chain resembled that for CFCs. But their global warming potential, up to 23,000 times more than carbon dioxide, has led the Commission to push for natural non-synthetic alternatives such as ammonia or CO2, which can have high cooling properties when used in refrigeration.

The industry says it supports change, but many argue it needs time to develop the right refrigerants as in some cases the alternatives are flammable, toxic or less energy-efficient. "We are very disappointed that the Environment Committee has chosen the course of command and control politics with the highest price tag that Europeans will have to pay for," the European Partnership for Energy and the Environment, which represents Europe's heating and cooling industry, said. Its members include Fujitsu and Honeywell.

Environmental campaigners and some small firms, specialized in natural refrigerants, say the opposite. They argue that replacement technology is already available and deploying it would help small innovative companies based in Europe to gain an international edge. "HFC-free alternatives are ready, and this is an opportunity to put European businesses at the forefront of the ever-growing refrigeration and air-conditioning markets while scoring a crucial victory for the climate," said the Environmental Investigation Agency, a group involved in climate issues.

In contrast to a drop in other emissions, F-gases have risen in the European Union by 60 percent since 1990. They leak into the atmosphere from production plants and during the operation and disposal of products and equipment that contains them.

Separately, the Environment Committee also voted to back a compromise plan to boost the price of allowances on the European Union's carbon market by temporarily removing some of a glut of the permits.

## **25. Commission Plans to Green the EU's Inland Fleet**

The European Commission is preparing to publish revised policies on inland waterway vessels, including new plans to cut air emissions from the fleet. A policy paper revising the commission's action program for river and canal transport should emerge within weeks, said an official in its transport department. The paper will aim to boost the uptake of cleaner vessels.

The market share of this mode of transport traditionally seen as more environmentally-friendly is falling. According to an impact assessment published alongside the EU's white paper for transport, its share could increase to 20% by 2050.

Last year, an EU report showed the sector was making "poor progress" in reducing emissions of air pollutants such as NOx compared with road transport. By 2020, road freight could produce less pollution per ton, it concluded.

"The commission is certainly planning to make a move to liquefied natural gas (LNG) easier," said Karin De Schepper of Inland Navigation Europe, which represents waterway managers. LNG is both cheaper and less polluting than oil but its availability remains limited at the moment. Earlier this year, the EU executive announced it wanted LNG refueling infrastructure in place at major inland ports by 2025. Its forthcoming paper could propose financial incentives for earlier adoption, Ms. De Schepper suggested.

A consultancy study for the transport department backs incentives for LNG, alongside measures to cut emissions from existing engines through retrofitting. The study is part of the commission's air quality policy review. It will inform the revision of emission limits set by the Non-Road Mobile Machinery (NRMM) directive, which applies to new, large inland vessels. A legislative proposal to revise this directive should emerge early next year.

Recreational boats under 24 meters in length are regulated separately. Revised EU emission standards for them should be agreed later this year.

## **26. EC Officials Outline Plan to Improve Air Quality**

The European Commission's autumn policy package to tackle air pollution will focus on achieving further emission reductions in certain sectors but existing air quality standards will not be revised straight away, Thomas Verheye, head of the commission's industrial emissions and air quality unit, told Green Week delegates. He also said that the package would include a legislative proposal to cut emissions from small combustion installations below 50 megawatts.

Small-scale combustion is one of several sectors where there is still a large potential for applying cost-effective emission reduction measures, said Mr. Verheye. Installations below

50MW are not covered by the Industrial Emissions Directive. Eco-design rules for solid fuel boilers are also being developed.

During an earlier presentation on the ongoing EU air quality review, Markus Amann of the International Institute for Applied Systems Analysis (IIASA) pointed out that compliance with air quality standards for PM10 will remain a problem in eastern European member states unless emissions from solid fuel boilers are cut.

The forthcoming package will also include a plan to revise the National Emission Ceilings Directive (NECD), Mr. Verheye confirmed. New national emission caps will be set for 2020 to align EU legislation with the revised Gothenburg protocol.

However, there are no immediate plans to revise the standards established in the Ambient Air Quality Directive (AAQD), the official said at a subsequent press briefing. Although these concentration limit values are obsolete, the commission must first ensure that current non-compliance issues are tackled, he explained.

In January, the World Health Organization recommended tightening the EU's standard for PM2.5. It said that there was a "strong need" to at least lower the indicative limit value of 20ug/m3 from 2020, subject to a review in 2013.

One of the options put to consultation was to make this limit mandatory. But at the press briefing Mr. Verheye indicated that there was no real need to do so since member states were expected to meet it. The most immediate problem is PM10, he stressed.

In another speech at Green Week, environment commissioner Janez Potočnik reiterated that the biggest priority will be to achieve full compliance by 2020 at the latest. New targets will be set at a later stage, the ultimate goal being to achieve "levels of air quality that do not give rise to significant negative impacts on, and risk to, human health and environment", as stated in the EU's sixth environment action program. Mr. Potočnik seemed to go even further by talking about "zero-impact".

## **27. Toyota Warns It Could Leave Electric Car Sector**

Toyota Europe has said it could walk away from the electric car market unless it is confident that electricity supplies will be decarbonized in the future. Didier Stevens, Toyota Europe's head of government affairs and environmental issues told reporters that policy makers and utility firms also had a role to play in ensuring electric vehicles got off the ground.

"We need to cooperate with the electricity providers so that what we present to the market, in its totality, is a clean solution, otherwise we'd prefer to step back," he said. "We always assess a vehicle from well to wheel. If the electricity is not sourced from renewables then it makes little sense."

The UK parliament recently failed to add a decarbonization target to its new energy bill. Stevens believes this is the kind of policy that could protect the environmental integrity of electric vehicles in the future making utility firms reduce the average CO2 emitted from their power, either by capturing carbon or using clean energy sources.

"We are looking with some concern at the German plan of having 1m electric vehicles on the road by 2020. If more and more of their electricity is going to come from coal, then this does not

solve the problem. It just shifts the emissions to another area. This is not how it should be,” added Stevens.

Toyota is currently focused on hybrid and plug in hybrid vehicles but Stevens says it will introduce an electric vehicle in Europe by 2015. How effective it and other electric vehicles are at reducing emissions will depend on how much clean energy countries are using on their grids, he added.

The EU is currently negotiating its 2030 climate and energy policies. The UK has called for a 50% reduction in emissions but is against an EU-wide renewables target.

“If renewable targets can help then why not,” said Stevens. “We don’t need to wait till it’s too late. We can do it now so why not. If the renewable targets are removed there will be serious question marks. Some pressure is always needed. Look at the progress made on CO2 emissions standards for cars, would that progress be made without targets? I doubt it.”

The EU recently announced a suite of alternative fuel targets that included a goal to build 1 million electric vehicle charging points and facilities for hydrogen and gas powered vehicles too. While Stevens welcomed the plans, the reception has not been universally positive. “We see a little reluctance from the energy sector. The electricity sector is interested but for different purposes. The utilities are more interested in electric vehicles as an energy storage solution than anything else.”

With renewable energy not always generating power when it is needed, using it to charge electric vehicles overnight would help to even out the distribution of power that they generate.

There are also fears that governments could attempt to recoup some of the lost revenue from fuel duties as people turn to electric vehicles, by charging a higher rate for electricity used to power electric cars. This could threaten the economic viability of going electric and offers governments a poison pill that would threaten the sector.

Rapid vehicle growth in the developing world is having a major effect on air quality and greenhouse gas emissions but costly electric and hybrid vehicles are not always the best solution. “The Chinese are very much concerned about fuel consumption and air quality. I don’t think the introduction of new technologies will be an issue in China. The government can make it happen.

“The situation in India is different. We have to produce vehicles that fit the market and we are considering a low cost vehicle for India, it will most probably be petrol. The first stage is to provide mobility and the infrastructure has a lot of progress to make,” said Stevens. “That vehicle will have a modern, clean engine however. It will be affordable and as clean as possible.

In Brazil we will focus on gas powered vehicles. We could go to India and offer plug in hybrids but only a few would buy them so we wouldn’t achieve clean mobility, they would just revert to the old methods. “If we build electric cars nobody can afford nobody wins, not us, not the governments, not the environment.”

## **28. EU Plan for 2014 Climate Pledges Receives Support**

An EU plan calling for countries’ emission reduction commitments to be submitted next year ahead of reaching a global climate deal met with a positive response at the Bonn climate talks,

according to European negotiators. The aim of the proposal is to allow for a period of review before a deal is struck. The deadline for adopting the agreement is the end of 2015.

Once countries have stated their targets, these could be compared against the possibility of keeping global warming below 2°C and adjusted accordingly, Juergen Lefevre of the European Commission said as the two-week talks ended.

Such a route to a global agreement is also backed by a coalition of climate groups, which want countries to agree a 2014 deadline at this November's talks in Warsaw for stating their emissions reduction pledges.

The US stood by its idea in Bonn that each nation should be allowed to determine its own level of ambition for the 2015 deal, which will come into effect in 2020.

In Warsaw, countries will need to make progress on pre-2020 ambition. They should try to agree a list of areas with high mitigation potential and decide how the UN climate process can drive changes there, Mr. Lefevre said.

There was also a "groundswell of support" in Bonn for a draft decision put forward by the EU calling for action to phase down HFCs under the Montreal Protocol, Mr. Lefevre added. David Walsh of Ireland emphasized that the EU is not trying to remove HFCs from the UN climate talks by pushing for action under Montreal.

NGOs, negotiators and the UN climate secretariat all said the mood in Bonn was more constructive than at other recent sessions, in spite of a serious procedural row that saw one of the three strands of negotiations abandoned. Russia, Ukraine and Belarus raised objections about how decisions were forced through at last year's meeting in Doha. The "regrettable" dispute meant no formal work was done or decisions made at the Subsidiary Body on Implementation (SBI), Mr. Lefevre said.

Ahead of the November talks, governments may need to hold informal discussions on unlocking the dispute and on the SBI's work program, to make up for lost time, said the head of the UN climate secretariat, Christiana Figueres.

A planned global leaders' summit on climate in September 2014, hosted by UN secretary general Ban Ki-Moon, is likely to be a crucial point in the negotiations towards the 2015 deal, both Ms. Figueres and the EU representatives said.

The Warsaw talks will also have to make progress on climate finance, which many developing countries felt was neglected in Doha. Countries should now examine ways they can raise money for the Green Climate Fund, including through their fiscal mechanisms for emissions mitigation like carbon taxes and carbon allowance auction revenues, she said.

## **NORTH AMERICA**

### **29. Congress Stalls EPA Nominee by a Flood of Questions**

Gina McCarthy has fielded 1,100 questions from Senate Republicans in Congress since President Obama picked her in March to head the Environmental Protection Agency—more than any EPA nominee before her. Among them: How many people in the U.S. last year got mercury poisoning from power plants fired by coal? (Seventeen hundred.) Will there be 21

billion gallons of ethanol made from renewable sources by 2030 as required under the law? (It's too soon to say.)

Yet there's one query the EPA's head of air regulation has no way to respond to, and it could derail her nomination. GOP Senator David Vitter of Louisiana—who alone has made 400 inquiries—is insisting she turn over data linking air pollution to early death. The EPA has used that research, much to the consternation of energy companies, to justify regulations that curb pollution from diesel engines, coal-fired power plants, and industrial boilers. There's one problem: The agency doesn't possess the data. They were compiled by Harvard University two decades ago—long before McCarthy became an EPA official—and confidentiality agreements with thousands of participants prevent researchers from making the information public. Nor can the EPA access the Harvard analysis.

Although McCarthy won the support of the Senate Committee on Environment and Public Works on May 16, no Republicans voted for her. Vitter says if McCarthy doesn't produce the Harvard research and other information he wants, he will filibuster the nomination. "I hope we won't have a fight on the floor," he said at a recent hearing.

Vitter is also using his filibuster threat to force McCarthy to pledge that she'll make specific changes to how the agency is run. The senator wants the EPA to improve the way it deals with Freedom of Information requests and to crack down on employees' use of personal e-mail accounts for government business. The agency's previous administrator used a private account under a different name to exchange messages with employees, and Republicans say the practice was meant to hide information from Congress and the public. Vitter also insists that the agency adopt an economic model that industry groups endorse for evaluating the costs and benefits of pollution rules.

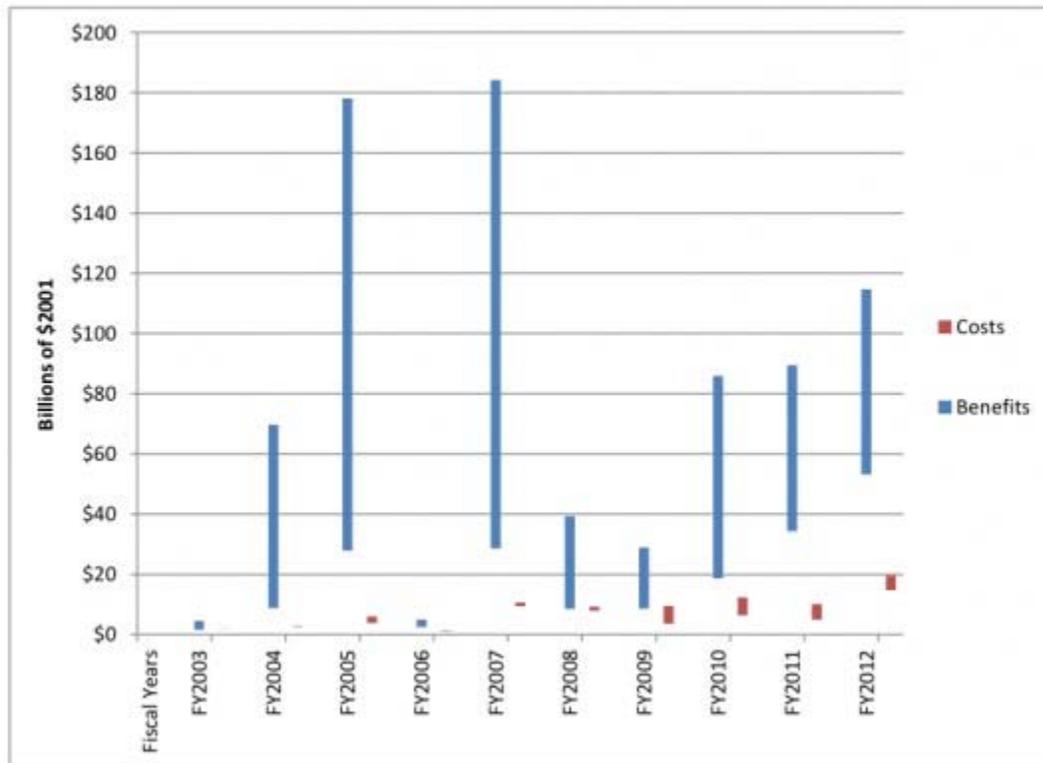
### **30. Benefits of EPA Rules Far Outweigh the Costs**

A new U.S. government report shows that the benefits of government regulations substantially outweigh the costs. Looking at all federal regulators, the report found that health and environmental protections created by the Environmental Protection Agency (EPA) are the most cost effective of any federal department.

How successful are EPA rules? The report found that for every dollar spent on environmental and health protections, the country gets back ten dollars in health, environmental, and economic benefits that add up to make all of US citizen's lives richer.

By far the largest factor making up this EPA success is from rules the agency has created to reduce health threats from air pollution. Over ten years, the report shows, we've seen about a half a trillion dollars of benefits by reducing air pollution. The health benefits of reducing air pollution are easy to see, but the economic benefits are less obvious. But consider, for example, pollution from coal-fired power plants. Air pollution from coal is associated with respiratory disease, heart attacks, infections and other serious illnesses. Preventing pollution results in healthier, more productive communities, with people who are making and spending money rather than being sick and dying.

The OMB study looked at a range of regulations across the economy, and found their benefits outweighed their costs across the board. The blue and red bars below represent the range of estimates for what the respective costs and benefits of regulations were. In very few instances was even the very upper limit of cost estimates equal to the very lower limit of benefit estimates.



Source: Office of Management and Budget

### 31. LNG Export Plan Approval Spurs Senators to Weigh DOE Process Changes

The Department of Energy's (DOE) conditional approval for liquefied natural gas (LNG) exports from a Texas facility is prompting key members of the Senate Energy & Natural Resources Committee to weigh whether the export approval review process needs an overhaul.

DOE's May 17<sup>th</sup> order conditionally grants a 2010 request from Freeport LNG Expansion and FNLG Liquefaction -- referred to as FLEX -- for a long-term authorization to export an estimated 1.4 billion cubic feet per day of natural gas for LNG to non-free trade agreement nations, a crucial step to speeding exports to Japan. While FLEX sought permission to export for an estimated 25 years, DOE conditionally agrees to a 20-year time frame for the export.

Environmentalists are criticizing the conditional approval and vowing to scrutinize all remaining steps in the project's permitting process.

However, industry advocates of LNG exports, such as the American Petroleum Institute and Independent Petroleum Association of America, are welcoming DOE's decision. The groups, along with several GOP lawmakers including Sen. John Barrasso (R-WY), said that the department should now approve a number of other export facility proposals. Advocates of exports say it will help bolster not only the U.S. economy but also energy security.

Despite DOE's tentative approval of the Freeport gas export facility in Texas, roughly two dozen applications for other export facilities are still pending at the department.

Following a May 21 Senate Energy & Natural Resources Committee “forum” on natural gas issues -- one of several the panel held recently -- committee Chairman Ron Wyden (D-OR) issued a statement saying DOE should update its LNG export policy. “Done right, there ought to be a way to get the trade benefits to exporters and trading partners while maintaining the domestic, economic and energy security benefits to our country,” the senator said.

Sen. Lisa Murkowski (R-AK), ranking member on the energy committee, in a separate statement stopped short of calling DOE's approach outdated, but cited DOE's recent conditional approval of the Texas facility as showing “that DOE's review process is deliberative, impartial and thorough -- though greater certainty should be provided so we can press our advantage in world markets.”

### **32. EPA Vehicle, Fuels Policies Prompt Push-Back from Key Automaker, Refiners**

Several major EPA vehicle and fuel policies are generating push-back from automaker Honda and separately from refiners, with Honda raising concerns over EPA's approval of a California zero-emission vehicle (ZEV) program and refiners ramping up attacks on the agency's renewable fuel standard (RFS) and its “Tier III” fuel rule that is modeled after a similar policy in California.

For example, EPA is proposing to allow additional biofuel pathways such as biogas to qualify toward its RFS cellulosic production targets in a bid to help fuel producers meet the ambitious goals, but critics say the nascent plan is unlikely to end attacks on existing RFS goals and could slow investment in other advanced biofuels.

While biofuel supporters welcome EPA's release of the rule -- which had been under White House Office of Management & Budget review since Oct. 23 -- they note that the time it will take to make the RFS pathway rule final will delay investment in advanced and cellulosic biofuels production facilities. Sources say EPA is unlikely to finalize the rule until this fall, meaning it will not affect fuel production this year and will have uncertain impacts next year.

And a source with the American Petroleum Institute (API) -- which has warned the rule will impose major costs on refiners and drive up gas prices -- says EPA's delay in publishing its Tier III rule in the Federal Register, and the overall rulemaking process, appears to be a “clear attempt to speed up the process” to limit public comment from affected industries. API has already formally asked EPA to provide a 90-day public comment period and schedule additional public hearings on the rule, but the agency's publication of the rule in the May 21 Register sets a June 13 deadline for comment -- a timeframe of just 23 days. (EPA responded recently by extending the comment period until July 1.)

Meanwhile, a senior Honda Motor Company official is attacking California's ZEV rule as unsustainable and in need of “substantial” reform to switch to a performance-based, technology-neutral mandate, which could signal a potential emerging auto industry push-back on the rule that at least 10 other states are implementing after EPA signed off on the policy.

### **33. Environmentalists Urge California Air District to Assess Tar Sands' GHGs**

Environmentalists are urging a California air district to scrutinize the potential adverse air quality and greenhouse gas (GHG) impacts from an expected increase in the use of Canadian tar sands and other heavy crude oil at refineries in the district, which could complicate refiners' efforts to increase crude oil processing in the state.

The dispute in California over the potential for GHG increases from tar sands echoes fights over the proposed Keystone XL pipeline, which environmentalists warn will worsen climate change due to GHGs associated with U.S. refineries processing Canadian tar sands crude oil that the pipeline would transport into the United States. EPA recently urged the State Department to update an environmental review of the project to better assess GHG impacts.

With a decision on Keystone unlikely for several months at the earliest, environmentalists appear to be targeting proposed tar sands projects on a state level, including the fight over tar sands refineries in California.

"It has come to our attention that oil companies are speeding up and expanding deliveries of one of the world's dirtiest crude oil products to California refineries," the Natural Resources Defense Council and Communities for a Better Environment wrote in an April 2 letter to California's South Coast Air Quality Management District. The group asked the district to review the health, air quality and climate impacts of tar sands refining in the area.

While refineries are subject to district rules and Clean Air Act Title V permits in the area, "we are concerned that emissions increases may be occurring at refineries processing more dirty crude oils including Canadian tar sands and that these increases have not yet been fully accounted for," they wrote, claiming oil companies are speeding up and expanding deliveries of "one of the world's dirtiest crude oil products to California refineries."

For example, Valero President Joe Gordon has stated that the company has allocated rail cars to import about 30,000 barrels per day of "Western Canada Select" or other products to its Wilmington plant located in South Coast's jurisdiction, the letter says. This would be more than twice the tar sands deliveries coming into the Los Angeles area, which was roughly 29,000 barrels for all of 2012, according to the Energy Information Administration.

Phillips 66 and Tesoro have also expressed in recent weeks an interest in increasing tar sands shipments into California, the environmentalists claim. "The increasing use of very high sulfur, low-quality crude oils in California refineries presents a major hazard to the surrounding communities that are already facing disproportionately high pollution levels," the letter states. "Refining tar sands will create more local air pollution due to the more intensive processing required for lower quality crude oil, which will lead to increased health consequences for residents near refineries. We also expect increases in carbon pollution, which will make it harder for the state to meet . . . [GHG] targets, if greater quantities of dirtier crude oil sources like tar sands are used in California."

The groups' letter concludes by urging South Coast to use all of its regulatory authority to prevent any increase in air pollution due to increased heavy crude oil used by refineries and to conduct a "rigorous evaluation" of all the air quality and climate impacts of increasing refinement of heavy crude oils such as Canadian tar sands.

Meanwhile, the South Coast air district governing board May 3 adopted proposed Rule 1114, which aims to reduce emissions released during the "delayed coking process" at refineries. The rule is expected to net annual emission reductions of 129 tons of volatile organic compounds and 547 tons of methane. Additional reductions in particulate matter and sulfur compounds are also expected under the rule, the district says.

WSPA officials at the meeting said they are supportive of the measure, with one representative noting there has been "an enormous amount of work" that the group has done to develop the rule. Environmentalists at the meeting argued that the rule should be strengthened to require refineries to comply sooner than a 2016 deadline.

### **34. Keystone Pipeline Bill Highlights Growing Debate over Taxing Tar Sands**

On May 22<sup>nd</sup>, a majority of House lawmakers approved legislation that would force approval of the Keystone XL pipeline, with debate over the bill prior to the vote highlighting a growing disagreement over an apparent exemption for tar sands from the federal oil spill trust fund tax. Several House Republicans are urging the tax oversight panel to review an apparent exemption for diluted bitumen -- also known as tar sands and oil sands -- from the trust fund tax, even as they rebuffed Democratic attempts to consider the issue prior to the House's approval of H.R. 3, which would overcome what pipeline advocates say is an unnecessary delay in approving Keystone.

"The story of the development of oil sands is one of continuous scientific and technological development. Not surprisingly, the economics of oil sands production are more favorable now than they were in 1980" when Congress issued a committee report on the Comprehensive Environmental Response, Compensation & Liability Act that defined crude oil as not including synthetic petroleum including shale oil, biomass, and tar sands, says a May 21 letter from the lawmakers to House Ways & Means Committee Chairman Dave Camp (R-MI).

The letter adds that the Internal Revenue Service has used the committee report definition in part for its conclusion in a May 2011 memo that tar sands or oil sands -- whichever definition is used -- are exempt from the spill tax. However, because of the advances in tar sands development "we respectfully ask that the Ways and Means Committee review its treatment when considering tax reform," write House energy panel Chairman Fred Upton (R-MI), Transportation & Infrastructure Chairman Bill Shuster (R-PA), energy panel commerce subcommittee Chairman Lee Terry (R-NE) and energy committee Chairman Emeritus Joe Barton (R-TX) in their letter to Camp.

### **35. Colorado Records First-Ever High Wintertime Ozone Levels**

Colorado regulators this year have measured elevated wintertime ground-level ozone levels for the first time, prompting an environmental group to petition the Bureau of Land Management to halt all new oil and natural gas drilling on federal lands in northwest Colorado where the pollution was detected. At issue are new statewide data from the Colorado Air Pollution Control Division that show high ozone levels along the Western Slope, as well as a short-term increase in places along the Front Range, including Rocky Mountain National Park, which never before had measured high ozone.

But the wintertime ozone readings recorded at a rural monitor in Rangely, Colo., in the northwest corner of the state are a major new development. The wintertime ozone phenomenon had previously been seen only in the Uinta Basin in northeast Utah and in the Upper Green River Basin in southern Wyoming -- both of which are in areas that have heavy oil and gas drilling.

In January, the Colorado health department issued its first ozone action alert in the Rangely area. But since that time, air monitors there have recorded a number of ozone violations. Through March 31, the fourth-highest reading at the Rangely site -- the level at which

compliance with the federal standard is based -- was 91 parts per billion, well above the federal eight-hour standard of 75 ppb, according to state data. The three-year average of the fourth-highest reading at the site was 77 ppb, according to state data, placing the area above the 75 ppb threshold set by U.S. EPA. The federal agency has not made any formal determination.

"Certainly there's an indication that there's a problem out there," said Garry Kaufman, the state Air Pollution Control Division's deputy director. Kaufman, however, cautioned that much more quality assurance and quality control are needed with the data. He also noted that the Rangely area shares the same air shed as the heavily drilled Uinta Basin in neighboring Utah, which has been battling wintertime ozone for years, and that pollution from the nearby basin could be drifting into Colorado.

"This is the first year we've seen it, and it's certainly fair to say that oil and gas is playing a significant role in that," he said. "But it's so new, we've not done the kind of analysis we've done in the Front Range. I think we need to study that more."

But the new data, which the division plans to present soon to Colorado's Air Quality Control Commission, come at a time when a state stakeholders group composed of industry, community and environmental groups is studying whether new air quality regulations for the oil and gas industry are needed as development grows. Drilling in the state is increasing, thanks to the Niobrara Shale formation that underlies much of eastern Colorado's Front Range.

The stakeholders group, which has been meeting since January, plans to submit recommendations to the commission by August, and new regulations could be approved and in effect by the end of the year, Kaufman said.

Wintertime ozone has become a common occurrence in Utah and Wyoming, where the phenomenon was first observed more than five years ago. Wintertime ozone is marked by stagnant air that allows pollution emitted mostly by drilling operations to collect in the lower atmosphere and then be converted into ozone by sunlight and heat reflecting off snowpack on the ground.

EPA last year determined that the Upper Green River Basin, which is home to the Jonah Infill and Pinedale Anticline oil and natural gas fields, is out of compliance with the federal ozone standard and gave the state three years to fix the problem. EPA monitors in 2011 registered 13 days from January to March when ozone levels in the basin exceeded the health-based standard, including a March 2, 2011, reading of 124 ppb -- higher than the worst ozone levels recorded that year in Los Angeles.

At such high concentrations, ozone can trigger asthma attacks and inflame the conditions of those suffering from bronchitis and emphysema, with small children and the elderly the most at risk.

A recent study conducted primarily by researchers with the Centers for Disease Control and Prevention and the Wyoming Department of Health measured daily ozone concentrations in Sublette County, Wyo., between 2008 and 2011 and found that increases in ozone concentrations had adverse health impacts for residents -- most notably an increase in the number of people visiting doctor's offices with respiratory complaints.

In Utah, ozone monitors this winter have measured concentrations as high as 130 ppb in some parts of the Uinta Basin. A two-year study led by the Utah Department of Environmental Quality,

together with EPA, and partly funded by \$2 million contributed by members of the Western Energy Alliance, concluded that oil and gas drilling operations are the primary source of the problem.

The latest Colorado Air Pollution Control Division report also includes ozone levels recorded this winter from monitors in the Uinta Basin, revealing just how severe the wintertime ozone problem is in Utah. The fourth-highest average reading from 2011 through the end of March 2013 was measured as 106 ppb at a monitor near the Ouray National Wildlife Refuge, 95 ppb at a monitor at Dinosaur National Monument and 93 ppb near Red Wash, Utah.

### **36. Canadian Government Sets New Limits for Particulate Matter, Ozone Exposure**

New long-term limits for outdoor exposure to fine particulate matter and ground-level ozone, as well as new short-term exposure limits, are the first step in implementing a new national Air Quality Management System, federal Environment Minister Peter Kent said on May 24<sup>th</sup>. The Canadian Ambient Air Quality Standards (CAAQS) set new objectives based on health considerations for outdoor concentrations of the two pollutants. The objectives were developed jointly with provincial and territorial governments and environmental and aboriginal organizations, Kent said in a statement.

The new standards are more stringent and more comprehensive than the existing Canada-wide standards for fine particulate matter and ozone, he said. They are part of the broader Air Quality Management System that was agreed to in October by federal, provincial, and environmental ministers through the Canadian Council of Ministers of the Environment.

The new standards, published in a notice in the May 25 issue of the Canada Gazette, Part I, are:

- long-term fine particulate matter (particles smaller than 2.5 micrometers in diameter, or PM<sub>2.5</sub>)—effective in 2015, a maximum outdoor concentration in ambient air of 10 micrograms per cubic meter per calendar year, based on a three-year average of annual average concentrations. The standard decreases to 8.8 micrograms per cubic meter in 2020.
- short-term PM<sub>2.5</sub>—effective in 2015, 28 micrograms per cubic meter per 24-hour calendar day, based on a three-year average of the annual 98th percentile of daily 24-hour average concentrations. The standard decreases to 27 micrograms per cubic meter in 2020. The previous Canada-wide standard was 30 micrograms per cubic meter by 2010, measured on the same basis.
- Short-term ground-level ozone—effective in 2015, 63 parts per billion per eight-hour period, based on a three-year average of the annual fourth-highest daily maximum eight-hour average concentrations. The standard decreases to 62 parts per billion in 2020. The previous Canada-wide standard was 65 parts per billion by 2010, measured on the same basis.

Environment Canada and Health Canada noted in an annex to the notice that a review of the 2020 standards is expected to be conducted in 2015.

The standards are necessary because of clear scientific evidence that PM<sub>2.5</sub> and ozone can aggravate existing medical conditions, including asthma, heart disease, and diabetes, and short-term or daily increases in their concentrations are associated with increased hospital admissions, medical visits, and premature death. Long-term exposure to fine particulate matter is also linked to further increased premature death, the departments said. The pollutants also

are associated with haze and reduced visibility and damage to vegetation and human-made structures, they said.

Environment Canada and Health Canada said the new Air Quality Management System “examines all significant emission sources of air pollution and provides a consistent, yet flexible framework to implement air quality management actions.”

According to the departments, “Other elements of the AQMS include industrial emissions requirements to achieve a consistent base level of performance for major emitters across the country and collaboration to reduce emissions from mobile sources. The AQMS also includes representative, timely, and easily accessible monitoring and reporting on air quality.”

### **37. Canadian Interim Order Better Aligns Draft Vehicle Emission Rules with U.S. Version**

On May 4<sup>th</sup>, Environment Canada published an interim order to better harmonize the country's draft regulations on greenhouse gas emissions from passenger automobiles and light trucks with rules currently in place in the United States. The interim order addresses changes to U.S. rules made by the Environmental Protection Agency since Canada's draft Regulations Amending the Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations were published in December 2012, the department said in an explanatory note accompanying publication of the interim order in the Canada Gazette, Part I.

The order updates the draft Canadian regulations by amending the approach to emission standards for nitrous oxide and methane and their application to emissions from emergency vehicles. The final regulations will be published in the Canada Gazette, Part II, likely later in 2013.

The draft Canadian regulations would harmonize greenhouse gas emission requirements for the 2017 and later model years. They also include provisions to align both the treatment of emergency vehicles and options for demonstrating compliance with nitrous oxide and methane standards with those in the United States, Environment Canada said.

The interim order follows changes made by EPA to its rules, which were primarily designed to set progressively more stringent standards for the 2017-2025 model year period. However, some of the U.S. changes also impact regulatory requirements for the pre-2017 model year period, Environment Canada said.

### **38. Canadian Environment Record Improves Over Past 20 Years**

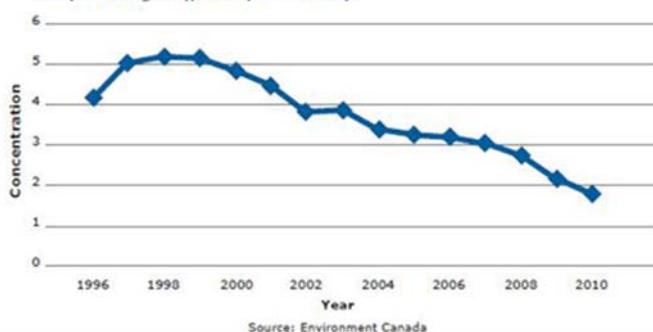
In 2009, the Frontier Centre undertook an examination of the long-term trends surrounding the health and vitality of the Canadian environment across a wide range of indicators. The objective was to provide an overview of Canada's environmental performance. The study concluded that while some areas required further improvement, the dominant theme that emerged from examining the relevant data was that Canada's natural environment had become considerably cleaner and greener over the previous 30 years.

This report is a follow-up and an update to the 2009 paper. It presents data that have become available since 2009 and re-examines Canada's medium-term environmental performance in light of the most recent information. Largely, the newly-available data confirm the conclusions of

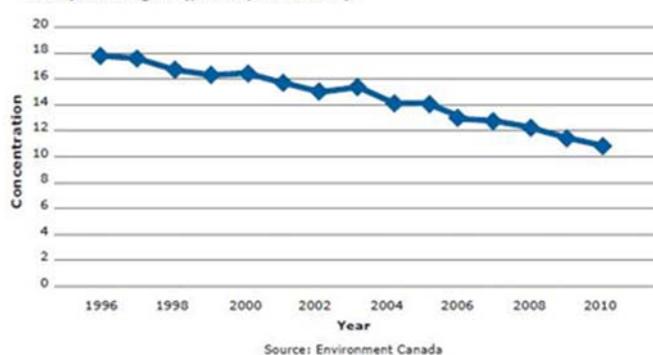
the 2009 paper. Over the past four decades, Canada has made impressive environmental progress. The health and vitality of the country's natural environment have improved steadily.

To measure Canada's progress, a number of indicators across several dimensions of environmental sustainability were examined. Specifically, urban air pollution, GHG emissions, freshwater withdrawals, freshwater quality, agricultural soil quality and forestry were examined.

**TABLE 1** Sulphur Dioxide, Average Ambient Concentrations, Canada (1996-2010)  
Daily averages (parts per billion)

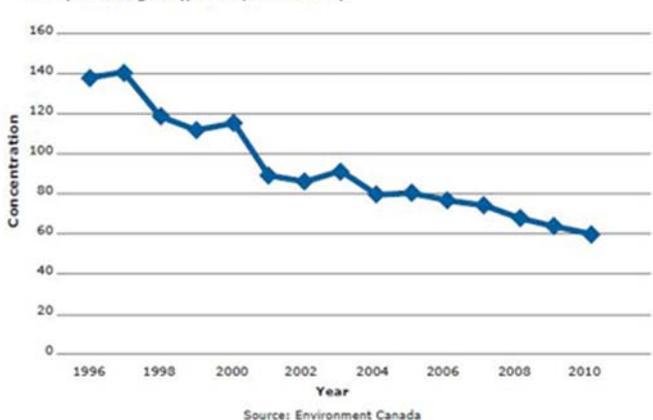


**TABLE 2** Nitrogen Dioxide, Average Ambient Concentrations, Canada (1996-2010)  
Daily averages (parts per billion)



reduction of 57 per cent.

**TABLE 3** Volatile Organic Compounds, Average Ambient Concentrations, Canada (1996-2010)  
Daily averages (parts per billion)



Urban air quality has improved dramatically in recent decades. Despite rapid population growth and strong economic growth, the recent past saw remarkable declines in the ambient levels of many air pollutants in Canada's cities and towns. As the charts below show, there was a statistically significant reduction in ambient levels of sulfur dioxide, nitrogen dioxide and VOC between 1990 and 2010. These data sets are based on the annual average of daily concentrations recorded at stations across Canada. (For some measures, stations are weighted differently depending on their proximity to major population centers.)

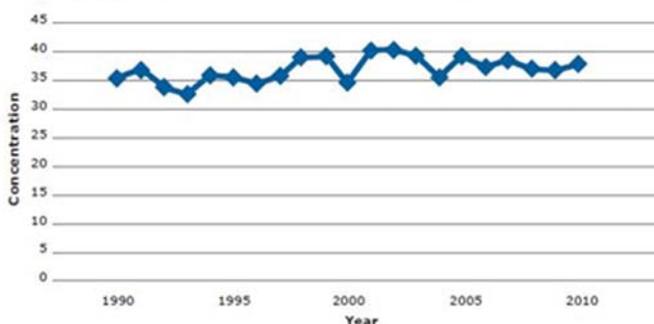
The Environment Canada data show:

- Average ambient concentrations of sulfur dioxide dropped from 4.2 parts per billion (ppb) in 1996 to 1.8 ppb in 2010. This is a reduction of 57 per cent.
- Average ambient concentrations of nitrogen dioxide dropped from 17.7 ppb in 1996 to 10.8 ppb in 2010. This is a reduction of 39 per cent.
- Average ambient concentrations of VOC dropped from 138 ppb in 1996 to 57.5 ppb in 2010. This is a reduction of 58 per cent.

There is some variation between regions of the country in terms of precisely how much progress has been made toward a reduction in ambient levels of these air pollutants, but all regions have

made significant progress. The charts illustrate the progress made in controlling the ambient levels of these three important pollutants.

**TABLE 4** Ground-level Ozone, Average Ambient Concentrations, Canada (1990-2010)  
8-hour averages (warm season, parts per billion)



Source: Environment Canada

The picture is somewhat more complicated for the two remaining pollutants reported upon by Environment Canada. For fine particulate matter, Environment Canada notes that there was no statistically significant change in average ambient levels between 2000 and 2010. 2010 saw a significant uptick in fine particulate matter levels compared with 2009, thanks largely to forest fires in several regions of the country and a warmer, dryer year in most of

Canada. Even with the higher 2010 levels, however, no statistically significant trend in either direction existed over the past decade. Canada has not had as much success in reducing fine particulate matter levels as it has in cutting other pollutants.

Similarly, ground-level ozone levels have remained stubborn in recent years. In fact, there has been a mild but statistically significant increase in ambient levels of ground-level ozone over the past 20 years in Canada's towns and cities. The following chart shows population-weighted, warm season average, ambient ozone concentrations between 1990 and 2010.

### 39. Mexico City Gov't Takes Steps to Deal with Air Pollution Episode

Environmental officials in the capital and neighboring Mexico State, which surrounds the Federal District and forms part of the Mexico City metropolitan area, are taking measures to deal with the high levels of air pollution in the region, the Metropolitan Environmental Commission, or CAM, said recently. Use of motor vehicles is being restricted and outdoor activities will be limited, the commission said.

Pollution levels hit 150 on the Metropolitan Air Quality Index, or Imeca, in the southeast section of Mexico City on a recent afternoon, the CAM said in a statement. Readings above 100 call for the air to be classified as "bad," while a level of 150 is considered "very bad" and a reading of more than 200 is "extremely bad," requiring officials to take drastic measures, the CAM said.

"High pressure in the central region of the country" caused changes in atmospheric conditions, preventing the dispersal of particulates, the commission said.

### 40. State Fines Truck Firm for Smog Violations

The California Air Resources Board has fined Mex-Cal Truckline Inc. of Otay Mesa \$300,000 for violating state air pollution laws by dispatching noncompliant vehicles serving regulated intermodal railyards in 2011 and 2012. The Otay Mesa office is south of downtown San Diego, just north of the state's border with Mexico.

Under terms of a settlement, Mex-Cal will pay its fine to the California Air Pollution Control Fund to support air quality research.

#### **41. A New Way to Make Truck Emissions Testing More Accurate and Less Costly**

There is an emission measure for trucks called the Society of Automotive Engineers J1667 test, also known as the “snap idle” test. It is widely disliked and inaccurate. The truck must be pulled over and stopped with the engine idling. The tester mounts an opacity monitor on the hot exhaust pipe, and then persuades the driver to floor the accelerator and allow the motor to go to its maximum allowed RPM. Too much light absorption (opacity) and the vehicle fails. The test only determines smoke opacity. The government standard for pollution, by contrast, is in units of smoke mass and the two do not correlate well. Oxides of nitrogen, an important component of diesel exhaust, are not measured at all. And the driving mode is one that never occurs under normal circumstances.

At the University of Denver researchers led by Dr. Steadman have invented a less intrusive and better test: the drive through, Streamlined, Heavy-duty Emission Test (SHED) measures all the pollutants of importance in mass emissions units. It allows the truck to simply accelerate in its normal way with its normal load. A full report on the successful testing of the SHED in Vancouver, Canada was released to the public in April.

The SHED technique can measure realistic truck exhaust emissions in 20 seconds or less and the truck does not even have to stop. The system places a 50 ft. long roof over the roadway which captures some of the exhaust. Under the roof is a perforated sampling tube with suction provided by an in-line blower. The perforations are designed to accelerate the air sample down the tube at about the same speed as the truck accelerates under the roof. The first sample in the tube is from the entering truck.

But, as the truck drives along, more exhaust is added to the previous exhaust sample which is running parallel to the truck such that, when the truck leaves, an integrated sample of air-diluted exhaust passes through the blower and into a suite of calibrated monitoring instruments. These instruments measure the masses of all the pollutants compared to the mass of carbon dioxide and thus the mass of pollutant relative to the mass of fuel burned. This fuel-specific mass emissions rate is closely comparable to the federal emissions standards which are in units of emissions per brake horsepower hour. The close comparison arises because modern diesel engines all use almost the same mass of fuel per brake horsepower hour. If they used a lot more fuel this would show up in their gas mileage and performance and no trucking company would buy such an engine.

The world's first demonstration of a full-scale SHED was successful and was carried out by the University of Denver in collaboration with Texas A&M University. It was sponsored by the North Central Texas Council of Governments.

The Vancouver study was the second. In a week, more than 1000 heavy-duty truck emissions were measured by SHED. Results showed that a majority of the Vancouver diesel fleet measured were well maintained and met the emission standards and regulations under which they were built. Particularly important is the fact that the newest heavy duty diesel vehicles have almost undetectable smoke emissions and their nitrogen oxide emissions are many times lower than the older trucks on the road. There were also some trucks with high emissions. One was emitting 60 times the average smoke emissions and its carbon monoxide emissions, normally low in diesel vehicles, would have only been normal for an early 1970s pickup truck. Repair would save the owner significantly in his diesel fuel bill and save the citizens of Vancouver the danger of inhaling potentially carcinogenic diesel exhaust.

The SHED results were presented in April to the Coordinating Research Council On-Road Mobile Source Emissions Conference.

Potential applications include improved estimates of the impact of truck emissions on air quality and fast emission screening at drive through locations such as weigh stations, transit terminals and border crossings. The North American Free Trade Agreement allows trucks from Mexico to deliver directly to destinations in the USA. But it doesn't happen. One reason is that the non-US trucks might be more polluting than the well-regulated USA fleet. Border crossing loads now are emptied from one truck and refilled into another, significantly increasing the cost and time of transportation.

With a SHED, a cross-border truck's emissions could be monitored efficiently. With a requirement to stop and accelerate over 100 yards in less than 25 seconds and then stop again, the truck's power to drive and stop its load are also tested. Assessing the truck weight in motion is available technology. This application could speed up and lower the cost of cross border goods shipping.

#### **42. Kerry Calls for Greater Global Action to Address Risks of Climate Change**

Secretary of State John Kerry said no nation is doing enough to combat climate change and expressed "regret" the United States has not done more, in remarks in Stockholm in connection with an Arctic Council meeting. Although he acknowledged the nation's shortcomings on the issue, Kerry pointed out U.S. successes such as automobile efficiency and energy efficiency standards and said President Obama recognizes the nation needs to do more.

"I regret that my own country—and President Obama knows this and is committed to changing it—needs to do more, and we are committed to doing more," Kerry said at a May 14 news conference with Swedish Prime Minister Fredrik Reinfeldt. Climate change "is not just an environmental issue, and it's not just an economic issue," Kerry said. "It is a security issue, a fundamental security issue that affects life as we know it on the planet itself, and it demands urgent attention from all of us."

"The threat of climate change is as ominous as ever, its effects are as tangible as ever, and the courage—literally, the courage—that we summon in the coming months and years is as crucial as ever," Kerry told the ministerial session May 15. "So the scientific research in each of our countries is more imperative than ever in order to protect the atmosphere, the global economy, the food chain, and the air we breathe. And we need to do more—all of us—urgently."

Kerry said the United States is below the emissions limits outlined in the 1997 Kyoto Protocol and is even below the limits in the Waxman-Markey American Clean Energy and Security Act of 2009 (H.R. 2454), which cleared the House in June 2009 but was never voted on in the Senate. U.S. leaders are "looking at every single option available to us to act responsibly," Kerry said.

In his remarks, Kerry said the United States is committed to being a "productive and engaged partner" on the Arctic Council while Canada serves as chair. The United States is already looking ahead to its own chairmanship from 2015 to 2017, he added.

The Arctic Council is an intergovernmental organization addressing political, environmental, and development issues in the fast-changing, resource-rich region. Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, and the United States are its permanent member states.

The White House released its National Strategy for the Arctic on May 10, saying it would balance energy and minerals development with conservation interests in the region. Kerry called the strategy a “key policy priority” of the United States and said implementation details for the plan will be provided in the next few years. According to the document, the national strategy seeks to advance U.S. national security interests, pursue responsible stewardship in the region, and strengthen international cooperation on how to address issues specific to the region.

### **43. U.S. Envoy Sees New Plan Energizing Global Climate Talks**

The United States' new proposal to let countries draft their own emissions reduction plans rather than working toward a common target can unlock languishing U.N. climate negotiations, the U.S. climate change envoy said recently. The proposal that a global climate deal by 2015 should be based on national "contributions" gained traction at the round of U.N. climate talks in Germany, although China, the world's biggest carbon emitter, said it wanted far more binding commitments by wealthy countries.

In the first public U.S. statements on the plan, Todd Stern, the U.S. State Department's Special Envoy on Climate Change, told reporters that the U.S. approach was designed to bring as many countries as possible to the table through a form of peer pressure and break the impasse over a successor to the 1997 Kyoto Protocol.

"Countries, knowing that they will be subject to the scrutiny of everybody else, will be urged to put something down they feel they can defend and that they feel is strong," Stern said from Berlin during a summit of environmental ministers focused on ways to advance the U.N. climate talks.

The approach would mean abandoning the format of the Kyoto Protocol, to which the United States was not a signatory, which set central goals for industrialized countries to cut emissions by 2012 and then let each work out national implementation.

Stern said that having each country's plans and targets "in an environment of intense public interest" may encourage countries to step up their existing plans.

Stern said countries could submit their initial plans several months before a ministerial meeting in Paris in 2015 to let other countries and stakeholders review the plans, and give enough time to strengthen or clarify the proposals.

The plan, said Stern, would provide an alternative to a negotiation process that has failed so far to deliver a legally binding agreement for both developing and developed countries to reduce their emissions under a common target. "It is very hard for us to imagine a negotiation with dozens and dozens and dozens of counties actually negotiating everybody else's targets and timetables," Stern said.

In recent weeks, the concentration of carbon dioxide in Earth's atmosphere has approached 400 parts per million (ppm) for the first time in human history, according to the Scripps Institute of Oceanography, a mostly symbolic threshold but one that shows how rapidly carbon dioxide levels have been rising. Carbon dioxide concentrations have risen from around 350 ppm in the past 25 years.

"The urgency of the situation is absolutely real but I don't think it has dramatically changed for climate negotiators this week as compared to before the news," Stern said, referring to the Scripps study.

Attempts to agree a successor to Kyoto have foundered above all on a failure to agree on the contribution that developing countries should make to curbing the industrial emissions responsible for global warming - greenhouse gases. The next ministerial conference to try to reach a deal is scheduled for Paris in 2015.

The United States, recently overtaken by China as the world's biggest carbon polluter, never ratified Kyoto because it set no binding emissions cuts for rapidly growing economies such as China and India.

President Barack Obama's administration now says each nation should define its "contribution" to a new U.N. accord - a weaker word than past U.S. demands for national "commitments".

And even if all countries agree to participate, all sides say the initial national promises will be insufficient to rein in greenhouse gases, which are rising by about 3 percent a year even though economic growth is weak in many regions.

Christiana Figueres, head of the U.N. Climate Change Secretariat, said it was already clear that promised emissions cuts would fall short of the level needed to prevent the global temperature rising more than 2 degrees Celsius (3.6 Fahrenheit) above pre-industrial times. Temperatures are already up by about 0.8 degree C (1.4F). "The challenge for the 2015 agreement is precisely to bridge that gap," she said. "The process is not on track with respect to the demands of science."

In Geneva, the World Meteorological Organization said that 2012 was the ninth warmest year since records began in the 19th century. Among extremes, Arctic sea ice shrank to a record low and Superstorm Sandy battered the United States.

Many emerging nations are still holding out in Bonn for binding common targets, especially for rich countries. But securing a bigger role by the United States might mean accepting a relatively weak accord in 2015.

The United States and China did agree last month to work more closely together on climate change, saying they hoped it would inspire action by others. Many delegates welcomed the plan, but said the two emitters have not led in the past.

Ronald Jumeau of the Seychelles, a spokesman for the 44-nation Alliance of Small Island States where many low-lying atolls fear they will be swamped by rising sea levels, said pledges so far were "woefully inadequate".

Japan, Canada and Russia have dropped out of the Kyoto accord this year, leaving a dwindling core of countries led by the European Union and Australia. But a collapse in carbon dioxide prices on a European Union market has weakened EU leadership on climate change.

#### **44. Obama Climate Agenda Faces Supreme Court Reckoning**

With a barrage of legal briefs, a coalition of business groups and Republican-leaning states are taking their fight against Obama administration climate change regulations to the U.S. Supreme

Court. The U.S. Chamber of Commerce and other industry groups, along with states such as Texas and Virginia, have filed nine petitions in recent weeks asking the justices to review four U.S. Environmental Protection Agency regulations that are designed to cut greenhouse-gas emissions.

If the court were to take up any one of the petitions, it would be the biggest environmental case since *Massachusetts v. EPA*, the landmark 2007 decision in which the justices ruled that carbon dioxide is a pollutant that could be regulated under the Clean Air Act. The court's decision on whether to take up any of the petitions, likely to come in October, could help shape or shatter the administration's efforts to solidify its climate change agenda before President Obama leaves office in 2017.

The EPA regulations are among Obama's most significant tools to address climate change after the U.S. Senate scuttled in 2010 his effort to pass a federal law that would, among other things, have set a cap on greenhouse gas emissions.

The petitions give the court various options for cutting back on, or even overturning the 2007 ruling, according to John Dernbach, a law professor at Widener University in Pennsylvania, who represented climate scientists in the 2007 case. If the court decides to hear any of the petitions, it "would be opening a really big can of worms," he said.

The rules being challenged apply to a cross-section of polluters, from vehicles to industrial facilities. A federal appeals court in Washington last summer upheld the rules, which were issued by the EPA under the Clean Air Act.

Lawyers involved in the process say the petitions, which raise different arguments, are not part of a centrally-coordinated plan, and that parties that joined the same petition are working closely together. The petition filed by Texas, for example, was joined by 12 states. The U.S. Chamber of Commerce's brief was joined by the American Farm Bureau Federation and Alaska. Other business-oriented groups either filed their own briefs or joined another organization's brief.

Those challenging the rules all cite the economic burden of the regulations and note that the EPA is making plans to regulate power plants. "The extension of these rules will cost tens, perhaps hundreds, of billions of dollars," lawyers for the conservative Southeastern Legal Foundation said in its petition.

The administration has a May 22<sup>nd</sup> deadline to file its response to the petitions but is expected to ask for an extension, meaning the court's decision on whether to take up one or more of the petitions is likely to come no sooner than October, the start of a new term after the its summer break.

The claims made in the petitions vary from broad attacks on the concept of regulating greenhouse gas emissions under the Clean Air Act to more nuanced arguments about the specific language of that law.

Some of the challengers specifically ask the court to consider overturning *Massachusetts v. EPA*. They point out that the Clean Air Act, which passed in 1970, was not designed to tackle climate change. At least one brief, by the state of Virginia, challenges the EPA's evaluation of the climate change science that underpinned its decision to regulate greenhouse gases. Others contend the Supreme Court's holding in the 2007 ruling, which specifically addressed

automobile emissions, did not give the EPA the authority to issue greenhouse gas rules that affect such a broad cross-section of the economy.

If the justices were to accept one of these broad petitions and side with challengers, they could make it impossible for the EPA to regulate greenhouse gases and could open the door to attacks on the air pollution regulations the agency has formulated for 30 years, according to Dru Stevenson, a law professor at the South Texas College of Law. "It will probably go into the textbooks as *Massachusetts v. EPA Part Two*," he said.

There is little sign the EPA is concerned about an adverse ruling. The agency is now looking at pushing ahead with regulating carbon dioxide from new and existing power plants, which account for nearly 40 percent of carbon dioxide emissions in the United States.

If the EPA doesn't act, noted David Doniger, climate and clean air policy director for the Natural Resources Defense Council, it would leave itself vulnerable to legal attack from environmental groups. "The legal pathway is quite clear and the need is there for the administration to move forward quickly on power plants," he said.

#### **45. In Major Speech, Obama Unveils Plan to Address Climate Change**

On June 25<sup>th</sup>, President Obama unveiled his plan for addressing climate change, laying out a timetable for the Environmental Protection Agency to regulate carbon dioxide emissions from power plants for the first time and pledging action on a number of fronts. "The levels of carbon pollution in our atmosphere have increased dramatically," Obama said. "That's science, accumulated and reviewed over decades. As a president, as a father, and as an American I'm here to say, we need to act."

Obama, in an address at Georgetown University, said the lack of emissions limits on power plants is "not right, it's not safe, and it needs to stop."

"I don't have much patience for anyone who denies that this challenge is real," Obama said. "We don't have time for a meeting of the Flat Earth Society. Sticking your head in the sand might make you feel safer, but it's not going to protect you from the coming storm. And ultimately, we will be judged as a people, and as a society, and as a country on where we go from here."

Obama later signed a presidential memorandum directing EPA to draft a new proposed rule for carbon dioxide emissions standards for new power plants by September 20<sup>th</sup> and to finalize the rule in a "timely fashion." The memo also tells the agency to issue final standards for existing power plants by June 2015.

The plan does not require any action from Congress and will rely on existing executive authority.

The president also called for the State Department to deny approval of the proposed Keystone XL oil pipeline unless it does not "significantly exacerbate" the nation's carbon pollution. "Allowing the Keystone pipeline to be built requires a finding that doing so would be in our nation's interest," Obama said. "And our national interest will be served only if this project does not significantly exacerbate the problem of carbon pollution. The net effects of the pipeline's impact on our climate will be absolutely critical to determining whether this project is allowed to go forward."

The State Department conducted a limited analysis of the impacts of increased greenhouse gas emissions as part of an environmental review of the pipeline released March 1, but it concluded the environmental impacts of the project could be mitigated.

Obama's plan also emphasizes large investments in renewable energy, calling for a reduction in carbon emissions of 3 billion metric tons cumulatively by 2030 through greater efficiency standards for appliances and federal buildings and international engagement on the issue of climate change.

Obama also called for the installation of more renewable energy projects on public land, the development of new heavy-duty vehicle fuel economy standards for vehicle model years after 2018, and efforts to reduce emissions of methane and hydrofluorocarbons, which are potent greenhouse gases that have been used as substitutes for ozone-depleting chemicals.

In addition, the president directed federal agencies to assist local communities in preparing for extreme weather events, making reference to Hurricane Sandy, which devastated areas of New York and New Jersey. Obama further set up a task force of state, local, and tribal officials to advise the federal government on what actions could be taken to address climate change.

In his speech, Obama described Gina McCarthy, his nominee to head EPA, as “terrific,” and urged Senate Republicans to end “obstruction” to her confirmation vote. “There are too many in the Republican Party right now who think that the Environmental Protection Agency has no business protecting our environment from carbon pollution,” Obama said. “The Senate should confirm her without any further obstruction or delay.”

Senate Republicans quickly shot back and said the president's remarks could hurt McCarthy's chance of receiving Senate confirmation. Sen. John Barrasso (R-Wyo.) said he had “serious concerns” about McCarthy's nomination. “Either she is ignorant of what's going on at EPA, a place where she's been assistant director for the last four years, or she is arrogant and wants the Senate not to know what she really knows,” Barrasso said. “Either way, I think this tarnishes her chances of being approved by the Senate, tarnishes her nomination. And I think the American people need somebody at the EPA that they can trust to be honest with them.” Barrasso was referring to EPA's intent to regulate existing power plants. McCarthy told Senate Republicans in May that EPA was “not currently” developing regulations on the emissions of existing power plants.

Key highlights of the administration's "Climate Action Plan" include:

#### **Domestic Actions:**

- A presidential order will be issued to direct the Environmental Protection Agency to complete performance standards for lowering carbon emissions from **existing power plants** with feedback from states, power companies, and other stakeholders. The EPA is directed to draft carbon limits by June 2014, to be finalized one year later.
- The EPA is also directed to finalize carbon limits rules for **new power plants** by September 20, 2013.
- The Department of the Interior is tasked with permitting enough **renewable energy projects** - wind and solar, for example - on public lands by 2020 to power more than 6

million homes. The Department is also directed with installing 100 megawatts of renewables on federally assisted housing by 2020.

- The United States has set a goal to reduce carbon pollution by at least 3 billion metric tons cumulatively by 2030, more than half the annual carbon pollution from the U.S. energy sector, via **efficiency standards for appliances and federal buildings**.
- **New fuel economy standards will be developed for heavy vehicles and trucks in model year 2018 and beyond.**
- The plan also leverages "new opportunities" to **reduce pollution from hydrofluorocarbons**, highly potent greenhouse gases used in air conditioning and refrigerators.

#### **International Measures:**

- The plan commits to expanding major new and existing international initiatives, including **bilateral agreements with China, India**, and other major emitting countries.
- It calls for the **end of U.S. government support for public financing of new coal-fired power plants overseas**, except for the world's poorest countries or facilities deploying carbon capture and sequestration technologies.
- The United States commits to working with trading partners to **launch negotiations at the World Trade Organization for a global free trade in environmental goods**, which include clean energy technologies like solar panels and wind turbines.

#### **Adaptation:**

- Federal agencies are directed to **support local climate-resilient investment** by removing barriers or counterproductive policies.
- The plan establishes a **short-term task force of state, local, and tribal officials** to advise on actions the federal government can take to help strengthen communities on the ground.
- **Pilot strategies are established for areas affected by 2012's Hurricane Sandy** to strengthen communities against future extreme weather and other climate impacts.
- The plan **establishes a National Drought Resilience Partnership** and expands restoration efforts for forest and rangeland to make areas less vulnerable to catastrophic fire.

#### **46. Truckers Welcome Obama Call for New Fuel Efficiency Rule**

President Obama's climate plan included a call to begin a new round of fuel efficiency standards for heavy-duty vehicles after 2018. Bring it on, says the American Trucking Associations.

Sean McNally, a spokesman for ATA, said his group's members were "enthusiastic supporters" of the most recent CAFE standards for heavy-duty vehicles, and that they "look forward to working with the administration with the goal of setting economically achievable economy standards based on sound scientific research."

Obama's climate plan also says it "invests to strengthen our roads, bridges and shorelines so we can better protect people's homes, businesses and way of life from severe weather."

However, the specifics of the severe weather plan mention community-based items such as hospitals, farms and flood risk reduction. Transportation infrastructure such as roads, bridges and transit get no specific mentions in the plan's line items, though it does make generic mention of directing agencies to "support local climate-resilient investment" by "removing barriers or counterproductive policies and modernizing programs."

#### **47. Obama Plan Offers Help to U.S. Cities on Climate's Front Lines**

President Barack Obama's climate plan offered help to U.S. cities dealing with natural disasters and specifically for the region slammed by massive Superstorm Sandy in October. In addition to proposals to cut pollution from power plants and boost fuel efficiency, the White House directed federal agencies to cut bureaucratic red tape to support local climate-resilient investment.

Obama's plan also sets up pilot projects for areas hit by Sandy to make communities better able to deal with extreme weather and other climate impacts.

Recently, more than 50 elected officials from localities as diverse as Washington D.C., Des Moines, Iowa and Santa Barbara County, California, released a plan to make communities better able to deal with climate impacts that included using more renewable energy and making buildings and infrastructure more energy-efficient. This initiative was launched less than a week after New York Mayor Michael Bloomberg announced a \$20 billion plan to prepare his city for rising sea levels and hotter summers.

Rosina Bierbaum, an expert on climate change adaptation at the University of Michigan and a member of the President's Council of Advisors on Science and Technology, said local leaders have consistently been at the forefront on these issues. "The rubber really hits the road in cities...Mayors are having to deal with heat waves, droughts, floods, all of the above, and they're making adjustments in real time," Bierbaum said. While the required action may be local, some of the data communities need, such as climate projections, can only be done at the federal level, Bierbaum said.

Bierbaum and other climate experts have long maintained that climate resilience, or adapting to altered conditions, must be done along with mitigation of climate change, which aims to curb the rate at which the global temperatures rise.

#### **48. California's Diesel Clean Up Big Success for Health, Climate Says New Study**

Reductions in emissions of black carbon since the late 1980s, mostly from diesel engines as a result of air quality programs, have resulted in a measurable reduction of concentrations of global warming pollutants in the atmosphere, according to a first-of-its-kind study examining the impact of black carbon on California's climate. The study, funded by the California Air Resources Board and led by Dr. Veerabhadran Ramanathan of the Scripps Institution of Oceanography at the University of California, San Diego, estimates that reductions in black

carbon as a result of clean air regulations were equivalent to reducing carbon dioxide emissions in California by 21 million metric tons annually or taking more than 4 million cars off California roads every year.

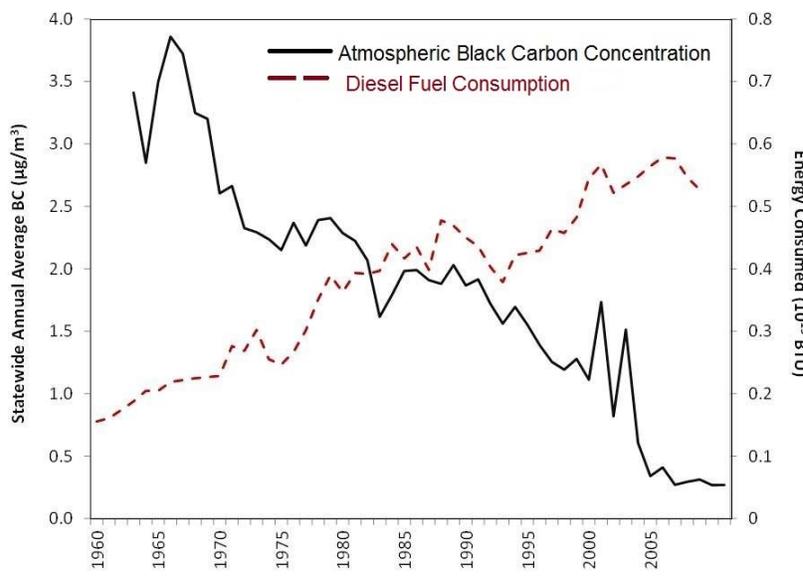
“We know that California’s programs to reduce emissions from diesel engines have helped clean up the air and protect public health,” said ARB chairman Mary D. Nichols. “This report makes it clear that our efforts to clean up the trucks and buses on our roads and highways also help us in the fight against climate change.”

Black carbon — tiny soot particles released into the atmosphere by burning fuels — has been linked to adverse health and environmental impacts through decades of scientific research. It is also one of the major short-lived contributors to climate change. The major sources of black carbon in California are diesel-burning mobile sources, residential wood burning in fireplaces and heaters, agricultural burning and wildfires.

The 3-year-study, titled “Black Carbon and Regional Climate of California,” was conducted by UC San Diego and the U.S. Department of Energy’s Lawrence Berkeley National Laboratory and Pacific Northwest National Laboratory. It is the first comprehensive regional assessment of the climate impact of black carbon on California. In conducting the study, scientists used computer models and air pollution data collected by aircraft, satellite and ground monitors.

The study’s results support a growing body of scientific evidence that suggests it is possible to immediately slow the pace of climate change regionally by reducing emissions of short-lived climate pollutants, like black carbon.

According to co-author Dr. Tom Kirchstetter of LBNL, black carbon levels have decreased by about 90 percent over a 45-year period, beginning with the establishment of CARB in 1967, mostly as a result of state regulations for diesel engine emissions. Researchers found the state’s efforts to reduce diesel emissions to have lessened the impact of global warming on California,



supporting earlier theoretical computer modeling by Dr. Mark Jacobson of Stanford University that reducing black carbon from diesel combustion is a potent ‘climate cooler.’

The reductions occurred during a time when diesel fuel consumption increased by about a factor of five, attesting to the effectiveness of CARB regulations requiring cleaner fuels and vehicle technology.

The study took a conservative approach in examining the impact black carbon has on the Golden State. Researchers considered emissions only from diesel-powered trucks and buses, and off-road

diesel equipment and vehicles to estimate the equivalent reduction of carbon dioxide. When all sources of black carbon emissions from diesel fuel combustion are considered, including farming and construction equipment, trains and ships, the reduction in carbon dioxide emissions can be as high as 50 million metric tons per year over the past 20 years. That's roughly equal to a 13-percent reduction in the total annual carbon dioxide emissions in California.

As ARB's current efforts to clean up trucks and buses move forward, resulting in the continued cleanup and turnover of older heavy-duty diesel vehicles, California should continue to see declines in particulate matter emissions. Advanced engine emissions control systems and filters are expected to dramatically reduce emissions from all new diesel engines. Current diesel truck engines, for example, are over 90 percent cleaner than models from years when they were unregulated.

"If California's efforts in reducing black carbon can be replicated globally, we can slow down global warming in the coming decades by about 15 percent, in addition to protecting people's lives," Ramanathan said. "It is a win-win solution if we also mitigate carbon dioxide emissions simultaneously."

Black carbon has the effect of warming the atmosphere because it is effective at absorbing sunlight. However, it is emitted together with a range of other particle pollutants, including organic carbon, sulfur and other chemicals, some of which have a cooling effect, typically by reflecting sunlight. Reducing diesel emissions can therefore lead to a reduction of both warming and cooling particles. The report, however, is the first to confirm, based on both observations and computer modeling that the warming effect of black carbon dominates, overwhelming any cooling effect of other pollutants. This confirms the positive impact reducing diesel emissions has on fighting climate change.

Other findings include:

- The study found evidence to link brown carbon — a form of organic carbon aerosols — to warming. Therefore, a commonly held view that organic particles from wildfires primarily reflect sunlight, and cause cooling, was not supported by the study.
- A finding that black carbon particles increased the number of drops of water in clouds, while decreasing the size of those drops, a condition that can reduce or delay rain.

#### **49. Recent Developments in Mexico Are Dramatic**

##### **40-Year Strategy to Address Climate Change Concerns Launched**

Mexico has launched a National Climate Change Strategy, or Estrategia Nacional de Cambio Climatico (ENCC), that will guide its climate change goals for the next 10, 20, and 40 years, President Enrique Peña Nieto has announced. The June 3rd move, scheduled to coincide with the United Nations Environment Program's World Environment Day on June 5<sup>th</sup>, will "set the basis" for the country to meet its target to cut carbon dioxide emissions by 30 percent below 2010 levels by 2020 and generate 35 percent of electricity from cleaner energy sources by 2024, the Environment Secretariat (Semarnat) said in a statement.

In a statement, Peña Nieto said the ENCC, which will follow the climate change law's directives, will have eight key goals:

- reduce Mexicans' vulnerability to climate change risks and strengthen their coping capacity;
- lower production systems' and strategic infrastructure's vulnerability to weather contingencies;
- promote ecosystems' climate-change resilience;
- accelerate Mexico's transition toward cleaner energy sources;
- reduce energy consumption through efficiency measures;
- move toward sustainable city models, with intelligent mobility systems, integrated waste management, and low-carbon footprint buildings;
- promote better agricultural and forestry practices, with schemes for curbing deforestation; and
- cut emissions from “short life” pollutants such as black carbon and methane to improve Mexicans' health and welfare.

Peña Nieto said the national climate change strategy will follow an “inclusive green growth” paradigm to develop Mexico's economy in a sustainable matter, as contemplated in the administration's recently launched 2013-2018 National Development Plan.

Peña Nieto further noted that Mexico's new fuel-efficiency regulation (Norma Oficial Mexicana 163) also will be published in the coming days to help the nation reduce automobile emissions.

The government will gradually begin to remove subsidies for electricity and water, so that rates for these services reflect real costs, including the environmental damage involved in their provision, Peña said. He said the federal government would require energy pricing that uses a life cycle analysis, taking into account emissions of greenhouse gases. There will still be compensatory measures for vulnerable groups, however, he said.

Peña called on Mexicans to care for the country's natural biodiversity, and to not lose it through “carelessness or negligence.”

According to a government document on the new strategy, a Mexican Network of Climate Modeling diagnosis found that 27 million Mexicans in 1,385 municipalities are at risk from the effects of natural disasters. These risks including phenomena from flooding and landslides to heat waves, reduced food production from lack of rain, and increased disease transmission. The study also found that 1,202 municipalities are at risk due to drought, and 1,020 due to heat waves.

Environmental damage costs the country 7 percent of its GDP, while barely .6 percent of GDP currently is generated through green technologies.

At the same time he announced the new climate change strategy, Peña Nieto also announced the establishment of a so-called Environmental Quality Commission that will tackle growing air quality problems in the Mexico City area. Environmental authorities from Mexico City and Mexico state, as well as from the Hidalgo, Morelos, Puebla, and Tlaxcala States (which together make up Mexico's most populated area), will lead the commission.

So far this year, air quality in the Mexico City area, home to some 30 million people, has worsened to worrying levels, prompting the government to issue five public alerts.

### **Fuel Economy Regulation That Mirrors U.S. Standards for 2016 Models Adopted**

Mexico has published a fuel economy regulation (NOM163) that aims to avoid 30 million metric tons of carbon dioxide emissions and save a total of 79 million barrels of oil between 2014 and 2016. Under the measure, published on June 21<sup>st</sup> in the Official Federation Diary and effective in 60 days, 2016 model cars and light-duty trucks weighing up to 3,857 kilograms (8,503 pounds) will have to achieve an average fuel economy of 14.9 kilometers per liter (35 miles per gallon). This mirrors the United States' corporate average fuel economy (CAFE) standard for 2016.

“This is the first regulation for reducing CO<sub>2</sub> in our country,” Environment Minister Juan José Guerra Abud said during a June 21 news conference. “It is part of our government's new climate change strategy to move into a lower-carbon economy”.

Also, the country's Environment Secretariat (Semarnat) announced on June 21<sup>st</sup> that it is preparing a regulation for 2017 model year vehicles that will be “much more ambitious” to ensure Mexico remains in line with U.S. and Canadian standards. The U.S. Environmental Protection Agency and National Highway Traffic Safety Administration have issued a joint rule requiring manufacturers to achieve the equivalent of 54.5 mpg by 2025.

NOM163 and its successor will help Mexico achieve its longer-term target of avoiding 265 million metric tons of carbon dioxide emissions and saving 710 million barrels of oil during the 2013-2032 period.

Before launching NOM163, Semarnat made a series of concessions to appease auto-industry complaints that the standard would be too hard to achieve. As part of that move, car manufacturers can begin earning early achievement and tradable credits starting in 2014, Guerra confirmed.

He reiterated that Semarnat has also asked Mexico's Supreme Court to ban a system of permits that has allowed used, relatively low-fuel-economy cars to flow into the country from the United States for years. The vehicles, commonly referred to as “chocolate cars,” cross the border without paying taxes and lack fuel-emissions certificates, according to Mexico's association of car distributors (AMDA). AMDA recently stepped up requests that the court expedite its ruling, noting that imports of used cars are denting Mexico's new-car sales. According to AMDA, 6.8 million imported used cars are circulating in Mexico.

### **Six-Year Strategy to Improve Air Quality Announced by Semarnat**

Mexico plans to tighten regulations and controls on emissions in a four-pronged attempt to improve air quality by 2019, according to the country's top air quality official. Ana Maria Contreras, air quality manager in the Environment Secretariat (Semarnat), told reporters on June 19<sup>th</sup> that the initiatives aim to improve air quality in the sprawling megalopolis of Mexico City and other urban areas by the end of President Enrique Peña Nieto's six-year term, which began in December 2012.

Contreras added that Mexico aims to have an air quality management program and air quality index fully operational in the medium term. She disputed environmental advocates' claims that the country's air quality is worsening, saying key pollutant concentrations meet interim guidelines of the World Health Organization (WHO).

The **first strategy** will focus on the transportation sector, launching a national vehicle inspection program to curb emissions from Mexico's aging automobile fleet, boost old-car recycling initiatives, and introduce a new fuel efficiency regulation (NOM163).

"We have 67 areas where we want to establish an obligatory vehicle inspections program," Contreras said, adding that the scheme will be built from scratch in some regions and reinforced in others.

The Federal District, as the Mexico City metropolitan area is known, has Mexico's most efficient vehicle verification program. The government hopes to replicate that elsewhere, with Mexico State, the Puebla-Tlaxcala metro area, and the states of Hidalgo and Morelos being the top priorities, Contreras said.

Efforts are also under way to strengthen verification inspection programs in regions on the U.S. border including Baja California North, Ciudad Juarez, Mexicali, Tijuana, Matamoros, Nuevo Laredo, and Reynosa. The city of Chihuahua will roll out a new inspection program in the coming months, Contreras said. "These are high-priority areas because a lot of used cars from the U.S. come into Mexico from there," she explained. She said border cities have high numbers of cars per capita, with Mexicali leading the country with 500 cars per 1,000 people.

The **second strategy** calls for new self-regulation programs to help large industries curtail emissions. Such initiatives will help the country build a green economy and reduce its carbon footprint, Contreras said. She noted one such scheme to reduce heavy-duty cargo vehicle pollution is yielding strong results with large companies such as Coca-Cola, Femsa and Wal-Mart signing up. Another self-regulation initiative will aim to encourage fuel-efficient driving technologies.

The **third strategy** aims to improving Mexicans' health. Contreras said health-related regulations are scheduled to be upgraded while lower pollutant limits will be enacted.

In the **fourth course of action**, Semarnat will move to curb emissions of highly toxic pollutants including dioxins and furans, in addition to benzene, toluene, ethyl benzene, and xylene. The former will be managed through improved emission technologies and through the upgrade of an existing regulation (NOM043), while the latter will be capped by the issuance of a new regulation (NOM-258 BTEX). She said NOM043's overhaul could happen in the medium term. NOM-258 BTEX will be rolled out later this year and will meet WHO and other international air quality standards, she said.

Other measures will be introduced to reduce emissions of carbon dioxide, ozone, fine and coarse particulate matter, sulfur dioxides, carbon monoxide, and nitrogen oxides, as well as volatile organic compounds and ammonia, Contreras said.

The fourth strategy would bolster vapor recovery from filling stations around the country under a new regulation to be issued in the medium term, Contreras added.

Mexico will also work to update other measures linked to air quality. According to Contreras, a fuel-quality regulation (NOM086) is due to be upgraded by 2015 while another directive linked to light-duty vehicle emissions (NOM042) will be updated soon after that. NOM044, aimed at capping emissions from heavy-duty vehicles, will also be streamlined in the medium term, Contreras said.

Upgrading NOM020 and NOM025, which govern fine and coarse particle pollution respectively, is also planned, she added.

Contreras would not provide emission reduction targets for the 2013-2019 period. However, she said the government's goal is for Mexico to comply with current and to-be-upgraded regulations, have a working air quality management program and index that will enable all Mexicans to view their city's air quality (only four out of 10 can do so now), and sharply reduce limits at which air-quality alerts are issued.

"We want to be as close to WHO's guidelines as possible and the updated regulations will be based on those values," she said. "However, it's important to add that we are currently inside WHO's interim parameters."

The Regulation on Atmosphere Matters, issued under the General Law for Ecological Equilibrium and Environmental Protection, will enable Semarnat to pursue a five-step program to clean Mexico's air. Contreras said Semarnat has already completed the first step, designating 67 air basins for monitoring air quality. "We have set up the basins," Contreras said. "Now we are working to create a national emissions inventory to more precisely identify the country's pollution sources including those related to transport and automobiles." By 2019, all the basins will have air quality management and improvement programs, she noted.

Under a regulation (NOM156) adopted in November 2012, cities with more than 500,000 inhabitants are required to gradually install real-time air quality monitoring systems and relay the data to state governments for posting online.

State governments also will transmit the data to the National Air Quality Monitoring Network (Sinaica) for publication online. If the plan works, most Mexicans will be able to know their city's air quality by the end of the current administration's term, Contreras said.

The ministry also intends to set up a national air quality index under a new Air Quality Index Regulation which should be ready by 2016 or 2017, according to Contreras. Semarnat has met with the U.S. and Canadian officials through the Commission for Environmental Cooperation to obtain guidance on how to create the index, based on the AIRNow-International model. Data will be gradually collected from the country's air quality monitoring stations so that AIRNow is implemented in the next two to three years, Contreras said. Monterrey launched an AIRNow pilot project in 2012.

A separate Semarnat program to improve air quality in the Mexico City metropolitan area, called ProAire, is going well, Contreras said.

Nevertheless, environmental groups have charged that Mexico's air quality is worsening with 14,000 people dying of pollution-related illnesses each year. The groups demanded in early June that Semarnat upgrade NOM086, NOM042, NOM044, and NOM020/025 after Mexico City's ozone levels May 24 triggered the country's sixth bad-air-quality alarm in 2013. The groups also demanded that Semarnat launch incentives to renovate Mexico's automobile fleet, curtail city bus emissions, and cut fossil fuel subsidies.

While acknowledging that "more must be done," Contreras said air quality is not worsening. She pointed out that the levels that trigger alarms have been lowered several times in the past few years. Contreras added that average ozone levels stood at 205 parts per billion (ppb) in 1991 but now hover around 100 ppb, slightly above a regulatory limit of 80 ppb. She said in 2012

Mexico's average annual level of coarse particulate matter (PM-10) was 50 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), in line with current regulations.

Semarnat is working to meet the environmental advocates' demands, Contreras said. Apart from updating the regulations, she said the ministry will consider their requests when implementing the four strategies to clean Mexico's air.

## **50. EPA To Issue Ethanol Use Targets This Summer**

The Environmental Protection Agency plans to announce targets for U.S. ethanol use in 2013 and 2014 this summer, an EPA official told lawmakers, even as critics of the program warned of a brewing fuel crisis. The United States is nearing the point where the law will require use of more ethanol than can be physically blended into the fuel supply at the most prevalent level of 10 percent ethanol per gallon.

"When Congress wrote this law, Congress anticipated that the market would solve this problem," Christopher Grundler, the EPA's director of the office of transportation and air quality, told lawmakers at a House oversight committee hearing. "Clearly, it has not been resolved," he said.

Grundler said EPA, which has the authority to lower ethanol use targets or waive them completely, will determine the best way to address the issue of the so-called "blend wall" and will release the targets by the end of summer. Oil refiners and ethanol producers are waiting the EPA's decision on the targets and the oversight hearing took place as the fight over the Renewable Fuel Standard intensified.

The RFS requires rising volumes of biofuels to be blended into U.S. gasoline and diesel supplies. Oil companies warn that the mandate could lead to fuel shortages and raise energy prices for consumers.

Lawmakers have been divided mostly along regional lines on the biofuel mandate. Those from corn-growing states - the majority of U.S. ethanol is produced from corn - support renewable fuel targets, while lawmakers from major oil and gas producing or livestock producing states have urged repeal or reform of the program.

Ethanol producers have blamed the volatility of ethanol credit markets, known as RINS, on opposition to allowing ethanol blends higher than 10 percent at the gasoline pump.

Republicans on the panel pressed the EPA to use its authority to waive the fuel targets, which they said were already raising food and fuel costs. "Why in the heck haven't you done what the law says you can do?" said Congressman Jim Jordan, a Republican from Ohio. "This is as obvious and plain as can be. You have the ability to help every single family in this country and you won't do it."

The agency said it expects that refiners will still be able to meet this year's targets using RINS purchased from renewable fuel producers in 2013 or credits carried over from 2012. But Grundler said 2014 could be more challenging.

Under guidelines subject to finalization, the biofuels mandate is set to rise next year to 18.15 billion gallons from 16.55 billion gallons in 2013. Of the total, 16 billion gallons or more may need to come from conventional corn ethanol. The amount of unused 2013 biofuel credits left

over for use next year will be "critical" in determining how refiners comply with the mandate in 2014, Grundler said.

Biofuel producers slammed the House hearing for shunning witnesses from the renewable fuel industry. Among those testifying were officials from the American Petroleum Institute and the National Turkey Federation. "Today's hearing provided Congress with only one perspective: Big Oil's," said Fuels America, a coalition of organizations backing the biofuel mandate. "The oil industry does not deserve yet another platform to blame the renewable fuel industry for a bogus blend wall they themselves created."

The EPA has authorized the use of gasoline blends with up to 15 percent ethanol content for cars built since the 2001 model year, or about two-thirds of vehicles still on the road. Refiners say the higher blend could damage older vehicles, and gasoline station operators and oil refiners have voiced concerns they could be held liable if engines are damaged.

### **51. Clean Diesel Trucks Make Up 28% of Those on US Roads**

More than 28% of all trucks registered in the United States—2.5 million of 8.6 million trucks—are now equipped with advanced new technology clean diesel engines, according to new data compiled by R L Polk and Company for the Diesel Technology Forum (DTF). The Polk data includes registration information on Class 3-8 trucks from 2007 through 2012 in all 50 states and the District of Columbia. Beginning in 2007, all heavy-duty diesel trucks sold had to meet particulate emissions levels of 0.01 grams per brake horse-power hour (g/HP-hr.).

Regionally, the Midwest (31%) has the highest percentage of new diesel trucks, followed by the South (29.8%), the Northeast (29.1%), and the West (26.0%).

"Emissions from today's diesel trucks and buses are near zero thanks to more efficient engines, more effective emissions control technology, and the nationwide availability of ultra-low-sulfur diesel fuel," said Schaeffer. "The new clean diesel technology has reduced emissions from heavy-duty diesel trucks and buses by 99% for nitrogen oxides (NOx) and 98% for particulate emissions.

"What makes the new diesel technology even more remarkable is model year 2010 and later trucks are experiencing an average of three to five percent improvement in fuel economy. Additional fuel-saving strategies are being developed to improve engine efficiency, vehicle aerodynamics and expanded application of hybrid technology.

"In addition, new diesel technology and ultra-low sulfur diesel are benefitting many of the older diesel trucks built before 2007. Through the use of retrofit upgrades, older diesel engines can improve their performance and reduce key emissions by up to 90%," said Schaeffer.

### **52. U.S. Justices to Hear EPA Appeal over Interstate Air Pollution Rule**

In a major win for the U.S. Environmental Protection Agency, the Supreme Court has agreed to consider the legality of an Obama administration effort to regulate air pollution that crosses state lines. At the request of the administration, the American Lung Association and environmental groups, the justices will revisit an appeals court ruling that invalidated the Cross-State Air Pollution rule, which the EPA implemented to enforce a provision of the Clean Air Act.

Oral arguments and a decision are due in the court's next term, which starts in October and ends in June 2014.

The rule sets limits on nitrogen oxides and sulfur dioxide from coal-fired power plants in 28 upwind states in the eastern part of the country. Various power companies and 16 states successfully challenged the law in the U.S. Court of Appeals for the District of Columbia Circuit. The appeals court ruled 2-1 in August that the EPA had exceeded its authority under the Clean Air Act by requiring states to curb air pollution to a greater extent than the statute requires.

The appeals court also said the EPA acted prematurely by failing to tell states what emissions reductions they had to achieve to meet their obligations under the statute before going ahead with its own federal plan.

The appeals court ordered that a rule issued during President George W. Bush's administration, which the appeals court ruled in 2008 was insufficient, should remain in effect until the EPA comes up with a revised regulation.

A central issue in the case will be the lower court's deference to agency rules and the agency's scientific expertise, legal experts said.

### **53. Canada Commits to Harmonize with U.S. EPA's Proposed Tier 3 Standards.**

The Canadian government will further harmonize its vehicle emissions standards with those of the United States by aligning existing regulations with the Environmental Protection Agency's proposed Tier 3 emissions standards for new cars and light trucks and sulfur content in gasoline, Environment Minister Peter Kent said on June 7<sup>th</sup>. The stricter standards would take effect in 2017 and, when fully phased in, are projected to reduce air pollutants emitted by new vehicles by about 80 percent compared with the current Tier 2 standards, Kent said in a statement. The government plans to achieve the harmonization by amending the On-Road Vehicle and Engine Emission Regulations and the Sulfur in Gas Regulations.

Canada's current regulations have resulted in significant reductions in emissions levels from vehicles, engines, and fuels, demonstrating the utility of its sector-by-sector approach to reducing emissions, Kent said. The latest estimates show that, in 2011, total emissions of nitrogen oxides and volatile organic compounds from automobiles and light-duty trucks had been reduced by 40 percent and 45 percent, respectively, compared with levels in 2003, which was before the current Tier 2 emissions standards took effect.

In the June 8, 2013, issue of the Canada Gazette, Part I, Environment Canada published details of the amendments it believes are needed to align Canada's regulations with the proposed Tier 3 standards for 2017 and later model year vehicles. The department said it expects the proposed amendments to the On-Road Vehicle and Engine Emission Regulations, to be published in a future issue of the Canada Gazette, to include:

- progressively tighter fleet average emissions standards for the sum of "non-methane organic gas plus nitrogen oxide emissions," with a related system for generating, banking, and trading emissions credits;
- more stringent standards for particulate matter emissions and evaporative emissions;
- extension of the useful life period for compliance with emissions standards; and
- changes to emissions test procedures and test fuel specifications.

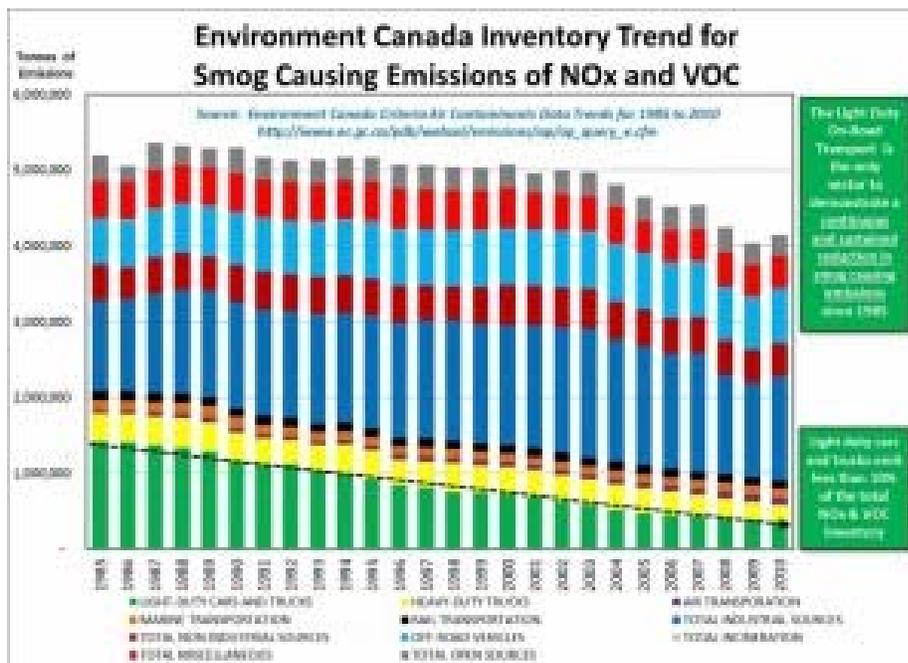
Amendments to be proposed to the existing Sulfur in Gasoline Regulations, meanwhile, would establish an annual average standard of 10 parts per million for sulfur in gasoline produced in Canada or imported, effective Jan. 1, 2017, the department said. Other elements of the EPA's proposed Tier 3 standards may also be considered as part of ongoing consultations with industry and the public, it said.

Canada's existing regulations, implemented under the Canadian Environmental Protection Act, 1999, are part of an integrated systems approach to reducing emissions from vehicles and fuels, it said. The vehicle and engine regulations phased in more stringent standards for emissions of ozone precursors in alignment with U.S. Tier 2 standards. The gasoline regulations required sulfur levels in gasoline sold in Canada, starting in 2005, to average no more than 30 parts per million, with a maximum of 80 parts per million, also aligning with U.S. standards.

Representatives of the domestic and offshore-based vehicle manufacturing sectors welcomed the government's decision to align with the EPA's proposed Tier 3 standards. Global Automakers of Canada fully supports the government's commitment, and the commitment to match the U.S. proposal to reduce sulfur in gasoline to 10 parts per million from 30 parts per million reinforces the idea that a systematic approach to vehicles and fuels is needed to maximize emissions reductions, David Adams, the association's president, said on June 6<sup>th</sup>.

The Canadian Vehicle Manufacturers' Association (CVMA) also supports the announcement that Environment Canada intends adopt Tier 3 emissions standards, harmonized with those developed by the U.S. Environmental Protection Agency (EPA). In fact, according to CVMA for the past 26 years, light duty on-road transportation is the only sector in Canada to demonstrate a continuous and sustained year-over-year reduction in smog causing emissions.

#### Vehicle Related Smog Emissions 1985 - 2010



“Canada’s commitment to Tier 3 emissions standards confirms that Canadians will continue to benefit from the most stringent emissions standards in the world,” said Mark Nantais, president of the CVMA. “Since smog-related emissions are not constrained by international borders, harmonized Tier 3 emission regulations are an important first step, as Tier 3 ultra-low sulfur gasoline requirements will be needed to ensure these advanced emission control technologies will provide Canadians, like their U.S. counterparts, the same air quality improvements.”

Harmonized standards with the EPA also ensure advanced vehicle technologies can be offered to Canadian customers at more affordable prices by leveraging North American economies of scale.

As a result of the continuous improvements made to vehicle emissions since 1985, light duty vehicles today account for just 9% of the total emission inventory across all sectors in Canada, according to the latest Environment Canada emissions inventory (see graph above).

#### **54. Canada Says Sees No Net Increase in Emissions from Keystone**

Canada does not think there would be a net increase in carbon emissions if TransCanada Corp builds its proposed Keystone XL pipeline from Alberta's oil sands to Texas, Natural Resources Minister Joe Oliver said recently. Earlier, U.S. President Barack Obama had indicated he would block the pipeline if it significantly increased the problem of carbon pollution and said the net effects of its impact on the climate would be a critical factor.

"On a net basis, we don't see any increase in emissions as a result of the construction of the pipeline," Oliver told reporters in Toronto. He said at least 20 percent of the oil transported by Keystone would be lighter grades of crude that would not come from the tar sands and would therefore not be carbon intensive to produce.

#### **55. In Keystone Boost, U.S. Study Sees No Added Leak Risk from Canada Oil**

The Keystone XL pipeline got a boost recently as a landmark U.S.-mandated report said heavy Canadian oil is no more likely to cause pipeline leaks than other crudes, knocking back one of the biggest objections to the project. Following a series of high-profile pipeline leaks over the past three years, environmental groups raised the alarm over the prospect that Canada's growing stream of heavy bitumen crude, which is diluted with light fuel to flow through pipelines, could corrode the lines due to its acid and mineral content.

But the National Research Council report, an eagerly awaited study that U.S. regulators were ordered to conduct by a 2011 pipeline safety law, said the oil mix flowing through U.S. pipelines for 30 years was no different in wear and tear on pipelines than other crude oils. "There's nothing extraordinary about pipeline shipments of diluted bitumen to make them more likely than other crude oils to cause releases," said Mark Barteau, a chemical engineering professor at the University of Michigan. Barteau is the chairman of the committee that wrote the report, which confirmed earlier reports sponsored by industry.

The report reviewed pipeline leak statistics and consulted experts on pipeline failure mechanisms, and solicited comments from the public. The NRS is part of the National Academies, a group of private non-profit institutions that advise government on science, technology and health policy.

While the report might not put to rest debate over the safety and impact of importing more Canadian crude, it added to growing signs President Barack Obama is likely to finally approve construction of the line after a more than four year wait that has frustrated Canadian politicians and operator TransCanada Corp. "I think it's harder to come up with reasons not to approve it than to approve it," said Sarah Emerson, director at Energy Security Analysis Inc. in Boston. "Most people in the industry expect it to be a foregone conclusion."

TransCanada Corp's Keystone XL pipeline, which would carry up to 830,000 barrels per day of Canadian and domestic oil to refineries along the U.S. Gulf Coast, was first proposed in 2008, but approval has been delayed several times due to a groundswell of criticism.

The NRC report found no physical or chemical properties outside the range of other crude oils and no evidence that pipeline operators manage their systems any differently when transporting diluted bitumen, compared with other heavy crude, such as that from Mexico. One analyst said the report likely obviates one of the objections to the pipeline, but stopped short of saying it was now more likely the Obama administration would ultimately approve the project. The main opposition to the Keystone pipeline has centered on carbon emissions from the energy intensive production of oil sands.

The State Department is reviewing more than 1 million public comments on a review of the Keystone pipeline before it issues a final environmental assessment of the project. After the final report is issued, the State Department will determine whether Keystone is in the national interest, taking into account its impact on the economy. A final decision by the Obama administration is expected later this year or early next.

### **56. Ford Slashes CO2 Emissions by A Third**

Ford has cut CO2 emissions by more than a third (37 per cent) per vehicle across its global operations between 2000 and 2012, the carmaker has revealed, as it releases its 14th annual Sustainability Report. But the car giant isn't stopping there, now targeting a cut of 30 per cent in CO2 emissions by 2025, compared to 2010 levels, by tackling everything from new products and technologies to manufacturing processes.

At its global manufacturing facilities, CO2 emissions have dropped by 4, 65 million metric tons, or 47 per cent since 2000 while vehicle tailpipe emissions have dropped by 16 per cent since 2007, thanks to new vehicles such as the C-Max Energi plug-in hybrid.

Reducing CO2 emissions is just one of several priorities outlined in the 'Blueprint for Sustainability: Our Journey Continues' report, other areas for improvement include water use, energy use and cutting waste-to-landfill.

"In the more than 30 years I have been with the company, I have seen genuine transformation as Ford has integrated sustainability into its business plan, products, operations and relationships with stakeholders," says Robert Brown, vice president, sustainability, environment and safety engineering. "Water and energy use, waste-to-landfill, Ford's role in reducing the amount of greenhouse gases like CO2 in our atmosphere - these are just a few of the top sustainability-related priorities considered in every decision."

Key to the success in reducing vehicle emissions across the Ford line-up has been the use of EcoBoost engines on combustion models and the introduction of new hybrid and electric vehicle range that now includes Fusion Hybrid, Lincoln MKZ Hybrid, Fusion Energi plug-in hybrids, C-Max Hybrid and C-Max Energi hybrid and Focus Electric.

Ford's latest sustainability report also shows that waste to landfill has been reduced 19 per cent per vehicle between 2011 and 2012, as part of a plan to cut the amount of waste-to-landfill 40 per cent per vehicle by 2016 from the 2011 baseline, water use has been cut by 62 per cent between 2000 and 2012 - equal to about 10 billion gallons-and energy efficiency has improved by 6.4 per cent compared to 2011.

## **CARRIBEAN REGION**

### **57. Jamaica Prepares For Ultra Low Sulfur Diesel Fuel**

The regular diesel fuel supplied by Petrojam Limited will have a red color as of Monday June 17<sup>th</sup>. Petrojam said that the change in color is in preparation for the introduction of another grade of diesel, Ultra Low Sulfur Diesel (ULSD) to the market on Monday, June 24. ULSD will be of a light yellow (straw) color.

Manager of Safety, Environment and Quality (SEQ) at Petrojam Leon Jarrett explained that the introduction of the ULSD fuel is in response to market demand to provide diesel that is compatible with newer models of diesel engines that are being manufactured with improved emission-controlling devices.

The fuel with its lower sulfur content is considered a plus for the automotive sector and the environment, as it is a cleaner option compared to the present diesel. ULSD fuel contains a maximum sulfur content of 15 parts per million (ppm) opposed to the 5,000 ppm currently on the market.

In the meantime Petrojam has assured that the red dye will in no way impact on the quality of the product.

## **ASIA-PACIFIC**

### **58. Funds Sought For Diesel Phase-Out in Hong Kong**

An unexpected last-minute surge in applications has prompted the Environmental Protection Department to seek more money for its replacement-grant scheme for old polluting diesel vehicles. The three-year, HK\$540 million scheme, aimed at 28,000 vehicles at least 12 years old that conform to outdated European emission standards set in 1996, is due to close at the end of next month.

The department is refusing to say whether it will be extended, as transport operators have asked. But the agenda for an upcoming meeting of the Legislative Council environment affairs panel shows the department plans to seek unspecified extra funds. A source familiar with the situation said funds were needed as there had been a surge in applications from owners of heavy vehicles, especially coaches.

Since its introduction in 2010, the scheme has attracted applications from the owners of about 5,000 Euro II vehicles. The government reported in November that about 4,000 applications with a total of HK\$340 million in grants had been approved.

The department's website is still saying the scheme would not be lengthened beyond the June deadline.

The transport trade has been asking for an extension until the launch of a HK\$10 billion scheme to replace all vehicles built before the more stringent Euro IV standards were introduced in 2005. This scheme, which offers a replacement grant of 21 per cent for Euro II vehicles, against 18 per cent being offered under the current scheme, is not likely to begin before summer next year.

Friends of the Earth environmental affairs manager Melonie Chau Yuet-cheung said she was puzzled by the surge in applications under the existing scheme, given the supposedly more attractive one ahead. "There is a question mark hanging over us."

Motor Traders Association secretary general Johnson Li said some operators were hesitating over replacing their worn-out vehicles at this stage. "It seems the HK\$10 billion scheme is unlikely to be ready before the middle of next year, and some operators have difficulty in making a decision right now since there will be at least a year of vacuum with no replacement grant after June," he said.

In 2010, the government secured HK\$540 million funding for the Euro II scheme on the assumption that up to 26 per cent of the then 28,000-strong Euro II commercial diesel vehicle fleet would take up the grants.

Leung Kun-kuen, chairman of the Kowloon Truck Merchants Association, said some operators were adopting a wait-and-see attitude as the new scheme had not been finalized. Officials said some motor vendors and vehicle body builders said they were being affected by the uncertainty as some transport operators had held up their replacement plans.

#### **59. Hindustan Motors Ready To Launch BS4 Amby Diesel with a New Name**

Hindustan Motors has announced that they are ready to launch the BS4 diesel variant of the Hindustan Ambassador very soon. The diesel Ambassador currently complies with BS3 emission norms only. As a result, Hindustan Motors has not been able to sell it in the major metropolitan cities since April 2010. With a BS4 compliant diesel engine, the Ambassador will be able to invade metros.

Hindustan Motors is currently launching the BS4 diesel in one engine specification only. It will be available with a 1.5-liter four cylinder diesel engine, while the 2.0-liter diesel engine stays in BS3 spec.

Following extensive test driving, senior functionaries of the taxi associations and the dealers found the BS IV-compliant Ambassadors distinctly superior to the current BS III model. Mr. Bimal Kumar Guha, general secretary of Bengal Taxi Association, said, "I myself drove the BS IV Ambassador over several laps of the test track and found that the new vehicle offers higher power and torque, better vehicle control with power steering, improved gradient negotiating capacity, better cooling and overall better drivability with no compromise on fuel consumption. Of course, it meets the emission norms. I could not detect any smoke."

Mr. Tarak Nath Bari, secretary of Calcutta Taxi Association, stated, "Driving the BS IV Ambassador, today, was a pleasant experience. The forthcoming vehicle is positively better than the current BS III vehicle. The drive proved that the new vehicle fully matches the technical specifications provided by HM. It is real value for money and will positively make better business sense to buyers, particularly in the taxi segment. Kolkata had been waiting for BS IV diesel Ambassador for quite some time." The introduction of the new BS IV-compliant Ambassador will now open for Hindustan Motors 17 metropolitan cities where sale of BS III cars had been banned from April 2010.

#### **60. Supreme Court Stays Proceedings against Diesel Decontrol in India**

The Supreme Court has stayed all proceedings in various high courts against moves to decontrol diesel, clearing a big hurdle in the implementation of the liberal fuel policy, which the government said was driven by concerns of fiscal prudence, energy security and freeing up funds for welfare schemes. The government was facing legal challenges against its move to gradually align diesel prices to international levels and grant state oil firms the freedom to charge full market rates to bulk buyers such as railways, defense and state transport corporations. Bulk purchasers had challenged the policy in various High Courts.

The central government, apprehending that multiple orders would be issued from different High Courts against its new policy, sought transfer of these petitions to the top court. On Monday, a vacation bench comprising Justices B S Chauhan and Dipak Misra issued notices to all parties to the petitions and stayed all proceedings in the High Courts in the interim.

"This is a relief to the Centre as it secures the national policy," said Amit Mohaan Maharia of Meharia and Co, which filed the petition to transfer cases to the highest court. The petition was argued by Solicitor General Mohan Prasaran in the top court. The government defended its new policy saying it was driven by fiscal prudence.

"The primary objective behind the pricing reforms... is the growing imperative for fiscal consolidation, the need for reducing the subsidy burden on petroleum products so as to allocate more funds to social sector schemes for the common man and for ensuring country's energy security in the long term," the transfer petition said.

The Kerala High Court and the Madras High Court had, acting on petitions opposing the policy, stayed its implementation, forcing the Centre to appeal against the March 14, 2013, single judge's decision in the Madras High Court.

A division bench on April 22, 2013, stayed it on appeal. But the Centre was faced with a situation in which different petitions were being filed in different High Courts, so it filed a plea for transferring all such petitions to the top court.

The Kerala High Court had in fact imposed an indefinite stay on the policy. The Kerala HC writ petition had challenged the Ministry of Petroleum decision of Jan 17, 2013, to allow OMCs to charge market prices from bulk purchasers. Similar other petitions are pending in the Gujarat High Court, AP and Karnataka High Courts as well.

The January 17, 2013, letter also authorized OMCs with effect from midnight the same day to increase the retail selling prices of diesel in the range of 40-50 paise per liter per month (excluding VAT as applicable in different states/ UTs) until further orders. They were also allowed to sell diesel to all consumers taking bulk supplies directly from installations of OMCs at non-subsidized market determined price with immediate effect. OMCs would not be eligible to any subsidy on such direct sale of diesel to bulk consumers.

### **61. Diesel Price Continues To Climb in India**

State-owned oil firms, which had been mandated in January to raise prices by up to 50 paise per liter every month till entire losses on the fuel are wiped out, skipped raising rates in April to avoid troubles for the government during the second half of the Budget session of Parliament. The companies have made up for skipping the April revision by increasing rates by Rs. 0.90 per liter, excluding local sales tax or VAT.

The increase comes to Rs. 1.02 per liter in Delhi where the fuel will now cost Rs. 49.69 a liter compared to Rs. 48.67 previously, Indian Oil Corp, the nation's largest fuel retailer, said in a press statement. In Mumbai, diesel will cost Rs. 1.12 more at Rs. 56.04 a liter, while in Kolkata it will cost Rs. 53.97 per liter as compared to Rs. 52.91 at present. In Chennai, the price has been raised by Rs. 1.10 to Rs. 52.92.

Diesel prices were last hiked on March 23 when rates were raised by 45 paise, excluding VAT. Similar hikes had taken place in January and February, but prices were not changed in April when Parliament's Budget session was on. The revision in April may have been avoided, possibly in view of oil minister M Veerappa Moily's home state of Karnataka going to assembly polls. Congress romped back to power in the state.

Before the hike, oil firms were losing Rs. 3.81 per liter on diesel and the recent increase will help cut losses by 90 paise. While losses on diesel had declined from Rs. 7.34 a liter at the beginning of the fiscal to Rs. 3.80 at present, the softening in international oil prices had led to petrol prices being cut by four times - by Rs. 3 per liter on May 1, Rs. 1.20 on April 16, Re 1 on April 1 and Rs. 2.40 on March 16.

IOC said the government had in an order dated January 17 authorized oil firms to "increase the retail selling price of diesel within a small range every month until further order". "Accordingly since then, retail price of diesel have been raised by Rs. 0.45 per liter on three occasions - January 18, February 16 and March 23," the statement said. IOC said it has decided to increase retail selling price of diesel by "Rs 0.90 per liter (excluding VAT) covering the increase for the months of April and May 2013."

Though petrol prices were deregulated in June 2010, they rarely moved in tandem with cost. However, since January, they have more or less moved in step with international prices with oil firms revising rates every fortnight.

Before the hike, it was estimated that oil firms were projected to lose Rs. 84,475 crore on diesel and cooking fuel this fiscal. IOC, Hindustan Petroleum Corp (HPCL) and Bharat Petroleum Corp (BPCL) lost Rs. 1,61,029 crore in 2012-13 on sale of diesel, domestic LPG and kerosene at government controlled rates, which are way below market price.

Softening of international oil prices had meant that losses on diesel came down from Rs. 7.34 a liter at beginning of the fiscal to Rs. 3.81 (before this recent hike).

The under-recovery on domestic cooking gas (LPG) has come down to Rs. 378.38 from Rs. 434.50 per 14.2-kg cylinder, while the same on kerosene has been cut to Rs. 29.33 a liter from Rs. 32.02 earlier.

## **62. Car Makers Run Into Diesel Dilemma as Fuel Price Increases**

Hindustan Motors rolled out the Mark 4, the first diesel car in India, in 1979. It was powered by a 1,489-cc 37 bhp engine and was extremely well received by buyers. Thirty-four years later, India has as many as 449 diesel (and 429 petrol) variants on the road—a clear indication of how diesel cars have become the preferred mode of transport in the country. Over 53 per cent of passenger vehicles sold across India in the last fiscal were powered by diesel. Among utility vehicles, 539,000 of the total 554,000 units sold in the country in 2012-13 were diesel, according to the Society of Indian Automobile Manufacturers (SIAM). The segment grew by about 35 per cent last year, while the petrol segment shrunk by 15 per cent. Not surprising,

given the lower cost of diesel and the fact that the cars are considered more fuel-efficient than petrol ones. Or so, everyone thought.

In the last year—with the government subsidy being slowly reduced (40 paise per month starting January 2013)—diesel prices have begun inching closer to that of petrol, which is becoming cheaper owing to a softening of global crude prices. We've seen diesel prices going from Rs 41.29 (on June 18, 2012) to Rs 48.67 (on April 16, 2013) while petrol prices have dropped from Rs 70.24 a liter to Rs 66.89 over the same period. In Goa, where diesel costs Rs 52.70, it's overtaken petrol, at Rs 52.10.

The state of the Indian auto sector, which is currently plagued by high input costs, enhanced interest rates and a lack of customer interest, doesn't help—although in this case, both diesel and petrol car sales are affected.

As a result, auto companies are going slow with their plans for fresh investment in diesel engines plants. India's leading auto maker Maruti Suzuki, which has bought land in Becharji in Gujarat, is yet to decide whether the plant will manufacture diesel or petrol engines. Similarly, India's second-largest car-maker Hyundai Motors, which was planning a second plant in Chennai at an estimated investment of \$300 million, is now contemplating a "flexi-plant" which can produce both diesel and petrol engines instead of instead of a totally diesel plant.

Jnaneswar Sen, senior vice-president, marketing and sales of Honda Cars India, which has just entered the diesel segment with Amaze, says: "In the current environment, when diesel and petrol are being aligned with market rates, we expect the choice of fuel to be determined by the customer on the basis of his usage requirements." The Japanese carmaker, which started Indian operations in 1995, registered a 35 per cent growth rate last fiscal. Amaze is its first diesel model in India.

Dr Pawan Goenka, president, Automotive Division of Mahindra & Mahindra, which makes only diesel vehicles, says: "The auto industry is faced with a situation where not only has the excise on SUVs increased but diesel prices too have gone up. This could have an impact on sales of diesel SUVs. The petrol-diesel price differential is currently 26 per cent, compared to 42 per cent a year ago. We have been saying for a while now that diesel price should be freed but this is happening at a time when the excise duty has also gone up. This is a double whammy."

### **63. Jiangxi Province to Evaluate Pollutant Reductions**

The environmental protection bureau of Jiangxi province in southern China said May 2 it will assign regional governments goals for reducing emissions of the four key pollutants targeted under the country's 12th Five-Year Plan (2011-2015). The governments will have to meet targets for cutting airborne emissions of sulfur dioxide and nitrogen oxides, as well as levels of chemical oxygen demand and ammonia nitrogen in wastewater. They will also have to set up monitoring systems to track the reductions. Regional governments will have to report their results annually to the provincial government and environmental protection bureau. Those that fail to meet their targets must issue a plan to improve their performance. If the provincial government is not satisfied with the level of progress, local governments will be punished by restrictions on new environmental impact assessments to be done on potential projects in their areas, which would restrict their economic development and reflect poorly on local officials.

### **64. Beijing's Goal: 50,000 Electric Vehicles by 2015**

The City of Beijing plans to have 50,000 electric cars on the streets by 2015, 30,000 of which will be owned privately, according to the Legal Evening News, a Beijing newspaper. In addition to the 30,000 private electric vehicles planned for China's capital city by 2015, there will be 8,000 electric or hybrid public buses — a third of the total number of buses in Beijing.

Plans call for 10,000 electric taxis or government vehicles and 2,000 EVs for uses in logistics, environmental, postal and rental sectors.

“BAIC has made a promise to the city of Beijing to launch electric cars in the first half of 2013,” said Lin Yi, the managing director of New Energy Automotive, Ltd., a subsidiary of the state-owned Beijing Automotive Group, or BAIC. “We are now looking for volunteers to purchase he first batch of electric cars in Beijing; there will be dozens of them in the first half of the year,” he said.

To promote electric vehicles, the city and the central government are each offering a 60,000 Yuan (\$9,800) subsidy to private citizens willing to purchase an electric car.

According to the official People's Daily newspaper, Beijing's pilot subsidy plan for private purchases of new energy vehicles has received preliminary approval from the four central ministries including the Ministry of Finance and the National Development and Reform Commission.

Cost is a central concern for consumers considering electric cars. An electric vehicle retails usually for more than 200,000 Yuan. With the 120,000 Yuan combined government subsidy, a consumer can expect to pay a price roughly equal to the cost of a petrol-powered vehicle

“The front-end cost is about the same, but an electric car and a traditional car have vastly different maintenance costs,” said Xu Heyi, the president of BAIC. “A traditional car will run around 20,000 kilometers (12,430 miles) per year and cost 20,000 to 30,000 Yuan to maintain,” he said. “One of BAIC's electric cars, however, only costs 12 Yuan to run 100 kilometers, so the cost of maintaining an electric car for a year will only be 2,400 Yuan.”

In addition, Beijing has just built what it claims is the world's largest electric car charging station, used to charge up to 400 electric sanitation vehicles per day. Beijing also has four other charging stations and 15 groups of charging posts around the city.

On May 19, the first electric car rental service in Beijing opened in the Wudaokou area of the city as part of the Electric Beijing Partnership Plan, Caixin News, a financial news website, reports. As part of the launch, dozens of EV chargers were installed.

The partnership between Yika Car Rental Service and Beijing Automotive Group, one of China's largest state-owned automakers, has rolled out the first batch of electric cars, 15 vehicles produced by BAIC. Automotive Safety and Energy National Laboratory Director Ouyang Ming Gao says the rental service is part of the initiative to popularize electric cars in Beijing in the hopes of easing the city's perennial congestion and pollution problems.

Across China, the government has set a target of producing and selling 500,000 energy-efficient and alternative-energy vehicles a year by 2015, and five million vehicles by 2020. These goals were announced by China's State Council in July 2012.

## **65. New Red Alert on Air Quality**

The most serious level of air pollution is now a red alert rather than orange, according to a new guideline released by Beijing Meteorological Bureau, the Beijing News has reported. The bureau has also included PM 2.5, or airborne particles measuring 2.5 microns or less in diameter, as an element in the appraisal criteria for air quality. According to the revised guideline, when the PM 2.5 reading exceeds 500 and visibility is reduced to less than 5,000 meters, a red alert will be announced.

The Beijing municipal government aims to decrease the average density of main air pollutants by 2 percent in 2013, according to the municipal government's annual work report released earlier this year.

### **66. Natural Gas Trial Set for Big Trucks in Shanghai**

Cargo trucks in Lingang New City and Yangshan Deep-water Port areas will be required to use natural gas as fuel to curb air pollution, part of the city's efforts to improve air quality, the Shanghai Environmental Protection Bureau has announced.

The government is also considering subsidizing taxi firms to help replace aging filters that reduce vehicle emissions. A manager with Shanghai Dazhong Taxi Co said they would welcome the replacement of the filters. The city has about 50,000 taxis and it is unknown how many filters need replacing.

Moreover, the environment monitoring center will add more PM2.5 monitoring stations in each district, allowing residents to have a better understanding of the air quality in their neighborhood.

Eighty percent of Shanghai's PM2.5 pollution is generated in the city with the remainder coming from neighboring provinces, the bureau said. Emissions from vehicles and ships contribute 25 percent of the city's PM2.5 pollution while industrial operations generate another 25 percent.

Heavy vehicles like cargo trucks discharge 20 to 30 times more emissions than small cars, so the city plans to have all trucks in Lingang New City and Yangshan port to switch to natural gas.

The city is stepping up the introduction of the National V vehicle emissions standard, the equivalent to European V standards.

It plans to eliminate 200,000 unqualified vehicles from the city's streets by 2015. So far, 46,000 vehicles have been taken off the road.

Renovating power plants has also been promoted as another way to reduce pollution.

Zhang Quan, director of the Shanghai Environmental Protection Bureau, said the discharge of major pollutants like sulfur dioxide, nitric oxide, volatile organic compounds and PM2.5 needs to be reduced 30 to 60 percent from last year to meet stricter air quality requirements that were established earlier this year. It could take 10 years to accomplish the goal, Zhang said.

### **67. China's First-Tier Cities Barely Livable, Report Says**

Most first-tier cities in China are barely suitable for living due to their poor ecological environment, despite rapid economic development and preferential regulations for investment, said a newly released report by a top Chinese think tank. First-tier cities, including Beijing,

Shanghai and Guangzhou, failed to make the list of habitable cities even though they are in the top 10 in terms of commercial advantages, unification of city and countryside, and culture development, according to a report on China's urban competitiveness from the National Academy of Economic Strategy under the Chinese Academy of Social Sciences.

Only two first-tier cities, Hong Kong and Macao, are among the country's most livable cities, said the report.

Beijing ranks best in terms of academic resources and intellectual atmosphere, second-best in business environment and sustainability, and third in cultural industry. But it dropped to 74th and 119th in habitable and ecological environment, the report said.

Huang Hui, a 27-year-old software engineer from Beijing, said he found the report "objective". "Beijing has the best medical, academic resources compared with other cities, but it's not necessarily the best choice when it comes to being habitable," he said. "I'm proud of the cultural diversification in the city, but it's a pity that Beijing sacrifices the most basic essentials, air and water, simply in exchange for all the rapid development."

In the past decade, there have been mounting problems in cities nationwide, including traffic jams, housing tension and food safety issues.

Li Guangquan, a researcher with the China Center for Service Sector Research, said the ultimate goal of urban competitiveness should be the pursuit of citizens' benefits. However, many first-tier cities, despite their outstanding competitiveness, are barely people-oriented and hardly satisfactory in ecological protection, Li said. High housing prices have become the main reason that some cities are increasingly "uninhabitable", with other reasons including poor air quality and traffic congestion, he said.

According to the report, livability is the primary and most basic function of a city and plays a key role in upgrading urban competitiveness.

Ni Pengfei, director of the center for city and competitiveness under the Chinese Academy of Social Sciences, said the competitiveness of a city usually rapidly ascends as economic competitiveness increases. However, the rise slows down and even descends soon afterward.

### **68. China Battery Plant Protest Gives Voice to Rising Anger over Pollution**

Hundreds of protesters gathered in the Chinese financial hub of Shanghai recently to oppose plans for a lithium battery factory, highlighting growing social tension over pollution. Police stood by as residents marched peacefully along a busy street in the Songjiang district of the city, gathering at an intersection near the site of a Carrefour hypermarket, chanting and holding signs saying "No factory here, we love Songjiang."

Many wore matching t-shirts with an image of a smoky factory enclosed by the red "no" symbol.

Residents are concerned about potential waste water and gas emissions from the plant, which would be built by Hefei Guoxuan High-tech Power Energy Co Ltd.

Protests over pollution are becoming more frequent in China, as the country's increasingly affluent urban population begins to object to the model of growth at all costs that has fuelled the

economy for three decades. Saturday's gathering, attracting about 1,000 protesters, was the third mass protest in recent weeks against the planned factory.

In response, Songjiang district officials said late last month that the factory would only produce lithium cells and conduct final assembly of the batteries, but would not be permitted to produce anode and cathode, the official Global Times reported at the time. Songjiang officials say the plant will be safe.

Recently, several hundred people took to the streets of Kunming, in southwest Yunnan province, to protest against a chemical refinery planned by China National Petroleum Corp, China's largest energy producer. Kunming's mayor, Li Wenrong, said that the government will halt the project if most citizens object to it, the official Xinhua news agency reported.

In November, the eastern port of Ningbo suspended a petrochemical project after several days of street protests.

Last July, a crowd of thousands in Qidong city, north of Shanghai, ransacked government offices in a protest against a pipeline for waste from a paper factory.

### **69. BYD's Electric Taxis Hit Hong Kong Roads with Big Ambitions**

Warren Buffett-backed Chinese carmaker BYD Co Ltd has rolled out Hong Kong's first electric taxi fleet, marking a milestone for its all-electric battery car that highlights its promise and its limitations. "We expect to increase the number of e6 taxis in Hong Kong to 5,000 in three years," said Liu Xueliang, general manager of BYD Asia Pacific sales, after the company announced it is making a push in the former British colony to encourage the use of its all-electric e6 taxi.

The Hong Kong Taxi & Public Light Bus Association said it is renting from BYD an initial fleet of 45 taxis for HK\$8,000 (\$1,000) each per month, although only six vehicles had licenses so far. The association is BYD's only Hong Kong customer to date.

The e6's use in Hong Kong's taxi fleet points to the technology's promise as a "zero-tailpipe-emission" vehicle, but its high cost has resulted in sluggish sales for private use, the very demand that BYD had been counting on to boost sales. The e6 sells for 369,800 Yuan (\$60,200) in mainland China and HK\$448,000 (\$57,700) in Hong Kong.

When BYD launched the car a few years ago in China, the e6 was intended for private use on the mainland and in the United States, but never quite caught on. BYD sold about 1,700 e6 vehicles in China last year, according to industry data.

The e6's failure to prove popular among everyday consumers is not only bad news for BYD, it illustrates how China's policy goal of putting 5 million "new-energy" cars on the road by 2020 is not going as planned. China's central government defines new-energy cars as either all-electric battery cars or heavily electrified plug-in hybrid vehicles.

To make up for slow sales of the e6, BYD executives told reporters last month it planned to start promoting conventional gasoline-electric hybrid technology. They said BYD might stop over the next few years making all-gasoline cars and sell only electric-assisted cars such as conventional hybrids or all-electric vehicles.

In addition to promoting the e6 as a taxi, BYD is also offering the e6 to private consumers in Hong Kong, just an hour by car from its headquarters in the southern Chinese city of Shenzhen.

"If Hong Kong's 18,000 taxis and 12,000 diesel-fuelled buses are all replaced with electric cars, the reduction of emissions will be equivalent to that of 800,000 private cars and it will reduce Hong Kong's emissions by 50 percent," said Wang Chuanfu, the billionaire engineer who founded BYD.

The launch of the fleet comes as Hong Kong is seeing increasingly high pollution readings, due in part to the rising number of cars on the city's already congested roads.

Shares in BYD have tumbled about 60 percent since a late 2009 peak. The stock was up nearly 5 percent recently at a two-year high of HK\$33.30, beating a 0.4 percent gain for the benchmark Hang Seng Index.

Called the BYD e6, the five-door crossover sedans are powered by iron phosphate batteries and take two hours to charge, a statement from BYD said, adding that they can travel for 300 kilometers.

"An electric car saves on fuel costs and will allow our taxi drivers to earn more," said Wong Chung-keung, president and chairman of the Hong Kong Taxi and Public Light Bus Association. Wong said a standard taxi costs HK\$0.8 (10 US cents) per kilometer to run, while an electric car costs HK\$0.2-0.3.

He called for more charging stations around the city to encourage taxi drivers to go electric. BYD said it is setting up 47 chargers in nine charging locations near car parks.

Hong Kong's Financial Secretary John Tsang was quoted in a BYD statement as welcoming the electric car and saying he was committed to "promoting environmental sustainability by laying the foundation for Hong Kong to become a zero emissions city."

The government announced revisions to its air quality objectives for the first time in 25 years in January 2012, after University of Hong Kong research showed pollution-related illnesses killed more than 3,000 residents a year.

## **70. Fujian Builds Clean Gasoline Project**

A Sinochem petrochemical project under construction in Quanzhou, Fujian province, is expected to provide clean gasoline to reduce vehicle emissions for the province when it is completed by the end of the year. The Sinochem Quanzhou Petrochemical Project will use world-class advanced technology and equipment to refine crude oil to meet the Euro V emissions standard, the most environmentally friendly standard. The project has a production capability of eight million tons of clean gasoline each year.

In a bid to promote clean gasoline, Quanzhou Sinochem has started to set up gas stations throughout the province, and several in southern Fujian have already been put into use

"We're using world-class environmental protection technology and we're investing more than 2 billion Yuan (\$250.4 million) in environmental protection, which accounts for 7 percent of the total investment," said a worker with the project.

In addition, the project will help develop petrochemical industrial chains dominated by ethylene, and boost light industry, farming, machine manufacturing, communication and transportation.

### **71. IOC Claims Breakthrough in Jatropha Oil Extract**

State-owned Indian Oil Corp. (IOC) has announced that it has developed technology that will help advance the use of non-edible oil extracted from plants like Jatropha (bio-diesel) in auto fuels. "IOC has successfully developed and commercialized a technology to co-process non-edible vegetable oil in the existing Diesel Hydrotreating (DHDT) units of a petroleum refinery to make bio-diesel," the company said in a statement.

This is first time in India, and possibly the first in the world, when Jatropha oil has been used for co-processing in a petroleum refinery. This technology for co-processing of Jatropha oil has been developed by the R&D Centre of IOC located at Faridabad.

The company termed this as a "major technological breakthrough that can be a game changer for advancing use of bio-diesel in the country and ensuring ready acceptance of the fuel by the automobile industry".

During the development of this process technology, IOC also developed a process for de-metallization and de-gumming of vegetable oils. De-metallization of oils is a pre-requisite for co-processing since metals are poisonous for the catalyst in the DHDT unit.

During the trial, the diesel cetane number improved by 2 units, sulfur content was reduced and the inlet temperature of the reactor could also be reduced by 100 degrees Celsius with resultant energy savings.

Conventionally, bio-diesel is produced by the trans-esterification process which requires a separate plant to be set up. Bio-diesel thus produced through trans-esterification route has inferior properties in terms of oxidation stability, lower energy content and results in more deposits in the engine due to which, it is not very well accepted by automobile industry. "The novel innovative co-processing technology developed by IOC overcomes these disadvantages and produces bio-diesel with higher Cetane number, good oxidation stability and lower density," the statement said.

### **72. Indonesia Struggles to End Fuel Subsidies**

Indonesians are accustomed to the pain of rising food prices in a country where about 100 million people live on \$2 a day or less. But both patrons and vendors at the market think things will get worse: The low fuel prices they count on, kept among the cheapest in the world by aggressive subsidies, may soon skyrocket, too as the national government has announced it wants to increase the price of gasoline, because state subsidies that keep it well below the international market rate are burning a hole in the budget.

The country's Finance Ministry says spending on fuel subsidies could reach \$23 billion in 2013, compared with about \$20 billion last year. Total subsidies for electricity and fuel could end up costing about \$32 billion, or 20 percent of the 2013 budget. The Indonesian government's statistics show that it spends more on fuel subsidies annually than it does on social programs and capital expenditures combined.

President Susilo Bambang Yudhoyono has said he would submit a revised 2013 budget to the House of Representatives in May that would include a fuel price increase, but would also revive a cash compensation program for poor families to cushion the blow.

“Usually when the price of gasoline goes up, all other prices go up,” said Theresa Natalia, 22, who runs a noodle stall in the market. “It pushes up transportation costs, and everything from food to clothes is higher. Even if it’s only private cars paying more, everything will go up. It’s always like that.”

Last month, Mr. Yudhoyono’s government floated the idea of a two-tier gasoline pricing plan meant to shield Indonesia’s poor and lower classes from higher costs. People who drive motorcycles and public transportation vehicles would continue to pay 4,500 rupiah per liter, or about \$1.74 per gallon, while owners of private vehicle and commercial vehicles like delivery trucks and company cars would pay 6,000 rupiah, a 33 percent increase.

However, cabinet ministers and aides to Mr. Yudhoyono said that under the new plan, fuel prices would probably increase for everyone to 6,500 rupiah per liter. Shortly afterward, tens of thousands of people from labor unions and groups representing women, students and environmentalists protested that proposal during street marches to observe Labor Day.

Although Indonesia has plenty of oil production fields and is among the top 25 oil-producing nations in the world, it is a net importer of petroleum. Gasoline is so heavily subsidized that at the end of 2012, the country had the lowest fuel prices of any net oil-consuming nation in the world, according to the World Bank. The second-lowest was the United States, where a gallon sold for \$3.29 on Dec. 31 — nearly twice as much as in Indonesia.

The Indonesian Finance Ministry has estimated that the country will exceed the 2013 budget quota of 46 trillion liters, or 12 trillion gallons, of subsidized fuel by at least 15 percent or more. Savings from eliminating or reducing a fuel subsidy could go to crucial public social programs including health care, as well as much-needed infrastructure investment, according to analysts.

Fuel subsidies are a highly political and emotional issue in Indonesia. Some of the unrest that led to the ouster of the authoritarian President Suharto, who died in 2008, was rooted in fuel prices.

Mr. Yudhoyono drew minor protests when he raised gasoline prices in 2005 and 2008, mainly because he gave poorer Indonesians cash handouts to ease the blow. But he then lowered fuel prices before his landslide re-election in 2009, while keeping the handouts in effect, angering his political rivals.

In March 2012, Mr. Yudhoyono proposed raising fuel prices again, but even members of his own governing coalition revolted to embarrass him, quashing his plan at a raucous House of Representatives session as student and labor groups outside clashed with riot police officers on live national television.

Mr. Yudhoyono was twice elected to office on a platform sympathetic to the country’s poor, and even with national elections scheduled for 2014 and his governing Democratic Party lagging in the polls, he has few viable alternatives but to raise gasoline prices in some fashion, according to analysts. Indonesian law prevents Mr. Yudhoyono’s government from running a budget deficit higher than 3 percent, and the Finance Ministry estimates that raising gasoline prices would keep the deficit below the legal threshold.

“It’s better than nothing,” said Ndiame Diop, lead economist at the World Bank in Jakarta. “It sends the signal that the government is doing something.” However, Mr. Diop said any incremental price increase should be viewed as a stopgap measure. The Indonesian private sector, the World Bank and others have long appealed to the Indonesian government to get rid of subsidies altogether, mainly because studies have shown that the country’s rich benefit from them far more than its poor do.

Still, Mr. Diop said, an increase in the price of a liter of gasoline to make it even fractionally closer to the international market level would have to be accompanied by the same compensation program for the poor that Mr. Yudhoyono’s government had in 2005 and 2008, which was viewed as effective. “Our key point is compensation — the need to compensate the poor from the spike in inflation following a fuel subsidy reform,” he said.

About 29 million Indonesians live below the country’s national poverty line — 250,000 rupiah per person per month or 1,250,000 rupiah per family per month, and in urban areas, 350,000 rupiah per person per month or 1,500,000 rupiah per family per month. A further 70 million, categorized as near poor, live just above that line. Didik Rachbini, a prominent economist and member of Mr. Yudhoyono’s National Economic Council, which comprises economists and leading businessmen and advises the president on economic policy, said the government had a longstanding fear that increasing the price of fuel would push tens of millions of near-poor Indonesians below the poverty line. “If we increase fuel prices for everyone, the price of 15 to 20 basic goods will also increase, such as rice,” he said. “It would reduce the purchasing power of the poor.”

Indonesia has one of the world’s strongest emerging-market economies, with growth of better than 6 percent for the past three years. It also has a higher rate of foreign direct investment as a percentage of gross domestic product, at 2.75 percent, than countries like Brazil (2.69 percent), India (1.4 percent) or China (1.36 percent).

Despite the country’s economic boom, Mr. Rachbini said, income among Indonesia’s poor and near poor rose 2 percent in 2012, compared with a nationwide average of 4.8 percent and between 7 percent and 8 percent for more affluent Indonesians. Hence, Mr. Rachbini said, quasi-socialist policies like low-cost gasoline are needed to maintain stability, given Indonesia’s high levels of poverty.

Yet Mr. Yudhoyono must balance Indonesia’s status as a hot investment destination against deficits in its budget and its current account balance, a measure of foreign trade and investment, which have political, social and even security consequences. He has repeatedly wavered — and has been accused of being weak — on reducing fuel subsidies since being re-elected in 2009 and is highly sensitive to street demonstrations, according to analysts.

Mr. Yudhoyono again hedged his bets recently by throwing the political hot potato back into the House, saying fuel prices would be raised “when the poverty funding is ready” from lawmakers when they debate his 2013 budget revision. Some lawmakers were on record last month as being against cash compensation because it could give Mr. Yudhoyono’s Democratic Party a lift before the legislative elections next year.

### **73. Air Pollution Is Asia’s Latest Diplomatic Flashpoint**

Every few months, Fukuoka, a city of 1.5 million people in southern Japan, not far from mainland China, gets a dose of lung clogging courtesy of its neighbor. Coal factories in the cities of Tianjin and Beijing combined with the growing numbers of automobiles, pump out toxins that drift westward across the East China Sea. They hit Japan and, to a lesser extent, South Korea.

The most recent air pollution crisis came in February, when a whitish gray blanket of smog fell over Fukuoka. The city government put out an advisory on its early warning system — the first in Japan, started that month — urging everybody, and especially infants and the elderly, to stay indoors and wear face masks outside.

“There is concern among citizens over the health effects,” said Keiko Nabamuta, a city environment official. “Whenever this happens, we ask residents to stay indoors and avoid hanging their laundry outside,” a measure to prevent unsafe particulates from gathering on clothing.

The air pollution problem has become so pervasive that it has joined the list of diplomatic issues on the table between three nations: China, which produces much of it, and Japan and South Korea, on its receiving end.

On May 7<sup>th</sup>, top environmental officials of the three countries met in Kitakyushu, a city near Fukuoka, and agreed to set up a panel that will occasionally gather to explore solutions. “Air pollution and climate change are common issues in the region,” Japan’s Environment Minister Nobuteru Ishihara told his counterparts in remarks carried by public broadcaster NHK. “Apart from domestic countermeasures, it is indispensable for China, South Korea and other countries to cooperate in solving them.”

“The agreement provides a meaningful consensus on the establishment of a consultative body among policymakers of the three countries in recognition of the growing severity of air pollution originating from China,” the South Korean ministry said in a statement. The so-called Tripartite Policy Dialogue on Air Pollution will facilitate policy coordination, research collaboration, and technology exchanges.

Specifically, the three countries agreed to conduct joint scientific research to provide early warning and pollution control mechanisms for PM-2.5 and photochemical oxidants as part of a broader effort to address a wide range of global and regional environmental concerns such as the Chinese dust and sandstorm problem, climate change, and threats to biodiversity.

The PM-2.5 initiative is a milestone in the growing environmental collaboration among the three East Asian neighbors in recent years. Various projects involving governments and the private sector from the three countries have been under way, including the Acid Deposition Monitoring Network in East Asia and tripartite scientific research on Long-Range Transboundary Air Pollutants in Northeast Asia.

The latest agreement is contained in a joint communiqué issued after the annual meeting, which has rotated among the three countries since 1999. This year’s meeting was attended by Li Ganjie, China’s vice minister for environmental protection; Nobuteru Ishihara, Japan’s minister of the environment; and South Korean Environment Minister Yoon Seong-kyu.

According to the communiqué, the three reaffirmed their countries’ commitment to emissions trading as a market-based solution to mitigate greenhouse gas emissions and pledged to share policy enforcement experiences. South Korea is set to begin emissions trading in 2015, while

China is experimenting with trading at the provincial and municipal levels. Japan, for its part, is promoting the so-called Joint Crediting Mechanism and Bilateral Offset Credit Mechanism under which Japanese investments in emission reduction efforts in developing countries generate credits to be used in achieving Japan's own emissions reduction target.

Over the past year, the governments of Japan and South Korea have been stepping up their early warning capabilities for cities at risk from air pollution. In Fukuoka, the municipal government raises the alarm on the municipal website when the average number of particulates with a diameter smaller than 2.5 micro-millimeters, known as PM2.5, reaches 35 or more micrograms per cubic meter in a day.

South Korea, too, has set up an early warning system, although it's dealing with a slightly different problem from the Beijing-born gasses. Every spring, clouds of "yellow dust" move southward from the Gobi Desert — the mass that straddles Mongolia and northern China — and sweep the Korean peninsula and other parts of the Pacific. The storms have been recorded for thousands of years, and have not always been a malignant force. But times are changing. China is industrializing and experiencing desertification, the process by which land becomes denuded and arid; the resulting winds are carrying heavy metals such as mercury, arsenic, and cancer-causing toxins into Seoul.

So far, South Korea has had mixed luck tackling the problem with China. In 2007, for instance, South Korea sent thousands of trees to China, in hopes they would be planted in the desert to halt the spread of yellow dust. Instead, the Chinese government placed them next to a highway.

But Japan and South Korea haven't experienced all gloom and doom dealing with their neighbor. Korean and Chinese volunteers are helping plant some 4 million trees in China's Gobi Desert, and the government says it's making an effort to ensure trees are placed in the right zones.

#### **74. Japan to Fight Air Pollution with Electric Three-Wheeled Cars**

Global air pollution has recently broken a carbon dioxide record of 400 parts per million (PPM), a situation that has not been seen on earth during the last two or three million years. Japanese carmaker Terra Motors thinks, however, that it can help fight the global atmospheric concentrations of carbon dioxide by selling electric motorcycles and three-wheeled vehicles.



Terra Motors has been working with former engineers from Honda, Yamaha and Panasonic in order to make two-wheeled vehicles that do not pollute, said Toru Tokushige, the president of the company.

Because the vehicles use electricity and not gasoline, they could be a revelation for many countries in Asia who are currently struggling with high fuel prices, Tokushige thinks.

One of Terra's most recent products is a three-wheeled car with a capacity for six people.

Terra's prime investors are former presidents of Sony, Apple Japan and Google Japan.

### **75. China Granted Observer Seat on Arctic Governing Council**

The Arctic Council has agreed to admit emerging powers China and India as observers, reflecting growing global interest in the trade and energy potential of the planet's Far North. The organization, which coordinates Arctic policy, is gaining clout as sea ice thaws to open up new trade routes and intensify competition for oil and gas - estimated at 15 percent and 30 percent respectively of undiscovered reserves.

China has been active in the polar region, becoming one of the biggest mining investors in Greenland and agreeing a free trade deal with Iceland. Shorter shipping routes across the Arctic Ocean would save its companies time and money.

Observer status gives countries the right to listen in on meetings and propose and finance policies. China, Japan, India, South Korea, Singapore and Italy were granted observer status.

"Despite the varied interests we have heard today from the permanent participants, there is nothing that should unite us quite like our concern for both the promise and challenges of the northernmost reaches of the Earth," U.S. Secretary of State John Kerry told the meeting in Sweden's northern town of Kiruna.

Canada, which will chair the council for the next two years, said the time had come to realize the "tremendous potential and opportunities" in the Arctic, which has rich reserves of gold, tin, lead, nickel and copper. "This development must be done in a responsible and an environmentally sustainable manner so that the land, the water and the animals ... are not negatively impacted," Canadian Health Minister Leona Aglukkaq told reporters by phone from Kiruna.

Indigenous groups have expressed concern the number of observers could dilute their voice as their traditional cultures are threatened by a possible influx of oil and mining projects.

A Chinese shipping firm is planning the country's first commercial voyage through a shortcut across the Arctic Ocean to the United States and Europe in 2013, saving time and money. The distance from Shanghai to Hamburg is 2,800 nautical miles shorter via the Arctic than via the Suez Canal.

The council ruled the Europe Union could observe meetings until a final decision on its status was taken. Diplomats said Canada and other Arctic states objected to an EU ban on imported seal products. Indigenous groups say they depend on the seal trade. Aglukkaq said she would hold talks with the EU in a bid to find a compromise on the seals issue but gave no details.

China already has mining links with Greenland and trade ties with Iceland. Greenland may have the world's biggest deposits of rare earths, used in smart phones and green technology.

"The entry of countries like China not only reflects how the Arctic has become a region of global interest, it also shows how the Arctic Council has become the main body of Arctic governance," said Damien Degeorges, founder of the Arctic Policy and Economic Forum.

The council also adopted an agreement to coordinate a response to potential spills that could result from increasing oil and gas exploration, including joint training exercises to deal with major accidents.

The meeting also heard about the threat to the region's biodiversity. Summer temperatures are warmer than at any time in the past 2,000 years, threatening animals and plants, according to an Arctic Biodiversity Assessment report given to ministers. "Decisive action taken now can help sustain vast, relatively undisturbed ecosystems of tundra, mountains, fresh water and seas and the valuable services they provide," it said.



Why is this so important to China? One reason is access to the Arctic Ocean's fishing supply. The "new fishing grounds" will become "the worlds largest storehouse of biological protein," wrote Tang Guoqiang, China's former ambassador to Norway, in a recent paper. Fishing is a big business for China. Arctic nations are currently mulling an

accord to prevent fishing in the open water above the Bering Strait until scientists can assess fish stocks. The objective would be to manage commercial fishing, not to protect the fish habitat, noted the New York Times.

The other reason is that the "Northwest Passage" and "Northeast Passage," as they're sometimes called, connect China to Europe, reducing travel from around 15,000 miles to 8,000 miles.

In the last few years, China has stepped up its funding of Arctic research to investigate the effects of climate change on water levels, shipping routes and various other things. It now has a Polar Research Institute in Shanghai to train scientists in Arctic research, as well as the Xue Long ("snow dragon"), a 170m (550 ft.) research icebreaker. In 2015, China will launch three research expeditions to the Arctic. Though some of this seems based on plans for exploiting the new sea route, so far these projects have been launched under the aegis of environmental science.

China justifies this investment on the grounds that rising waters and melting ice affect everyone. It relies on such an argument because China's own emphasis on "national sovereignty"—particularly when it comes to territory—leaves Chinese officials with little claim on Arctic policy. Instead, they've opted for referring to China as a "near-Arctic state" and an "Arctic stakeholder." (The shortest distance between China's border and the Arctic Circle is about 900 miles.)

Apparently, the council thinks China is "near-Arctic" enough. It was a tricky question for the Arctic Council member states concerned about diluting the forum with too many competing interests, says Mia Bennett, a polar studies researcher at Cambridge University. "Whereas the Nordic countries tend to be quite receptive towards outside interest in the Arctic, Canada and Russia—the Arctic's two largest states—are more possessive of their sovereignty in the Arctic,"

says Bennett. "They worry about losing control of their shipping routes...as non-Arctic countries like China have an interest in allowing freedom of the seas and unrestricted shipping in the region."

But while some observer members worried about their participation being diluted, it was probably in the Arctic Council's interest to loop China into its discussions. Plus, there were ways China might sidestep the council to influence policy. "If countries like China or Japan are excluded...they might shift the discussion to other forums like the International Maritime Organization or UN, thereby weakening the power of the Arctic Council," said Bennett.

## **76. South Korea to Scrap Diesel, Petrol Import Tax Break in July**

South Korea said it will scrap a diesel and gasoline import incentive from July as local refiners plan to start trading oil products on the Korea Exchange, a move that could enable them to increase market share. Diesel and gasoline imported for trade on the online Korea Exchange is currently exempt from a 3 percent tariff, making it competitive with local supplies.

South Korea's energy ministry said in a statement this tax benefit would terminate from July and that domestic refiners plan to join the online market from the second half of this year.

Korea Exchange was launched last year in an effort to tame record-high fuel prices, increase transparency and reduce the influence of the four refiners - Hyundai Oilbank, GS Caltex, SK Energy, and S-Oil.

The latest tax move is expected to encourage refineries to shift some diesel from export markets to the domestic market, which could help push up Asian margins on diesel during June and July, the typical months of peak demand from customer Saudi Arabia.

Saudi Arabia's demand for diesel imports for power generation is expected to increase as temperatures soar from June, and its demand for diesel as a transport fuel could increase during the Muslim festival of Eid, traders said.

Asian diesel margins recently climbed to a one-month high after falling to a more than two-year low late last month.

Japan's diesel exports to the rest of Asia could increase at the same time, however, since South Korea's independent importers have been buying its diesel to take advantage of the import tariff exemption. But Japan's diesel is unable to meet specifications for Saudi summer demand.

South Korea's first-quarter diesel exports rose more than 10 percent on the year as cargoes priced out of the local market were shipped overseas.

Diesel volumes traded on Korea Exchange are now equal to around 10 percent of South Korea's diesel consumption, and about 1,300 entities participate in the market, the exchange has said.

Combined with other import exemptions, diesel prices when traded online can be as much as 44 Korean won (\$0.04) per liter lower, according to Korea Exchange data.

## **77. High Vehicle Density in City Causing Pollution, Parking Woes, Says CSE Director**

Chandigarh has 4.4 lakh vehicles per 1,000 kilometers, which is almost twice as much as Delhi, where the number is 2.4 lakh. Further, the city has 878 vehicles per 1,000 persons as compared to Delhi, where the number is 362. The high vehicle density in the city is creating problems, like the lack of parking space and air pollution among other things.

The figures were highlighted during a discussion organized by the Centre for Science and Environment in collaboration with the UT Administration.

Giving a presentation, Anumita Roychowdhury, CSE's executive Director, Research stated that with such a high number of personal vehicles being used, there was a need to plan alternate means of commuting. She said that for the number of vehicles being added every year, parking space equal to 58 football grounds was required, which is not available.

In Chandigarh, 73 per cent of travel is through personal vehicles. While 43 per cent of households in the city have cars, only 20 per cent of Delhi households own these. Even though Chandigarh falls in the category of class III cities in terms of population, it is among the richest cities of Asia with a high per capita income. Its motorization rate is higher than the mega cities of India.

Experts opine that Chandigarh will reach its saturation levels quite fast and congestion will increase. In absolute numbers, the total number of road accidents is much higher in Delhi than in Chandigarh. While in 2010, the total number of accidents in Delhi was 7,260, in Chandigarh it was 456. However this translates into 201 accidents per 1,000 km of road length in Chandigarh while in Delhi it is 245 accidents per 1,000 km. Experts stated that this was because roads here are designed for high speed. During off-peak hours, the journey speed and running speed in Chandigarh is greater than 40 km per hour. Peak-hour traffic, though, is comparatively lower.

## **78. China Announces New Measures to Curb Air Pollution**

China's Cabinet has announced new measures to curb the country's notorious air pollution, one of the many environmental challenges facing the country that are increasingly angering the public. The broad measures approved by the State Council include putting strict controls in place for industries that produce large amounts of waste and pollution, but it will likely be up to local governments to work out the details.

In a meeting chaired by Premier Li Keqiang, the State Council approved 10 "tough measures to accomplish tough tasks," the council said in a statement on its website. Topping the 10 measures is a target to reduce pollution emissions per unit of GDP by at least 30 percent in heavy-polluting industries before the end of 2017. "These measures can have their effects in the short term," said Chai Fahe, vice-president of the Chinese Research Academy of Environmental Sciences. "Given that adjusting industrial structures and altering development modes both require a relatively long process, raising the ability to control airborne pollutants by about one third first, using advanced technologies, is very important for now," he said.

This measure corresponds with a ministry-level move in February, when six heavy-polluting industries: thermal power, iron and steel, petrochemicals, cement, non-ferrous metals and chemicals, in 47 cities were asked to gradually comply with special international emission limits on airborne pollutants from March 1. Chai told China Daily in an earlier interview the annual amount of smoke and dust from these six industries contributes more than 70 percent of total emissions. "The level of dust concentration emitted by coal-burning boilers in thermal power

plants has been reduced from 30 milligrams per cubic meter to the strictest in the world — 20 milligrams per cubic meter," he said.

China's growing middle class has become increasingly fed up with air, water and soil pollution that has resulted from development-at-all costs policies. Members of the public have virtually no say on industrial projects, and often protest against factories or petrochemical plants they fear could affect their health.



In its announcement of the new measures, the State Council said local governments should shoulder the general responsibilities for local air quality. During periods of heavy pollution, the State Council also asked local governments to enact emergency management response measures, such as restricting traffic flow or placing emissions limits on polluting industries. "This is an important signal sent by the State government, calling for all levels of

governmental officials to treat heavy pollution as seriously as severe natural disasters like earthquakes," Chai said. He added that an emergency plan in response to heavy air pollution has been raised to national level, rather than simply being a spontaneous policy of local governments.

However, local governments pose a potential obstacle because they understand that their performance is judged by growth, said Environmental campaigner Ma Jun, director of the Institute of Public and Environmental Affairs. "When it comes to the approval of new projects, the local governments often still pursue the highly energy- and pollution-intensive projects which can often generate higher GDP growth rate in the short term," he said.

Strict controls however will be put in place for industries that produce large amounts of waste and pollution and hope to expand, while efforts to eliminate outdated technology in the steel and cement industries, among others, will be strengthened, the State Council said. Construction projects that fail to pass environmental evaluations should not receive permission to go ahead. Under this measure, no loans should be provided to projects that haven't passed the assessment, and no electricity or water should be offered to such projects.

One measure says heavily polluting industries and companies will be required to publicize information about how their operations affect the environment. When such information is disclosed to the public, it will be harder for local governments to interfere, Ma said. "This will be subject to public supervision. This is new and I think this is very important," he said.

China's new measures are intended to adjust the country's energy structure, increase supplies of cleaner-burning fuels such as natural gas and methane, raise the quality of car fuel and

phase out older, more polluting, cars. Some cities including Beijing already have raised their car fuel standards, but there has been no national approach.

While burning of coal for power plants is a major source of air pollution across China, vehicle emissions are a big source of tiny particulate matter known as PM2.5 in dense cities. In January, the air pollution in Beijing garnered unprecedented coverage by state media when PM2.5, which can enter deep into the lungs, went beyond 700 micrograms per cubic meter. The World Health Organization considers a safe level to be 25 micrograms per cubic meter.

A Deutsche Bank report on air pollution in China released earlier in June called for significant policy changes to reduce the urban PM2.5 to a level of 30 by 2030. It said China should sharply reduce the growth in coal consumption and new cars and massively increase investment in cleaner energies — gas, nuclear, hydroelectric, wind and solar — and in subways and railways.

The Cabinet also expressed support for the country's solar industry during its "production and operating difficulties." It is wrestling with overcapacity and, earlier this month, the European Union hit Chinese exporters of solar panels with anti-dumping duties. The United States did the same thing last year. The measures approved by the state council talk about strengthening international cooperation in fostering a "new energy industry" but do not specifically mention solar, wind, hydroelectric or nuclear energy.

Under the current 12th Five-Year Plan (2011-2015), China has national goals to reduce sulfur dioxide emissions 8 percent and nitrogen oxide emissions 10 percent by the end of 2015, compared to 2010 levels.

Under another measure, control of small particulate matter (PM 2.5) will focus on the region around Beijing and Tianjin municipalities in northeast China, as well as on the Yangtze and Pearl River delta areas, all regions with heavy urban populations.

Li said China is reviewing proposed amendments to the Air Pollution Prevention and Control Law—proposals that were submitted to the National People's Congress in 2010 but have not been passed—as well as new and revised emission standards for key industries.

Other goals include upgrading small coal-fired boiler systems, increasing the use of technology to reduce sulfur dioxide and nitrogen oxide emissions in industry, treating urban dust pollution, increasing fuel quality standards, and removing older vehicles from the roads. These initiatives are already under way, though they could be strengthened.

Li also outlined goals for increasing the use of natural gas, coal-bed methane, and renewable energy; for expanding public transportation; and for increasing credit support for companies purchasing air pollution control technologies.

## **79. China Transport Ministry Releases Low-Carbon Transportation Guidance**

China's Ministry of Transportation (MOT) has released a guidance document outlining goals for accelerating the development of low-carbon and energy-efficient transportation systems, according to an announcement posted on its website on May 27<sup>th</sup>. The guidance document, which covers rail, highway, waterway, civil aviation, and postal service transport, states that China aims to construct a less carbon-intensive transportation industry from now through 2020.

The MOT said it is calling for government departments at all levels to use the guidance document as a way to inform drafting of further regulations and policies that can help to achieve a less carbon-intensive transportation system.

The document calls on government departments to create leading teams to oversee implementation of low-carbon transport policies, appoint officials who will direct those policies, create a special funding system for subsidizing low-carbon and energy-efficient transportation, and draft measures for selecting pilot cities for implementing low-carbon transport policies.

## **80. China Issues Overview of Pollution Situation**

China's environmental situation remained stable in 2012 though the country still faces severe pollution problems, according to a statement reviewing the country's environmental state in 2012, released by the Ministry of Environmental Protection (MEP) on June 4<sup>th</sup>. The MEP stated that China had achieved targets for cutting airborne sulfur dioxide and nitrogen oxide emissions, down 4.52 percent and 2.77 percent compared to the year before, respectively, as well as reducing levels of chemical oxygen demand and ammonia nitrogen in wastewater by 3.05 percent and 2.62 percent, also respectively.

In 2012, China spent 5.4 billion Yuan (\$881 million) to treat the pollution impacts of heavy metals, and cleaned up 2.3 million metric tons of soil contaminated with chromium, the MEP stated. The MEP conducted a total of 240 reviews of environmental impact assessments and rejected 24 of those in 2012, according to the statement.

Water quality remains poor and environmental problems are becoming more severe in rural areas, while coastal water quality has remained stable, the MEP stated.

Pollution in China's vast countryside worsened further in 2012 as a result of the encroachment of industry and mining on farmland and an expansion of animal husbandry, the environment ministry announced. "With industrialization, urbanization and the modernization of agriculture, the situation for the rural environment has become grim," the Ministry of Environmental Protection said in its annual report. "The stand out points are an increase in pressure from mining pollution ... and severe pollution from the raising of livestock and poultry."

In its annual report, the Ministry of Environmental Protection said China continued to face grave pollution problems despite overall improvements in air and water quality in 2012. It described 2012 as a significant turning point after China's newly-appointed leadership vowed to build a "beautiful China" and address the consequences of three decades of untrammled growth. But it noted that while overall environmental conditions did not worsen in 2012, "trends remained extremely serious".

Wan Bentai, chief engineer with the environment ministry, told reporters that despite the January crisis, caused in part by "unique weather conditions", air quality in China had been improving steadily for at least a decade. "I can say as a matter of fact that Beijing's air quality is getting better and better - that is an objective fact," he said.

The environment ministry said water quality also saw a slight improvement in 2012, with 68.9 percent of samples found to be suitable for human consumption, up from 61 percent in the previous year. It said 10.2 percent of sampled water was below grade V and unsuitable even for industry or irrigation, down from 13.7 percent in 2011.

The Beijing Environmental Protection Bureau (Beijing EPB) also issued a similar document on May 31 looking back at 2012, in which it stated that air quality had continuously improved last year even though the city faced what many here have termed an “airpocalypse” in the early months of 2013.

The Beijing EPB stated that 259 companies that violated environmental protection rules were ordered to cease operations in 2012.

According to the statement, surface water quality in Beijing slightly improved in 2012 though water resources per person remain limited because of water scarcity issues in northern China.

The Beijing EPB said the city faces great pressure to cut pollution emissions due to an annual growth rate of around 600,000 people, and while the volume of waste emissions per person has slightly decreased the overall levels are not sustainable.

The MEP, in cooperation with six other ministries, has issued an internal document stating that they have jointly launched a large-scale campaign to crack down on illegal behavior of businesses that violate environmental protection rules, focusing on specific industries, a June 3<sup>rd</sup> report from state-run Xinhua news agency stated. The report indicated that the campaign will run until the end of November and target illegal discharges of airborne and wastewater emissions, particularly within industries that have high emissions of heavy metals, including mining and refining industries, lead battery producers, and leather goods manufacturers. The campaign also will focus on pollution from pharmaceutical companies.

### **81. Emissions Fee Program for Chinese Cities, Subsidy Scheme Expected to Face Delays**

The finalization of a pilot program for charging higher pollution discharge fees for vehicles in several cities is likely to be delayed as the actual details are still being drafted by the authorities involved, according to recent reports in Chinese media. The announcement of updated policies for subsidizing the purchase of alternative energy vehicles also faces a delay, the reports said.

State-run People's Daily newspaper reported on May 24, citing information from a researcher at the Chinese Research Academy of Environmental Sciences, that Beijing will be among the first cities to pilot a vehicle emissions discharge fee of around 2 Yuan (32 cents) per liter. Major cities such as Shanghai, Shenzhen, and Guangzhou also have reportedly been selected to pilot such vehicle emissions discharge fees, though none have finalized or confirmed that they will implement the policies.

On May 3, state-run Xinhua news agency reported that the Ministry of Industry and Information Technology (MIIT) along with the Ministry of Finance (MOF) had “reached a consensus” on the new subsidies for new energy vehicles and that they could be released as early as the end of June 2013. But a May 23 report from Shanghai Securities Journal, a newspaper affiliated with the Shanghai municipal government, stated that an updated new energy vehicle subsidy policy would have to be approved by the State Council and that the current subsidy policy could remain in place until the end of 2015.

Subsidies for alternative energy vehicle purchases were started in 2009 in China with projections that private sales of such vehicles could total over 50,000 in 25 pilot cities by the end of 2012. Sales only reached about half that, mostly for public transportation fleets and

government use, with only around 4,500 being purchased by private consumers in that time period, an April 1 report from state-run China Daily newspaper indicated.

## **82. Singapore Smog Eases as Indonesian Planes Water bomb Fires**

Air quality in Singapore improved significantly to "moderate" pollution levels on Saturday, as Indonesian planes waterbombed raging forest fires and investigators scrambled to determine the cause of one of Southeast Asia's worst air pollution crises.

Indonesia's environment minister said eight domestic firms were suspected of being responsible for the blazes on Sumatra Island that blanketed neighboring Singapore in record levels of hazardous smog. Parent companies of the Indonesian firms included Malaysia-listed Sime Darby, the government said.

A senior presidential aide on Friday also blamed units of Jakarta-based PT Sinar Mas Agro Resources and Technology (SMART) and Asia Pacific Resources International (APRIL) for the fires.

"We will take legal action whoever they are," Environment Minister Balthasar Kambuaya told reporters. "Any companies from Indonesia, Malaysia or Singapore, they will be legally processed."

But Indonesia's Forestry Ministry, which is leading the investigation, warned about naming suspects and jumping to conclusions too soon. "We have to be very careful in any legal action. We have to really find out what happened, why the fire happened, and so on. This could be due to negligence too," said Hadi Daryanto, the ministry's general secretary.

Under Indonesian law, any company or person proven to be involved in an illegal forest fire could face up to 10 years in prison and fines of up to 5 billion rupiah (\$503,800).

Sime Darby and APRIL said there were no fires in any of their operating areas in Indonesia. SMART said they it had a "zero burning" policy and that most, if not all, the fires raging in and near their concessions were caused by the local community.

Singapore has warned the "haze" - which has fuelled fears about health problems and raised diplomatic tension in Singapore, Malaysia and Indonesia - could last for weeks, or even longer.

Indonesia has deployed military planes to fight the blazes on Sumatra Island from illegal burning that typically takes place in the June to September dry season to clear space for palm oil plantations. The fires are unusually widespread this year and the smog was the heaviest in Singapore's history.

On the sixth day of the thick smoke, Singapore's pollution index eased to the "moderate" zone with readings as low as 77. It hit a record of 401 earlier, a level considered potentially life-threatening for the ill and the elderly. Despite the improving conditions, streets in the clean and green city-state were far less crowded than on a typical Saturday when people go out to shop, meet in outdoor cafes and have fun at the park.

The Ministry of Education advised public schools to cancel all activities planned for the holiday month of June.

StarHub Ltd, a cable television and Internet provider, said it was providing a free preview of more than 170 channels over the weekend "as we stay home to escape the unbearable haze".

The cost of the smog for Singapore, a major financial center and tourist destination, could end up being hundreds of millions of dollars, brokerage CLSA said in a report.

In Malaysia, the haze spread north. Air quality in Kuala Lumpur, the capital, and in several surrounding areas worsened into the "unhealthy" zone. The air quality was now "unhealthy" in 17 areas of Malaysia and "very unhealthy" in one area.

### **83. Kerry Urges Climate Change Action on Eve of India Talks**

Emerging economies like India have resisted pressure in global climate talks to commit to targets to reduce greenhouse gas emissions, in a dispute with rich nations over whose industries should bear the brunt of the cuts. But Kerry, on a seven-nation tour in the Middle East and Asia, said failing to act would undermine growth and hurt the poorest the most.

The day before he was due to take part in the fourth annual US-India Strategic Dialogue in New Delhi, he urged India to work with the United States to negotiate a global treaty on curbing global warming. "We should work constructively side-by-side in the UN climate negotiations. I am convinced we can move toward a global agreement ... that is sensitive to and respectful of the diversity of national circumstances," he said in a speech.

"The health of our planet and the irreversible climate challenge speeding toward us, crying out for a global solution, is the place to begin this conversation," Kerry added.

Cooperation on developing clean technologies would also spur economic growth and create jobs, he added. "As we look forward, India and the United States, with our traditions of innovation and technology, are particularly well-positioned and ready to roll up our sleeves and take advantage of this opportunity," he said.

"If we do this right, it won't hurt our economies - it will grow them," he said, noting that new energy markets were worth \$6 trillion.

Over the years, the United States and India have expanded cooperation on clean energy through the US-India Partnership to Advance Clean Energy, or PACE, mobilizing more than \$1.7 billion to finance clean energy initiatives.

Kerry's talks with India's Prime Minister Manmohan Singh and other leaders are expected to focus on increasing opportunities for business and trade. In recent weeks, U.S. business groups have increased their calls for the Obama administration to press India to change policies they say threaten American exports, jobs and innovation. In a letter to U.S. President Barack Obama earlier this month, U.S. lawmakers said Indian policymakers and courts had taken a series of actions designed to block imports by forcing local production of a wide range of manufactured goods.

## **AFRICA**

### **84. Air Pollution Reportedly Led to African Drought-Famine**



Decades of drought across parts of Africa have been caused in part by air pollution generated continents away, scientists say. Researchers from the University of Washington found that sulfur-laden particles in the air from coal-burning factories in the Northern Hemisphere from the 1960s through the 1980s strongly contributed to the arid conditions.

The particles slowed warming north of the equator, forcing tropical rain bands to shift southward, away from the Sahel region during the 1970s and 1980s. This eventually caused Lake Chad to nearly dry up during a protracted period of drought that forced millions into hunger and even famine.

It was initially thought the droughts were due to poor farming practices in the affected region. "But over the last 20 years or so we've realized that that was quite

wrong, and that large-scale ocean and atmosphere patterns are significantly more powerful in terms of shaping where the rains fall," said university atmospheric sciences expert Dargan Frierson.

Writing in the journal *Geophysical Research Letters*, the researchers say that steps taken in the U.S. and Europe in the 1960s and 1970s to reduce air pollution emissions improved air quality and caused the African tropical rain band to shift back to the north, ending the droughts.

## MIDDLE EAST

### 85. Saudi Arabia to Import near Record High Diesel This Summer

Saudi Arabia will import near record high diesel volumes this summer, as it gears up to beat the sweltering heat and meet rising travel needs during the Muslim fasting month of Ramadan, trade sources said. State oil giant Saudi Aramco will import up to 8.9 million barrels of diesel in June, up from an estimated 6.7m to 7.5m barrels in May, according to the sources, who expect at least the same volume or higher to be booked for July.

Top oil exporter Saudi Arabia shipped in record diesel volumes of 8.99m barrels in July, 2011, up from 8.13m in June that year, government data showed. "I think this year, the July, 2011 number might be surpassed as Saudi's diesel demand is growing every year and their new refinery is not expected at least until later this year," a Gulf-based trader said.

Higher overseas purchases by Saudi Arabia should help boost spot premiums and support weak Asian gasoil margins as Aramco imports from countries such as India and Singapore.

Aramco relies heavily on imported diesel in summer when demand for electricity peaks with rising use of air conditioning as temperatures soar to a grilling 50 degrees Celsius.

To cut its imports, Aramco has planned three new refineries. But the first of these which will produce 176,000 barrels per day of diesel comes online in the second half of 2013, instead of the second quarter as previously expected, traders said. Until the refinery -- a joint venture with France's Total and Saudi Aramco Total Refining and Petrochemicals Co.'s (SATORP) Jubail refinery -- is at full capacity, Aramco will buy heavily to ensure it is covered for Ramadan, when travel within the region significantly picks up.

This year, Ramadan is due to start in early July.

"Aramco's expecting very high demand this summer and they are stocking up before Ramadan. The demand growth is higher compared to previous summers as there are several infrastructure expansion projects ongoing," one middle distillates trader said.

Refinery glitches also led to higher imports, traders said. "The Sasref unit was down and the Jeddah refinery maintenance has been extended. These all add to why they're buying higher than usual. The summer demand is already here and they need to stock up for more." Saudi Aramco shut a desulphurization unit at its 305,000 barrels-per-day joint venture Sasref Jubail refinery with Royal Dutch Shell in April due to a problem.

Spot premiums for the 500 parts per million (ppm) sulfur gas oil, which is the grade imported by Saudi Arabia, have edged up ahead of the summer demand. Bahrain Petroleum Co. last sold a 500 ppm sulfur gas oil cargo for loading in May at a premium of \$2.60 a barrel, up to 30 cents more than an earlier April loading cargo, traders said.

There have been no diesel cargoes offered for exports for loading in June by Gulf refiners so far, suggesting the region's demand has risen, they added.

Saudi Arabia's gasoline imports are expected to be around 4.5 million barrels in June, which is about 45 percent higher than the same period last year, traders added.

## **86. Iran to Boost Diesel Exports to Iraq**

Iran will more than double its diesel exports to Iraq thanks to higher capacity at its refineries, a leading oil official said.

Trade relations between the two former enemies have improved markedly over the last few years, with bilateral trade amounting to around \$12 billion and Iranian officials hoping to double commerce within two years.

Tehran will supply up to 5 million liters a day of diesel, increasing the volume of an earlier agreement between the OPEC member neighbors, the director of the National Iranian Oil Refining and Distribution Company (NIORDC) said.

Iranian Oil Minister Rostam Qasemi signed a deal in March to supply 2 million liters a day of diesel to Iraq. "Under the agreement, Iran will export 3-5 million liters of quality diesel to this neighboring country each day," Alireza Zeighami told Mehr news agency.

Iran has exported small quantities of diesel before but has been a net importer over the past few years because its own demand has exceeded its production capacity.

“It is forecast that production of Iranian diesel will reach 100 million liters per day this (Iranian) year,” he said, adding that after meeting domestic demand there should be at least 3 million left over for export to Iraq.

In November, Qasemi announced plans to ration diesel sales at Iranian pump stations to prevent smuggling of cheap subsidized fuel to Pakistan, Iraq, Afghanistan and Turkmenistan.

### **87. Israeli Parliament Passes Ambient Air Quality Standards**

Israel's legislature has adopted stricter ambient air quality standards, including the country's first limits for respirable particulate matter. The standards were finalized by a unanimous vote on May 1<sup>st</sup> in the Knesset's Internal Affairs and Environment Committee. The next step is implementation.

“Today, we are taking care of our children and grandchildren's futures,” Environmental Protection Minister Amir Peretz said. “The new regulations will save lives and will raise Israel to the most advanced standards in the world.”

The new standards are based on estimates that full compliance will save about 700 lives and 8 billion shekels (\$2.24 billion) in hospitalizations and other government-funded health care annually, Tzur Galin, head of the Environment Ministry's Air Quality and Climate Change Division, told reporters.

The law provides a two-year transition period before the new standards take full effect. Nevertheless, Galin said most Israeli industries are already meeting the new target values by following the emission standards stipulated in Israel's Clean Air Law.

The new ambient standards, he said, are intended to provide a tool for better planning and government oversight, especially with “municipalities whose energy and transportation systems rely on older infrastructures.”

The new regulations set a limit of 25 micrograms per cubic meter on fine particulate matter (PM-2.5, or particles 2.5 microns in diameter and smaller), in line with European standards. But that limit is more than double the U.S. standard, Galin explained, because Israel—unlike the United States—faces heavy dust storms and pollution that blow across its borders, mainly from the east and south.

The new Israeli standards also gradually reduce the ambient air quality limits for nitrogen dioxide, sulfur dioxide, methylene chloride, and ozone in the air, with a five-year updating mechanism that can see the limits increased or decreased. In a last-minute addition, the Knesset also put benzene, 1,3-butadiene, cadmium, formaldehyde, trichloroethylene, and mercury on the list of stricter standards, to be updated every three years.

Designing and passing the new standards entailed about two years of discussions with related government ministries, the Israel Electric Corporation, the Manufacturers Association, the Roads Authority, local governments, and environmental organizations, an Environmental Protection Ministry statement said. “We're not the Ministry of Surprises,” Galin said. “We're all about working together to protect Israel's environment.”

## GENERAL

### **88. Concentrations of CO<sub>2</sub> Cross 400 Parts per Million Threshold at Several Stations**

Observed concentrations of carbon dioxide (CO<sub>2</sub>) in the atmosphere have exceeded the symbolic 400 parts per million (ppm) threshold at several stations of the World Meteorological Organization's Global Atmosphere Watch network. This is a wakeup call about the constantly rising levels of this greenhouse gas, which is released into the atmosphere by fossil fuel burning and other human activities and is the main driver of climate change. Carbon dioxide remains in the atmosphere for thousands of years, trapping heat and causing our planet to warm further, impacting on all aspects of life on earth.

On May 9, 2013, the daily mean concentration of carbon dioxide in the atmosphere of Mauna Loa, Hawaii, recorded a reading of 400.03 ppm, according to the U.S. National Oceanic and Atmospheric Administration. Mauna Loa is the oldest continuous atmospheric measurement station in the world and so is widely regarded as a benchmark site in the Global Atmosphere Watch. Several other Global Atmosphere Watch stations have also reported CO<sub>2</sub> concentrations exceeding the 400 ppm threshold during the seasonal maximum. This occurs early in the northern hemisphere spring before vegetation growth absorbs CO<sub>2</sub>. The threshold was first crossed at stations in the Arctic. A monthly average value exceeding 400 ppm was registered at Barrow, Alaska, USA (71.3N) for the first time in April 2012, as well as at Alert, in Canada (82.5N). From the beginning of 2013, measured CO<sub>2</sub> values at another GAW Global station, in Ny-Ålesund, Norway, (at 78.9N) also exceeded 400 ppm. This threshold has now also been crossed at stations closer to the Equator.

Izaña, (Canary Islands, Spain), reported daily mean values exceeding 400 ppm at the end of April 2013. This was followed by Mauna Loa, which has been carrying out measurements since 1958. The Global Atmosphere Watch coordinates observations of CO<sub>2</sub> and other heat-trapping gases like methane and nitrous oxide in the atmosphere to ensure that measurements around the world are standardized and can be compared to each other. The network spans more than 50 countries including stations high in the Alps, Andes and Himalayas, as well as in the Arctic, Antarctic and in the far South Pacific.

Carbon dioxide is the single most important greenhouse gas emitted by human activities. It is responsible for 85% of the increase in radiative forcing – the warming effect on our climate – over the past decade. Between 1990 and 2011 there was a 30% increase in radiative forcing because of greenhouse gases. Radiative forcing is calculated relative to the pre-industrial level of key greenhouse gases.

According to WMO's Greenhouse Gas Bulletin, the amount of CO<sub>2</sub> in the atmosphere reached 390.9 parts per million in 2011, or 140% of the pre-industrial level of 280 parts per million. The pre-industrial era level represented a balance of CO<sub>2</sub> fluxes between the atmosphere, the oceans and the biosphere. The amount of CO<sub>2</sub> in the atmosphere has increased on average by 2 parts per million per year for the past 10 years.

At the current rate of increase, the global annual average CO<sub>2</sub> concentration is set to cross the 400 ppm threshold in 2015 or 2016.

### **89. Shipping Body May Delay NO<sub>x</sub> Limits Until 2021**

Planned nitrogen oxide emissions control areas (NECA) in the Baltic Sea and on the US coast may not enter into force until 2021, after an International Maritime Organization (IMO) committee agreed to postpone their implementation by five years. The decision to push back implementation of NECAs from 2016 until 2021 will be put to a final vote next year, meaning it could yet be reversed.

Poland, Estonia and Latvia were among the countries that supported Russia's proposal to amend the date in the MARPOL convention. Denmark, Finland, Germany and Sweden opposed the delay at the IMO's environment committee meeting in London, observer organizations said.

Those supporting the delay are concerned about the cost and effectiveness of NOx abatement technology. A technology review for the IMO committee showed there was no need to postpone 2016 implementation. But this review focused on the availability of technology, rather than its cost.

Baltic countries were due to decide in October at a ministerial meeting when to launch NOx controls for the sea. An official at the Helcom secretariat said it was "too early to speculate" on the impact of the IMO decision on those talks. A preliminary meeting of Baltic States' representatives in June ahead of the ministers' meeting is likely to discuss the matter, he added.

In Europe, NOx emissions from shipping are likely to exceed emissions from all land-based sources by 2020, with the problem particularly acute in northern Europe, a coalition of green groups told the IMO committee's plenary session. "This is a massive U-turn compared to the [MARPOL] convention," a spokesman for NGO Transport and Environment said, adding that ship owners who have already invested in clean technology will be "punished" by the decision.

The technology review was undertaken by countries including France, Germany, the UK and the US. They identified a number of methods for meeting the NECA limits, including using liquefied natural gas (LNG) as a fuel. The review found that some ship engine manufacturers are already marketing engines that would enable compliance with the rules. And the use of LNG is likely to increase as distribution infrastructure for the fuel expands.

## **90. IMO Makes Contentious Deal on Climate Principles**

The Marine Environment Protection Committee (MEPC) of the International Maritime Organization (IMO) met for its 65th session from 13 to 17 May 2013, at IMO Headquarters in London. The Committee made significant progress in its work on further developing energy-efficiency regulations; adopted an MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the Improvement of Energy Efficiency of Ships; and gave the go-ahead to carry out an update to the greenhouse gas (GHG) emissions' estimate for international shipping.

The MEPC adopted an MEPC Resolution on Promotion of Technical Co-operation and Transfer of Technology relating to the Improvement of Energy Efficiency of Ships, which, among other things, requests the Organization, through its various programs, to provide technical assistance to Member States to enable cooperation in the transfer of energy efficient technologies to developing countries in particular; and further assist in the sourcing of funding for capacity building and support to States, in particular developing States, which have requested technology transfer.

The MEPC approved the terms of reference and agreed to initiate a study for an updated greenhouse gas (GHG) emissions' estimate for international shipping, following discussion in an expert workshop, which met earlier this year, on the methodology and assumptions to be used. The new study will focus on updating key figures in the current (second) IMO GHG Study (2009), which estimated that international shipping emitted 870 million tons, or about 2.7%, of the global man-made emissions of carbon dioxide (CO<sub>2</sub>) in 2007.

The MEPC continued its work on further developing technical and operational measures relating to energy-efficiency measures for ships, following the entry into force, on 1 January 2013, of the new chapter 4 of MARPOL Annex VI, which includes requirements mandating the Energy Efficiency Design Index (EEDI), for new ships, and the Ship Energy Efficiency Management Plan (SEEMP), for all ships.

The International Maritime Organization (IMO) made a breakthrough in its fractious climate change discussions by agreeing what the UN body's secretary general has hailed as a "landmark resolution". But diplomats' varying interpretations of the text show disagreements over who should take on responsibility for cutting ships' greenhouse gas emissions have not been solved. However, agreement on the 'technical co-operation' resolution opens the door for work on emission reduction measures, noted John Maggs of Seas at Risk.

Over the past two years, the unresolved text had been a proxy for wrangling between industrialized and developing nations over the key principles that should guide climate action at the maritime organization.

After lengthy talks over wording that extended until late into the night, countries agreed on a text that takes account of the principles on which both the IMO and the UN Framework Convention on Climate Change (UNFCCC) are based. While the IMO is based on the principle of non-discrimination, the UNFCCC is based on the principle that industrialized and developing nations do not have the same responsibility or ability to mitigate climate. These principles seem incompatible.

In a joint response, Denmark, the UK and the Netherlands welcomed the resolution on the basis that it could "in no way be interpreted as accepting that other principles than the IMO's" can be applied, adding that the resolution "does not mean" that the UNFCCC's principles can be used in the IMO. The US made a similar statement supported by Japan and Australia.

Emerging economies welcomed the resolution too but for the opposite reason – they said it acknowledged that the UNFCCC principle of common but differentiated responsibility for climate change should be used at the IMO. India's representative said the resolution as adopted means the country "stands vindicated" in its belief that industrialized and developing nations have "undeniable differences in capacity to address climate change". China's representative said the document "has introduced the common but differentiated responsibility principle" and is a "very good foundation for further consideration of greenhouse gas reductions". Brazil's delegate agreed, saying the text was an "important step for ensuring the consistency of climate action of the IMO with the international climate regime".

## **91. Greener Ships Could Enjoy Lower Charges at EU Ports**

Ships with superior environmental performance should pay less to enter EU ports, according to a recently unveiled draft regulation. The legislative proposal on port policy envisions that fees should vary according to vessels' type, fuel and activity, for example short-sea shipping.

The concept is not well defined at this stage. The European Commission wants to get MEPs and the member states behind it before conducting further work. A common methodology for calculating the discounts would be developed by member state experts by 2015.

Several major European ports, such as Hamburg and Rotterdam, are already varying their fees according to ships' pollutant emissions. These fees are set according to the environmental ship index, a calculation method developed by the World Ports Climate Initiative. The index has expanded outside the EU since its launch in 2011.

In Sweden, discounts are similarly based on NO<sub>x</sub> and SO<sub>2</sub> emissions. The Green Award, a more broadly-based scheme taking into account other environmental factors such as waste management, is also used by some EU ports.

One of the main intentions of the draft regulation is to improve the efficiency of goods handling at the EU's 319 major ports. Cutting congestion could open up the market for short-sea shipping, which is less carbon-intensive than alternative forms of transport. It would also boost economic growth.

The commission also notes that European ports need to cope as ships grow in size, driven by the need to improve fuel efficiency. The provision of shore-side electricity and liquefied natural gas fuel are further challenges.

## **92. UN Faces Uphill Battle to Reduce Global Airline Emissions**

Little progress has been made in a United Nations' effort to craft an agreement to lower greenhouse gas emissions from international air travel, raising doubts that its civil aviation body can deliver a final resolution by a September target date, several government officials said on Monday.

Representatives to the International Civil Aviation Organization (ICAO) said a high-level group of representatives from 17 countries tapped to expedite a global agreement continues to be bogged down by a few key issues. The group had been tasked with developing a global plan to address aviation emissions using market-based measures in time for the body's triennial assembly in September. But it has yet to resolve key questions such as whether states or airlines would be responsible to pay for their emissions; how to account for a country's aviation emissions and whether less-developed countries should have different goals than rich states.

"We hoped that they would bring to the table some ability to find some compromise. What has transpired, however, in the three meetings of that group unfortunately we've had very little progress," said Kerryn Macaulay, Australia's representative to ICAO.

If ICAO makes enough progress toward a global agreement on emissions, it could ensure that the European Union would no longer need to apply its own emissions trading system to global airlines. The advent in 2012 of an EU law requiring all aircraft using EU airports to pay for carbon emissions via the bloc's Emissions Trading Scheme stirred threats of a trade war. The United States, China, India and Russia all lobbied fiercely against it.

At the end of 2012, the EU agreed to "stop the clock" on its law requiring all airlines to pay for each ton of emissions associated with flights into and out of its airports, provided that ICAO comes up with a solution by late this year.

ICAO has narrowed its options to three approaches: a mandatory offsetting scheme, mandatory offsetting that would raise revenue to fund joint measures to address climate change and a global emissions trading scheme similar to the European Union's carbon market.

Tony Tyler, chief executive of the International Air Transport Association (IATA), said a global carbon offsetting system was preferred by the industry out of three market-based solutions floated by the United Nations to tackle the sector's growing greenhouse gas emissions. Under an offsetting system, either air carriers or countries would have to purchase credits to cover each ton of carbon emitted over a set baseline.

Paul Steele, executive director of the Air Transport Action Group, said that there is a general consensus that a mandatory offsetting system could begin sometime after 2020. Under this option, which is so far the most favored by industry, the ICAO would have to set an emissions baseline, for example an average of the last three years prior to 2020. Steele said it is not yet clear whether countries or airline operators would be responsible for purchasing offsets under that plan.

Auditor and consultancy PwC estimated in a report last year that offset demand from the aviation sector could grow to more than 100 million tons (110.2 metric tons) of carbon dioxide by 2020. This would be a boost to the United Nations' struggling carbon offset market, the Clean Development Mechanism, because potential aviation demand would be more than 25 percent of carbon credits issued in 2012, according to PwC.

The EU has forecast that aviation emissions alone will rise from 640 million tons (705.4 metric tons) in 2005 to almost 1.1 billion by 2020, even with 2 percent annual growth in fuel efficiency.

Elina Bardram, who is responsible for carbon markets in the aviation and maritime sectors for the European Commission's climate division, said although there has been political "goodwill" to reach an agreement, ICAO's efforts have not been enough. "I think it's good to know ... that the process hasn't ended yet. We have four months to go before the ICAO assembly, and I believe, genuinely believe, that there is a meaningful outcome within reach still."

ICAO will next discuss the different proposals when the 36-member governing body, the ICAO council, convenes in June. The high-level group is not expected to re-convene then.

### **93. Greenhouse Gas Control Advocates Push Carbon 'Cost' As Driver for Rules**

Advocates of greenhouse gas (GHG) controls are launching a push for the Obama administration to raise its default estimate of the social cost of carbon (SCC) -- the benefits in terms of reduced future damage from climate change -- seeing it as a driver for new GHG regulations.

Their effort could get a boost from a report released this week by the nonpartisan Congressional Budget Office (CBO) that analyzed the impacts of a potential carbon tax. While the report says that SCC values continue to be "highly uncertain," it also notes that delaying action on controlling carbon emissions may increase the risk of future losses from climate change.

The SCC claims could give environmentalists and other supporters of strict climate rules a new argument in pushing the Obama administration to issue new climate policies.

EPA recently rebuffed a request from environmentalists to develop a first-time GHG rule for coal mine emissions, blaming resource limits due to budget cuts. The agency's efforts to issue a final new source performance standard (NSPS) to curb GHGs from newly constructed power plants is delayed, while the fate of a climate NSPS for existing utilities is uncertain. And the White House Council on Environmental Quality says it has no timeline for releasing a long-pending guide for how federal agencies should consider GHGs in National Environmental Policy Act reviews

Given the unclear future for new climate rules, the Natural Resources Defense Council, Environmental Defense Fund and the Institute for Policy Integrity, a think tank based at the New York University School of Law, are developing a web-based platform to foster sharing of data between climate scientists and economists in an effort that proponents believe will help put pressure on the administration to raise its SCC estimate and drive new carbon controls.

The environmentalists' effort is aimed at raising the Obama administration's 2010 determination setting an SCC measure to be used in regulatory cost-benefit analysis at \$21.40 per ton. The measure, crafted by an interagency task force, is used to calculate the regulatory benefits of curbing emissions, which allows it to be used to justify rules and other policy measures. CBO has also estimated the revenue benefits of a carbon tax that assumed a \$20/ton value.

CBO again assessed a carbon tax in a May 22 report, "Effects of a Carbon Tax on the Economy and the Environment," that says a tax could either apply directly to carbon dioxide (CO<sub>2</sub>) emissions or fossil fuels that release CO<sub>2</sub> when they are burned, such as coal, oil and natural gas.

Using carbon tax revenues to reduce deficits would help the economy, CBO says, but "Targeting revenues toward people who would be likely to bear a disproportionate burden under a carbon tax would provide them with relief, but such a policy would tend not to reduce the total economic costs of the tax. Thus, lawmakers would face a trade-off between the goals of helping those households most hurt by the tax and helping the economy in general," CBO says.

The report also weighs the environmental impacts of a carbon tax and notes that the benefits in terms of SCC are "highly uncertain. . . . Those values are highest when researchers attach significant weight to long-term outcomes and when they incorporate a small probability that damage from climate change could increase sharply in the future -- causing very large, or even catastrophic, losses. Delaying efforts to reduce emissions increases the risk of such losses."

In lieu of new federal rules, California continues to pursue landmark GHG regulations -- including its climate cap-and-trade program -- that could serve as a model for other states and the federal government. The state recently released the results of its third auction of allowances used by industries to comply with the trading program, with experts saying the results show continuing strong support for the cap-and-trade rule.

But an industry-funded study that finds massive costs from California's rules has reignited a debate in the state over the merits of the GHG controls.

#### **94. Scientists Say United On Global Warming, At Odds With Public View**

Ninety-seven percent of scientists say global warming is mainly man-made but a wide public belief that experts are divided is making it harder to gain support for policies to curb climate change, an international study showed recently. The report found an overwhelming view among

scientists that human activity, led by the use of fossil fuels, was the main cause of rising temperatures in recent decades.

"There is a strong scientific agreement about the cause of climate change, despite public perceptions to the contrary," said John Cook of the University of Queensland in Australia, who led the study in the journal *Environmental Research Letters*.

"There is a gaping chasm between the actual consensus and the public perception," he said in a statement. "When people understand that scientists agree on global warming, they're more likely to support policies that take action on it."

Global average surface temperatures have risen by 0.8 degree Celsius (1.4F) since the Industrial Revolution.

Experts in Australia, the United States, Britain and Canada studied 4,000 summaries of peer-reviewed papers in journals giving a view about climate change since the early 1990s and found that 97 percent said it was mainly caused by humans.

They also asked authors for their views and found a 97 percent conviction from replies covering 2,000 papers. The data will be released at ([www.skepticalscience.com](http://www.skepticalscience.com)).

The report said it was the biggest review so far of scientific opinion on climate change.

"If people disagree with what we've found we want to know," said Mark Richardson of the University of Reading in England, one of the authors of the study that looked at English-language studies by authors in more than 90 nations.

Another co-author, Dana Nuccitelli of Skeptical Science, said she was encouraging scientists to stress the consensus "at every opportunity, particularly in media interviews".

Opinion polls in some countries show widespread belief that scientists disagree about whether climate change is caused by human activities or is part of natural swings such as in the sun's output. A survey by the U.S. Pew Research Center published in October last year found 45 percent of Americans said "Yes" when asked: "Do scientists agree Earth is getting warmer because of human activity?" Forty-three percent said "No".

### **95. Ice Melt, Sea Level Rise, To Be Less Severe Than Feared: Study**

A melt of ice on Greenland and Antarctica is likely to be less severe than expected this century, limiting sea level rise to a maximum of 69 cm (27 inches), according to a new international study. Even so, such a rise could dramatically change coastal environments in the lifetimes of people born today with ever more severe storm surges and erosion, according to the ice2sea project by 24, mostly European, scientific institutions.

Some scientific studies have projected sea level rise of up to 2 meters by 2100, a figure that U.N. Secretary-General Ban Ki-moon has called a worst case that would swamp large tracts of land from Bangladesh to Florida.

Ice2sea, a four-year project to narrow down uncertainties of how melting ice will pour water into the oceans, found that sea levels would rise by between 16.5 and 69 cm under a scenario of moderate global warming this century. "This is good news" for those who have feared sharper

rises, David Vaughan, of the British Antarctic Survey who led the ice2sea project, told Reuters in a telephone interview. "But 69 cm is a very real impact ... it changes the frequency of floods significantly," he said. And seas would keep rising for centuries beyond 2100, in a threat to coastal cities and low-lying islands such as the Maldives or Tuvalu.

Ice2sea said a thaw of Antarctica, Greenland and glaciers from the Alps to the Andes would contribute between 3.5 and 36.8 cm to sea level rise this century. The fact that water expands as it warms would add another 13 to 32 cm, Vaughan said.

Some other scientists disputed ice2sea's projections. "I think the numbers are too low," said Dorte Dahl-Jensen, an ice expert and professor at the Niels Bohr Institute in Copenhagen. She said ice2sea wrongly assumed a slowdown in the rate of ice discharge from Greenland.

Sea levels rose by 17 cm last century and the rate has accelerated to more than 3 mm a year. A third of the current rise is from Antarctica and Greenland - equivalent to emptying 138 million Olympic-sized pools into the sea every year.

One factor likely to offset sea level rise, ice2sea said, is that warmer temperatures will result in more snow, especially over Antarctica, locking in the moisture on land. It also played down worries of a runaway melt of Greenland, and of the breakup of major Antarctic ice shelves.

Governments want to know future sea levels to plan sea barriers and regulations for everything from vacation homes to nuclear power plants by the coast. And every extra centimeter means big costs. A Dutch commission planning to bolster sea defenses, for instance, has advised spending more than 100 billion euros (\$130 billion) by 2100 to strengthen dykes and other barriers for a worst case scenario of a 1.2 meter North Sea rise by 2100.

The ice2sea study also said that a survey of experts' opinions showed there was a less than one-in-20 risk that melting ice sheets would contribute more than 84 cm to sea level rise this century. Taken with thermal expansion, that would mean a sea level gain of just over a meter, Vaughan said.

A leaked report by a U.N. panel of climate scientists, due for release in September and drawing on ice2sea data, estimates sea level rise at between 29 and 82 cm by the late 21st century, above the estimates in its last report in 2007 of between 18 and 59 cm. Many studies since 2007 have had higher upper numbers, including by the World Bank, the U.S. National Oceanic and Atmospheric Administration (NOAA) and a report for the Arctic Council. NOAA put the upper limit at 2 meters.

## **96. Acidification: The Latest Unknown for Stressed Arctic Ecosystem**

The Arctic ecosystem, already under pressure from record ice melts, faces another potential threat in the form of rapid acidification of the ocean, according to a new international study. Acidification, blamed on the transformation of rising levels of the greenhouse gas carbon dioxide from the air into carbonic acid in the sea, makes it harder for shellfish and crabs to grow their shells, and might also impair fish reproduction, it said.

Cold water absorbs carbon dioxide more readily than warm water, making the Arctic especially vulnerable. The report said the average acidity of surface ocean waters worldwide was now about 30 percent higher than at the start of the Industrial Revolution. "Arctic marine waters are experiencing widespread and rapid ocean acidification," said the report by 60 experts for the

Arctic Monitoring and Assessment Programme, commissioned by the eight nations with Arctic territories.

"Ocean acidification is likely to affect the abundance, productivity and distribution of marine species, but the magnitude and direction of change are uncertain."

Experiments with the eggs of brittlestars, which are related to starfish, showed that they died within days when exposed to the levels of acidification likely in coming decades, said Sam Dupont, one of the report's authors from the University of Gothenburg in Sweden. That would have knock-on effects on creatures that prey on them, such as crabs and fish.

The report said adult and juvenile fish were likely to cope with levels of acidification likely in the coming century but fish eggs and young larvae might be more sensitive.

In general, the report said, fish stocks might be more "robust to ocean acidification" if the other stresses they are already subject to, such as overfishing or habitat degradation, were minimized.

A warming of Arctic waters means that plankton are growing further north, providing a new source of food for fish such as cod and salmon, but Dupont said acidification would "constrain the positive effects of warming" for some species.

Meanwhile some types of sea grass seem likely to thrive with acidification.

Overall, Dupont said, acidification was "an additional stressor on a system that is already quite fragile".

The report was presented to Arctic governments at a meeting in Sweden attended by U.S. Secretary of State John Kerry and Russian Foreign Minister Sergei Lavrov, among others.

### **97. Nations Seek Flexible Climate Approach, But No Breakthrough in Bonn**

New, more flexible ways to fight climate change were sketched out at the end of a week of talks between 160 nations, but there was no breakthrough in bridging a deep divide between China and the United States. The meeting of senior officials in Bonn, Germany, aired formulas to resolve disputes between rich and poor on sharing out the burden of curbing greenhouse gas emissions as part of a new U.N. deal, a successor to the 1997 Kyoto Protocol.

Attempts to reach agreement have foundered above all on a failure to agree on the contribution developing countries should make to curbing the industrial emissions responsible for global warming. The next ministerial conference to try to reach a deal is scheduled for Paris in 2015.

The United States, recently overtaken by China as the world's biggest carbon polluter, never ratified Kyoto because it set no binding emissions cuts for rapidly growing economies such as China and India.

The United Nations said there was a broad agreement among delegates in Bonn that any new accord should have flexibility to ratchet up curbs on emissions, without a need for further negotiations, if scientific findings about floods, droughts and rising sea levels worsen in coming years. That approach would be a big shift from the Kyoto Protocol, which binds about 35 industrialized nations to cut greenhouse gases, with targets set every few years.

"There's been quite a lot of common ground appearing," said Christiana Figueres, head of the U.N. Climate Change Secretariat. But she said no nation was doing enough to combat global warming. "The agreement of 2015 cannot be cast in stone, cannot be frozen in time," she said of the idea of greater flexibility.

Some developed nations also suggested that a deal should have mechanisms, perhaps linked to per capita gross domestic product, so that governments in emerging nations would make bolder actions as their economies grew.

Governments agreed in 2010 to limit a rise in temperatures to no more than 2 Celsius (3.6 Fahrenheit) above pre-industrial times but are far off target. Economic slowdown has sapped many countries' willingness to act on climate change. Temperatures have already risen about 0.8 C (1.4F) and many leading scientists say the 2C target is slipping out of reach.

There were no breakthroughs in Bonn, with tougher decisions put off at least until a next session in June.

Developing nations said rich countries appeared unwilling to keep promises to take the lead in cutting emissions, and called for more focus on burden-sharing to safeguard the interests of the poor. "If we fail to act now, a vastly more expensive response will be required later," a group of 83 of the least developed nations and small island states said in a statement.

China and the United States showed little indication of closer cooperation despite agreeing last month to step up efforts on climate change, saying they hoped that would inspire action by others. China stuck to its insistence that developed nations should collectively cut greenhouse gas emissions by between 25 and 40 percent below 1990 levels by 2020. President Barack Obama's plan is the equivalent of a 4 percent cut.

The United States won some support for a suggestion that the 2015 deal should be based on national promises of action, while China wants far more binding commitments by the rich.

Chinese chief negotiator Su Wei also said China could not impose caps on its rising emissions because it needed time to focus on economic growth, despite U.S. calls for tougher action by Beijing. "In China the per capita income is just around \$5,000, compared to the industrialized countries where you have \$40,000 or even more," he said.

## **98. Industrialized Nations' Greenhouse Gas Emissions Dipped In 2011**

Industrialized nations' greenhouse gas emissions dipped 0.7 percent in 2011, helped by a U.S. shift from high-polluting coal in power plants and by Europe's economic slowdown. For many years it has been a mantra that rich nations, historically the top polluters, should make the biggest cuts in emissions while emerging economies could burn more energy to help lift them from poverty. But figures based on submissions by 42 industrialized nations this month used to judge compliance with U.N treaties underscore how continued worldwide growth in emissions is increasingly led by China and other emerging economies.

Combined emissions in the 42 countries slipped to 17.1 billion tons in 2011 from 17.2 billion in 2010. That was down 6.4 percent from levels in 1990, the U.N. benchmark year for judging progress in combating global warming.

"For the United States, it's mainly a shift from coal to gas in power plants," said Steffen Kallbekken, research director at the Center for International Climate and Environmental Research, Oslo, said of the 2011 numbers. "For Europe it's primarily weak economic activity," he said. Industrialized nations are trying to cut emissions, mainly from burning fossil fuels, to curb a rise in temperatures and avert heat waves, floods, droughts and rising sea levels.

In the United States, the world's No.2 emitter behind China and ahead of the European Union, greenhouse gas emissions dipped to 6.67 billion tons in 2011 from 6.79 billion in 2010. That put U.S. emissions 7 percent below their 2005 levels. President Barack Obama wants a cut of 17 percent from 2005 levels by 2020 but has lacked support for that drive in the Senate.

European Union emissions fell by 3.3 percent in 2011, according to official accounting of gases ranging from carbon dioxide to methane. That means EU emissions were 18.5 percent below 1990 levels in 2011, apparently on target for a promised cut of at least 20 percent by 2020 despite a plunge in the price of carbon dioxide on an EU market that has removed a main spur to action.

Elsewhere, emissions rose in 2011 in nations including Russia, Japan and Turkey. They were little changed in Canada and Australia.

The unexpectedly rapid rise of emissions in China and other emerging economies such as India and Brazil in recent years is pushing up global emissions and complicating talks among 200 nations on a new U.N. accord aiming to slow climate change.

Emerging economies are not obliged to submit annual emissions data to the U.N. Climate Change Secretariat. But other studies show that worldwide emissions are rising. A Global Carbon Project, for instance, estimates that world emissions from fossil fuels and cement grew by 3 percent in 2011 and by 2.6 percent in 2012. It says China's surging emissions were responsible for most of the global growth. "Per capita emissions of China are now pretty much on the same level as those in the EU," said Jos Olivier, senior scientist at the PBL Netherlands Environmental Assessment Agency.

### **99. Aviation Industry Says Alternative Fuels Reality, but Commercialization Issues Remain**

The international aviation sector has made "tremendous progress" on developing alternative fuels that would reduce its overall greenhouse gas emissions, but the ongoing challenge is to fully commercialize those alternatives to provide sufficient supply, according to a representative of the Commercial Aviation Alternative Fuels Initiative (CAAFI).

There have already been 1,500 commercial flights using alternative fuels, technical specifications have been developed, and there has been progress on assessing the life-cycle environmental benefits of using alternative fuels, Nancy Young, vice president of environmental affairs with Airlines for America, a partner in CAAFI, told participants on May 15 at a symposium sponsored by the International Civil Aviation Organization (ICAO) at its Montreal headquarters.

The industry and its partners are now approaching the "bitter end" of the process as alternative fuels are rapidly becoming a reality, she said. Young stressed that the aviation sector is under "no illusion" that alternative fuels will be less expensive than regular jet fuel, but there is hope that they will help reduce overall price volatility while providing an environmental benefit.

CAAFI is involved, for example, in a ground-breaking project to compare approaches to life-cycle analysis, which will help provide a basis for determining environmental benefits, she said. “It doesn't matter right now, but eventually we're going to have to have mutual recognition of those types of standards,” she said.

Fokko Kroesen, environmental manager with KLM Royal Dutch Airlines, agreed that commercialization of biofuels remains a significant challenge and stressed the need to ensure a level playing field for various types of fuels and a “road map” for the use of biofuels. KLM's Corporate BioFuel Program, part of the airline's efforts to meet a target of 1 percent biofuels use by 2015, includes a strong focus on involving customers as part of the process, Kroesen said. The airline, with biofuels supplied by SkyNRG, offers its customers and partners a way to make their air travel more sustainable based on their anticipated travel demand, he said.

The program gives corporate customers an opportunity for a portion of their contracted travel needs to be met on aircraft using fuel with biofuel content, helping those customers contribute to lowering their carbon footprint and meeting their own corporate sustainability goals, he said. “They can choose the kind of level they want to operate on biofuels,” he said.

Governments also have a major role to play in promoting increased use of alternative aviation fuels, including setting sustainability criteria for biofuels that recognize the dynamic future of markets and the need to develop standards that are adaptable to different feedstocks based on their availability and pricing, Kroesen said. Governments also need to help simplify technical certification protocols and regional regulations to ensure a level playing field for aviation compared to other sectors, he said.

Alternative fuels can help ICAO meet its aspirational goals for reducing greenhouse gas emissions, but it is crucial to remember that the alternatives under consideration are still hydrocarbon fuels, not radical alternatives like hydrogen, Philippe Novelli, alternative fuels officer in ICAO's Environment Branch, told symposium participants. ICAO has set a goal of a 2 percent annual improvement in fuel efficiency through 2020 and carbon neutral growth for the aviation sector by 2020, as well as an aspirational goal of an additional 2 percent in annual fuel efficiency improvements through 2050.

The alternative fuels, which can be mixed with regular jet fuel, still lead to carbon dioxide emissions but are considered “neutral,” as they are derived from biomass and ultimately return to biomass, Novelli said. Production of alternative fuels also generates greenhouse gas emissions, so it is critical to ensure a full life-cycle analysis of alternatives to ensure that they provide a net improvement in emissions levels, he said.

Symposium presenters offered details on a number of ongoing alternative aviation fuel projects. For instance:

- Alejandro Rios Galvan, an engineering systems and management faculty member with the United Arab Emirates-based Masdar Institute of Science and Technology, highlighted a research project on the use of salt-tolerant biomass to develop biofuels. The project involves using seawater aquaculture, using the aquaculture wastewater to grow salt-tolerant plants (halophytes), using the wastewater from the halophyte operation to grow mangrove plantations, and harvesting biomass from the mangrove trees to produce biofuels.

- Cesar Velarde, manager of Spain's Observatory of Sustainability in Aviation, provided details of a project to produce synthetic kerosene for use as an aviation biofuel. The key focus is on generating sufficient production of camelina—a plant also known as “false flax”—to provide sufficient feedstock to produce biofuels at costs significantly below the current state of the art. A sustainability assessment will be conducted to see if the project, which involves 12 partners in nine countries, meets its goal of at least 60 percent greenhouse gas emissions savings throughout the fuel's life cycle. “This project shows that the deployment of sustainable alternative fuels for aviation requires global cooperation,” Velarde said.
- Finally, Darrin Morgan, director of biofuel strategy with Boeing, outlined how Brazil's Flightpath to Aviation Biofuels initiative is using a “road map” process to develop consensus among aviation interests, nongovernmental groups, and biofuel producers to find sustainable biofuels production methods. The road map approach is intended to avoid problems like those encountered with the Altamont Pass wind project in California, where insufficient preparatory work led to problems with migrating bird populations, Morgan said. “We're trying to get a higher level of success for the systems that are developed, whatever those systems end up being,” Morgan said. The project's findings are expected to be unveiled in a few weeks, after which work will start on addressing gaps in the development of sustainable biofuel supplies.

#### **100. Russian Objections Curtail Key ADP Track in Bonn Climate Talks**

The central negotiating track at the U.N. climate talks closed on June 13<sup>th</sup> with consensus on administrative points but no agreement on new innovative proposals regarding hydrofluorocarbons (HFCs) and adaptation costs, while new information emerged on the Russia-led tactic that caused talks on implementation matters to collapse before they could start.

The Ad-hoc Working Group on the Durban Platform for Enhanced Action (ADP) ended its session after selecting chief EU negotiator Artur Runge-Metzger and Kishan Kumarsingh of Trinidad & Tobago as new co-chairmen of the ADP. The selection of Kumarsingh was widely expected, but Runge-Metzger's selection was a minor surprise as Norwegian negotiator and outgoing co-chairman Harald Dovland had been considered likely to stay on for another term.

The ADP agreed that the United Nations Framework Convention on Climate Change (UNFCCC) should hold at least one extra session in 2014, in addition to the midyear Meeting of the Subsidiary Bodies and the end-of-the-year COP, which are on the schedule every year. The additional talks will be held in the first half of 2014, with a fourth set of meetings in the fall a possibility to be decided on early next year.

The ADP negotiators did not act on a call from developing countries to commission a technical paper to start the process of accurately estimating the costs of worldwide adaptation efforts.

An EU proposal to move the process of regulating potent HFCs to the Montreal Protocol was also tabled. HFCs are a family of chemicals used in refrigerants in lieu of chlorofluorocarbons limited by the 1987 Montreal Protocol because of their impact on the ozone layer. The move was opposed by a group of developing countries, led by India that feared it would remove one of the areas in which they will seek to achieve emissions reductions in a 2015 agreement the ADP track is working to finalize.

Meanwhile, it was confirmed that Russian President Vladimir Putin had sent a letter to U.N. Secretary General Ban Ki-moon that apparently preceded the Russian delegation's proposal of an agenda item at the June 3<sup>rd</sup> start of the meeting of the Subsidiary Body for Implementation (SBI), resulting in eight days of discussions before its talks closed June 11 without having officially opened. The SBI is charged with implementing COP decisions.

The letter reportedly made reference to “concern” about a 2012 UNFCCC Conference of the Parties decision that severely limited the future value of greenhouse gas reduction credits Russia earned before 2012 and was referred to the UNFCCC, where it will be addressed at a later date. Many are predicting that the SBI stalemate in Bonn would likely result in heavy waves of lobbying in Moscow as parties seek to resolve the problem before the next COP starts in Warsaw in November.

The issue started with a request from Russia, joined by Belarus and Ukraine, to add an item to the SBI agenda to clarify whether future COP decisions should be approved by consensus or by a unanimous vote. Current rules generally require unanimity but give COP chairmen leeway in drawing conclusions. In several high-profile instances, COP chairmen have approved COP decisions over objections from one or a small handful of countries, including last year's decision on carbon credits.

“The question is, what does Russia want now?” said Duncan Marsh, international climate policy director with The Nature Conservancy. “If it's a joint effort to clarify decision making processes in the future, that would receive support from many countries. On the other hand, seeking to renegotiate the Doha outcome from December would strike a serious blow to near-term prospects to build a strong global agreement to combat climate change.”

Meena Raman, from Third World Network in Malaysia, said the topic could have serious ramifications if not addressed: “This could undermine the Warsaw talks, and if that happens 2013 could prove to be a lost year” for climate negotiations, she said.

The most high-profile topic left unaddressed by the failure of the SBI to reach a decision on its agenda in Bonn is the topic of Loss and Damage, a kind of insurance policy for poor countries impacted by climate change. The COP in 2012 in Doha, Qatar, established a work program to consider approaches to the topic, but progress will now be severely limited, at least until the Warsaw talks get under way.

### **101. U.S., China Agree to Collaborate To Phase Down Hydrofluorocarbons**

An agreement between the United States and China to cooperate on reducing emissions of hydrofluorocarbons could signal the start of negotiations to amend an international treaty to phase out the use of such chemicals in air conditioning and refrigeration units, according to U.S. and international leaders, analysts, and observers.

International and U.S. leaders said the agreement announced on June 8<sup>th</sup> by President Obama and Chinese President Xi Jinping marks a potential shift because it will allow both countries to work through the Montreal Protocol on Substances that Deplete the Ozone Layer to phase down the use and production of HFCs.

China, India, and Brazil have been blocking a joint proposal by the United States, Canada, and Mexico to amend the Montreal Protocol since 2009, contending that use of HFCs, which are considered a highly potent greenhouse gas, should be curtailed through an international treaty

on climate change rather than a treaty on ozone depletion. As recently as November 2012, China spearheaded the effort to block the North American proposal at the 24th Meeting of the Parties (MOP-24) to the Montreal Protocol that would have required parties to reduce consumption and production of 21 types of HFCs by 85 percent over the next 20 years.

In a June 10 tweet, EU Commissioner on Climate Action Connie Hedegaard said she hopes China and the United States “will now join international cooperation” on HFCs. “The sooner the declaration is reflected in practical policies the better.”

Use of HFCs is growing rapidly, as the substances were identified as replacements for ozone-depleting substances under the Montreal Protocol. HFCs do not deplete the ozone layer, but many are highly potent greenhouse gases, with some having many times the global-warming potential that carbon dioxide has, according to EPA. HFCs are used in air conditioners, refrigerators, and as sealants.

According to the U.S.-China agreement, “Regarding HFCs, the United States and China agreed to work together and with other countries through multilateral approaches that include using the expertise and institutions of the Montreal Protocol to phase down the production and consumption of HFCs, while continuing to include HFCs within the scope of UNFCCC and its Kyoto Protocol provisions for accounting and reporting of emissions.”

The Montreal Protocol has been successful in significantly cutting ozone-depleting substances such as chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs), and halons. The treaty has helped preserve the ozone layer, which protects humans from harmful ultraviolet rays, but it also has driven up the use of HFCs because it has been used as a substitute for CFCs.

If unaddressed, HFC emissions could contribute nearly 20 percent of global greenhouse gas emissions by 2050, “a serious climate mitigation concern,” the White House said. Phasing down HFCs globally could reduce approximately 90 gigatons of carbon dioxide-equivalent of emissions by 2050, equal to roughly two years worth of current global greenhouse gas emissions, according to the White House. (See report below.)

More than 130 countries support the North American proposal, which is on the agenda for the October Meeting of the Parties to the Montreal Protocol in Bangkok. Prior to the October meeting, a half-yearly, open-ended working group of the parties took place on June 24<sup>th</sup> in Bangkok to discuss the agenda of the fall meeting. Initial indications are that the meeting made significant progress. Any amendment to the protocol requires consensus support from the protocol's 197 parties.

HFCs will continue to be subject to the reporting and accounting provisions under the United Nations Framework Convention on Climate Change and Kyoto Protocol, according to the U.S.-China agreement.

In the absence of global action, regional and private sector initiatives have been launched to phase down HFCs. The European Commission proposed on November 7<sup>th</sup> that permitted sales of HFCs in the European Union be reduced to about one-fifth of current levels by 2030. In addition, a group of about 400 global consumer goods manufacturers and retailers pledged in November 2010 to phase out HFC refrigerants and replace them with natural refrigerants starting in 2015.

In a June 10 statement, U.N. Environment Program Executive Director Achim Steiner said the U.S.-China agreement “could signal a new and perhaps transformational chapter” in international cooperation on climate change. “Along with a variety of recent signals from several key countries including China and the United States, this one on HFCs by these two key economies is welcome as the world moves towards a universal U.N. treaty on climate change by 2015—certainly allowing the market for HFCs to grow will only aggravate the challenge of combating climate change,” Steiner said.

### 102. New EPA Study Finds HFC Phase Out Worth Two Years of Global Climate Emissions

The United States, Canada, and Mexico have proposed an amendment to the Montreal Protocol to phase down production and consumption of hydrofluorocarbons (HFCs) and control byproduct emissions. The proposal includes binding reduction targets for all countries, and provides access to financial support and extended phasedown time to developing countries.

HFC use and emissions are rapidly increasing as a result of the phase-out of ozone-depleting substances (ODS) and growing global demand for air conditioning. Although safe for the ozone layer, the continued emissions of HFCs – primarily as alternatives to ODS and also from the continued production of HCFC-22 – will have an immediate and significant effect on the Earth’s climate system. Without further controls, it is predicted that HFC emissions could negate the entire climate benefits achieved under the Montreal Protocol. The proposal calls for a gradual phasedown of HFCs to allow for early transition in sectors where there are have alternatives, and gives more time and incentive for innovation to deploy alternatives in other areas. Some niche areas may never transition, which is why the phasedown ends at 15% of allowable use of HFCs relative to an established baseline.

Adoption of the HFC amendment would produce environmental benefits of more than 90 gigatons of carbon dioxide equivalent (CO<sub>2</sub>eq) by 2050.<sup>3</sup> To provide some context, current

TABLE ES-1: ESTIMATED BENEFITS OF THE AMENDMENT PROPOSAL, AT VARIOUS INTERVALS

Party	Cumulative HFC Reductions (MMTCO <sub>2</sub> eq)			
	2016 to 2020	2016 to 2030	2016 to 2040	2016 to 2050
<b>HFC Phasedown – Consumption Reductions</b>				
Non-Article 5 Parties	1,600	9,900	24,100	40,200
Article 5 Parties	-	4,900	19,400	43,200
<b>World</b>	<b>1,600</b>	<b>14,800</b>	<b>43,500</b>	<b>83,400</b>
<b>Byproduct Controls – Emissions Reductions</b>				
Non-Article 5 Parties	300	900	2,000	3,800
Article 5 Parties	700	2,100	4,200	7,500
<b>World</b>	<b>1,000</b>	<b>3,000</b>	<b>6,200</b>	<b>11,300</b>
<b>World Total</b>	<b>2,600</b>	<b>17,800</b>	<b>49,700</b>	<b>94,700</b>

global climate emissions from all sources are about 45 gigatons CO<sub>2</sub>eq annually.

The proposed Amendment builds on the success of the Montreal Protocol, relies on the strength of its institutions, and realizes climate

benefits in both the near and long-term. Table ES-1 displays the projected benefits from the Amendment.

### 103. International Airline Group Urges Market-Based Scheme for Carbon Emissions

<sup>3</sup> Benefits of Addressing HFCs under the Montreal Protocol, US EPA, June 2013

Airlines representing 85 percent of the global market agreed on June 3<sup>rd</sup> on a proposal that would encourage governments to adopt a single market-based system to regulate carbon emissions from the aviation industry deemed harmful to the environment. The International Air Transport Association (IATA) “overwhelmingly” supported a resolution that would assist governments in establishing a single market-based system for regulating emissions and integrating that system into broader industry carbon-reduction goals, at its annual general meeting in Cape Town, South Africa.

“Sustainability is aviation's license to grow,” Tony Tyler, director general of IATA, said in a statement. “With that understanding and a firm focus on the future, airlines found an historic agreement. This industry agreement should help to relieve the political gridlock on this important issue and give governments momentum and a set of tools as they continue their difficult deliberations.”

Airlines are urged to strongly encourage their countries' governments to adopt “a commonly agreed, single global market-based mechanism to be applied to offsetting the industry's growth in emissions post-2020, which could play a complementary role with technology, operations and infrastructure measures”. But airlines' call for governments to agree a global deal at this September's ICAO assembly comes with a number of caveats.

- Governments should not be able to raise any revenues through the market-based mechanism.
- If ICAO decides to have different rules for developed and developing countries, it should ensure equal treatment is granted to operators on any given route.
- The baseline years for calculating emissions should be 2018-20, but airlines that want to grow should have their obligations adjusted accordingly.
- And any net reductions below an airline's baseline should be redistributed to the rest of the sector.
- Airlines should be also allowed to choose from a selection of different reporting methodologies,

The agreement now puts further pressure on the International Civil Aviation Organization (ICAO), a 191-member U.N. body, to reach a global agreement to reduce emissions from international air travel at its September assembly.

Aviation groups had previously said failure by ICAO to reach an agreement on a global scheme to regulate airline emissions would be a “complete nightmare” for the industry due to the current patchwork of national emissions regulations.

One of those regulatory schemes is the European Union's Emissions Trading System. Facing pressure from countries like the United States, China, and India, the European Union Council agreed on April 22<sup>nd</sup> to delay the inclusion of intercontinental aviation emissions in the system for an additional year, meaning operators of intercontinental flights would be required to begin reporting their emissions and surrender emissions allowances on April 30, 2014.

European Union Climate Action Commissioner Connie Hedegaard said in a June 3<sup>rd</sup> Twitter message that the IATA agreement sends a “very strong message” that the aviation industry is ready for a single market-based mechanism for regulating aviation emissions and called for countries to “deliver” at the fall ICAO meeting.

But environmental groups reacted to the resolution with skepticism. The resolution “kicks the ball into the long grass until after 2020 and sets out a string of unworkable conditions”, Bill Hemmings of T&E said, adding that airlines’ support for a global scheme indicates continuing industry opposition to the EU’s emissions trading system (ETS) as a stepping-stone measure.

But the deal “represents a welcome departure from their historical position that better air traffic control, better planes and biofuels alone can solve the problem”, he noted.

The aviation industry had previously set self-imposed targets of improving fuel efficiency by 1.5 percent annually through 2020, carbon neutral growth by 2020, and cutting industry emissions in half by 2050 compared with 2005 levels, according to IATA.

#### **104. CFCs Key Element in Global Warming, Researcher Claims; Others Skeptical**

There is concrete evidence that chlorofluorocarbons (CFCs), rather than carbon dioxide emissions, are the key driver of global warming, and that the ongoing reductions in releases of chlorofluorocarbons are responsible for a decline in global temperatures since 2002, a professor at the University of Waterloo in Canada said on May 31<sup>st</sup>. There has been no direct correlation between carbon dioxide emission levels and global temperatures since the start of the Industrial Revolution in the 1850s, but there is a direct correlation between the recent cooling in temperatures and decreasing emissions of chlorofluorocarbons, Qing-Bin Lu, a professor of physics, astronomy, biology, and chemistry, told reporters. “The evidence is quite convincing,” Lu said.

Traditional theories project global temperatures to continue rising as carbon dioxide emissions continue to grow, but temperatures have actually declined since 2002. At the same time, CFCs emissions have decreased sharply due to successful implementation of the Montreal Protocol on Substances that Deplete the Ozone Layer, he said.

“The data shows that CFCs conspiring with cosmic rays caused both the polar ozone hole and global warming,” he said. This confirms Lu’s earlier research on a cosmic-ray-driven electron-reaction theory of ozone depletion and the interconnection between greenhouse gases and global warming, but he was reluctant to bring attention to those findings before fully confirming the data, he said.

However, now it is time for governments to pay attention to those data in setting climate policy, Lu said. “I hope the government can eventually use this to reach the right decisions,” he said. The Canadian government has so far correctly taken a cautious approach to global warming to date, and was justified in withdrawing from the Kyoto Protocol, he said. “Personally, I think we’re doing okay,” he said.

Publication of Lu’s 38-page research paper in the International Journal of Modern Physics B<sup>4</sup>, together with a statement May 30 by the University of Waterloo drew sharp criticism from other climatologists.

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<sup>4</sup> “Cosmic-Ray-Driven Reaction and Greenhouse Effect of Halogenated Molecules: Culprits for Atmospheric Ozone Depletion and Global Climate Change”

The lack of correlation between carbon dioxide emissions and global warming over the lengthy period cited in Lu's research is no surprise, nor is the correlation over the short period that CFCs have been an issue, Gordon McBean, a renowned climatologist and currently a geography and political science professor at the University of Western Ontario, said May 31<sup>st</sup>. Lu's research appears to be based purely on data correlation, without any basis in real-world physics, said McBean, who between 1994 and 2000 headed Environment Canada's Meteorological Service of Canada. "I worry about the science in all this," he said.

The claim that global temperatures have been decreasing since 2002 is not totally credible, as while the rate of warming has slowed, 2012 was among the warmest years on record, and in any event, climate must be viewed on a time scale of decades, he said.

McBean also criticized the University of Waterloo for overpublicizing Lu's research. "This kind of science—it's appropriate to be done and published," he said. "But to make the claims as was done in the press release and in the abstract, that this is the final word on the issue, is very inappropriate." Unfortunately, the publicity could provide support for government inaction on climate change, McBean said. The current Canadian government has shown a clear lack of interest in concrete climate change action and would likely appreciate the support for its inaction, he said.

Andrew Weaver, a professor in the University of Victoria's School of Earth and Ocean Sciences who was recently elected as the British Columbia Legislature's first Green Party member, said Lu's research essentially claims that 150 years of climate knowledge, developed by thousands of scientists worldwide, should be overturned by a simple correlation analysis. There is no basis for suggesting that global warming has been reversed, as 2010 was the warmest year on record and 2005 the second warmest, Weaver told the press. "If it sounds a bit far-fetched, it should," he said. "While it may be headline-grabbing and attention-seeking, we all know that the laws of physics are not derived from correlation between two curves."

Lu said he was surprised by the severe backlash against publication of his research, including abusive comments posted online. The climate change debate has become too politicized, but an honest evaluation of all available scientific data could still lead to consensus on policy, he said.

There is clear evidence that human activity is attacking the environment, and that governments need to act to stop and reverse the damage, he said. But the data suggest that measures to address carbon dioxide emissions, which can cause serious economic harm, might not be the best option, he said. "We have to choose the right target," he said.

Other scientists in North America are not convinced that carbon dioxide is the culprit behind climate change, but their research has largely been ignored, he said. That is reflected in societal effects, including an education system that is excessively tilted toward a focus on carbon dioxide as the cause of global warming, he said.

The observed data "convincingly" demonstrate that CFCs are not only the major culprit behind depletion of the ozone layer, but also the approximately 0.6 percent Celsius increase in average global temperatures between 1970 and 2002, Lu said in the research paper.

Successful execution of the Montreal Protocol has controlled the hole in the ozone layer in the Earth's polar region, which it is now estimated will return to its 1980 state by 2058, but will have a slower impact on reversing global warming due to the slow decline in atmospheric CFCs

concentrations in the low and mid-latitudes, the paper said. That suggests global sea levels will continue to rise for 10 to 20 years, but after that global surface temperatures and sea levels will decline, it said.

“It should also be noted that the mean global surface temperature in the next decade will keep nearly the same value as in the past decade, i.e., ‘the hottest decade’ over the past 150 years,” Lu’s paper said. “This, however, does not agree with the warming theory of CO<sub>2</sub>. If the latter were correct, the current global temperature would be at least 0.2-0.3 degrees Celsius higher than the observed value. Actually, a slow cooling trend has begun,” the paper said.

### **105. BP Statistical Review Reveals US Oil Production Up, Coal Consumption Down**

The BP Statistical Review of World Energy 2013 was released on June 12<sup>th</sup>, revealing that 2012 had the largest single-year increase in US oil production ever recorded. The US recorded the world’s highest growth in production of both oil and natural gas in 2012, on the back of increasing production of unconventional hydrocarbons such as tight oil. With rising natural gas output driving prices lower in the US, natural gas displaced coal in power generation, causing the US to experience the largest decline of coal consumption in the world.

Elsewhere, 2012 saw the largest annual decline in world nuclear output. In Japan, where nuclear power generation all but disappeared after 2011’s Fukushima accident, higher imports of fossil fuels including liquefied natural gas (LNG) ‘kept the lights on’. In Europe, where gas prices were higher than in the US, power generators took the opposite course from the US, and substituted coal for gas.

The Review also revealed a drop in the growth of overall global energy consumption to 1.8% in 2012, down from 2.4% the previous year. This was partly as a result of the economic slowdown, but also because individuals and businesses responded to high prices by becoming more efficient in their use of energy. The emerging economies - the non-OECD countries - firmly established themselves as the source of what demand growth was seen, with China and India alone accounting for nearly 90% of the increase. Just twenty years ago, the emerging economies accounted for only 42% of global consumption; now that figure is 56%.

For a second consecutive year, oil supply disruptions in Africa and the Middle East were offset by growth among other Middle East producers, with record oil production in Saudi Arabia, the UAE, and Qatar. Despite these supply increases, average nominal oil prices reached another record high.

Coal remained the fastest-growing fossil fuel, with China now consuming the majority of the world’s coal for the first time—but it was also the fossil fuel that saw the weakest growth relative to its historical average.

Hydroelectric and renewable energy (along with cheap natural gas in North America) competed against coal in power generation. Global biofuels output fell for the first time since 2000 due to weakness in the US, but renewables in power generation grew by 15.2% and accounted for a record 4.7% of global power output.

Global carbon dioxide (CO<sub>2</sub>) emissions from energy use continued to grow in 2012, but at a slower rate than in 2011. Lower coal use helped the US reduce its emissions of carbon dioxide

to 1994 levels, and EU emissions declined despite coal gaining market share from natural gas in power generation.

### **Review highlights – energy developments**

- World primary energy consumption grew by 1.8% in 2012, well below the 10-year average of 2.6%.
- Consumption in OECD countries fell by 1.2%, led by a decline of 2.8% in the US (the world's largest decline in volumetric terms).
- Non-OECD consumption grew by 4.2%, below the 10-year average of 5.3%.
- Global consumption growth was below average for all fossil fuels and nuclear power; regionally growth was below average everywhere except Africa.
- Oil remains the world's leading fuel, at 33.1% of global energy consumption, but oil continued to lose market share for the 13th consecutive year and its current market share is the lowest in BP's data set, which begins in 1965.

### **Oil**

- Dated Brent averaged \$111.67 per barrel in 2012, an increase of \$0.4 per barrel from the 2011 level.
- Global oil consumption grew by 890,000 barrels per day (b/d), or 0.9%, below the historical average.
- Oil had the weakest global growth rate among fossil fuels for the third consecutive year. OECD consumption declined by 1.3% (530,000 b/d), the sixth decrease in the past seven years; the OECD now accounts for just 50.2% of global consumption, the smallest share on record. Outside the OECD, consumption grew by 1.4 million b/d, or 3.3%.
- China again recorded the largest increment to global consumption growth (+470,000 b/d, +5%) although the growth rate was below the 10-year average. Japanese consumption grew by 250,000 b/d (+6.3%), the strongest growth increment since 1994.
- Global oil production increased by 1.9 million b/d, or 2.2%. OPEC accounted for about three-quarters of the global increase despite a decline in Iranian output (-680,000 b/d) due to international sanctions. Libyan output (+1 million b/d) nearly regained all of the ground lost in 2011.
- For a second consecutive year, output reached record levels in Saudi Arabia, the UAE and Qatar. Iraq and Kuwait also registered significant increases.
- Non-OPEC output grew by 490,000 b/d, with increases in the US (+1 million b/d), Canada, Russia and China offsetting unexpected outages in Sudan/South Sudan (down 340,000 b/d) and Syria (-160,000 b/d), as well as declines in mature regions such as the United Kingdom and Norway.
- US net oil imports fell by 930,000 b/d and are now 36% below their 2005 peak. Conversely, China's net oil imports grew by 610,000 b/d.

### **Natural gas**

- World natural gas consumption grew by 2.2%, below the historical average of 2.7%.
- Consumption growth was above the 10-year average in South & Central America, Africa and North America, where the US (+4.1%) recorded the largest increment in the world. In Asia, China (+9.9%) and Japan (+10.3%) were responsible for the next-largest growth increments. Globally, natural gas accounted for 23.9% of primary energy consumption.

- Global natural gas production grew by 1.9%. The US (+4.7%) once again recorded the largest volumetric increase and remained the world's largest producer. Norway (+12.6%), Qatar (+7.8%), and Saudi Arabia (+11.1%) also saw significant production increases, while Russia (-2.7%) had the world's largest decline in volumetric terms.
- Global liquefied natural gas trade declined for the first time on record (-0.9%), while pipeline trade grew weakly (+0.5%).

### **Other fuels**

- Coal consumption grew by 2.5% in 2012, well below the 10-year average of 4.4% but still the fastest-growing fossil fuel.
- Global coal production grew by 2%, with growth in China (+3.5%) and Indonesia (+9%) offsetting a decline in the US (-7.5%). Coal reached the highest share of global primary energy consumption (29.9%) since 1970.
- Global nuclear output fell by 6.9%, the largest decline on record for a second consecutive year; Japanese output fell by 89%, accounting for 82% of the global decline. Nuclear output accounted for 4.5% of global energy consumption, the smallest share since 1984. Hydroelectric output rose by an above-average 4.3%, with China accounting for all of the net increase.
- Renewable energy sources saw mixed results in 2012. Global biofuels production recorded the first decline since 2000 (-0.4%), due to a decline in the US (-4.3%). In contrast, renewable energy used in power generation grew by 15.2%, slightly above the historical average.
- Renewable forms of energy accounted for 2.4% of global energy consumption, up from 0.8% in 2002; renewables in power generation accounted for a record 4.7% of global power generation.

### **106. Global Carbon Emissions Hit Record High In 2012**

China led a rise in global carbon dioxide emissions to a record high in 2012, more than offsetting falls in the United States and Europe, the International Energy Agency (IEA) has announced. Worldwide CO<sub>2</sub> emissions rose by 1.4 percent to 31.6 billion tons, according to estimates from the Paris-based IEA.

China is the biggest emitter and made the largest contribution to the global rise, spewing out an additional 300 million tons. But the gain was one of the lowest China has seen in a decade, reflecting its efforts to adopt renewable sources and improve energy efficiency.

In the United States, a switch from coal to gas in power generation helped reduce emissions by 200 million tons, bringing them back to the level of the mid-1990s.

Even though the use of coal increased in some European countries last year due to low prices, emissions in Europe declined by 50 million tons because of the economic slowdown, growth in renewables, and emissions caps on industrial and power companies, the IEA said.

Japan's CO<sub>2</sub> emissions increased by 70 million tons, as efforts to improve energy efficiency failed to offset increasing use of fossil fuels after the Fukushima nuclear accident in 2011.

Scientists say global average temperature rise needs to be limited to below 2 degrees Celsius this century to prevent devastating climate effects like crop failure and melting glaciers. That

would only be possible if emission levels are kept to around 44 billion tons of CO2 equivalent by 2020. However, the IEA said the data shows the world is on a path to an average temperature rise of between 3.6 and 5.3 degrees Celsius.

"Global energy-related greenhouse gas emissions in 2020 are projected to be nearly 4 billion tons higher than a level consistent with attaining the 2 degree target, highlighting the scale of the challenge still to be tackled just in this decade," the agency said.

The IEA urged governments to quickly adopt four policies that would ensure climate goals could be reached without harming economic growth. They are: **improving energy efficiency in buildings, industry and transport; limiting the construction and use of inefficient power plants; halving methane emissions; and partially phasing out fossil fuel subsidies.**

These would reduce global energy-related emissions by 8 percent or 3.1 billion tons of CO2 equivalent in 2020, the IEA said.

"Delaying stronger climate action to 2020 would come at a cost: \$1.5 trillion in low-carbon investments are avoided before 2020, but \$5 trillion in additional investments would be required thereafter to get back on track," the IEA said.

### **107. Time to Stop Arguing About Climate Change, World Bank Says**

The world should stop arguing about whether humans are causing climate change and start taking action to stop dangerous temperature rises, the president of the World Bank said recently. Jim Yong Kim said there was 97 to 98 percent agreement among scientists that global warming was real and caused by human activity. "If you disagree with the science of human-caused climate change you are not disagreeing that there is anthropogenic climate change. What you are disagreeing with is science itself," Kim told a Thomson Reuters Newsmaker event in London.

"It is time to stop arguing about whether (climate change) is real or not," he said.

A study last month found that 97 percent of around 4,000 scientific reports giving an opinion about the cause of climate change since the 1990s said it was mainly human. Skeptics said the survey wrongly omitted thousands of papers which did not give a view.

Governments across the world have agreed to limit global temperature rise to below 2 degrees Celsius (3.6 Fahrenheit). Estimates differ over how high temperatures may rise and over what period of time. The World Bank and others have estimated that the globe has already warmed by about 0.8 degrees C (1.4F) since the Industrial Revolution and 2 degrees C is widely viewed as a threshold to dangerous changes such as more floods, heat waves and rising sea levels.

The World Bank wants more focus on the issue. In a report, it cited Bangkok as an example, saying much of it could flood within the next two decades if global warming stays on its current trajectory.

Kim said that as extreme weather events continue, public opinion about climate change should start to change.

The lack of an international deal is a "lame excuse" to not tackling climate change, Kim said. In the meantime, any kind of agreements or action should be encouraged.

"The level of seriousness at the top in the United States couldn't be higher. As extreme weather events occur (such as) in the mid-west and Hurricane Sandy etc., other legislators will come around," Kim said.

He noted that China, the world's second largest economy, is also taking climate change very seriously. Even though China is the biggest CO<sub>2</sub> emitter in the world and is still building coal plants, it is investing more in solar and wind power than any other country and ramping up efforts to build cleaner cities and more efficient buildings.

China's efforts to develop its own national carbon market - similar to Europe's, is also positive sign for a global agreement, Kim said. China launched its first emissions trading scheme this week in Shenzhen, marking a milestone in the country's climate policy. "If we get China, the U.S. and the EU to agree on a price for CO<sub>2</sub> we will have a market mechanism to fight climate change. I hope a practical solution will happen before 2020," he added.

The European Union currently operates the world's largest carbon market, which has been in place since 2005.

The rate of warming since the turn of this century, meanwhile, has slowed more than many scientists had expected after strong rises in the 1980s and 1990s. Some have interpreted this as a sign climate change is less of an immediate threat than thought.

Attempts to agree a plan of action to combat climate change failed at a U.N. conference in Copenhagen in 2009, primarily because of concerns over the economic impact.