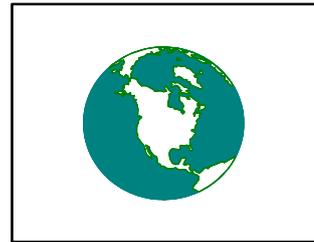


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# CAR LINES

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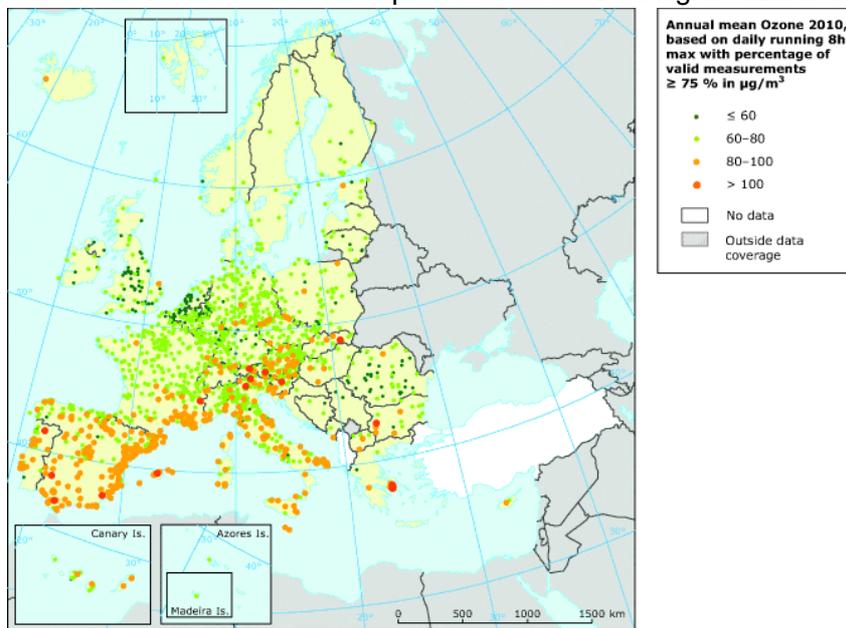
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## EUROPE

### 1. Ground-Level Ozone Exceeds Target Limit in Most European Countries, Report Finds

During the summer of 2011, most EU countries exceeded a target limit set in legislation for ground-level ozone, the European Environment Agency (EEA) said in a report<sup>1</sup> published on March 19<sup>th</sup>. According to the report, there were “serious levels” above the target limit at measuring stations in Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, France, Germany, Greece, Hungary, Italy, Luxembourg, Malta, Poland, Portugal, Slovakia, Slovenia, and Spain. Non-EU members Croatia, Liechtenstein, Macedonia, Serbia, and Switzerland also experienced high ozone levels, EEA said.

Ground-level ozone is produced when pollutants such as nitrogen oxides and volatile organic chemicals in the lower atmosphere react with sunlight. Ozone can cause breathing problems and worsen conditions such as asthma.



Under the EU Ambient Air Quality Directive (2008/50/EC), EU countries are required to ensure that ozone does not exceed a target limit of 120 micrograms per cubic meter of air on more than 25 days per year, averaged over three years.

The first calculation to see if EU countries are meeting the target will take into account the years 2010, 2011, and 2012. However, EEA said that because of

high levels of ozone in the past four years, “it seems likely that many EU member states will face a significant challenge” to stay within the averaged threshold.

The European Commission, the European Union's executive arm, could take countries to the EU Court of Justice in an effort to require them to take measures if they are considered to have fallen short in implementing EU legislation.

Ground level ozone production depends on weather conditions such as solar intensity and temperature, and is a result of chemical reactions between other pollutants in the air. These include nitrogen oxides, carbon monoxide, methane and non-methane volatile organic compounds. These substances are emitted by industry, transport, agriculture and other sources.

<sup>1</sup> “Air Pollution by Ozone Across Europe During Summer 2011”

The European Environment Agency (EEA) publishes an annual report on summer ozone levels. The 2012 report, covering April to September 2011, was based on data from 2 186 monitoring sites across Europe.

Main findings of the report are:

- In the summer of 2011, the 'information threshold' and the 'long term objective' (LTO) for the protection of human health were both exceeded in the lowest proportion of air monitoring stations since the start of comprehensive Europe-wide data reporting in 1997. This reduction was mainly due to unusually low temperatures and increased rainfall during the summer months, although there have also been some reductions in the emissions of ozone-precursor pollutants.
- The information threshold (a one-hour ozone concentration of 180 µg/m<sup>3</sup>) was exceeded at monitoring sites in 16 EU Member States and four non-member countries. The information threshold was exceeded at approximately 18 % of all operational stations. Only northern Italy and several more isolated locations reported a substantial number of exceedances.
- As in previous years, the LTO for the protection of human health (maximum daily eight-hour mean concentration of 120 µg/m<sup>3</sup>) was exceeded in all EU Member States. These exceedances were registered at approximately 84 % of all operational stations. This limit was exceeded on more than 25 days in a significant part of Europe.
- The alert threshold (a one-hour average ozone concentration of 240 µg/m<sup>3</sup>) was exceeded 41 times. Concentrations of 300 µg/m<sup>3</sup> or more were measured three times in 2011, in Bulgaria, Italy and Spain.

In Europe, ozone concentrations in a particular country are also influenced by emissions in other northern hemisphere countries and by sectors such as international shipping and aviation. Thus, ozone pollution is not only a local air quality issue but also a hemispheric and global problem.

## **2. EU Will Not Back Stricter Mandatory Controls on Agriculture to Reduce Reactive Nitrogen**

The executive body of the Convention on Long-range Transboundary Air Pollution will meet in a special session April 30-May 4 to decide whether to adopt amendments to the Gothenburg Protocol, including controls on ammonia, a form of reactive nitrogen emitted by farms through animal manure and fertilizer runoff. Documents published ahead of the meeting show the European Union decided to back only changes to the EU ammonia annex of the treaty that would include more stringent controls as voluntary measures. Because ammonia is not considered a transboundary pollutant, this part of the protocol applies only to the European Union.

In response, the executive body's Swiss delegation, which has long advocated stricter requirements on agriculture, is suggesting no changes to the existing ammonia annex under the current circumstances. Its members said in comments that the European Union's proposed annex could actually weaken existing requirements for agriculture.

The United States, Canada, and the European Union are the largest parties to the Gothenburg Protocol, which sets emission ceilings for sulfur, nitrogen oxides, volatile organic compounds, and ammonia. Russia, Belarus, and the Central Asian countries are expected to ratify the protocol in the coming years.

The existing ammonia annex was decided on in 1999 but it has had little impact on controlling ammonia from farms. Since then, new scientific evidence has shown that excess reactive nitrogen in the environment has serious effects, including air, water, and soil pollution and the forcing of climate change.

The convention's Task Force on Reactive Nitrogen produced a range of control options, from more ambitious mandates to compromise options, for review. The task force met March 1 in St. Petersburg to discuss strategies to reduce nitrogen, particularly in Eastern European countries. The group decided to set up an expert panel with members from Western and Eastern European countries, which will serve as a focal point for countries working together to advance the issue.

### **3. What Next For Effective Emission and Air Quality Targets?**

European policies have eliminated the most visible and harmful effects of air pollution, but current rates of emissions still pose a threat to the environment and to human health. A new study has assessed the policy scope to make further environmental improvements by applying the GAINS (Greenhouse gas-Air pollution Interactions and Synergies) model.<sup>2</sup>

The GAINS model<sup>3</sup> identifies cost-effective emission control strategies to improve air quality at the least cost. It places the many aspects of air pollution into context, including interconnections between different air quality problems and interactions between pollutants in the atmosphere. With the help of funding through the LIFE EC4MACS project<sup>4</sup>, the researchers used GAINS to develop projections of future emissions and air quality impacts, assuming that existing trends continue (baseline projections). For the EU's 27 Member States, the projections imply a 6% decline in CO<sub>2</sub> emissions<sup>5</sup> between 2005 and 2020 and an 11% increase for non-EU countries.

Assuming a full implementation of emission control legislation, significant changes are expected in the EU-27: a decrease of two-thirds in sulfur dioxide (SO<sub>2</sub>) emissions, one half in nitrogen oxides (NO<sub>x</sub>) emissions and one third in emissions of Volatile Organic Compounds (VOCs) as well as of particulate matter (PM 2.5). These reductions will alleviate harmful effects of air pollution, for example, the GAINS model estimates that the average loss in life expectancy attributable to exposure to fine particulate matter will decline from 7.4 months in 2005 to 4.4 months in 2020.

The negative effects of air pollution on ecosystems will also be reduced, for example, in 2005 about 50% of the ecosystem area in Europe experienced harmful nitrogen deposition, whereas only 38% of the same area would be affected in 2020. The baseline scenario analysis indicates that there will be significant improvements in air quality following the continued implementation

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<sup>2</sup> Amann, M., Bertok, I., Borcken-Kleefeld, J. et al. (2011) Cost-effective control of air quality and greenhouse gases in Europe: Modeling and policy applications. *Environmental Modeling & Software*. 26:1489-1501.

<sup>3</sup> See: [www.iiasa.ac.at/rains/gains.html](http://www.iiasa.ac.at/rains/gains.html)

<sup>4</sup> EC4MACS (European Consortium for Modeling of Air Pollution and Climate Strategies) is supported by the European Commission through the LIFE program. See: [www.ec4macs.eu](http://www.ec4macs.eu)

<sup>5</sup> 6% CO<sub>2</sub> reduction is based on national projections that did not yet take into account the more ambitious climate change mitigation targets comprised in the Climate and Energy Package.

of emission control legislation. Nevertheless, the projected impacts on human health (shortening of life expectancy by over four months) and on ecosystem health are still of grave concern, and more needs to be done.

So far, EU policy has addressed many of the most immediate sources of air pollution. Now that these 'low hanging fruits' have been harvested, further policy action will come at greater cost and will need to be carefully designed and implemented, the study suggests. The GAINS model estimated that the environmental improvements from full implementation of all available emission control technologies, a so-called Maximum Technical Feasible Reduction (MTFR) scenario, could lead to a further 60% reduction in SO<sub>2</sub>, a 30% reduction in NO<sub>x</sub> and a 65% reduction in PM<sub>2.5</sub> by 2020. In turn, these reductions would curb the loss in human life expectancy by a further 50% and diminish the threat to biodiversity from excess nitrogen and acid deposition by more than 60%.

These improvements would raise pollution control costs for Europe from €110 billion (0,66% of GDP) to €192 billion (1,15% of GDP) per year in 2020. However, to ensure maximum cost-effectiveness, the study identifies pollution reduction targets that would realize 75% of those MTFR improvements at only about 10% of total costs. Such cost-effective solutions require common but differentiated efforts by all European countries and need full political backing. The ongoing negotiations under the UN ECE Convention on Long-range Transboundary Air Pollution to revise the Gothenburg Protocol, e.g. to set new national emission reduction targets for 2020 for five key air pollutants, seek to address these questions in a comprehensive way.

#### **4. Poland Blocks EU Plans to Move Ahead On Low-Carbon Road Map**

Talks to set medium and long-term greenhouse gas emission reduction goals for the European Union were put on hold on March 9<sup>th</sup> after Poland blocked agreement among EU member state environment ministers. The ministers had intended to endorse a European Commission proposal that would have established nonbinding "milestones" to reduce emissions 40 percent from 1990 levels by 2030, and 60 percent by 2040.

The proposal was put forward in a low-carbon road map published in March 2011 by the Commission, the European Union's executive arm. The Commission had argued that the 2030 and 2040 cuts, combined with a 25 percent cut to be achieved by 2020, would be the most cost effective pathway towards an 80 percent to 95 percent cut by 2050, as agreed by the world's wealthiest nations in the Group of Eight forum.

However, Poland refused to endorse the plan, though the other 26 EU countries said they could support it. Poland is heavily dependent on coal for its energy needs, with coal producing 90 percent of the country's electricity in 2009. The plan required unanimous backing to move forward, under the rules of the EU Council, which represents the governments of EU member states.

The Commission's low-carbon road map was an attempt to get EU countries to commit to more ambitious emission reduction targets after the 2009 United Nations climate change summit in Copenhagen failed to set global emission reduction goals. Prior to Copenhagen, the European Union had adopted legislation committing it to a binding 20 percent emissions cut by 2020, compared with 1990 levels. But the bloc said it would increase the target to a 30 percent cut if other developed economies took similar action.

The failure of Copenhagen led to a debate in the European Union between proponents of deeper emissions cuts—who said greater reductions would spur innovation and green growth, even if other economies did not act—and those who argued that more ambitious EU targets without action by other economies would simply damage the European Union's economic prospects.

Poland's Environment Minister Marcin Korolec said his country blocked discussion of longer-term emissions cuts because the European Union should not take on such obligations unless the rest of the world also acted. Poland was “not at all” opposed to longer-term EU climate goals, but they should be tied to a second Kyoto Protocol commitment period after 2012, and a possible third commitment period that could start in 2020, he said.

EU Climate Action Commissioner Connie Hedegaard said it was an “important signal” that 26 EU countries had been prepared to back the EU road map, despite Poland's veto. The European Commission, which has pushed EU countries to agree to deeper greenhouse gas emissions cuts, will now focus on negotiations on draft energy efficiency legislation, Hedegaard said.

If a full range of energy efficiency measures were put in place, the European Union would in any case cut its greenhouse gas emissions by 25 percent by 2020, according to the Commission's low-carbon road map.

## **5. European Parliament Endorses Commission's Road Map**

The European Commission should press ahead with measures to reduce the European Union's greenhouse gas emissions through 2050, despite Poland blocking EU member state discussions of longer-term climate goals, according to a recent vote of the European Parliament. In particular, the Commission, the European Union's executive arm, should move forward with new energy efficiency legislation, should take steps to ensure the effectiveness of the EU Emissions Trading System (ETS), and should publish proposals for emission reductions and renewable energy targets for 2030, members of the European Parliament said.

Sitting in a plenary session in Strasbourg, France, the lawmakers voted 398-132, with 104 abstentions, for an advisory resolution in favor of a low-carbon road map, which was published by the Commission in March 2011. The EU Council, which represents the governments of the bloc's 27 member states, has not been able to endorse the road map because of the Polish veto.

The road map would set nonbinding “milestones” of a 40 percent emission reduction by 2030 and a 60 percent reduction by 2040, leading to at least an 80 percent reduction by 2050, compared to 1990 levels.

The deep mid-century emission cut is needed to give the world a chance of avoiding dangerous levels of climate change, according to the European Commission and the world's main economies represented in the Group of Eight forum.

Although Parliament's vote is advisory, it adds to the pressure for EU governments to resolve an impasse that has seen coal-dependent Poland prevent discussion of possible 2030 and 2040 climate targets. Poland blocked agreement on the issue at a meeting of EU environment ministers March 9.

Among the requests of European Parliament lawmakers included in the March 15 resolution were calls for the Commission to publish within two years “the measures necessary” for the European Union to achieve a 40 percent emission reduction by 2030, to put forward targets for the share of renewable energy in the EU energy supply in 2030, and to publish by the end of 2012 plans to reinforce the ETS.

Because of low demand as a result of the recession, the price of ETS carbon allowances has fallen to a level considered too low to stimulate emission-reducing investments. According to the resolution, the Commission should make plans to set aside carbon allowances and to tighten the ETS cap, or maximum number of allowances issued to market participants, through 2050.

Though the Parliament's resolution is nonbinding, the Commission is obliged to take it into account when making relevant legislative proposals.

## **6. Cleaner Vehicles Coming to Moscow**

On February 15, the Russian Energy Agency (REA) announced a memorandum of understanding between REA, the Moscow United Electric Grid Company (MOESK), and the Moscow Department of Natural Resources and Environmental Protection that would make it easier to import and drive electric cars. REA plans to propose legislation in the State Duma to reduce import tariffs on electric vehicles. The agency also plans to work with local Moscow authorities to create incentives for electric car use—such as reserved parking spots and dedicated lanes of traffic for electric cars—as well as providing charging stations at gas stations. In an unrelated announcement the same day, Moscow city trumpeted its purchase of ten Mitsubishi electric cars for use by staff in the city's protected areas.

According to the Moscow Times, the model of Mitsubishi that Moscow purchased for city protected areas is the first electric car available for sale in Russia. Russian engineers have been researching designs for electric engines for many years without any domestic commercial production, only demonstration projects. Given the Russian government's consistent policy of encouraging domestic development and production within the automotive sector, if the report of REA's intent to remove barriers to import of electric cars is true, it is surprising that the government would choose to attempt to ease imports rather than to protect or support a potential domestic market.

The Moscow city government also has plans to clean up the city's bus fleet. On February 16, the Moscow city government announced plans to purchase 2,000 buses that will meet level-four European emissions standards.

European emissions standards for vehicles have grown progressively more stringent since being introduced in 1992. Most classes of vehicles in Europe are now subject to level-five emissions standards with still tougher level-six standards coming soon. But if the new Moscow city buses do reach level-four EU standards, it would represent a huge improvement from current emissions levels.

## **7. Air Quality Doubts Over the London Olympics**

Day after day of cloudless skies may have helped Londoners forget the economic gloom, but this silver lining does have a cloud; the clear skies have been accompanied by record levels of dangerous air pollution.

There have, so far this year, been six serious spells of it in the South East alone. Last week, most of England registered a spell of “very high” levels when even healthy people should be officially advised to “reduce physical exertion, particularly outdoors”. The week before it was even worse: in London, concentrations of particulates reached their highest level since they began being officially measured in 2008.

Air pollution kills: research has shown that up to 800 people died during one episode in August 2003. In all, the European Environment Agency has calculated, some 50,000 Britons perish as a result of it every year.

No official public air pollution alert has been issued since April 21, 2011. And the one before that was a full two years earlier. One reason is that the recent record levels were caused, as far as officialdom is concerned, by the wrong sort of pollution. Particulates are much the most dangerous air pollutants, but the Government ignores them. It will only issue a warning when it expects ozone to be at high levels for three successive days. The second reason is that no matter how many high pollution episodes there may be in any one year, the Government will only issue a public warning for the first, maintaining silence when lethal levels recur. The reason, says the Department for Environment Food and Rural Affairs (Defra) is that following the first public announcement people are expected to sign up to get text messages warning of subsequent episodes.

Reducing the most dangerous particulates – the Department of Health has calculated – would save three times as many lives as slashing passive smoking and five times as many as cutting car accidents.

The country has failed to meet European standards for both particulates and nitrogen dioxide and could be subject to enormous fines on each count. Indeed, the Campaign for Clean Air in London has already filed infringement complaints with the European Commission. London has the worst air quality of any capital city in Europe for both substances, while its nitrogen dioxide levels are around the same as Beijing's.

The Chinese capital took emergency action to cut pollution by stringently restricting traffic when it hosted the Olympics four years ago, but there is no sign of London following suit. And the Games could well be tarnished. Training and competing athletes take in more air and therefore more pollution. If levels are high, doctors warn, their performance could be hit and they could suffer from coughs and breathlessness. And, under present policies, they are unlikely to be publicly warned when the pollution reaches dangerous levels.

## **8. Transport Firms Launch Green Freight Initiative**

A group of haulers, shipping companies and transport logistics firms have launched an initiative aimed at developing a reliable method for measuring and reporting carbon emissions from freight transport in Europe. The current method for measuring and reporting emissions from this sector is generally seen as unreliable because of the large number of variables involved, such as distance driven and the type of vehicle used. There are also no legal requirements to do so, as highlighted in an EU consultancy study issued in 2011.

One of the objectives of the initiative, called Green Freight Europe is to show that freight operators are willing to tackle this problem, which is regarded as a first step towards improving their fuel efficiency and cutting CO2 emissions.

The European Commission is considering action to reduce emissions from heavy duty vehicles, including setting limits for certain categories. Andrew Traill of the European Shippers' Council said EU policy objectives "cannot be achieved without industry's proactive support and engagement in such initiatives".

Data submitted each year by Green Freight Europe members will be rated. Members are being encouraged to use measured or recorded data rather than assumptions or default values to provide accurate benchmarking reports.

The initiative was developed in 2009 by a group of EU firms inspired by the US's SmartWay Partnership, a green freight initiative run by the country's Environment Protection Agency (EPA). More companies joined in later, including Deutsche Post DHL and UPS, leading to the launch of Green Freight Europe recently.

### **9. Courts Support Milan Congestion Charge**

In an order issued on March 1<sup>st</sup>, the Milan section of the Lombardy Administrative Court rejected all five judicial requests to immediately stay the congestion charge Area of Milan (Area C) enacted on January 16, 2012 and which, based on a monitoring that is currently being carried out, is achieving a significant reduction of black carbon levels within the charging area.

The challenges had been discussed on Feb. 29, 2012 not only by the Town Government lawyers - who defended Area C against owners of parking areas within the congestion charge and individual citizens - but also by those of Genitori Antismog, WWF, Legambiente, Italia Nostra, FAI and Ciclobby, a compact bunch of environmental NGOs who claimed the prevalence of the right to health over private individual interests brought forward by the plaintiffs.

In rejecting the claims by the plaintiffs the Italian Administrative court stated that, "bearing in mind the need to balance the public and private interests at stake, the public interests to health and environment protection and to achieve the objective constituted by the reduction of car traffic in the critical city areas are prevailing and, therefore, the sacrifice imposed on private interests does not seem to overcome the limits of reasonableness".

### **10. Volkswagen Making Rapid Progress on CO2 Emissions and Fuel Efficiency**

On March 6<sup>th</sup>, German car manufacturer Volkswagen announced a "fundamental ecological restructuring" that would reduce its carbon dioxide emissions by 30% in the 2006-2015 period. "Every new model generation will on average be 10 to 15 percent more efficient than its predecessor," a company statement said. More than two thirds of Volkswagen's €62.4 billion investments between now and 2016 will be spent on more efficient vehicles, the statement added.

"We welcome that more and more car manufacturers are announcing that they will overachieve the 2015 target and hope that manufacturers will continue their CO2-reduction efforts with a view to meeting the 2020 target of 95 grams per kilometer," Isaac Valero Ladron, an EU spokesman, told reporters.

The news came as a shock, because Volkswagen had previously lobbied so strongly against EU standards that the environmental group Greenpeace slammed it as Europe's dirtiest carmaker. A VW lobby brief to the EU in June 2010 stated that future CO2 reduction targets "will definitely not be met through energy-efficiency measures taken on the vehicle alone." The brief

described the EU's proposed 95 grams target for 2020 as "not based on sound impact assessment, nor on a realistic appreciation of the costs and technical progress necessary to meet the goal within the timescale."

In 2007, Volkswagen argued that achieving the 120 grams target by 2012 was technically impossible and would cause a massive jobs hemorrhage.

### **11. Spain Cuts Electric Vehicle Subsidies by Almost 80 Percent from 2011 Levels**

Spain has drastically reduced the level of subsidies for companies, individuals, and public sector entities looking to buy electric vehicles. Under Royal Decree 417/2012, which the Council of Ministers approved on February 24<sup>th</sup>, subsidies for electric vehicle purchase will total €10 million (\$13.4 million) in 2012, down from €49 million (\$65.7 million) set out last year in Royal Decree 648/2011.

"The amount of aid is consistent with budgetary restrictions within the scope of the government's efforts to reduce the public deficit," the Council said in a prepared statement.

Under decree 417, the Ministry of Industry, Energy and Tourism will subsidize 25 percent of a vehicle's pre-tax purchase price, up to €6,000 (\$8,000) for individual or fleet vehicles and €30,000 (\$40,200) for large buses. The subsidy covers applications presented between Jan. 1 and Nov. 30.

The subsidy percentage may reach 35 percent of the vehicle's pre-tax purchase price in the event a propulsion battery must be purchased separately.

With subsidies tied directly to a vehicle's electric range, the ministry will pay up to €2,000 (\$2,700) for those passenger vehicles reaching between 15 and 40 kilometers (9.3–24.9 miles) on a single charge; €4,000 (\$5,400) for vehicles with a range from 40 km to 90 km (24.9–55.9 miles); and €6,000 for those with a range above 90 km.

### **12. Spain's Vapor-Reduction Rules Require Service Stations to Cut Emissions 85%**

In tardy compliance with EU regulations, the Spanish government has established measures aimed at recovering at least 85 percent of gasoline vapor emissions at service stations. Royal Decree 455/2012, which took effect on March 6<sup>th</sup>, transposed EU Directive 2009/126/EC on vapor recovery. It requires service stations to prevent, limit, and reduce the release of vapors during vehicle refueling.

New service stations with throughput greater than 500 cubic meters (132,100 gallons) per year must be equipped with vapor recovery systems, under the decree. Existing stations with an annual throughput greater than 3,000 cubic meters (792,500 gallons) will have until December 31, 2018, to install such systems.

The decree foresees periodic inspections for vapor capture efficiency held once annually, or every three years in the case of stations with automatic monitoring systems. "These vapors contribute to the emissions of atmospheric pollutants like benzene and ground-level ozone, which are harmful for human health and the environment," the decree said.

EU member states were to have brought into force all “laws, regulations, and administrative provisions” necessary for compliance with the directive by Jan. 1.

### **13. EU Postpones Decision on Assigning Greenhouse Gas Intensity Ratings to Fuels**

The European Union will defer until 2013 a decision on a proposal to assign pollution ratings to different transportation fuels, including oil derived from Canadian oil sands, the European Commission said on April 20<sup>th</sup>. The proposal, an implementing measure of the EU Fuel Quality Directive (2009/30/EC), would label crude oil produced from oil sands 22.3 percent more greenhouse gas-intensive than average crude. Carbon intensity values would also be assigned to other fuel sources, such as oil from shale and coal converted to liquid fuel.

The Fuel Quality Directive requires the greenhouse gas intensity of vehicle fuels to be reduced by 6 percent by 2020. The implementing measure will establish a baseline for judging progress.

Commission climate spokesman Isaac Valero-Ladron said the postponement will allow the Commission to carry out an impact assessment to give an “even more solid basis” for the decision.

The decision should have been made in February by an EU regulatory committee but was referred to the EU Council, which represents the governments of EU member states, after an inconclusive vote. The Council was due to decide by June, but Valero-Ladron said the Commission will now “submit the proposal to the Council in early 2013.”

### **14. Tajani Wants Regulatory Break For Carmakers**

The adoption of new environmental rules for the automobile sector could be delayed because it is facing economic difficulties, according to industry commissioner Antonio Tajani. This would be part of a package of measures to support carmakers. These measures will be detailed in a plan for the sector due on 6 June. Previously, Former industry commissioner Günter Verheugen called for a regulatory pause for carmakers in 2009, but the suggestion was rejected by EU ministers.

The action plan, which could propose measures such as support for restructuring, will draw on the results of studies from the CARS 21 high-level group, which made a number of policy recommendations at the end of 2011. "It is important that we come up with a response to the sector," said the commissioner.

Mr Tajani stressed that he has no authority to change rules on carbon dioxide emissions from vehicles or how they are implemented. However, the next vehicle emission standard, Euro 7, which covers pollutants such as nitrogen oxide and particulates, is one of the regulations that might be postponed.

### **15. 2020 Strategy for Russia Calls for Tax to Curb Pollution, Higher Energy Prices**

A proposed new strategy for Russia through 2020 would encourage the use of taxes to curb pollution and increases in domestic energy prices to promote efficiency. Strategy 2020, also known as the Putin Plan, is expected to be adopted by the government of incoming President Vladimir Putin, who takes office in May. The economic and social development plan was

released on March 14 after several years of work under the direction of the government's senior leadership. It sets out an agenda of reforms across the public and private sectors of the economy to ensure economic growth and attract foreign and domestic investment.

Taxes on pollutant emissions should be based on an analysis of the risk of harm to human health from air quality pollutants and effluent, according to the strategy. Carbon dioxide is singled out for consideration in the proposal. The report said the state should consider a tax on each ton of carbon dioxide emitted, with the fee dependent on the type of fuel burned.

The report also concluded that meeting goals for increasing the energy efficiency of the economy would require significant policy reform. The strategy suggested removing the fee Russian producers pay to export oil and gas, which it said would help to increase domestic prices for fuel and electricity to the global level. Higher prices are needed to stimulate modernization of the oil and gas industry as well as to reduce energy use, it said. However, price increases should be implemented in stages to allow for adjustments in the economy and to prevent social tensions.

### **16. Italy to Lower Highway Tolls for 'Clean' Vehicles**

On March 28<sup>th</sup>, the Italian government announced a plan to create an "eco-pass" for the country's highway system, allowing drivers of vehicles with low environmental impact to pay lower tolls than those driving less efficient cars. The eco pass, announced by Environment Minister Corrado Clini, is part of a plan that includes initiatives to increase the amount of land with protected status while also privatizing state and regional parks and cracking down on construction projects that lack proper environmental assessments. It has drawn the most attention, though Clini said its many details have yet to be worked out.

### **17. British Panel Suggests Carbon Budget Hikes To Cover Airline, Shipping Emissions**

The British government should increase its three five-year carbon budgets covering the period from 2013 to 2027 by 40 million metric tons per year to include the country's share of international aviation and shipping emissions, the Committee on Climate Change (CCC) recommended on April 4<sup>th</sup>. The budgets, which set targets for overall greenhouse gas emission cuts in five-year increments, currently exclude international aviation and shipping.

Although the Committee has previously called for the government to formally include these sectors, this new report goes further by specifying the actual level of emissions the government should allocate. CCC said the additional amount for aviation emissions should be based on Britain's share of the European Union Emissions Trading System cap, or 31 million metric tons per year. The allocation for shipping should be 9 million metric tons per year, based on a projection of U.K. emissions that reflects the Energy Efficiency Design Index adopted by the International Maritime Organization in 2011.

CCC highlighted that the budget adjustments would not lead to additional spending, as the overall costs for meeting a 2050 target that includes international aviation and shipping emissions—between 1 percent and 2 percent of gross domestic product—were accepted when the Climate Change Act was approved in 2008.

### **18. UK Truck Trials to Test Low Carbon Technologies**

Low carbon demonstration trials for heavy goods vehicles will be funded by the British government for two years. The trials are expected to deliver fleets of low-emission trucks and supporting infrastructure such as natural gas fueling stations and electric recharging hubs.

Transport Minister Mike Penning said that the trials will be supported with £9.5 million (US\$15.4 million) invested by the Department for Transport and the Technology Strategy Board. "This competition will help drive down emissions from trucks," said Penning. "Almost a quarter of carbon from transport in this country comes from heavy goods vehicles, so this is a key area for us to tackle."



Heavy goods truck in England (Photo by Ian Britton courtesy FreeFoto.com)

To identify the innovation platform's priorities the Technology Strategy Board reviewed published roadmaps and held stakeholder consultations. These priorities continue to be guided by an industry-led steering group.

Truck operators are now being invited to bid for a slice of the funding as part of a competition that opened on April 24<sup>th</sup>.

The two-year trial will support the capital costs of trialing low carbon commercial vehicles by business and to help kick-start the building of a national gas refueling infrastructure for commercial vehicles. "These trials will show us how low carbon technologies perform day-to-day in the real world, providing vital data to build operator confidence in these green trucks and allowing us to make policy choices based on hard evidence," said Penning.

A variety of technologies are eligible for funding under the rules of the competition, including gas powered, dual fuel or hybrid trucks of over 7.5 tons and electric vehicles over 3.5 tons.

"The investment in gas refueling infrastructure will also give haulage firms a push to buy gas powered heavy goods vehicles," he said, "leaving a legacy that will support low carbon transport well into the future."

Companies wishing to take advantage of the funding have until June 20 to bid for up to 750,000 pounds (917,000 euros) each. To qualify for the competition, vehicles must deliver carbon savings of at least 15 percent compared with the equivalent conventional vehicle.

Trials will run for two years and data collected over this period will be used to inform government policy on low carbon road freight, Penning explained.

Gas refueling infrastructure funded by the competition will be made accessible to other commercial and public service vehicle operators, helping to build a network around the country.

The competition does not cover refuse collection, utility, off-road, agricultural vehicles or public service vehicles such as buses, though these vehicles may use refueling facilities provided through competition funding.

There are already benefits for running low-carbon fleets due to rules already laid down by the government. For example, vehicles with CO<sub>2</sub> emissions of up to 100g/km are exempt from the road tax, while those between 101 and 110g/km only have to pay £20. A £30 levy is in place for vehicles from 111 to 120g/km, before there is a major jump to £95 for vehicles between 121 and 130g/km of CO<sub>2</sub>.

### **19. Switzerland Meets Protocol's Emissions Requirements**

On March 26<sup>th</sup>, the Swiss Federal Office of the Environment (FOEN) said national emissions of sulfur, nitrogen oxides, volatile organic compounds, and ammonia are at or below ceilings fixed under the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone. The protocol set country-specific emission targets for the four pollutants that countries were to meet by 2010. The protocol is attached to the 1979 Geneva Convention on Long-range Transboundary Air Pollution. FOEN said emissions of sulfur in 2010 were down 68 percent from the 1990 reference year, compared to the 38 percent reduction Switzerland committed to under the protocol. Emissions of volatile organic compounds were down 69 percent in 2010 compared to Switzerland's 50 percent commitment. The 46 percent reduction of nitrogen oxides and 14 percent reduction in ammonia were exactly in line with the Swiss reduction commitments. Talks on revising the protocol and setting new reduction targets for 2020 will take place in Geneva at the end of April, FOEN said. Twenty-five countries have ratified the 1999 Gothenburg Protocol, including the United States, Croatia, Macedonia, Norway, Switzerland, and 20 EU member states.

### **20. Sweden Plans to Cut Vehicle CO<sub>2</sub> Emissions by 600,000 Tons a Year**

Sweden plans to cut carbon dioxide emissions from vehicles by 600,000 tons per year by raising the amount of biofuel in gasoline and diesel, the government has announced. Under the proposal, from 2014 fuel producers would have to double the amount of ethanol in gasoline to 10 percent and raise the share of fatty acid methyl esters, FAME, in diesel to 7 percent from 4 percent. The government is also reportedly considering prolonging a tax exemption on fuels with little or no fossil ingredients which expires at the end of next year; it will also levy a "small" tax on FAME and ethanol in 2013 to avoid breaching European Union law by making them too competitive.

### **21. Norway Raises Carbon Tax on Oil Industry**

The Norwegian government has announced a near doubling of its carbon tax on the petroleum sector to 200 NOK (€26.3) per ton, as part of a climate white paper. The country's climate goals for 2050 remain unchanged.

An energy ministry official explained that because the price of traded carbon allowances is low there is little incentive to reduce emissions. To avoid double taxation, the tax will be lowered once the price of allowances goes up again.

The white paper also announced a new climate and energy fund to finance clean technologies. The initial budget of 25bn NOK (€3.9bn) will go up by 5bn NOK in 2013 and double to 50bn NOK by then end of the decade.

The plan is part of efforts to achieve Norway's goal of reaching carbon neutrality by 2050. Other measures announced include phasing out oil-fired boilers, increased afforestation and the development of farm-based biogas initiatives.

## **22. Finland Alters Tax Based on Carbon Emissions**

Changes to Finland's fees for new vehicle registrations that took effect on April 1<sup>st</sup> are designed to encourage the purchase of models with lower carbon dioxide emissions. Under an amendment to the Vehicle Tax Act (1482/1994), the carbon dioxide emissions tax on new registrations rose for vehicles with emissions above 110 grams per kilometer (g/km). The tax was reduced for the vehicles emitting less than that. The levy ranges from a minimum of 5 percent for zero-emission vehicles to a maximum of 50 percent for vehicles with emissions of 360 g/km or more. Previously, the rate ranged between 12.2 percent and 48.8 percent. Reportedly the change was introduced in part to compensate for falling state tax revenue. Finland has had an emissions-related registration tax since 2008, and state revenue has been declining as motorists switch to less expensive or lower-emitting vehicles.

## **NORTH AMERICA**

### **23. US EPA Releases Black Carbon Report to Congress**

On Friday, March 30, 2012, EPA released its long awaited report to Congress regarding Black Carbon. Major highlights of the report included:

- Black carbon (BC) is the most strongly light-absorbing component of particulate matter (PM), and is formed by the incomplete combustion of fossil fuels, biofuels, and biomass.
- BC is emitted directly into the atmosphere in the form of fine particles (PM<sub>2.5</sub>). The United States contributes about 8% of the global emissions of BC. Within the United States, BC is estimated to account for approximately 12% of all direct PM<sub>2.5</sub> emissions in 2005.
- BC contributes to the adverse impacts on human health, ecosystems, and visibility associated with PM<sub>2.5</sub>.
- BC influences climate by: 1) directly absorbing light, 2) reducing the reflectivity ("albedo") of snow and ice through deposition, and 3) interacting with clouds.
- The direct and snow/ice albedo effects of BC are widely understood to lead to climate warming. However, the globally averaged net climate effect of BC also includes the effects associated with cloud interactions, which are not well quantified and may cause either warming or cooling. Therefore, though most estimates indicate that BC has a net warming influence, a net cooling effect cannot be ruled out.
- Sensitive regions such as the Arctic and the Himalayas are particularly vulnerable to the warming and melting effects of BC.
- BC is emitted with other particles and gases, many of which exert a cooling influence on climate. Therefore, estimates of the net effect of BC emissions sources on climate should include the offsetting effects of these co-emitted pollutants. This is particularly important for evaluating mitigation options.

- BC's short atmospheric lifetime (days to weeks), combined with its strong warming potential, means that targeted strategies to reduce BC emissions can be expected to provide climate benefits within the next several decades.
- The different climate attributes of BC and long-lived greenhouse gases make it difficult to interpret comparisons of their relative climate impacts based on common metrics.
- Based on recent emissions inventories, the majority of global BC emissions come from Asia, Latin America, and Africa. Emissions patterns and trends across regions, countries and sources vary significantly.
- Control technologies are available to reduce BC emissions from a number of source categories.
- BC mitigation strategies, which lead to reductions in PM2.5, can provide substantial public health and environmental benefits.
- Considering the location and timing of emissions and accounting for co-emissions will improve the likelihood that mitigation strategies will be properly guided by the balance of climate and public health objectives.
- Achieving further BC reductions, both domestically and globally, will require adding a specific focus on reducing direct PM2.5 emissions to overarching fine particle control programs.
- The most promising mitigation options identified in this report for reducing BC (and related "soot") emissions are consistent with control opportunities emphasized in other recent assessments.
  - —United States: The United States will achieve substantial BC emissions reductions by 2030, largely due to controls on new mobile diesel engines. Other source categories in the United States, including stationary sources, residential wood combustion, and open biomass burning also offer potential opportunities.
  - —Global: The most important BC emissions reduction opportunities globally include residential cook stoves in all regions; brick kilns and coke ovens in Asia; and mobile diesels in all regions.
  - —Sensitive Regions: To address impacts in the Arctic, other assessments have identified the transportation sector; residential heating; and forest, grassland and agricultural burning as primary mitigation opportunities. In the Himalayas, studies have focused on residential cooking; industrial sources; and transportation, primarily on-road and off-road diesel engines.
- A variety of other options may also be suitable and cost-effective for reducing BC emissions, but these can only be identified with a tailored assessment that accounts for individual countries' resources and needs.
- Despite some remaining uncertainties about BC that require further research, currently available scientific and technical information provides a strong foundation for making mitigation decisions to achieve lasting benefits for public health, the environment, and climate.

## 24. US EPA Issues Annual Light Duty Vehicle Fuel Economy Trends Report

This report summarizes key trends in carbon dioxide (CO<sub>2</sub>) emissions, fuel economy, and CO<sub>2</sub>- and fuel economy-related technology for gasoline- and diesel-fueled personal vehicles sold in the United States, from model years (MY) 1975 through 2011.<sup>6</sup> Personal vehicles are those vehicles that EPA classifies as cars, light-duty trucks (sport utility vehicles, minivans, vans, and pickup trucks with gross vehicle weight ratings up to 8500 pounds), or, beginning in MY 2011, medium-duty passenger vehicles (sport utility vehicles or passenger vans with gross vehicle weight ratings between 8500 and 10,000 pounds). The data in this report cover the MY 1975-2011 timeframe, supersede the data in previous reports in this series. Except when noted, CO<sub>2</sub> emissions and fuel economy values in this report have been adjusted to reflect "real world" consumer performance and therefore are not comparable to CO<sub>2</sub> emissions and fuel economy standards.

Data for MY 2010 are final, but data for MY 2011 are preliminary. The fleetwide average real world MY 2010 personal vehicle CO<sub>2</sub> emissions value is 394 grams per mile (g/mi) and fuel economy is 22.6 miles per gallon (mpg), both slight improvements over MY 2009 and the most favorable levels since this analysis began in 1975. Preliminary projections for MY 2011 are for continued slight improvements for both CO<sub>2</sub> emissions and fuel economy. Highlights of the report are summarized below:

- A. Highlight #1: MY 2010 had the lowest CO<sub>2</sub> emission rate and highest fuel economy since the database began in 1975.

MY 2010 adjusted composite CO<sub>2</sub> emissions were 394 g/mi, a record low for the post-1975 database and a 3 g/mi decrease relative to MY 2009. MY 2010 adjusted composite fuel economy was 22.6 mpg, an all-time high since the database began in 1975, and 0.2 mpg higher than in MY 2009. Preliminary MY 2011 values are 391 g/mi CO<sub>2</sub> emissions and 22.8 mpg fuel economy, reflecting slight improvements over MY 2010.

While year-to-year changes often receive the most public attention, the greatest value of the historical trends database is the identification and documentation of long-term trends. Since 1975, overall new light-duty vehicle CO<sub>2</sub> emissions have moved through four phases: 1) a rapid decrease from MY 1975 through MY 1981; 2) a slower decrease until reaching a valley in MY 1987; 3) a gradual increase until MY 2004; and 4) a decrease for the seven years beginning in MY 2005, with the largest decrease in MY 2009. Since fuel economy has an inverse relationship to tailpipe CO<sub>2</sub> emissions, overall new light-duty vehicle fuel economy has moved in opposite phases.

The recent improvements in CO<sub>2</sub> emissions and fuel economy reverse the trend of increasing CO<sub>2</sub> emissions and decreasing fuel economy that occurred from MY 1987 through MY 2004. From MY 2004 to MY 2010, CO<sub>2</sub> emissions decreased by 67 g/mi (15 percent), and fuel economy increased by 3.3 mpg (17 percent). Prior to MY 2009, the previous records for lowest CO<sub>2</sub> emissions and highest fuel economy were in MY 1987. Compared to MY 1987, MY 2010 CO<sub>2</sub> emissions were 11 g/mi (3 percent) lower, and fuel economy was 0.6 mpg (3 percent) higher.

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<sup>6</sup> Light-Duty Automotive Technology, Carbon Dioxide Emissions, and Fuel Economy Trends: 1975 through 2011 (EPA-420-R-12-001) is available on the Office of Transportation and Air Quality's (OTAQ) Web site at: [www.epa.gov/otaq/fetrends.htm](http://www.epa.gov/otaq/fetrends.htm)

MY 2010 unadjusted laboratory composite values, which reflect vehicle design considerations only and do not account for the many factors which affect real world CO<sub>2</sub> emissions and fuel economy performance, were also at an all-time low for CO<sub>2</sub> emissions (313 g/mi) and a record high for fuel economy (28.4 mpg) since the database began in 1975.

- B. Highlight #2: MY 2010 truck market share increased by 5 percent compared to MY 2009, but is at the second lowest level since 1996.

Light trucks, which include SUVs, minivans/vans, and pickup trucks, accounted for 36 percent of all light-duty vehicle sales in MY 2010. This represents a 5 percent increase over MY 2009, but that was a year of market turmoil and MY 2009 truck share was 8 percent lower than MY 2008. Truck market share is now at the second lowest level since MY 1996 and 9 percent lower than the peak in MY 2004. The MY 2011 light truck market share is projected to be 38 percent, based on pre-model year production projections by automakers.

There were two changes to the database this year that affect truck market share. The first change, as discussed above, is that most small, 2 wheel drive SUVs from MY 1975-2011 have been reclassified from trucks to cars. This lowers the absolute truck share, particularly since the mid-1980s when SUV sales began to increase rapidly, so truck share values in this report should not be compared to those in past versions of this report. For example, for MY 2010 data in this report, nearly 1.1 million vehicles are reclassified from trucks to cars, representing a 10 percent absolute change in both the car and truck production share. The second change, also discussed above, is that, for the first time, the preliminary data for MY 2011 include MDPVs. EPA does not have data for MDPVs for MY 1975-2010, so there is a small discontinuity in the database beginning in MY 2011. The projected production volume for MDPVs in MY 2011 is approximately 10,000 vehicles, which increases the projected truck share of the overall fleet in MY 2011 by less than 0.1 percent.

- C. Highlight #3: MY 2010 weight and power increased from MY 2009, but decreased relative to MY 2008.

MY 2010 vehicle weight averaged 4002 pounds, an increase of 88 pounds compared to MY 2009, but the second lowest average weight since MY 2004. The average car and truck weight both increased by about 25 pounds each, and the remaining difference was due to higher truck market share. In MY 2010, the average vehicle power was 214 horsepower, an increase of 6 horsepower since MY 2009, but lower than in MY 2007-2008. Car power increased slightly and truck power was unchanged, so the primary factor in increasing the overall power level was higher truck market share. Estimated MY 2010 0-to-60 acceleration time decreased slightly to 9.6 seconds.

Vehicle weight and performance are two of the most important engineering parameters that help determine a vehicle's CO<sub>2</sub> emissions and fuel economy. All other factors being equal, higher vehicle weight (which supports new options and features) and faster acceleration performance (e.g., lower 0-to-60 mile-per-hour acceleration time), both increase a vehicle's CO<sub>2</sub> emissions and decrease fuel economy. Automotive engineers are constantly developing more efficient vehicle technologies. From MY 1987 through MY 2004, on a fleetwide basis, this technology innovation was generally utilized to support market-driven attributes other than CO<sub>2</sub> emissions and fuel economy, such as vehicle weight, performance, and utility. Beginning in MY 2005, technology has been used to increase both fuel economy (which has reduced CO<sub>2</sub> emissions) and performance, while keeping vehicle weight relatively constant. Preliminary MY 2011 values

suggest that average vehicle weight and performance will both increase, though these projections are uncertain and EPA will not have final data until next year's report.

- D. Highlight #4: Most manufacturers increased fuel economy in MY 2010, resulting in lower CO2 emission rates.

Nine of the 13 highest-selling manufacturers increased fuel economy (which also reduced CO2 g/mi emission rates) from MY 2009 to MY 2010, the last two years for which we have definitive data, and 4 manufacturers increased fuel economy by 1 mpg or more.

In MY 2010, the last year for which EPA has final production data, Hyundai had the lowest fleetwide adjusted composite CO2 emissions performance, followed very closely by Kia and then Toyota. Hyundai and Kia tied for the highest fleetwide adjusted composite fuel economy value. Daimler had the highest CO2 emissions (and lowest fuel economy), followed by Chrysler and Ford. Kia had the biggest improvement in adjusted CO2 (and fuel economy) performance from MY 2009 to MY 2010, with a 37 g/mi reduction in fleetwide CO2 emissions (and 2.8 mpg fuel economy improvement), followed by Hyundai (26 g/mi reduction in CO2 emissions) and Mazda (19 g/mi reduction in CO2 emissions). Preliminary MY 2011 values suggest that 11 of the 13 manufacturers will improve further in MY 2011, though these projections are uncertain and EPA will not have final data until next year's report.

- E. Highlight #5: Many new technologies are rapidly gaining market share.

Several advanced powertrain technologies are making significant inroads into the mainstream market. For example, in terms of market share, gasoline direct injection doubled in MY 2010 and is projected to triple from MY 2009-2011, turbocharging is projected to double in MY 2011, cylinder deactivation is projected to nearly double in MY 2011, and both 6-speed and 7-speed transmissions approximately doubled from MY 2009-2011. These and other technology trends help to explain the improvements in CO2 and fuel economy over the last seven years.

Personal vehicle technology has changed significantly since the database began in MY 1975. New technologies are continually being introduced into the marketplace, while older and less effective technologies are removed from the market. For example, in MY 1975 most engines relied on carburetors to deliver fuel to the engine. Carburetors were replaced by fuel injection systems in the 1980s. Now, in some vehicles, conventional fuel injection systems are being replaced by gasoline direct injection systems.

## **25. California Gas Prices Soar as Consumption Falls**

Gasoline prices soared by an average of 23 percent statewide last year and in-state consumption of gas declined nearly 2 percent, according to 2011 statistics released recently by the California Board of Equalization. The BOE said 2011 ended with an average statewide gas price of \$3.86 a gallon.

In 2011, 14.6 billion gallons of gasoline were used, down from about 14.86 billion in 2010.

"I'm very concerned about the high price of gasoline that California consumers are having to pay at the pump," said BOE Chairman Jerome Horton. "It is a heavy burden for California families who are already struggling to find creative ways of stretching their hard-earned dollars."

There was actually a slight year-over-year increase in diesel fuel use, edging up about 1 percent to 2.62 billion gallons in 2011. Diesel use is one indicator of in-state trucking commerce.

However, as diesel fuel reached a statewide average of \$4.13 a gallon in last year's fourth quarter, diesel use took a hit. Fourth-quarter diesel consumption of 656 million gallons was down about 8 percent from 713.2 million in the third quarter of 2011.

### **26. Gas-Price Politics Slowing Down Tier 3 Rule**

With rising gasoline prices fueling election-year political rhetoric, the Obama administration is accelerating moves it can paint as energy-friendly while putting the brakes on some environmental initiatives that opponents could blame for raising costs. Among the stalled proposals is a requirement that refiners make gasoline that emits 67 percent less sulfur - 10 parts per million down from the 30 ppm permitted now.

That Environmental Protection Agency rule eventually could add 6 to 9 cents per gallon to refiners' gasoline manufacturing costs, with at least some of that passed on to consumers, according to an American Petroleum Institute analysis. A careful reading of the report indicates that the impact on **average** gasoline prices would be ~ 2 cents per gallon. An alternative study carried out for state air pollution regulators estimated the cost impact at less than 1 cent per gallon.

Regular gasoline hit a national average of \$3.91 per gallon Wednesday, according to AAA.

With rising fuel costs likely to be a major issue in the November election, Obama has devoted at least two recent weekly radio addresses to the topic. And last week, the president touted his "all of the above" approach to energy during visits to an oil and gas field in New Mexico, a solar plant in Nevada and a pipeline hub in Oklahoma.

Obama knows that he's vulnerable on the issue, but can't really do much about gasoline prices according to observers. So, he has to promote the idea that he's doing everything in his power to respond to voters' concerns about pump prices, including delaying some environmental regulations.

Under a timetable announced in January, the EPA planned to propose its sulfur emission rule for gasoline this month and impose it in October, but the measure hasn't gone to the White House Office of Management and Budget for a review. Instead, it has been bottled up at the EPA since a draft of the rule was finished in December.

An agency spokeswoman pointed to EPA Administrator Lisa Jackson's congressional testimony in February that the regulations were at least a year away from being final.

Environmentalists who support the proposal and oil industry advocates who oppose it say the rule is on a slower track as gasoline prices spike. "The White House is obviously skittish because of rising gasoline prices unrelated to this," said Frank O'Donnell, president of the advocacy group Clean Air Watch, who predicts the rule won't take effect this year.

### **27. GOP Advances Bill Stalling EPA Fuel Rules, With New Focus on Natural Gas**

The political storm over gasoline prices was aimed directly at EPA recently as Republicans on a House Energy & Commerce subcommittee passed a bill to delay fuels, refinery and ozone rules until a new multi-agency task force has analyzed the rules' cumulative impact on gasoline and diesel prices. And, in a change to the draft version of the measure, the subcommittee-passed bill would require an assessment of the rules' impact on natural gas prices.

At an April 17 markup before the energy and power subcommittee, Rep. Joe Barton (R-TX) overcame objections from the draft bill's sponsor, subcommittee chairman Ed Whitfield (R-KY), for adding a requirement for EPA and other agencies to determine the effect of multiple environmental regulations on natural gas prices, in addition to gasoline and diesel prices as originally sought by Whitfield.

The change broadens the draft bill, known as the "Gasoline Regulations Act of 2012," from a narrow focus on gasoline and diesel prices, which are climbing to levels posing political difficulties for the Obama administration, to a vehicle examining the impact of EPA rules on transportation fuels in general.

Industry claims pending EPA regulation may increase natural gas prices -- but those prices are currently at historic lows, raising questions among Democrats and some Republicans about Barton's motivations. The panel's markup also came on the same day President Obama chose to announce a new initiative to curb speculation in oil markets, which he blames for inflating gasoline prices.

While a large majority of GOP panel members backed Barton's amendment, including Energy & Commerce Committee Chairman Fred Upton (R-MI), Whitfield voted against it, saying he prefers a narrow bill focused only on gasoline and diesel. Full committee ranking member Henry Waxman (D-CA) also voted to approve the amendment, saying he favors promoting natural gas as a transportation fuel, despite the fact that he and all other Democrats on the panel voted to oppose the Whitfield bill as a whole. All Republicans present voted in favor of the underlying bill.

The bill would delay EPA from finalizing its "Tier III" car emission and fuel standards, its pending new source performance standards (NSPS) for oil refineries and any revision to the national ambient air quality standards (NAAQS) for ozone. EPA would have to wait until six months after the final report from the interagency task force -- due within 210 days of enactment of the legislation -- before issuing these rules in final form.

The task force report would analyze cumulative effects of these rules and any potential renewable fuels rules on fuel prices for the years 2016 to 2020, in addition to cost-benefit analysis and consideration of the effects on U.S. competitiveness, employment and other factors.

The panel also passed amendments offered by Whitfield that would add the U.S. Department of Agriculture to the list of agencies on the fuel price task force; change the bill language to require that the task force study the impact on employment of fuel price "changes," rather than only increases; and clarify that rules not listed in the bill will not be delayed by it.

Committee Democrats universally condemned the bill. Several noted that a number of the rules to be analyzed have yet to be proposed, while others said that EPA rules undergo interagency and White House review prior to publication in any event, and are already subject to cost-benefit analysis. NAAQS rules are exempt from cost considerations under the Clean Air Act according

to Supreme Court precedent, but Whitfield's bill would alter the air act to require EPA to “take into consideration feasibility and cost” when setting ozone NAAQS -- a move Democrats oppose.

Waxman said it is a “complete fantasy” that not-yet-proposed EPA rules will cause higher gasoline prices, when the factor driving prices higher is the global price of crude oil. He called analyzing such unproposed rules an “impossible task” and an unnecessary bureaucratic step. In his opening statement, Waxman said that Whitfield's bill is “about using high gasoline prices as yet another rationale for advancing a profoundly anti-environment agenda.” He said, “While producing more oil here won't lower gasoline prices, oil production in the U.S. is the highest it's been in eight years.”

Environmentalists also rushed to condemn the bill. In a letter<sup>7</sup> to Chairman Whitfield they wrote, “Our organizations are writing to express our opposition to the Gasoline Regulations Act of 2012, which would delay vital Clean Air Act protections applicable to the largest polluters, diminish crucial public health benefits for all Americans, and will have no discernible impact on gas prices. The bill has far-reaching, adverse health and environmental impacts, including, among others, fundamentally altering ozone public health protections and delaying a protective Tier 3 clean air program for passenger vehicles.

The bill mandates consideration of costs in the determination of ozone health-based air quality standards, overturning 40 years of clean air protection in America. A strong ozone standard will save thousands of American lives and prevent tens of thousands of asthma attacks every year. The bill would thwart the intent of a unanimous, bipartisan Senate, which in 1970, plainly required the Administrator to establish standards that “are requisite to protect the public health with an adequate margin of safety.” The bill would also overturn a unanimous Supreme Court decision, where the Court, in an opinion by Justice Antonin Scalia, concluded that the Clean Air Act was clear in its requirement that health-based air quality standards be based solely on health science. The Clean Air Act already thoroughly allows for consideration of economic factors, including cost and feasibility, in implementing pollution control strategies to achieve clean air. By including cost in the standard-setting process, this bill would fundamentally undermine these health-based protections, preventing American families from knowing whether the air they breathe is safe.

The bill also seeks to delay updated emission performance standards for petroleum refineries and a protective Tier 3 clean air program for passenger vehicles, which would significantly cut emissions of nitrogen oxides, carbon monoxide, and volatile organic compounds.<sup>8</sup> The cleaner gasoline needed to secure these clean air benefits would cost less than a penny a gallon – contrary to the erroneous, fear-based claims being made by the petroleum refining industry and its allies about the costs of cleaner, healthier air.

This bill fundamentally undermines these and other health-protective measures, damaging the ability of communities to maintain healthy air and resulting in additional sickness and premature death. We cannot afford to delay these vital clean air protections for millions of Americans.”

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<sup>7</sup> The letter was signed by Center for Biological Diversity, Clean Air Watch, Clean Water Action, Earthjustice, Environmental Defense Fund, Greenpeace, League of Conservation Voters, Natural Resources Defense Council, Sierra Club, Southern Environmental Law Center, Union of Concerned Scientists, and US Climate Action Network.

<sup>8</sup> “NACAA, Cleaner Cars, Cleaner Fuel, Cleaner Air: The Need for and Benefits of Tier 3 Vehicle and Fuel Regulations; October, 2011”

EPA air Chief Gina McCarthy at a March 28 House energy panel hearing on the draft bill said it “would not reduce gas prices but waste government dollars” by creating additional bureaucracy.

### **28. Truckers Argue 'California-Only' Diesel Will Come at High Cost for State**

California clean fuel directives will lead to significant job losses for the state and drive up diesel prices at the pump to around \$6.69 per gallon, according to a study just released by the California Trucking Association (CTA). The study, "The Impact of the Low Carbon Fuel Standard & Cap-and-Trade Programs on California Retail Diesel Prices," prepared by Bethesda, Md.-based consultants Stonebridge Associates Inc., examined the effect of California's new low-carbon fuel and cap-and-trade emissions initiatives on the state's retail diesel future.

By 2020, the two programs combined could increase the price of diesel fuel by \$2.22 per gallon, the report said. That would represent more than a 50% increase in the price of diesel and a shocking \$6.69 per gallon at the pump. The average price difference between California and neighboring states would be \$2.33 per gallon, when accounting for taxes.

According to the study, between 2015 and 2020, the higher costs of "California-only" diesel will cause the loss of nearly 617,000 jobs in the containerized import sector, \$68.5 billion in lost state domestic product, \$21.7 billion in lost income and \$5.3 billion in lost state and local taxes.

California's transportation and logistics industry is responsible for almost 14% of the state's economy and is an important source of employment in the state. The study said that a "California-only" diesel price will put California's transportation sector at a significant competitive disadvantage.

### **29. Oil Sands' Environmental Impact Overblown, Canadian Minister Says**

The impact on the environment of Canada's oil sands has been exaggerated, according to Canadian Natural Resources Minister Joe Oliver. “The fact is, the oil sands represent 0.1 percent, or one one-thousandth of global greenhouse gas emissions,” Oliver said March 21<sup>st</sup> in a speech to the Vancouver Board of Trade.

Getting Canada's energy to markets, particularly China, is vital to the country's economic growth, he continued. “In 2010, China became the second-largest economy in the world. By 2025, it is expected to be the world's largest. Between now and 2035, 30 percent of world energy demand is expected to come from China,” Oliver said. Diversifying Canadian markets to China, India, and other Asian economies “is crucial to Canada's economic success in the 21st century,” he said, adding that only 1 percent of Canada's energy exports currently are bound for the Chinese market.

The question is whether or not Canada is prepared “to take full advantage of our resource endowment and know-how and to invest in the infrastructure we need to access the fastest growing markets on the planet,” he said. In the next decade, Oliver said, Canada is looking at C\$500 billion (\$500.3 billion) in new energy projects.

He said Canada is the world's second-largest producer of uranium, the third-largest producer of natural gas and hydroelectric power, and the sixth-largest producer of oil. “Canada's proven oil reserves, at 174 billion barrels, are the third-largest on the planet—more than 97 percent in our oil sands,” Oliver said.

“Our energy resources offer an even greater opportunity to diversify our markets in the Asia-Pacific region, for it is no exaggeration to say that Canada is an energy superpower.”

In his comments to the Vancouver Board of Trade, Oliver also addressed the number of tankers already operating on the B.C. coast, an issue that has been of concern in the proposed development of the Kitimat marine terminal. “There is every evidence to suggest that shipping by tanker can be done safely,” Oliver said. “During the past five years, over 1,300 tankers arrived at the Port of Vancouver and nearly 200 at the ports of Prince Rupert and Kitimat [about 400 miles northwest of Vancouver]. They did so safely.” By 2015, all oil tankers operating in Canadian waters must be double-hulled, Oliver said.

“For Northern Gateway and the Kitimat marine terminal, Enbridge has committed to ensuring that a minimum of two pilots will be on board tankers traveling through B.C.’s coastal waters,” the minister said.

Oliver also discussed the overhaul of Canada's regulatory system for project approvals, a process that he called “needlessly complex.” “Projects that are environmentally benign and safe, and generate thousands of new jobs, should not be allowed to simply die because they are stuck in the review process,” he said. Canada can create a regulatory system that protects the environment while supporting the country's competitive advantage, he said. “We need a system of one project, one review, completed in a clearly defined time period.”

### **30. API Study: EPA Air Emissions Rules Could Cause Slowdown in Drilling**

The New Source Performance Standards for oil and natural gas production proposed by the Environmental Protection Agency (EPA) would significantly slowdown drilling, resulting in less oil and natural gas production, lower royalties to the federal government, and lower tax payments to state governments, according to a new study funded by the American Petroleum Institute. “EPA needs to fix these rules in a way that they’ll reduce emissions but not impede oil and natural gas development, which creates jobs and government revenue and improves our energy security,” said Howard Feldman, API director of scientific and regulatory affairs.

The study – by Advanced Resources International – concludes that the regulations as proposed would reduce drilling for natural gas using hydraulic fracturing by up to 52 percent, reduce natural gas production by up to 11 percent, and reduce oil production by up to 37 percent. As a result, the federal government would not collect up to \$8.5 billion dollars in royalties and state governments would not collect up to \$2.3 billion in severance taxes due to reduced drilling and production.

Feldman asked the EPA to avoid the one-size-fits-all approach for emissions completions; to allow more time to implement the requirements; and to streamline the compliance and recordkeeping requirements.

“Natural gas prices are half what they were three years ago because of the shale boom, and this is benefiting consumers and businesses,” Feldman said. “At a time when the government is desperate for revenue, and America’s fuel prices are high, applying overly burdensome regulations would be bad public policy and could place an even bigger burden on Americans in the form of higher energy costs.

API represents more than 500 oil and natural gas companies, leaders of a technology-driven industry that supplies most of America's energy, supports 9.2 million U.S. jobs and 7.7 percent

of the U.S. economy, delivers more than \$86 million a day in revenue to our government, and, since 2000, has invested more than \$2 trillion in U.S. capital projects to advance all forms of energy, including alternatives.

### **31. Diesel Truck Technologies Drastically Cut Emissions in Real-World Conditions**

New research from North Carolina State University shows that federal requirements governing diesel engines of new tractor trailer trucks have resulted in major cuts in emissions of particulate matter (PM) and nitrogen oxides (NOx) -- pollutants that have significant human health and environmental impacts. The purpose of the research was to assess the robustness of relative comparisons in emission rates between fuels and technologies to differences in real-world duty cycles based on in-use measurements of five heavy duty diesel vehicles (HDDVs). The study methodology includes field measurements with a portable emission measurement system (PEMS) and related instruments and sensors for five selected HDDVs operated in normal service by professional drivers on multiple roundtrip routes within North Carolina. Duty cycles and emission rates are quantified based on manifold absolute pressure (MAP), which is an indicator of engine load. Variability in engine load for each observed roundtrip is quantified based on the cumulative distribution function of normalized MAP. The effect of variability in duty cycles on fuel-based emission rates for NO, CO, hydrocarbons, and particulate matter is evaluated. Comparisons are made for emissions of three trucks operated on each of B20 biodiesel and ULSD. Furthermore, comparisons are made among five trucks with model years ranging from 1999 to 2010 to illustrate the impact of different emission standards and emission control technologies on real world emission rates. A key finding is that relative comparisons pertaining to fuels and technologies are robust to variability in observed duty cycles.

"These requirements for new emission control technologies have increased costs for truck owners and operators, and we wanted to know whether there was any real benefit," says Dr. Chris Frey, professor of civil, construction and environmental engineering at NC State and co-author of a paper describing the research.<sup>9</sup> "We found that there is a huge reduction in both PM and NOx emissions."

Frey and Ph.D. student Gurdas Sandhu found that a truck in compliance with 1999 standards emitted 110 grams of NOx per gallon of fuel used, and 0.22 grams of PM per gallon of fuel used. Trucks in compliance with newer standards had far lower emissions. For example, a 2010 truck emitted 2 grams of NOx per gallon of fuel -- a decrease of 98 percent. The PM emissions were 95 percent lower. The NOx reductions stem from the implementation of exhaust gas recirculation and selective catalytic reduction technologies. The PM reductions are the result of installing diesel particulate filters into the tail pipes of diesel trucks.

"While these technologies are a significant investment for truck owners, this study shows that they are achieving a remarkable drop in emissions of contaminants that have meaningful health and environmental consequences," Frey says.

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<sup>9</sup> "Real-World Measurement and Evaluation of Heavy Duty Truck Duty Cycles, Fuels, and Emission Control Technologies," is forthcoming from Transportation Research Record, the journal of the Transportation Research Board (TRB). Sandhu is lead author of the paper. The research was supported by the North Carolina Department of Transportation and the National Science Foundation.

### **32. State of the Air 2012: American Lung Association Reports Improvements, Challenges**

More than 127 million Americans -- about 41 percent of the country -- still suffer from pollution levels that can make breathing dangerous, according to a new report. The American Lung Association State of the Air 2012 shows signs of air-quality improvement, but also indicates struggles in many regions nationwide. The volunteer health organization examined 2008-2010 ozone levels, the main ingredient of smog air pollution, and air-particle pollution at official measuring sites across the U.S.

Out of the 25 cities with the most ozone pollution, 22 saw improvements in air quality over last year's report. Similar advancements were seen among cities with the most year-round particle pollution.

"State of the Air shows that we're making real and steady progress in cutting dangerous pollution from the air we breathe," said Charles Connor, American Lung Association president, in a statement. "But despite these improvements, America's air quality standards are woefully outdated, and unhealthy levels of air pollution still exist across the nation, putting the health of millions of Americans at stake."

ALA project director Janice Nolen told reporters that the continued cleanup of power plants and fleet turnover has led to improvements.

"Cleaning up air pollution has measurable public health benefits," Nolen said. During the 1996 Olympics in Atlanta, for example she said, morning traffic levels decreased by 23 percent, the region's ozone levels decreased by 28 percent, and pediatric asthma emergency room visits dropped by an estimated 42 percent. "These results suggest that efforts to reduce traffic congestion and improve air quality also can help improve the respiratory health of a community," according to the Centers for Disease Control and Prevention website.

Nolen also cited the EPA's 2010 findings that reduced air pollution resulting from Clean Air Act amendments in 1990 prevented more than 160,000 premature deaths. Despite the benefits of reduced air pollution, Nolen said that generally, "we are not yet at the point where we're providing air that doesn't send people to the emergency room."

Regions that topped the list for year-round particle pollution included Bakersfield-Delano, Calif.; Hanford-Corcoran, Calif.; and Los Angeles-Long Beach-Riverside, Calif.

While short-term particle pollution is based on a 24-hour period, year-round particle pollution is considered the annual average of pollution in the region. The report used a weighted average number of days for both ozone and short-term particle pollution levels.

Bakersfield-Delano also was first among regions most polluted by short-term particle pollution, with Fresno-Madera, Calif., and Hanford-Corcoran following. Los Angeles-Long Beach-Riverside; Visalia-Porterville, Calif.; Bakersfield-Delano were the three most ozone-polluted regions in the country.

Four cities were newcomers to the list of cities most polluted by particle pollution: Wheeling, W. Va.; Atlanta; Fairmont, W. Va.; and Davenport, Iowa. Although the cities were added in part because other cities made greater improvements in reducing pollution levels, the list includes

cities "where some of the cleanup measures haven't been put in place as much, where you've had a lot of pollution from coal plants," said Nolen.

Some states suffer not just from plants in their own cities, but plants in other states. "The folks who live in those communities can't address it themselves. They can't stop the pollution from blowing across state lines," according to Nolen.

The reasons for high levels of air pollution vary to a degree by location. California regions face challenges due in part to the agricultural processes, weather and goods-movement industry there. The goods-movement industry includes everything from ships, trucks and trains to machines that load and unload freight and stock store shelves.

In the middle and eastern U.S., coal-fired power plants play a larger role in contributing to air pollution.

The report lists at-risk groups that are particularly vulnerable to air-pollution threats, although air pollution does not necessarily cause these conditions. They include people with asthma, diabetes, cardiovascular disease and those of certain ages. Another notable group listed is people living in poverty. "Over 16.9 million people with incomes meeting the federal poverty definition live in counties with unhealthful levels of ozone," the report says.

Nolen said people with low incomes tend to be at higher risk from air pollutants than wealthier people. "One, they live closer to sources that are producing the pollution. You don't have high rent housing near a power plant, or downwind from an industrial site contributing to a problem, or near a busy highway ... You also have folks who have higher incidents of diseases, which makes them at higher risk ... Third, often it's harder for them to get medical care."

She encouraged at-risk groups and concerned citizens to "let your member of Congress know that you expect the Clean Air Act to protect you and your family. Which means we have to have pollution reductions that can provide that kind of protection. We're not seeing that."

While Nolen said the EPA is taking some steps to reduce pollution, it faces challenges in the court and from members of Congress.

With an eye toward the future, one of ALA's goals for the year, Nolen said, is "to get a strong particulate matter standard out and finalized ... There are cleaner sources than coal burning for energy. But we do realize we have a ways to go."

### **33. Court Lifts Stay On California LCFS, Requiring Cuts In Fuel's GHG Levels**

The U.S. Court of Appeals for the 9th Circuit has ruled to allow the California Air Resources Board (CARB) to continue implementing its low carbon fuel standard (LCFS) while it considers the board's appeal of a federal district court's injunction of the LCFS. A state source says the 9th Circuit's decision to grant CARB's request for a stay of the injunction is significant in part because the court could take nine to 12 months to rule on the appeal, meaning that companies subject to the regulation will have to show progress in reducing the carbon intensity of diesel and gasoline over that period.

In an April 23 order in *Rocky Mountain Farmers Union, et al., v. James N. Goldstene*, the 9th Circuit granted CARB's request to stay the injunction imposed by a lower court late last year that had blocked the state from implementing its LCFS because it violates the Commerce Clause of

the Constitution. The court also agreed to CARB's request for an expedited schedule to review the case.

The three-judge panel did not provide any explanation for granting CARB's request for a stay of the LCFS injunction beyond citing a 1987 Supreme Court ruling, *Hilton v. Braunskill*. The state source says this ruling set a standard for granting a stay motion. In meeting this standard, CARB attorneys argued that the state is likely to succeed on the merits of the broader appeal, the state would be irreparably injured absent a stay and the public interest lies in favor of the stay.

### **34. Fracking Rules Let Drillers Flare Till 2015**

U.S. environment regulators have announced that they will give natural gas and oil drillers more than two years of extra time to invest in equipment that slashes unhealthy air emissions from fracking wells, citing a lack of clean technology. Drillers that use fracturing, or fracking, to extract natural gas and oil will not be required to use the equipment until January 2015, the Environmental Protection Agency said as it finalized long-delayed rules on the smog-forming emissions.

The new rule comes as the Obama administration tries to balance its support for a booming industry that could help the United States become a major exporter of natural gas, while still addressing concerns about its safety.

In a draft rule in July the EPA had proposed drillers would have to invest in equipment to capture the waste gasses soon after the standard was finalized. Now, drillers will have until 2015 to invest in equipment that captures the emissions, a process known as 'green completion'. Until then they can burn off, or flare, the gas. The decision to phase in the requirements for green completion equipment came after the EPA reviewed 150,000 comments on the proposed rule, and after it studied the availability of the equipment, said Gina McCarthy, the EPA's assistant administrator on air and radiation.

Some companies already conduct green completions voluntarily. They sell the methane to lower the costs, though gas prices at 10-year lows can make the savings harder to achieve. Companies including Chesapeake Energy and Exxon Mobil could be forced by the rules to invest in pollution control technologies.

Drilling proponents have warned the Obama administration against imposing too many costly restrictions on natural gas. Recently, the White House formed an interagency panel to support gas development and streamline regulation in an executive order that recognized states are the main regulators of natural gas drilling.

Environmentalists and health groups have complained that fracking operations near schools and homes can harm air and water supplies. In fracking, drillers blast large amounts of sand and water laced with chemicals deep underground to free natural gas and oil.

The EPA said the rules will reduce emissions that contribute to smog by 95 percent from fracking wells.

### **35. Independent Test Results Show Fracking Emissions Are Dangerous Toxic Chemicals**

On April 24 Colleyville and Southlake residents, and Earthworks' Oil & Gas Accountability Project released results from local residents' privately-funded air testing of Titan Operations' "mini-frack" on the border of both communities. The tests, performed by GD Air Testing Inc. of Richardson, Texas, prove emissions released during fracking and flowback contain dangerous levels of toxic chemicals.

Colleyville City ordinances expressly prohibit the release of any gases: "No person shall allow, cause or permit gases to be vented into the atmosphere or to be burned by open flame." The community-funded test results, which detected twenty-six chemicals, also showed carbon disulfide, a neurotoxin at twice the state level for short-term exposure. Benzene, a known carcinogen, and Naphthalene, a suspected carcinogen, were both over state long-term exposure levels by more than 9 times and more than 7 times, respectively. Carbonyl sulfide, dimethyl disulfide and Pyridine were all detected above safe limits for long-term exposure.

Gordon Aalund, an MD with toxicology training who lives in Southlake and practices emergency medicine said, "Exceeding long and short term exposure limits to these toxics places us all at increased and unneeded risk." He went on to say, "When your government fails to protect you and the company cannot be trusted, private citizens are forced to act."

The Colleyville results indirectly confirm the suspicions of Arlington-area residents about air pollution from ongoing Chesapeake Energy fracking and flowback operations in their neighborhood since December 2011. Residents who experienced health impacts were told by Chesapeake that flowback emissions were only "steam". When challenged to substantiate its claims with public testing, the company failed to respond.

### **36. Canada Unveils Heavy-Vehicle Emissions Rules**

Canada has unveiled long-delayed regulations that aim to make big trucks and buses up to 23 percent less polluting by 2018. The greenhouse-gas emissions rules - designed to fit with measures already set in the United States - will come into effect starting with the 2014 model year. They will apply to full-size pickups, heavy trucks and buses as well as to cement, garbage and dump trucks.

"The new standards are expected to reduce emissions from 2018 heavy duty vehicles by up to 23 percent from those sold in 2010," Environment Minister Peter Kent said in a speech announcing the rules. "We expect this to translate into total greenhouse gas emissions reductions of about three megatons annually in 2020 - equivalent to removing about 650,000 personal vehicles from the road," he said.

Last August the Obama administration in the United States unveiled its own similar measures.

Canada - a major energy producer that abandoned the Kyoto protocol on climate change last year - wants to cut overall greenhouse gas emissions by 17 percent from 2005 levels by 2020. Environmentalists say this will be almost impossible, given rapid expansion of the country's oil and gas industry. Output from the crude-rich tar sands of northern Alberta alone is expected to double by 2021. Extracting oil from the sands is particularly energy-intensive.

### **37. Sales Up For Electric Vehicles and Hybrids**

The market for hybrids, plug-in hybrids and electric vehicles is perking up, just when many were ready to write it off. In the first three months of 2012, U.S. sales of hybrids, plug-in hybrids and

EVs shot up 44 percent from the year-ago quarter, to 113,457. March sales of those vehicles were double those of January. It was a breakout quarter for sales of vehicles with alternative powertrains, which had been rising at a much slower pace than expected despite waves of fresh entries.

The strong performance is a measure of validation for automakers that have persevered despite tepid demand for hybrids and criticism in political circles. Hybrids accounted for the bulk of alternative powertrain sales -- 106,207, compared with 7,250 EVs and plug-in hybrids.

Sharper sales of the longtime hybrid king, the Toyota Prius, drove much of the growth as buyers snapped up recently launched models, including a wagon and subcompact. Also providing a lift were launches of General Motors' mild hybrid technology, dubbed eAssist, on volume models such as the redesigned Chevrolet Malibu.

Plug-in hybrids and pure EVs still represent a tiny slice of the market for electrified vehicles. Sales of the Chevrolet Volt plug-in hybrid easily hit their highest mark yet in March. The Nissan Leaf electric car sales nearly quadrupled from the first quarter 2011, to 1,733 units.

Surging fuel prices have helped; U.S. gasoline prices are up 19 percent since the start of the year, to a nationwide average of \$3.87 a gallon. But that doesn't explain fully the jump. During the last two gasoline price spikes, in the summer of 2008 and the spring of 2011, the market share for hybrids, plug-in hybrids and EVs didn't crack 2.2 percent.

Analysts and dealers point to two other factors that are helping to drive sales higher this time: Pent-up demand and new models that are drawing people who never before had found what they wanted in a hybrid -- a wagon, for example, or one with a price they could afford.

Last year production of the Prius was slashed because of the March 2011 earthquake. Toyota sold 27,800 Priuses in March, up 49 percent from 18,605 a year earlier. The new models made the difference: Toyota sold 4,937 Prius Vs., 4,875 Prius Cs and 891 Prius plug-in hybrids.

Other hybrids have hit the market too. In the first quarter Hyundai sold 4,968 units of the Sonata Hybrid, which was launched in May 2011. GM sold 1,767 Chevrolet Malibu Ecos and 3,146 Buick LaCrosse with eAssist. Neither was in its lineup a year earlier. An auto with eAssist is called a mild hybrid because the small electric motor can't propel the vehicle on its own. It simply assists the gasoline engine in certain driving conditions.

#### U.S. market share of hybrids, plug-in hybrids and EVs

2008: 2.4%  
2009: 2.8%  
2010: 2.4%  
2011: 2.2%  
2012\*: 3.3%

\* First quarter

Source: Automotive News Data Center

### **38. Q1 Electric Car Battery Prices Drop 14 Percent on Year**

The average price of an electric vehicle-grade battery fell 14 percent year-on-year to \$689 per kilowatt hour in the first quarter as manufacturing capacity outstripped demand, a report by

Bloomberg New Energy Finance said recently. Lower battery costs for electric vehicles could improve their commercial uptake, which has been slow.

The United States wants to see up to 1 million electric and plug-in hybrids on its roads by the middle of next decade. To help achieve this goal, the U.S. government has spent over \$2 billion under President Obama to underwrite domestic battery production and billions more to finance electric car development to cut U.S. oil imports and reduce pollution.

But electric vehicles such as Mitsubishi Motor Corp.'s iMiEV, Nissan Leaf or Tesla Model S to travel longer distances need to store 16 to 85 kWh at a cost of \$11,200 to \$34,000, which is around 25 percent of the total cost of the vehicle. A Tesla car with an 85 kWh battery, for example, has a range of about 300 miles before it needs to recharge.

Battery prices for plug-in hybrid vehicles such as GM's Volt are on average 67 percent higher than those for electric-only vehicles, mainly due to the greater power-to-energy performance required for plug-in hybrid vehicles.

Bloomberg New Energy Finance research shows that the average price of a lithium-ion battery pack for electric vehicles was \$689/kWh in the first quarter of this year, down from around \$800/kWh a year earlier and 30 percent lower than 2009 levels of over \$1000/kWh. The cost of lithium-ion batteries could drop as low as \$150/kWh by 2030 (in 2012 dollars) if current trends continue.

Prices have dropped because production capacity for EV battery packs has exceeded demand due to significant investment on the supply side, while consumer demand for the vehicles has been slow, the report said. Current production capacity for electric vehicle battery packs outstrips demand by over 10 gigawatt hours, which is equivalent to around 400,000 pure battery electric vehicles, and the gap is on course to widen to 17 GWh by the end of 2013.

In comparison, the total number of electric vehicles sold in 2011 was 43,237, the report said.

"Batteries are one of the biggest drivers of the cost of electric vehicles and hence of their uptake. A sharp decline in price may be unwelcome for battery manufacturers, but it is essential for the long-term health of the sector," said Michael Liebreich, chief executive of Bloomberg New Energy Finance.

### **39. UCS Report Says Electric Cars Cheaper To Run, Less Polluting**

Electric vehicles in the United States save money on fuel and are less polluting than most gasoline-powered vehicles, even in places where electricity is made by burning coal, the Union of Concerned Scientists said in a recent report. "Drivers should feel confident that owning an electric vehicle is a good choice for reducing global warming pollution, cutting fuel costs, and slashing oil consumption," said Don Anair, a senior engineer on UCS's clean vehicles program.

In the report, [State of Charge](#) (PDF), UCS researchers focused on three key issues:

1. Is an electric car better than a gasoline vehicle on global warming emissions?
2. How much does it cost to charge an electric vehicle in different cities around the country?
3. How do EVs such as the Chevy Volt, Mitsubishi "i," and Nissan LEAF compare with each other and with gasoline vehicles on global warming emissions and fueling costs?

The results vary by region as some parts of the country rely more strongly on coal-fired power plants while other regions receive energy from a variety of sources. On a national level, EVs do produce fewer greenhouse gas emissions than a gasoline-powered vehicle with 27 miles per gallon fuel efficiency rating. The UCS report further breaks this figure down by region.

- 45 percent of Americans that live in the “best” regions for cleaner electricity production will produce fewer greenhouse gas emissions than a 50 mpg plus rated hybrid
- 37 percent of Americans live in the “better” areas of the country where the emissions created by recharging an electric vehicle put the EV on par with a hybrid that achieves 41 – 50 mpg
- 18 percent of Americans live in the “good” region, areas more reliant on coal-fired power plants, and this puts an EV on par with a non-hybrid vehicle that achieves between 31 and 40 miles per gallon

In addition to comparing the greenhouse gas emissions of charging an EV with the emissions associated with some of the most fuel efficient cars on the road today, the UCS researchers also examined the charging costs in 50 cities. When looking at cities with the best rate plans, an electric vehicle owner could save between \$750 and \$1,200 a year on fuel when compared to a 27 mile per gallon vehicle refueling at \$3.50 per gallon.

Overall, the electric vehicle bests even the most fuel-efficient vehicles in terms of greenhouse gas emissions and fuel cost savings. As more electric vehicles are introduced to the market, including the summer release of the [Honda Fit Electric](#), more Americans may find the data presented by the UCS an important part of their car-buying process.

UCS said the study is the first to analyze emissions from vehicles charged on a power grid of electricity made from fuels such as coal and natural gas.

#### **40. U.S. Approves 20 Firms to Make Ethanol for E15**

Twenty companies have been cleared to produce the new ethanol grade called E15, a significant step toward putting the higher blend biofuel on sale, the government has announced. Most fuel sold at filling stations is a 9-to-1 blend of gasoline and corn-based ethanol. The ethanol industry proposed E15, a 15 percent blend, three years ago.

The Environmental Protection Agency said it approved the first applications to register ethanol to make E15, "a significant step toward its production, sale and use" in cars and light trucks built since 2000. E15 is barred from use in light equipment or in older vehicles.

Before E15 goes on sale, EPA must approve steps to prevent misfueling of E15 and a monitoring program to make sure the fuel is marked and sold properly. Some states also must adjust their fuel regulations.

Only a relative handful of the more than 100,000 U.S. fuel stations have pumps designed to dispense mid-level or high-blend ethanol fuels. The government and industry groups offer help in paying for so-called blender pumps.

The American Petroleum Institute chided EPA for a "headlong rush to allow more ethanol in gasoline." It said more testing was needed.

#### **41. General Motors Cuts Funding To Heartland Institute Due To Climate Change Denialism**

After being outed as a financial contributor to the conservative advocacy group Heartland Institute, known for its denial of global climate change, General Motors has faced harsh criticism from environmentalists. The car company, which is pushing its new all-electric model, the Chevy Volt, has now announced it will no longer be contributing to the Heartland Institute. "We've looked into it, and we've decided to discontinue it," a spokesperson from General Motors told the LA Times.

General Motors received extra pressure from the climate group Forecast the Facts, which organized an online campaign to push the company to stop donating to the Heartland Institute, including gathering signatures from 10,000 previous and current General Motors' customers.

Heartland Institute President Joseph Bast said in a statement for the press, "The General Motors Foundation has been a supporter of The Heartland Institute for some 20 years. We regret the loss of their support, particularly since it was prompted by false claims contained in a fake memo circulated by disgraced climate scientist Peter Gleick."

Documents were leaked from Heartland Institute by climatologist Peter Gleick, who gained access to the documents after pretending to be a board member via email. In an admission published in February, Gleick called his actions a "serious lapse of my own and professional judgment and ethics."

While much has been made of the memo released with the documents--Gleick says he received it anonymously in the mail, while Heartland insists it's a fake-- the memo was largely a summary of information found in the other documents leaked by Gleick.

In addition to listing Heartland's funders, which includes an anonymous donor that funds the bulk of the group's work on dismissing climate science, the documents also reveal plans by Heartland Institute to craft curriculum that would teach school kids that anthropogenic climate change is "a major scientific controversy," despite the fact that most scientists don't see it that way. According to the documents, Heartland Institute plans to pay Dr. David Wojick \$100,000 this year to write-up the curriculum.

Nearly all climate scientists, as well as the world's major scientific institutions, agree that the Earth is warming and human activities are the primary driver. Since the Industrial Revolution global temperatures have risen 0.8 degrees Celsius (1.44 degrees Fahrenheit). Evidence is strengthening that climate change is not only melting glaciers and Arctic sea ice, but also fueling extreme weather disasters, such as floods, droughts, and heat waves.

### **ASIA-PACIFIC**

#### **42. Beijing Drafts Nation's Toughest Tailpipe Standards**

Stricter auto emission standards are likely to be adopted this year in the capital city as pollution in Beijing continues to cause concern. A draft plan by the Beijing Environmental Protection Bureau under public review until April 9 calls for the city to lead the way with tougher standards.

"The Beijing V standard is equivalent to the Euro V standard," said a professor at the Environmental School of Tsinghua University. The standard calls for lower nitrogen oxide, carbon monoxide and hydrocarbon emissions.

Nitrogen oxide emissions would be limited to 0.06 grams, down from the 0.08 grams in the national IV standard, while particulate matter emissions are limited to less than 0.0045 grams per km. It also requires cleaner emissions to remain as vehicles get older, upping the compliance limit to vehicles with 160,000 km on the odometer compared to 100,000 km in the national IV standard.

Though Beijing has been the pacesetter in implementing increasingly tough emission standards over the past decade, total tailpipe emissions in the city have continued to rise by more than 10 percent annually.

A source at Shanghai GM's technology and engineering department said the company has already finished modifying its engine designs. When the new standard is officially implemented, the company will be able to supply models to meet the new standard right away, it said. Li Yunfei, an executive at domestic automaker BYD, told reporters that the company was also prepared for the change.

Besides engine improvements, fuel quality is also critical to lowering vehicle pollution, industry insiders say. Chinese-language media reported that the country's fuel suppliers have already developed gasoline and diesel fuel that meets engine requirements in the Beijing V standard.

#### **43. China State Council Executive Meeting Decides On New Air Quality Standards**

Premier Wen Jiabao chaired the standing committee (Premier, Vice Premier and all Ministers) of the state council, which agreed to release new revised Ambient Air Quality Standards, and discussed ways to strengthen the air pollution prevention and control.

In order to make the assessment results of ambient air quality more in line with the actual air quality situation, and the public feelings, the meeting agreed to release new revised Ambient Air Quality Standards for fine particulate matter (PM<sub>2.5</sub>) and ozone (O<sub>3</sub>) 8-hour concentration limits. Monitoring work for fine particulate matter and ozone will be required in key areas, such as Beijing, Tianjin and Hebei, Yangtze River Delta and Pearl River Delta, as well as four key municipalities (Beijing, Shanghai, Tianjin, Chongqing) and provincial capital cities in 2012; in 113 key environmental protection cities and the National Environmental Protection Model Cities in 2013; and to cover all prefecture-level cities in 2015.

It was pointed out by the meeting that the CPC Central Committee and State Council attach great importance to air pollution prevention and control work. Since the "11th Five years", our country's air quality has been basically stable; part of the urban air quality has been improved; sulfur dioxide (SO<sub>2</sub>) and inhalable particulate matter (PM<sub>10</sub>) continued to decline. While at the same time, China's total discharge of pollutants is still large; regional air pollution problems are still outstanding; and the atmospheric environment situation is grim. Therefore, China should strengthen the comprehensive prevention and control of air pollution, and promote improved air quality with greater determination, higher standards, and more effective measures.

First, we must accelerate the phase out of backward production capacity of electric power, iron and steel, building materials, nonferrous metals, petrochemical, chemical industry. China must

also actively promote the use of clean energy in the key regions of air pollution joint prevention and control. Urban enterprises with serious pollution must be relocated or retrofitted with energy saving and environmental protection technologies, to optimize the industrial layout.

Second, it is necessary to improve the environmental access threshold. Implement more stringent emission standards of air pollutants in particular limits, and prohibit new construction, expansion of coal-fired power plants, steel mills, and cement plants except the cogeneration in the key regions. Hold strict access to new projects, and strictly supervise environmental law enforcement. Give full play to the market mechanism, and vigorously develop the environmental protection industry.

Third, we must strengthen pollution reduction. Promote sulfur dioxide emission reduction and treatment of electricity industry and steel, petrochemical and other non-electric industries. Speed up the construction of denitrification (NO<sub>x</sub> control) facilities for coal-fired units and strengthen the control of NO<sub>x</sub> of the cement industry.

The fourth is to focus on motor vehicle pollution prevention. Improve vehicle fuel quality and vehicle emission standards. Basically phase out the yellow-sticker cars registered before 2005 by 2015.

The fifth is to strengthen regional coordination to control regional air pollution. In key regions such as Beijing, Tianjin, Hebei, the Yangtze River Delta, Pearl River Delta, implement joint prevention and control of air pollution. Establish air pollution warning system under extreme weather conditions.

The meeting emphasized that China is a big developing country and is now in a period of rapid industrialization and urbanization, so environmental protection and air quality improvement needs the long-term and persisting efforts of the whole society. To strengthen the construction of the environment legal system; to strengthen scientific publicity and education guidance; to enhance public awareness of environmental protection; to carry out environmental responsibility of the authorities, enterprises, institutions, social organizations and citizens; to advocate and practice green production patterns and green life styles.

The meeting heard reports of proposed air pollution control measures in Beijing from 2012 to 2020. PM<sub>2.5</sub> air quality levels seem to be approximately double the new air quality standard based on preliminary data.

Wu Xiaoqing, vice minister of the Ministry of Environmental Protection, said that two-thirds of China's cities cannot meet the recently updated air quality standard, adding that air pollution control will be "an arduous task for the country." "But that doesn't mean air quality is deteriorating in these cities," Wu said. "It is because the appraisal standards have been raised."

Stressing the focus is on improving air quality rather than its monitoring, Wu said his ministry is working on a five-year plan for air pollution prevention and control in key regions, aiming to reduce the amount of fine particles in the air by strengthening controls over industrial waste treatment and auto emissions.

The vice minister urged local governments to formulate plans for meeting the new standard, raise environmental access requirements for enterprises and invest more in pollution treatment.

The amended standards also impose stricter limits for several types of pollutants and specify new analytical methods for pollutants such as SO<sub>2</sub>, NO<sub>2</sub> and particulates.

Wu described the new standard as a "significant milestone" in the country's environmental protection efforts, as it marks a transformation from pollution control to environmental quality management and risk prevention.

The new standard "generally" follows international practice, Wu said, admitting China still has a long way to go to meet the guiding limits set by the World Health Organization.

By the end of last year, 56 cities in China had been able to monitor PM<sub>2.5</sub> or O<sub>3</sub>, with 169 sets of equipment ready for such monitoring. Wu said another 1,500 monitoring sites will be built across the country in four years, with an initial investment of 2 billion Yuan (317 million U.S. dollars).

According to the new standard, Beijing will release in real time the concentration of six pollutants including PM<sub>2.5</sub>, O<sub>3</sub> and SO<sub>2</sub>, and the individual air quality index recorded at each site, making the monitoring more comprehensive and representative, said Wu. The new standard stresses the protection of people's health as the prime objective. It will remove the inconsistency between existing air quality results and public feelings, which also counts much in boosting the government's credibility and international image, said Wu.

Concentrations of PM<sub>2.5</sub> must be kept below daily averages of 75 micrograms per cubic meter, compared to the US standard of 35 micrograms.

At the same time, acceptable levels of the bigger PM<sub>10</sub> particles will also be tightened.

The reform came after an online campaign for more stringent monitoring drew widespread support across China, including from some famous figures.

Wu said China would improve air quality in cities by improving energy infrastructure and intensifying controls over industrial and motor emissions.

The Ministry of Environmental Protection started gauging public opinion on revised standards in November and received more than 1,500 letters, e-mails and faxes from people expressing concern over air quality.

The power industry is expected to play a leading role in curbing sulfur dioxide pollution and coal-based power plants are a major cause of the discharge of sulfur dioxide. The National Development and Reform Commission, the main economic planner, has offered preferential pricing terms to plants with sulfur and nitrogen oxide removal systems. These could offset power plants' added costs for protecting the environment.

Targets have been set to increase the proportion of non-fossil fuels in the mix to 11.4 percent by 2015, from 8.7 percent in 2010.

The statement also mentioned a more stringent emission limit to be imposed on new projects and monitoring vehicle pollution.

#### **44. Beijing Struggles To Reduce Carbon Emissions**

With 350 million tons of coal burned a year in the pan-Beijing area, it is difficult for Beijing to fulfill its goal of reducing air pollution, officials and political advisors have said ahead of China's pending legislative sessions.

Meng Wei, head of the Chinese Institute of Environmental Sciences and a longtime low-carbon advocator, said Beijing should establish a "common goal" with its neighbors in Hebei province and Tianjin municipality for reducing pollution. The Ministry of Environment is mulling a recent proposal submitted by the Beijing Bureau of Environmental Protection, asking the ministry to set up a special organization to help coordinate Beijing, Hebei and Tianjin to reduce coal-burning by 10 percent by 2015.

"Officials and experts have been talking for years about a synchronous air pollution control mechanism in the Pan-Beijing area. This proposal is the first official step toward that goal," said Li Kunsheng, an official with the Beijing Bureau of Environmental Protection. Li said the pollution control mechanism will require local environmental departments to roll out stricter pollution standards for local thermal power plants, coal-fired heaters and steelmakers.

Beijing's annual coal consumption currently stands at 26 million tons. Its neighbors Hebei and Tianjin are much more dependent on coal, consuming 280 million and 47 million tons a year, respectively.

Research conducted by the Beijing Bureau of Environmental Protection last year showed that pollution from Beijing's neighboring regions is the largest contributor to the city's PM2.5 reading, a scientific measure of the number of fine particles in the air. Auto emissions are the second-largest contributor.

The Beijing municipal government announced earlier this month that it aims to reduce the city's average PM2.5 reading from the current 70 micrograms per cubic meter of air to 50 micrograms by 2020.

Beijing's vice mayor Hong Feng said reducing coal-burning is still one of the most important efforts being made to reach the city's pollution control target. Of the 26 million tons of coal burned in Beijing in 2010, 2.79 million tons were used by individual households, where polluted air is discharged without being treated. Although most residential coal consumption happens in Beijing's outskirts, there are still 90,000 homes in the city proper that are solely dependent on coal for winter heating.

The Beijing Bureau of Environmental Protection said in December 2011 that it will provide subsidies to all 90,000 of the city's coal-burning households by 2014 to allow them to retrofit their homes for electric heating. Bureau official Liu Wei said the bureau has made house calls to these families to inquire about their needs.

Zhang Gong, director of Beijing municipal development and reform commission, said that an estimated 80 billion Yuan (\$13 billion) will be invested to switch the city's coal-fired power plants and heating facilities to natural gas. "We want to make sure that power plants and heating facilities will be fueled by natural gas in the coming three to four years, reducing the use of coal as much as possible," Zhang said on the sidelines of the annual session of the National People's Congress.

Emissions from coal-fired power plants and heating facilities, as well as from the 5 million cars running in Beijing, are a major source of PM2.5 in the capital, according to research conducted by the municipal government.

Zhang from the reform and development commission of Beijing said that the experience of Western countries shows that improving air quality is a long and complicated battle.

"The government is no longer focusing solely on the economic growth of the city. We want to have sustainable development and create a livable city for the people," he said, adding that is the reason that the government has set an annual target of 8 percent GDP growth during the 12th Five-Year Plan period (2011-15) instead of the double-digit growth of previous years.

#### **45. Early Start on PM2.5 Monitoring In Guangdong Province**

Environmental authorities of Guangdong province plan to start releasing PM2.5 readings very soon, an early-bird approach to meeting the stricter national air quality requirements. Guangdong's initial readings will come from 17 monitoring stations in the Pearl River Delta.

Readings at other stations in the delta would be made public by June 5, with those from all stations in the province available in 2014, said Li Qing, director of the provincial environmental protection bureau, at a work conference. Given the marked air pollution in the delta, the number of days with air quality that meet the standards in Guangdong will fall 10 to 30 percent after the new standards are adopted, Li said.

As an economic powerhouse of China, Guangdong faces an uphill task in environmental protection. With a large increase of output from coal-fired power plants last year, sulfur dioxide and nitrogen oxide compound emissions went up, heightening the pressure to fulfill the emission reduction task in the 2011-15 period, according to the provincial environmental protection bureau.

Authorities will tighten clean air legislation this year, strengthening the treatment of emissions from automobiles and coal-fired power plants. They will also phase out obsolete capacities in industries involving furnaces, paper making, printing and dyeing, chemicals, construction materials and cement.

An investment of 100 million Yuan (\$15.8 million) is needed to enable all 97 national monitoring stations in Guangdong to test the air for PM2.5, in addition to staff recruitment and training.

In Guangzhou, capital of Guangdong province, daily air quality reports in line with the new standards, including PM2.5 readings, will be issued on the websites of the environmental authorities almost immediately.

The new standards further emphasize public health guidelines and will serve as reference to the public in arranging their lives and outings, said Yang Liu, deputy director of the city environmental protection bureau, in a statement. He said city authorities will strengthen the control of automobile emissions and industrial pollutants, among other measures.

Following Guangdong, the financial center of Shanghai vowed to complete a monitoring network for PM 2.5 in June and focus on cutting emissions from vehicles and power plants - two major sources of the city's pollutants.

The local environment protection department said about 25 percent of the city's PM2.5 comes from car emissions, as a large amount of small pollutants are discharged from diesel-fueled vehicles on the road. The amount increases if the drivers of these vehicles adopt bad driving habits such as frequent sudden acceleration and braking.

Official statistics showed that Shanghai still has more than 200,000 "yellow-label cars" - heavy-polluting vehicles - discharging 20 to 30 times more pollutants than green-label cars. Another 20 percent of PM2.5 in the city's air comes from the chemical industrial process and industrial boilers and furnaces. As such, the city plans to phase out 150,000 yellow-label cars by the end of 2014, and raise emission standards for newly registered cars, while providing sufficient approved-quality refined oil.

To fight pollution from thermal power plants, the city proposed cutting emissions by upgrading filtering and denitration facilities.

#### **46. Hong Kong Commences PM2.5 Hourly Reporting**

Hong Kong's Environmental Protection Department (EPD) has announced that it will commence the regular reporting in real time of fine suspended particulates (also known as PM2.5) from March 8<sup>th</sup>, and the data can be accessed on the EPD website. The data will reveal the hourly concentrations of PM2.5 as measured by the EPD's air quality monitoring network, which comprises 11 general stations and three roadside stations.

A spokesman for the EPD said, "In anticipation of the inclusion of PM2.5 as a new criteria pollutant in the proposed new Air Quality Objectives (AQOs), we have progressively acquired new PM2.5 monitors to extend continuous PM2.5 measurements to all air quality monitoring stations. The installation and testing of the new PM2.5 monitors has now been completed."

According to the spokesman, to better understand the situation with regard to PM2.5 in Hong Kong, the EPD has been monitoring the pollutant since 1999 at three of its general air monitoring stations. And another general station was later added in 2005.

The monitoring results show that the level of PM2.5 in Hong Kong has been reduced by 17 percent from 2005 to 2011. The spokesman said this progress was owed to the control measures jointly implemented by the Hong Kong and Guangdong Governments in recent years.

The spokesman added that they will continue to collaborate with the Guangdong Provincial Government on emission reduction measures to further reduce the levels of particulates and other pollutants in Hong Kong.

#### **47. Clean Up Effort for Hong Kong Port Hits Rocks**

In 2010, Hong Kong's government was handed an extraordinary corporate gift. A group of 17 cruise and shipping lines volunteered to begin burning more environmentally friendly fuel when berthed in Hong Kong's waterways, at no small expense to their shareholders. Now, though, as the shipping industry reels from billion-dollar losses, the future of that agreement is on the rocks. The so-called "Fair Winds Charter" is slated to expire in December, and without more government support, say companies, prospects for its revival look murky.

This month, Hong Kong's largest container ship operator, Orient Overseas International Limited, announced that its profits slid by 90% in 2011. Likewise, Maersk Line—the world's biggest

container shipping company—has announced that its profits have taken a hit, dropping by a third last year as well. Both companies are signatories to the Fair Winds Charter. The container shipping industry has been badly battered by high spikes in fuel prices and slowing trade volumes and is still struggling to recover from a \$19 billion industry-wide loss in 2009.

Last month, in a bid to support the Fair Winds Charter, Hong Kong's government announced that it would begin reducing port dues for shipping companies who make the switch to low-sulfur fuel at berth. Shipping companies, though, say that this subsidy would only offset about 40% of the costs involved in using the cleaner fuel.

Traditionally, ships at berth in Hong Kong have burned bunker fuel: the inky, viscous sludge left over from the crude oil refining process, which produces far more pollution when burned than fuels such as diesel. Though burning cleaner fuel may be more expensive, environmentalists say such costs are a bargain compared to the environmental toll of burning bunker fuel in proximity to Hong Kong's densely populated shores. According to a 2007 study by University of Delaware professor James Corbett, pollution caused by the shipping industry kills an estimated 60,000 people a year globally. In the Pearl River Delta, home to the busy shipping lanes of Hong Kong, Shenzhen and Guangzhou, such figures are especially worrisome.

A University of Hong Kong study released in January estimated that every year, some 3,200 people are killed by Hong Kong's air pollution. When it comes to nitrogen dioxide pollution levels, among China's 32 largest cities, Hong Kong's are the country's second-highest. Even limited exposure to heavy air pollution can trigger strokes, arrhythmia and heart failure.

Given the impact of shipping pollution, in recent years, governments in Europe and North America have begun requiring ships to burn cleaner fuels when entering their waters. Asia, though, remains a regulatory no-man's land.

Currently, even with the Fair Winds Charter in place, Hong Kong University of Science and Technology's Dr. Simon Ng — who closely monitors shipping pollution — notes that only 10% of ships making port calls in Hong Kong are currently switching to cleaner fuels while at berth. Larger entities that aren't presently participating in the Fair Winds Charter include companies such as the Mediterranean Shipping Company, "K" Line Logistics and China Shipping.

#### **48. China Moves Ahead With Low-Carbon Pilot Projects in 8 Cities, 5 Provinces**

China is moving forward with plans for its pilot low-carbon development areas, especially with transportation and energy-efficient buildings, according to a report from state-run Xinhua news agency. Su Wei, head of the climate change department for the National Development and Reform Commission (NDRC), said on February 28<sup>th</sup> that trial work is starting in the five provinces of Guangdong, Liaoning, Hubei, Shaanxi, and Yunnan, and the eight cities of Tianjin, Chongqing, Shenzhen, Xiamen, Hangzhou, Nanchang, Guiyang, and Baoding.

The pilot plan for Guangdong province, China's most populous province, has been approved, but a full, final version has not been released. It reportedly set a provincial goal of reducing carbon intensity by 19.5 percent by 2015.

Shenzhen's pilot low-carbon plan, which runs from 2011 to 2020, also has been approved, though an actual detailed plan has yet to be released, according to a February 27<sup>th</sup> report of the Shenzhen Economic Zone Daily, the official newspaper of the municipality.

The low-carbon pilot program for the five provinces and eight cities was outlined in China's 12th Five-Year Plan blueprint.

The programs were set up to help China reach its goal to reduce carbon intensity, or emissions per unit of gross domestic product, by 17 percent by 2015, and by 40 percent to 45 percent by 2020, based on 2005 levels.

Meanwhile, a program started in July 2011 to boost the use of new energy vehicles and "low-carbon transportation" in 10 cities has been expanded to include 16 more cities, the Ministry of Transportation announced on February 9<sup>th</sup>. The first 10 cities were Tianjin, Chongqing, Shenzhen, Xiamen, Hangzhou, Nanchang, Guiyang, Baoding, Wuhan, and Wuxi. The newly added cities will be Guangzhou, Beijing, Kunming, Xi'an, Ningbo, Shenyang, Harbin, Huai'an, Yantai, Haikou, Chengdu, Qingdao, Zhuzhou, Bengbu, Shiyuan, and Jiyuan.

These cities will be allowed to access special funding for projects that reduce carbon emissions in transportation and reduce energy use, as well as for monitoring and evaluation systems to measure such use, the ministry said.

#### **49. India to Urge Airlines to Opt Out Of EU Carbon Scheme**

India will urge its airlines not to take part in the European Union Emissions Trading Scheme (ETS), a senior official said, the latest salvo in an escalating row over an EU law requiring all flights in and out of Europe to pay for their emissions.

China in February said its airlines were barred from participating in the scheme unless they get government approval to do so. Beijing has also suspended the purchase of \$14 billion worth of planes for Europe's Airbus due to the dispute.

India does not yet plan to ask airlines to cancel Airbus purchases, but that is a possibility if the dispute escalates, the Indian official said. The official told reporters that India would soon ask local airlines not to share emissions data with the bloc or buy any carbon credits. If the European Commission retaliated by suspending Indian airlines from flying to Europe, India would make similar moves and consider charging an "unreasonable" amount for flying over India, the official said.

The Indian government is awaiting formal approval from several ministries to implement the order to airlines, which it expects soon.

European plane maker Airbus has a 73 percent share of the commercial plane market in India. It has orders for more than 250 planes with IndiGo, Go Air and Kingfisher Airlines, making fast-growing India a crucial growth market.

Foreign governments say the EU is exceeding its legal jurisdiction by charging for an entire flight, as opposed to just the part covering European airspace. But Europe's highest court ruled in December that the EU law did not breach international agreements.

The EU scheme has been widely criticized by the aviation industry, and recently Indonesia's state-owned airline Garuda said it might stop flying to Amsterdam in response. "If (the regulation) is too costly, we could be forced to close our European routes," President Director Emirsyah Satar told reporters.

Thai Airways President Piyasvasti Amranand said the state-controlled airline also opposed the EU law, but declined to comment on its impact on plane purchases. "If nothing changes, this will cost us 200-300 million baht (\$6.5-\$9.75 million) a year starting 2013," Piyasvasti said. "I do agree with the idea of reducing carbon emissions but the way EU has come up with the calculation for making airlines pay is something we feel is unfair."

India this month inadvertently delayed approval of some European summer schedules by a day, which disrupted the flight schedules of many European airlines. The official said India may use that example to show how disruptive a dispute with the country could be. "If things continue like this, then European airlines will be forced to avoid flying over India and go over the Indian Ocean and the Bay of Bengal," the official said. "That's not viable for them. They won't have fuel to do that."

The European Commission has said it introduced a carbon cost for all flights, because well over a decade of talks at the United Nations' International Civil Aviation Organization (ICAO) had failed to agree on a way to curb the sector's rising emissions. The escalation of international tension over the EU's scheme has accelerated efforts at the ICAO to come up with a global plan. At a recent meeting, it directed a working group to continue studying the options and report back in June. The European Commission has said it will modify its law if the ICAO can deliver a convincing alternative and is doing its best to help.

#### **50. China Raises Fuel Prices for Second Time in a Month**

China has raised the price of petrol by about 6% and diesel about 7% for the second time in 2012, as it struggles with the rising cost of crude oil. The move is aimed at ensuring domestic fuel supplies and to help local refiners cut heavy losses.

Rising prices have been a problem in China since the global financial crisis led authorities to introduce a stimulus package.

Consumer price inflation peaked in July last year at 6.5% before easing. In February, the rate of inflation was 3.4% from a year earlier, which is below the government's target of 4%.

High prices, especially of food and fuel, have previously led to unrest in Chinese cities.

Under China's fuel-pricing system, domestic fuel prices can be adjusted when a basket of international crude changes by more than 4% over a period of 22 days.

Refiner benefits

The hikes are higher than market expectation of an average 3% rise. They come after crude prices rose more than 10% in February.

Fuel prices were last raised in China in February by around 3% to 4%.

After the new increase, benchmark diesel will be about \$1.22 (76p) per liter and 90-octane petrol about \$1.17, although prices vary by region.

Refiners had been urging the government to raise fuel prices, to help them pass on some of the higher cost of crude to consumers.

## 51. Fuel Prices Rise in Pakistan

The Government on Saturday once again increased the price of petrol by Rs 8.02 and that of Compressed Natural Gas (CNG) by 11.98 per liter for region one and by Rs 9.93 for region two, DawnNews reported.



The price of diesel has also been raised by Rs 4.70 per liter. A notification to this effect has been issued.

After the rise, the revised price of petrol has jumped to Rs 105.68 a liter and diesel to Rs 108.16. While, CNG in region one to Rs 88 and in region two has jumped to Rs 80 per liter.

The price of light diesel went up by Rs 5.45 to Rs 99.69 per liter; HOBC by Rs 8.94 to Rs 135.81 and the rate of kerosene oil jacked up by Rs 5.29 to Rs 101.69 a liter.

## 52. India's Proposed Budget Contains Few Environment, Renewable Energy Initiatives

India's annual budget for 2012-13, announced in New Delhi on March 16<sup>th</sup>, contained few initiatives related to the environment or renewable energy. Presenting the budget in the lower house of Parliament, the Lok Sabha, Finance Minister Pranab Mukherjee announced what appeared to be the only direct provision for a renewable energy sector: an exemption from special countervailing duty for solar thermal plants and equipment.

No provisions were announced for the solar photovoltaic or wind energy sectors, though the latter was expecting an announcement on whether existing generation-based incentives and an accelerated depreciation program would be extended. The finance minister did not address these in his budget speech.

Mukherjee did propose concessions and exemptions to encourage the use of energy-saving devices: A chemical coating used for compact fluorescent lamps would be exempted from basic customs duty, while certain items imported for manufacturing hybrid or electric vehicles and battery packs would be exempted from basic customs and special countervailing duty.

No announcement was made on increasing excise duty on diesel cars, as was largely expected. However, standard excise duty was proposed to be increased from 10 percent to 12 percent and the duty on large cars to be increased marginally from 22 percent to 24 percent, to discourage use of fossil fuels. India imports over 70 percent of the fossil fuel it uses.

The proposed outlay for the Ministry of Environment and Forests was increased marginally from 2,300 crore rupees (\$458 million) for 2011-2012 to Rs 2,430 crore (\$484 million) in 2012-13. The Ministry of New and Renewable Energy's proposed budget would rise significantly—Rs 3,355 crore (\$669 million) in 2012-13 as compared to Rs 2,150 crore (\$428 million) the previous year.

Parliament will vote on the budget proposals March 31. The new fiscal year begins April 1.

Meanwhile, the proposed railway budget announced March 14 incorporated some green measures, such as use of wind, solar, and biodiesel energy in the railway network. Railway Minister Dinesh Trivedi said Indian Railways would set up wind power plants totaling 72 megawatts of capacity in the southern states of Andhra Pradesh, Karnataka, Kerala, and Tamil Nadu, as well as the eastern state of West Bengal. This would help earn carbon credits and tax breaks and take advantage of incentives and depreciation benefits, Trivedi said.

The minister also outlined plans to set up biodiesel plants at Raipur in the central state of Chhattisgarh and at Tondiarpet in the southern state of Tamil Nadu.

There is uncertainty about when the rail budget will be voted on, after a political storm over the railway minister's decision to hike passenger fares led to political discord. Mamata Banerjee, the leader of the Trinamool Congress which is a partner of the ruling Congress-led coalition, asked the government to sack the railway minister, which the government has refused to do.

### **53. Global Oil Supplies Stretched By Chinese Demand**

Developing nations such as China are pushing global oil supplies to their limits, prompting exploration and development companies such as First Titan Corp. to aggressively pursue new resources to help meet rising worldwide demand. Emerging economies in Asian nations such as India and China have been spared the worst of the global recession, and growth in these nations is now driving world energy demand. For the first time ever, more oil was consumed in 2010 by emerging economies in Asia than by the U.S. China claimed the majority of that growth — the growing superpower is on pace to have energy consumption levels 70 percent greater than the U.S. by 2035.

The rapid explosion of demand from emerging economies around the world has helped to very high oil prices this year as the supply side of the oil market struggles to keep up. FTTN is working to capitalize on high oil prices and help ensure that global demand is met by exploring and developing oil resources in the U.S.

Just this week, FTTN added a working interest in a proposed well located in Alabama's largest producing oil field to its growing list of assets. It is the third working interest in a prospective well that FTTN has purchased so far this year. The company also owns interests in promising wells located in Terrell County, Texas, and Calcasieu Parish, La.

The company is aggressively pursuing the development of domestic resources to capitalize on high oil prices by creating American jobs. First Titan is working to develop new energy solutions to compete in a booming global industry alongside Chesapeake Energy Corp., Anadarko Petroleum Corp., SandRidge Energy Inc. and Apache Corp.

### **54. China's Light-Vehicle Sales Forecast To Nearly Double By 2020**

China's annual light-vehicle sales will nearly double from 17.7 million units in 2011 to nearly 31 million units by 2020 thanks to sustainable economic growth, predicts IHS Automotive. China's light-vehicle sales, which include passenger vehicles and light trucks, will be almost double those of the United States by 2020, according to the forecast, which was recently released.

IHS Automotive, a research firm headquartered in suburban Detroit, expects U.S. light-vehicle sales will reach 16.8 million units in 2020, up from 12.8 million in 2011.

This year, China's light-vehicles market will overtake Europe, according to LMC. It expects China to sell 19.2 million light vehicles, compared with Europe's 18.2 million units.

Despite robust auto sales in recent years, China's car ownership rate still lags far behind mature markets such as Japan, the United States and Western Europe.

The density of vehicles in the western region of China is especially low, but incomes there will rise due to the government's investment initiatives, said IHS Automotive Consulting Director James Chao. "Simultaneously, automakers are already betting on an increase in the number of first-time car buyers and are setting up new manufacturing plants to cope with the anticipated demand," Chao said in a statement.

China's booming auto industry is important is because the automakers and parts suppliers best positioned to win in China will also have a better shot at long-term success. GM and VW are neck and neck in the race for #1 in China and they are laying out plans to strengthen their operations in China. GM has eight plants in China while VW is in the process of adding three more plants.

Ford and Chrysler have much further to go. Ford is rapidly building sales in China, but because it was slow to invest in the country in the late 90's Ford is playing catch-up. For example, Ford sold 519,390 vehicles in China last year compared to GM's 2.54 million.

Chrysler is even further behind with annual sales in China totaling well fewer than 100,000. Sergio Marchionne knows the potential of China, especially when it comes to SUV's and is looking to aggressively grow the Jeep brand in that country.

## **55. CO2 Emissions from Cars in Australia Higher Than In Europe**

The Australian National Transport Commission (NTC) began reporting the carbon dioxide emissions of new cars and light commercial vehicles in 2009 to provide a transparent benchmark for how Australia's vehicle emissions are tracking. The NTC has since published this information annually based on data provided by the Federal Chamber of Automotive Industries (FCAI).

The 2010 paper was provided to the Commonwealth Government to inform the work that is currently underway to develop mandatory carbon dioxide standards for new passenger and light commercial vehicles (expected to be introduced by 2015).

The NTC's current information paper, Carbon Dioxide Emissions from New Australian Light Vehicles 2011, was released on 14 March 2012. The paper provides detailed up-to-date information about carbon dioxide emissions from new cars and light commercial vehicles sold in Australia during 2011.

Some of the key findings include:

- In 2011, the national average carbon emissions from new passenger and light commercial vehicles was 206.6 g/km.

- In 2011, 15 manufacturers sold 93 per cent of the new light vehicles in Australia. Of these manufacturers, Suzuki had the lowest average corporate emissions (161 g/km) and Nissan the highest average corporate emissions (226 g/km).
- In 2011, the average emissions from Australian-made light vehicles was 230 g/km. This is a 6.9 per cent reduction from 2010.

While there were more green vehicles available for sale in 2011, these vehicles were not amongst the best selling vehicles. If Australians had made greener purchasing decisions in 2011, carbon emissions from new cars and light commercial vehicles could have been cut by over a third.

New cars will need a 10-fold improvement in carbon emissions by 2050 if transport is to play its part in meeting the Commonwealth Government's target of an 80 per cent reduction in emissions by 2050, according to the NTC.

NTC Commissioner Frank Muller made the comments at The Cars of Tomorrow conference. "Industry, consumers and governments all have an important role to play in helping Australia reduce its emissions," said Mr Muller.

"During 2011 there has been a 2.8 per cent improvement in carbon emitted from new vehicles, with a number of manufacturers working to make their vehicles greener," Mr Muller said. "There is a tremendous opportunity to build on this progress by continuing to look at ways to encourage Australians to make greener car choices."

### **33. HK Rises in Quality Of Life Survey Up, But Air Pollution Problematic**

Hong Kong is the third most livable city among 49 Asian cities for expat employees following Singapore and Kobe in Japan, according to a new survey. However, Hong Kong's rise in the ranking from fifth last year was not the result of any improvement in its quality of life. "Unfortunately, it's been due to deterioration in the quality of living elsewhere," said Lee Quane, regional director, Asia, of ECA International, the British-based human resource consulting company that conducts the annual survey.

Quane said Hong Kong came third after overtaking Tokyo and Yokohama, which both dropped a place because of the inevitable fallout from the devastating earthquake and tsunami that hit Japan in March 2011.

The survey assesses the 49 Asian cities under 10 categories including climate, health risks, air pollution, goods and services, infrastructure, housing and education.

Though ranking far below Hong Kong, scores among cities on the Chinese mainland remained steady. Shanghai, in 12th place, was the most livable of mainland locations, followed by Beijing, Nanjing and Guangzhou. Infrastructure, goods and services, and air pollution are among the areas where the Chinese cities should put more effort, the survey said.

Singapore hung on to the No. 1 spot with its good air quality, solid infrastructure and health care facilities, low crime and low health risks.

Compared with Singapore, Hong Kong, almost equally good in infrastructure, goods and services, and housing, is perceived to be more affected by natural disasters such as typhoons.

"But Hong Kong's main issue that really separates it from Singapore is its air pollution," Quane said. The city's air quality was among the least favorable, compared with places such as New Delhi and other developing locations that are prone to poor air quality. "This is where Hong Kong really fails," Quane said.

### **56. Solutions Sought On Soot As Shanghai Suffers 140 Hazy Days per Year**

About 140 days per year are hazy in Shanghai, environmental experts told a forum addressing PM2.5 pollution. Hao Jiming, a member of the National Environmental Advisory Commission and vice director-general of the Chinese Society of Environmental Sciences, said PM2.5 density in most Chinese cities exceeds the World Health Organization Interim Target-1, the most lenient standard.

"In many cities, PM2.5 accounts for 50 percent of PM10. In Beijing, the percentage is more than 60 and in Shanghai it is about 60 percent," he said. "Compared with PM10, PM2.5 is more harmful to people's health."

PM2.5 affects air quality and visibility, causing haze, and poses major health risks as the particles are small enough to lodge deep in the lungs and even enter the bloodstream, leading to some premature deaths and long-term diseases.

Every year, there are about 100 hazy days in Beijing, 207 in Tianjin, 133 in Chongqing, 131 in Guangzhou and 239 in Chengdu, Hao said. He said developing public transportation and restricting the number of vehicles are the major solution for Shanghai to improve its air quality and reduce hazy days. "It may take five to ten years for Shanghai to meet China's new standard on PM2.5 of 75 micrograms per cubic meter," he said.

The current air-quality measurement system includes only PM10, sulfur dioxide and nitrogen dioxide but not the stricter PM2.5 gauge, which monitors fine particles 2.5 microns or less in diameter. Shanghai started to release PM2.5 measurement as a trial in March and plans to include PM2.5 data into the local air-quality measurement system in June. The number of days with excellent and good quality is expected to drop by 10 to 15 percent as a result.

Exhaust from motor vehicles and boats are the biggest source of local PM2.5 emissions, accounting for one-fourth of fine particles in the city's air. Other major components are the spreading of sandstorms from northern China and local sources that include industrial processes like chemical factories, industrial sprays, industrial boilers, power plants and flying dirt from construction sites, roads and stocking yards. Residences contribute with kitchen smoke, laundry and painting, as do agricultural practices like straw burning, fertilizer use and livestock farming.

Professor Hao said at the forum that the Yangtze River Delta region, of which Shanghai is a part, has its regional characteristics on fine particle pollution.

### **57. NDRC Says Modest Rise in Consumer Prices Acceptable**

A modest rise in consumer prices is inevitable and acceptable, an official with China's top economic planner said recently, as long as the rise is slower than the rate of economic growth and income growth. A reasonable increase in prices cannot be avoided, given increasing demand for agricultural products and the rise of labor, resources and environmental costs, Peng Sen, deputy director of the National Development and Reform Commission (NDRC), said in an

article published recently in Qiushi Journal, the main theoretical publication of the Central Committee of the Communist Party of China. But as long as the rise in prices is notably slower than the rate of economic growth and income growth, it will be acceptable to society in terms of macroeconomic policy, Peng said.

Peng's comments came after China's consumer price index (CPI) rose 3.6 percent in March from a year earlier, accelerating from a 3.2 percent rise in February but within the government's annual target of 4 percent. "The 4 percent goal indicates that China's tolerance of inflation is higher than in the US and some European economies, where the annual inflation target is set within 2 percent," Wang Yuwen, an analyst at the Bank of Communications, told the Global Times. "Considering the recent price rise of fuel and of consumer goods such as edible oils and shampoo, China still faces inflationary pressure in the short term," she said.

Premier Wen Jiabao last month set a 4 percent target for inflation this year, which some economists said is higher than expected and could offer room for more reforms in energy and utility pricing, which may see higher bills for petrol, electricity and gas.

### **58. Parikh Asked To Suggest Ways to Lower Fuel Subsidy in India**

The government has asked former Planning Commission member Kirit Parikh to suggest ways in which the price of diesel can be raised to check the mounting fuel subsidy. Parikh said he is likely to submit a report to the finance ministry within two months.

Despite rising global crude prices, India hasn't raised diesel prices since July last year. State-run oil refiners lost Rs80,000 crore in the year ended 31 March for selling diesel below cost, according to an oil ministry spokesperson. Petrol prices, which were removed from state control in June 2010, have also not been increased since December.

The price differential has led to the proportion of diesel cars rising as the cheaper fuel makes up for the higher cost of the cars. Owners of diesel-powered luxury cars made by Mercedes-Benz India Ltd, BMW India Pvt. Ltd and Audi India Pvt. Ltd, among others, are also beneficiaries of a subsidy aimed primarily at farmers to allow them to run irrigation pumps.

In February 2010, a committee under Parikh had suggested that the government immediately deregulate diesel prices. While this is unlikely to happen because of the political compulsions of the Congress-led United Progressive Alliance government, Parikh said he may suggest several alternative measures to determine diesel prices.

One of the options could be staggering the increase in diesel prices over time to minimize the impact on the poorer sections of society, according to Parikh. "This is just one of the many options that could be considered," he said, adding that the decontrol of diesel is "strongly recommended" to reduce the subsidy burden "once and for all".

A staggered increase in diesel prices cannot be a permanent solution, said Anumita Roychowdhury, executive director at Centre for Science and Environment, a research institute. "It still doesn't solve the problem of the car-buying pattern shifting towards diesel cars," she said. "Reforms are needed, but we cannot wait for them indefinitely. We need an interim measure. You need to tax the end-user of the fuel."

Dipesh Dipu, director of consulting practice at Deloitte Touche Tohmatsu India Pvt. Ltd, said diesel prices should gradually be brought on par with petrol, as is the practice in most developed

countries. In some states in India, the difference between the two is as much as `25 per liter, he said, and suggested that "the government should bridge this gap".

The Parikh committee had recommended that the government cap the spending on the diesel subsidy. In effect, such a mechanism would ensure that any additional subsidy burden would be passed on to the consumer by way of a price increase.

The subsidy on fuels accounted for the biggest expenditure in the government's balance sheet last fiscal. While the government spent Rs38,371 crore on the fuel subsidy in 2010-11, the figure shot up 78% to Rs68,481 crore the next year—nearly three times the Rs23,640 crore provision in the budget.

While the fuel subsidy estimates in last year's budget were pegged to the price of Brent crude at \$90 (Rs4,626) a barrel, its average price during the year stood at \$115 a barrel. Crude prices in the international markets are currently hovering at around \$120 a barrel. For the current fiscal, the government has budgeted Rs43,580 crore for fuel subsidy.

The price differential between diesel and petrol has led to a steady rise in the sale of diesel vehicles in the country. The proportion of diesel cars sold in India has steadily risen from 21.4% of total cars sold in fiscal 2008 to 40% in the year ended 31 March, according to data compiled by the Society of Indian Automobile Manufacturers (SIAM). About 85% of sales of Maruti Suzuki India Ltd, the country's largest car maker, in 2011-12 came from its four diesel models—the Ritz, the Swift, the Swift DZire and the SX4.

### **59. Prime Minister Hints at Rise in Fuel Prices, Cites Import Bill**

Despite key Congress allies opposing deregulation of diesel prices, Prime Minister Manmohan Singh recently stressed the need to rationalize fuel prices as spiraling cost of international crude severely impacts India's import bill. Inaugurating a nine-million ton a year refinery, the PM said imports account for about 80% of India's crude supplies and "we need to rationalize prices and at the same time ensure that the poor and needy are shielded from the effects of such rationalization." (Speaking at the event Arcelor Mittal chairman Lakshmi N Mittal said capacity of Bathinda refinery could be doubled to 18 million ton in future. The refinery is an equal joint venture between state-run Hindustan Petroleum and Mittal Group.)

The PM also indicated that the government was working on a direct subsidy mechanism to shield the poor from price volatility of petrol, diesel, and kerosene and cooking gas.



Despite his caveat on protecting the vulnerable, Singh's remarks point to likely increases in petrol and diesel prices if he does bite the bullet, despite the Nationalist Congress Party and the Trinamool Congress opposing the "in principle" decision to deregulate diesel prices.

The voluble allies have promised to protest the move with the NCP planning rallies in Delhi and TMC chief Mamata Banerjee instructing party MPs to voice the party's opposition. Trinamool parliamentary party leader Sudip Bandhopadhyay has said the party will not support diesel price deregulation.

The Prime Minister may have hinted at the need to rationalize fuel prices but key allies like Trinamool and NCP are unlikely to accept such a move. TMC chief Mamata Banerjee, given her "pro-people" stance - she even sacked her own railway minister to stymie a bid to raise rail fares - will certainly not support a hike in fuel prices. It remains to be seen if she will put her foot down or limit herself to protests. If NCP and TMC team up they can create a serious hurdle for the government and PM's comments seem intended to test the waters.

Besides allies, opposition groups are certain to criticize fuel hikes on the ground that they spur inflation.

The PM said "the challenges we face on the energy front are formidable. We need adequate supplies of energy at affordable prices. Domestic sources of crude oil and gas are inadequate to meet the growing demands of our rapidly expanding economy."

Suggesting that the oil subsidy bill was getting out of hand, Singh said "In order to insulate the common man from rising oil prices, the government should shoulder a sizeable portion of the burden by pricing diesel, kerosene and domestic LPG below their market prices."

"We need to adopt better technology and consumers should be made aware of the benefits of fuel conservation," said the PM.

State minister for petroleum & natural gas RPN Singh, who was also present at the event, said the companies were incurring Rs 15 a liter revenue loss on diesel, Rs 32 per liter on kerosene and Rs 550 per cylinder on cooking gas. According to oil companies, they plan to raise petrol rates by Rs 9.65 a liter in Delhi, if government does not cut taxes on the fuel.

"Petroleum ministry has written to finance ministry for removing duties in petrol to prevent a steep hike in petrol rates. We are awaiting government's action before taking a decision on raising petrol prices," the chairman of an oil company said requesting anonymity. It was recently reported that the oil ministry wanted the special additional excise duty of Rs 6/liter on petrol to be removed so that price increase could be kept as low as possible. Total central levies on petrol are Rs 14.78 a liter, including education cess.

In his address, Petroleum Minister S Jaipal Reddy said, with a population of 1.2 billion and an economy that is growing on an average of 8 per cent a year, India's energy needs are increasing at a rapid rate. "The challenge is more pronounced since we are highly dependent on imported oil, which accounts for 75 per cent of our total requirement," he said, adding that the country's oil import bill had already breached the \$100-billion mark in 2010-11.

"Meeting the requirements of India's expanding economy is creating a tremendous surge in the demand for hydrocarbons," he said. Fuel demand has risen from 129 mt in 2007-08 to 147 mt in 2011-12 at an annual growth rate of 4.2 per cent.

Prime Minister also stressed on the need to conserve scarce energy resources. "There is no room for inefficient and wasteful usage of fuel, be it petrol, diesel, kerosene or gas," he said in Punjabi. Government and industry officials say that selling fuel below substantially below market rates is one of the main reasons for wasteful consumption of fuel products and its conservation is possible only if their prices are market linked.

Senior officials of state-run Indian Oil Corp, Bharat Petroleum and HPCL said the Prime Minister hinted at a "possible" hike in fuel rates. "We expect that prices of petrol, diesel, kerosene and

cooking gas would be raised after the Budget session is over next month," one official said requesting anonymity.

### **60. India Railways Takes Steps to Cut Diesel Locomotives' Emissions**

'Indian Railway has taken up a clean diesel project to reduce emissions from diesel locomotives and to bring them in consonance with international emission standards. An initial feasibility study has been completed and the phase-II of the project for developing a prototype system for a locomotive is under process,' MoS for Railways Bharatsinh Solanki told the Rajya Sabha or Council of States, the upper house of the Parliament of India..

### **61. Beijing Puts 2.8 Billion Yuan into Traffic Improvement**

Beijing plans to allocate 2.84 billion Yuan (US\$450 million) this year to further improve the capital's notorious traffic, China News has reported. The fund will be used mainly to open up dead-end roads, widen road bottlenecks, and rebuild roads that cause congestion. Roads near schools and old residential communities are top of the list of priorities for improvement, said an official of the Beijing Municipal Commission of Development and Reform.

Beijing has already introduced a series of measures to tackle the jams, including a monthly quota for license plates. But since the number of cars registered in Beijing passed the 5 million mark in February 2012, vehicles are usually slowed to a crawl on major road networks.

### **62. China Adopts the Energy-Saving and New Energy Vehicle Industry Development Plan**

The State Council adopted the Energy-saving and New Energy Vehicle Industry Development Plan (2012-2020) on April 18, 2012. It highlighted that the auto industry restructuring strategy will focus on the development of battery electric and plug-in hybrid vehicles. The Plan calls for further fuel economy improvement from conventional vehicles and greater promotion of new energy vehicle deployment. It sets the goal of fleet average fuel consumption of 6.9l/100km and 5l/100km in 2015 and 2020 respectively and 500,000 cumulative sales of battery electric vehicle and plug-in hybrid vehicles by 2015, and 5 million by 2020. The plan was initiated by the Ministry of Industry and Information Technology and other government departments.

### **63. Mini Electric Cars Fill Gap in China as Official EVs Sputter**

The tiny electric car that Chen Xianping drives to work over bumpy country roads in Shandong province says much about the hurdles facing China's efforts to promote electric vehicles and the big car companies' efforts to sell them. It's not a beautiful machine. The Shifeng brand car resembles a plump Fiat Mini with oversized headlights and has a top speed of about 50 kilometers per hour. But Chen's little car has a big advantage: it cost only 31,600 Yuan (about \$5,000), far cheaper than BYD's larger e6, which costs 369,800 Yuan (\$58,700). And it helps that it's not a real car in the eyes of the government.

Beijing has made a dismal start toward its ambitious goal of putting of 500, 000 hybrids and electric vehicles (EVs) on China's roads by the end of 2015, rising to more than 5 million by 2020. Last year, a mere 8,159 were sold across the entire country, including those for government pilot programs for e-taxis and e-buses. Although heavily subsidized, the EVs the government promotes remain expensive. Even after generous subsidies of 120,000 Yuan, the price of the BYD e6 would be seven times Chen's salary.

A dearth of charging stations and high battery prices have also contributed to the slow pace of high-performance EV sales.

But while policymakers and executives at major automakers wring their hands, scores of small, unlicensed entrepreneurs are tapping the market's real sweet spot - not middle-class environmentalists, but lower-income buyers who want to get off their bikes and into any four-wheel vehicle they can afford. By some estimates, some 260 million people in China still rely on bicycles and motorcycles as their main mode of transportation and could be potential customers.

"Mini electric cars are getting popular in rural areas as farmers need something affordable to carry them around," said Wei Xueqing, vice chairman and secretary general of Shandong Automobile Manufacturers Association. "Many are still taking their kids to school on bikes, motorcycles or even three-wheel farm vehicles, which are neither safe nor comfortable."

Mainstream automakers, however, see it differently "These cars are illegal, unsafe and shouldn't be on the road," said an executive at Changan Automobile Group, China's fourth-largest automaker. There could also be some intellectual property rights issues, he added, and "the government should do something about it."

Lu Jiantong, founder and CEO of auto R&D firm Lojo EV, is typical of the small entrepreneurs who have entered the sector. He shifted his previous focus on pricy, high-performance EVs after he discovered the real opportunities for quick money were catering to rural consumers. With Lu's help, Yang Huayu, a Shandong entrepreneur who started building mini e-cars only a year ago, is already selling three or four a day.

"The technology must match the market. Today the high-speed electric car market hasn't taken off yet, but demand for slow-speed electric cars is growing," said Lu.

About 12 hours' drive from Yang's factory in Gaotang county is Shifeng Group's new 480 million Yuan assembly plant, where workers churn out 100 mini e-cars per day. Shifeng is the top player in the market, with about a 50 percent share. Shifeng delivered nearly 30,000 cars to its 200 dealer outlets across the country in 2011. Sales this year could hit 50,000, about a 13-fold increase over the level in 2008, the first full year of sales, said company vice president Lin Lianhua. "We have a built-in capacity of 100,000 cars, we can easily speed up if needed," said Li, who has been commuting between home and work in a blue e-car for nearly two years.

Sandwiched between the trucks, vans and farm vehicles that dominate the country roads of Shandong, the quirky mini EVs have even caught the attention of global heavyweights. According to Wei at the automobile association, executives from Toyota Motor and Mitsubishi Motors Corp have made fact-finding trips to Shandong.

To expand their appeal, Lin and his team at Shifeng have started trial production of a sleeker version of mini e-cars, with improved interior design and power efficiency. Yang, the business owner, is also ready to add more factory workers to meet rising demand.

Both executives declined to share their longer-term sales targets, aware that shifting government policies could suddenly change their outlook. Like Shifeng, most of the dozens of small manufacturers in this segment operate without official licenses, making their sustainability uncertain. Moreover, the cheap lead-acid batteries that power their cars create pollution during production and disposal, hardly projecting the "green" image that government officials hope the

EV sector will convey. But they account for merely a third of mini e-car total cost, while e6's lithium iron phosphate batteries contribute about two-thirds of the cost.

In late 2008, just as Shifeng was gearing up to increase output, executives got a surprise visit from Beijing regulators and were advised not to challenge the market's status quo. Some feared the e-cars could take market share away from similarly priced low-end gasoline models. After that visit, Shifeng's assembly line was idled for half a year and resumed only after tenacious lobbying efforts by authorities eager to spur the local economy. The latest message to Shandong from at least one powerful central government official: Go ahead if there is market demand, but don't call them "green" vehicles.

Meanwhile, new orders keep coming. Yang Wenjun, a friend of Chen's and owner of a small grocery store in a neighboring village, also wants to trade his motorcycle for an e-car. "I've seen them around," he says. "I figure it must feel good to visit friends and relatives in a four-wheeler."

#### **64. China Apparently To Extend Timeframe to Reduce Carbon Emissions Intensity**

China will adopt a goal to reduce its carbon intensity 40 percent from 2005 levels by 2025, the vice-chairman of the country's top planning body told the Major Economies Forum on Clean Energy and Climate. The announcement gives China 5 more years to reach the voluntary carbon intensity reduction target that it set for itself in late 2010 during the 16th Conference of the Parties (COP-16) to the United Nations Framework Convention on Climate Change, held in Cancun, Mexico.

The world's largest emitter of the greenhouse gas, China said during the U.N. climate summit in Cancun that it would seek to reduce its carbon intensity—or carbon dioxide emissions per unit of gross domestic product—by 40 percent to 45 percent from 2005 levels by 2020. More recently, China also has announced plans to reduce its emissions intensity 17 percent by 2015. Xie Zhenhua, vice-chairman of China's National Development and Reform Commission, announced the 2025 goal at the 14th session of the MEF talks, which concluded on April 17<sup>th</sup>.

The MEF talks involve major greenhouse gas emitters, including the United States, India, and Brazil. The talks were the first major multilateral climate change discussions since the U.N. climate summit in Durban, South Africa (COP-17), ended on December 11<sup>th</sup>.

#### **65. EU Climate Chief: Looking At China's Airline Carbon Plan**

EU Climate Commissioner Connie Hedegaard said recently that officials were looking at a Chinese plan for its aviation carbon emissions, but did not yet have enough information to see if it could count as an "equivalent measure" under EU carbon law. China confirmed that it would use revenue from a passenger tax on international flights to cut carbon emissions in the aviation sector, adding that the tax itself would not increase, according to Chinese media.

"We asked our delegation in Beijing to look into what this might mean," Hedegaard told reporters at a meeting in Denmark. Asked whether this was something that could be seen as an equivalent measure to the EU's efforts to reduce carbon output, she said: "We don't have enough information yet."

EU legislation aimed at making airlines pay for carbon pollution allows Europe to exempt carriers from countries that are taking "equivalent" steps to curb greenhouse gases from aviation.

China's Ministry of Finance told state-owned news agency Xinhua that a tax on passengers on international flights operated by China-registered airlines will be used on a number of new initiatives, including cutting emissions. The funds will now be redirected to the newly established Civil Aviation Development Foundation, which will focus on emission cuts, security enhancement and research and development.

#### **66. PETCOA Joins Philippine Medical Association (PMA) On Drive to Improve Air Quality**

The Private Emission Testing Center Operators Association (PETCOA) has expressed its support for the campaign of the Philippine Medical Association (PMA) to eliminate corruption in the motor vehicle emission testing industry in a bid to improve the air quality in the country. In a statement released by PMA, PETCOA president Tony Halili said they decided to forge an alliance with the doctors' group as they also want to improve the quality of air in the country.

"We totally support this crucial partnership with the PMA. Because of this alliance, PETCOA deemed it necessary to implement immediately several drastic measures to complement government's role," he said.

Halili said the government has not been "consistent in monitoring and imposing penalties against erring PETCs to the detriment of those who are righteously conducting emission tests under strict protocol."

Last March, the PMA had organized a summit to combat air pollution in Metro Manila. The group blamed the rampant corruption at the Land Transportation Office (LTO) – which is tasked to test private vehicles for smoke emission – for the worsening quality of air in the metropolis. The PMA said rampant corruption at the LTO is to blame for the continued operation of smoke-belching vehicles on Metro Manila roads.

Under the Republic Act 8749 or the Clean Air Act, accredited private emission testing centers are tasked to check the exhaust system of private vehicles. According to Halili, PETCOA intends to police its ranks to make sure that smoke-belching private vehicles are taken off the road.

For his part, PMA Gov. for Manila Dr. Leo Olarte maintained that PMA and PETCOA have "agreed to intensively cooperate with each other in our concerted effort to weed out the corrupt elements within their ranks as well as that of the government's motor vehicle emission testing centers, initially in the National Capital Region and ultimately the entire nation."

#### **67. Changes Planned To New Zealand Vehicle Emissions Rules**

Transport Minister Gerry Brownlee has announced plans to update the rules setting emissions standards for vehicles entering New Zealand. Proposed changes to the 2007 Vehicle Exhaust Emissions Rule will ensure that New Zealand continues to import new vehicles built to the highest available exhaust emissions standards. Current standards for used vehicles would remain in place.

"The new standards for new vehicles would mirror those recently agreed in Australia for the introduction of the European standards known as Euro 5 and Euro 6. These standards significantly reduce the harmful emissions from these vehicles," Mr Brownlee said.

"The current emissions rule does not set any standards for used vehicles beyond 2012. When this rule was introduced in 2007, the intention was that a review should take place to consider when to introduce the standard known as Japan 09. "Much has changed since the 2007 emissions Rule was first drafted. Therefore I am proposing that we review the need for any further standards in 2014. "Until then the current standards for used vehicles will continue. These were only introduced on 1 January 2012 for petrol vehicles and in 2010 for diesel vehicles and were an important improvement over the earlier standards they replaced."

A draft amendment rule will be made available for public consultation in June this year, and it is expected that the final amendment rule would come into effect before the end of the year.

## **SOUTH AMERICA**

### **68. Brazilian State Council Wants Tax Incentives for Companies That Buy Cleaner Vehicles**

The government of Brazil's São Paulo State should offer tax incentives to encourage companies to replace existing vehicle fleets with lighter models powered by renewable sugar cane ethanol to reduce emissions of carbon dioxide and particulate matter, the state's Environmental Council (CONSEMA) has recommended. The suggestion is one of four that the public policy body submitted to the enforcement and execution arm (CETESB) of the state's Environment Secretariat. The recommendations are meant to strengthen CETESB's Vehicle Pollution Control Plan (PCPV).

CONSEMA also recommended government purchasing preference for the most technologically developed trucks and buses to encourage their manufacture; government financing of bicycle paths and racks; and stricter controls on emissions of volatile organic compounds (VOCs), a major contributor to ozone pollution.

All Brazilian states are required by a 2009 CONAMA resolution (No. 418) to publish PCPV plans.

São Paulo state's PCPV, drafted by CETESB in September, identified cities and regions with the worst air pollution and proposed vehicular emission controls to stabilize air quality. The state, Brazil's most industrialized, is home to 41 million of the country's nearly 192 million people and includes its largest city, São Paulo (population 20 million).

The state PCPV recommended that the state legislature approve a proposed law that would require annual vehicle emission inspections before registrations are renewed. The city of São Paulo has had such a requirement since 2009.

The vehicle pollution control plan also urged efforts to increase the availability of low-sulfur diesel for all trucks and buses; to boost state investments in rail and waterway transport to replace trucks; and to expand public transportation, mainly subways, in cities with the worst air pollution.

CETESB must revise and upgrade the PCPV every three years. The next revision scheduled for 2014.

### 34. C40-CCI Hybrid & Electric Bus Test Program: Interim Results

C40 has published a summary of interim results of its Hybrid & Electric Bus Test Program, developed in partnership with the Clinton Climate Initiative, and supported by the Inter-American Development Bank (IADB). Promising findings show significant progress towards the Program's ultimate goal: catalyzing the deployment of up to 9,000 buses across Latin American cities over the next five years, with steady-state reduction of annual CO2 emissions by



475,000 tons.

Launched in June 2011, the Program aims to reduce the carbon footprint of public transportation in Latin America, and develop a market for fuel efficient, low-carbon buses in the region. It tests bus technology performance in city-specific driving conditions and duty cycles; and, through the publication of results, establishes the case for investment in hybrid and electric buses. An initial group of four cities are participating: Bogota, Curitiba, Rio de Janeiro and Sao Paulo.

“This innovative Program brings together cities, bus technology companies, and local transport operators to produce accurate and comprehensive data, which all parties can use to make investment decisions. Bus testing has so far been conducted in two of the four participating cities – and the results demonstrate that hybrid bus technology has an important role to play in reducing urban greenhouse gas emissions.”

The Program's interim results demonstrate that hybrid technology is more fuel efficient, and produces fewer local air pollutants and greenhouse gases, than conventional diesel buses. To date, two test campaigns have been completed in Rio de Janeiro and Sao Paulo; these focused on comparing hybrid diesel-electric technology to conventional diesel technology. Results measured a range of factors from exhaust emissions to energy performance, following a rigorous test protocol based on simulating real-world driving conditions: representative urban routes, road congestion levels, different driving cycles and road types where buses actually can operate in each of the participating cities.

Looking ahead, new campaigns will run again in Rio de Janeiro and Sao Paulo as well as in Curitiba and Bogota in the second and third quarter of 2012. A final report is due to be released by October 2012.

A total of 58 global cities are members of the C40 Cities Climate Leadership Group (C40). Current Chair, New York City Mayor Michael R. Bloomberg, along with the ten-member Steering Committee of other C40 mayors, guides the work of the C40.

## **69. Economic Interests Cannot Justify Environmental Harms, Brazilian Court Says**

A Brazilian appeals court ruling that banned the burning of sugar cane stalks to harvest the crop in a region of São Paulo state could set a judicial precedent that environmental interests trump economic ones when farming or industry pollute or cause other serious environmental impacts. A five-judge panel of the Superior Justice Tribunal (STJ) unanimously overturned a decision by the São Paulo State Judicial Tribunal, the highest court in the state. The STJ ranks just below Brazil's Supreme Court.

The state court had said sugar cane producers in the municipality of Jaú could burn cane stalks to manually harvest the crop because a 2000 state law had made it legal because replacing manual harvesting with mechanized harvesting could worsen unemployment, thus harming the state's economy; and because there was no scientific evidence that smoke and soot from stalk burning causes environmental harm.

São Paulo state is Brazil's leader in sugar cane production. Cane producers burn stalks to destroy leaves whose sharp edges cut workers and make manual harvesting difficult.

State prosecutor João Marques said the STJ decision will probably be definitive. He said it is unlikely that the São Paulo state government will appeal to the Supreme Court because the STJ decision cited federal laws that ban polluting activities like stalk burning. "The Supreme Court virtually always rules that federal laws supersede state ones, unless state laws are more restrictive," he said.

## **70. Peru Is Latest Developing Nation to Adopt Climate Change Initiative**

Peru became the latest developing country to enact a domestic climate change initiative in the absence of a binding global pact, adopting a resolution to lower carbon emissions in its fast-growing economy.

As one of the world's most geographically diverse places, Peru said it is already feeling the effects of a changing climate, such as melting tropical glaciers in the Andes and high levels of solar radiation. Record rainfall in the Amazon basin this year has wrecked crops, spurring inflation and hurting specialty exports like coffee. Lima, on the Pacific coast, is often regarded as the world's driest capital next to Baghdad.

"If we don't do something we will have problems with water supplies along the coasts, we know there will be more droughts, more rains ... we are already seeing temperature changes," said Mariano Felipe Soldan, head of the government's strategic planning office.

Peru's long-term climate change plan aims to include more renewable fuels in Peru's energy matrix, switch to a low-carbon economy and curb illegal logging in the Amazon rain forest. Peru's model is based on one developed by South Africa. Similar plans are being implemented in Chile, Argentina, Colombia and Brazil.

The local plans were formed in part because an ambitious global agreement to limit greenhouse gas emissions has been delayed by disagreements between the developed and developing world. Peru, which emits some 0.4 percent of the world's greenhouse gas emissions, backed a goal set at last year's U.N. talks in Durban, South Africa to forge a wider international climate change deal by 2015 that would come into force by 2020. But like many developing countries,

Peru insists that any future global agreements to reduce emissions preserve its right to industrialize. It says big polluting countries should bear the brunt of emissions cuts.

The seemingly intractable issue of climate change has been largely replaced by the less polarizing issue of sustainable development at the U.N.'s next big conference on the environment, the Earth Summit, in June.

## **AFRICA**

### **71. South Africa: Petrol Price to Increase by 71 Cents**

Global events have led to the substantial 71 cents a liter increase in the price of petrol, the Energy Department has announced. This comes as the department announced that a liter of 95 ULP will rise by 71 cents in Gauteng and 66 cents at the coast, while that of diesel (0.05% sulfur) will rise by 47.6 cents at the coast and 51.9 cents in Gauteng.

In Gauteng, a liter of petrol will now cost R11.94.

The price of illuminating paraffin (wholesale) is set to increase by 20.6 cents at the coast, while it will rise by 26.6 cents in Gauteng.

"This is a tough period for motorists. We recognize the challenges that motorists are going through," the department's Deputy Director General for Hydro-carbons and Energy Planning, Tseliso Maqube, told media. He said the department acknowledged the trend of increasing petrol prices and this month's "sizeable" hike.

The department advised motorists to be economic in terms of their fuel use, given the increasing prices.

Maqubela said South Africa was a price taker in terms of fuel supplies, adding that global prices have been on the increase (including Brent crude) since December last year.

Maqubela noted that the global economy in the main has been on the mend and as a result, there will be an increase in demand that will have an impact on the price.

Geopolitical issues in countries producing oil also have had an impact on pricing. In the US, the closing down of refineries in the East Coast -- leading to the US obtaining its supplies from the Mediterranean -- has meant that there was an increase in demand. Fifty percent of South Africa's fuel price is based on prices it gets from the Mediterranean.

"If the demand there increases, the prices increase as well, hence we have seen gradually a [systematic] increase in the petrol price. In the main that global set of events has led to the situation we are in today" explained the Maqubela.

The fuel tax levy announced by Finance Minister Pravin Gordhan as well as the RAF levy and pipeline tariffs announced by NERSA factor into the price of petrol.

Maqubela said there was consensus that there was a premium on crude oil prices due to developments in the Middle East.

"I must indicate that in the structure of prices in South Africa, no direct impact has been factored in as a result of sanctions. What you see is the impact of crude oil imports," he added.

Following recent shutdowns of refineries in South Africa, there was now stable supply available for motorists.

The department has issued several tips, including the checking of tire pressure, not speeding as well as car-pooling as methods of saving fuel.

## GENERAL

### 72. New Study Highlight Benefits and Costs of Desulfurizing Jet Fuel

In jurisdictions including the US and the EU ground transportation and marine fuels have recently been required to contain lower concentrations of sulfur, which has resulted in reduced atmospheric SO<sub>x</sub> emissions. In contrast, the maximum sulfur content of aviation fuel has remained unchanged at 3000 ppm (although sulfur levels average 600 ppm in practice). This report assesses the costs and benefits of a potential ultra-low sulfur (15 ppm) jet fuel standard ("ULSJ").<sup>10</sup> It estimates that global implementation of ULSJ will cost US\$1-4bn per year and prevent 900-4000 air quality-related premature deaths per year. Radiative forcing associated with reduction in atmospheric sulfate, nitrate, and ammonium loading is estimated at +3.4 mW/m<sup>2</sup> (equivalent to about 1/10th of the warming due to CO<sub>2</sub> emissions from aviation) and ULSJ increases life cycle CO<sub>2</sub> emissions by approximately 2%. The public health benefits are dominated by the reduction in cruise SO<sub>x</sub> emissions, so a key uncertainty is the atmospheric modeling of vertical transport of pollution from cruise altitudes to the ground. Comparisons of modeled and measured vertical profiles of CO, PAN, O<sub>3</sub> and <sup>7</sup>Be (Beryllium-7) indicate that this uncertainty is low relative to uncertainties regarding the value of statistical life and the toxicity of fine particulate matter.

### 73. OECD Says Pollution to Pose Major Global Health Risks by 2050

Without major policy changes, the world's population and economic growth between now and 2050 will likely contribute to a doubling of premature deaths linked to air pollution and growing health risks linked to toxic chemicals, in particular in emerging economies, according to a report released March 15<sup>th</sup> by the Organization for Economic Cooperation and Development.

According to the report, humanity has witnessed unprecedented growth and prosperity in the past decades, with the size of the world economy more than tripling and population increasing by over 3 billion people since 1970. This growth, however, has been accompanied by environmental pollution and natural resource depletion. The current growth model and the mismanagement of natural assets could ultimately undermine human development.

The *OECD Environmental Outlook to 2050* asks "What will the next four decades bring?" Based on joint modeling by the OECD and the Netherlands Environmental Assessment Agency, it

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<sup>10</sup> "Public Health, Climate and Economic Impacts of Desulfurizing Jet Fuel", Steven Barrett, Steve Yim, Christopher Gilmore, Lee Thomas Murray, Stephen Kuhn, Amos Tai, Robert Yantosca, Daewon Byun, Fong Ngan, Xiangshang Li, Jon Levy, Akshay Ashok, Jamin Koo, Hsin Min Wong, Olivier Dessens, Sathya Balasubramanian, Gregg Fleming, Matthew Pearson, Christoph Wollersheim, Robert Malina, Sarav Arunachalam, Francis Binkowski, Eric Leibensperger, Daniel J. Jacob, Jim Hileman, and Ian Waitz, *Environ. Sci. Technol.*, Publication Date (Web): March 1, 2012

looks forward to the year 2050 to find out what demographic and economic trends might mean for the environment if the world does not adopt more ambitious green policies. It also looks at what policies could change that picture for the better.

This Outlook focuses on four areas: climate change, biodiversity, freshwater and health impacts of pollution. These four key environmental challenges were identified by the previous *Environmental Outlook to 2030* (OECD, 2008) as “Red Light” issues requiring urgent attention.

Without policy action, the world economy in 2050 is projected to be four times bigger than it is today, using about 80 per cent more energy. At the global level, the energy mix would be little different from now, with fossil fuels making up about 85 per cent, renewables 10 per cent and nuclear 5 per cent. The emerging economies of Brazil, Russia, India, Indonesia, China and South Africa would become major users of fossil fuels. To feed a rising population, agricultural land is projected to expand, increasing competition for land.

Global emissions of greenhouse gases are projected to increase by half, mostly from energy use. The atmospheric concentration of greenhouse gases could reach almost 685 parts per million, with the global average temperature increasing by 3 to 6 degrees by the end of the century. "A temperature increase of more than 2 degrees would alter precipitation patterns, increase glacier and permafrost melt, drive sea-level rise, worsen the intensity and frequency of extreme weather events such as heat waves, floods and hurricanes, and become the greatest driver of biodiversity loss," the report says. Loss of biodiversity would continue, especially in Asia, Europe and southern Africa. Native forests would shrink in area by 13 per cent.

More than 40 per cent of the world's population would be living in water-stressed areas, particularly in Africa and Asia. Environmental flows would be contested and groundwater depletion might become the greatest threat to agriculture and urban water supplies. About 1.4 billion people are projected to be still without access to basic sanitation.

Urban air pollution would become the top environmental cause of premature death. With growing transport and industrial air emissions, the number of premature deaths linked to airborne particulate matter would more than double to 3.6 million a year, mainly in China and India.

With no policy change, continued degradation and erosion of natural environmental capital could be expected, "with the risk of irreversible changes that could endanger two centuries of rising living standards".

Presenting the 353-page outlook to reporters, Helen Mountford, deputy director of OECD's Environment Directorate, noted that the outlook's policy recommendations include eliminating fossil fuel subsidies, increasing environmental taxes, boosting knowledge of toxic chemicals, and improving chemical regulations and enforcement.

It said investments needed to hold global warming to a level that gives even a 50 percent chance of avoiding disastrous climate events could cost \$15 trillion to 20 trillion by 2050. But the economic cost of inaction on climate change would be far higher, it said.

The outlook said that four U.S. cities are among the 20 cities worldwide most likely to suffer human and economic losses due to increased flooding risks linked to climate change in the period ending 2070. It cited Miami, New York, New Orleans, and the Virginia Beach area as

among port cities with the highest exposure and vulnerability to coastal flooding. Amsterdam, Tokyo, and Bangkok were among others cited.

The outlook's climate change chapter includes a series of policy recommendations, including a global carbon price, mainly implemented through a carbon tax and a global emissions trading market.

OECD said small particulate matter concentrations in some cities, particularly in Asia, already far exceed safe levels established by the World Health Organization, and this is expected to worsen in many regions. It projected that by 2050 urban air pollution—especially particulate matter and ground-level ozone—will become the top environmental cause of premature death worldwide, taking over from the current top risks of dirty water and lack of sanitation.

“Excessive exposure to particulate air pollutants can lead to respiratory failure, and globally the number of premature deaths from [this] air pollution could double under our baseline of no new policies, reaching 3.6 million people per year by 2050,” Mountford said. Most of these deaths are expected to come in China and India, where economic and population growth is expected to sharply raise pollution from energy-related greenhouse gas emissions and other sources, OECD said.

To curb air pollution, more ambitious and targeted regulatory standards and economic instruments, such as taxes on polluting activities, are needed. “An urgent policy priority is to reduce the sources of particulate air pollutants in non-OECD countries, especially emissions from transportation,” OECD said. It recommended policy mixes of fuel taxes and regulations and cleaner public transport to reduce motor vehicle-related emissions.

#### **74. IMO Fails to Advance Discussions to Cut GHGs from Shipping**

The world's shipping industry was unable to make headway on developing market-based measures (MBMs) to reduce greenhouse gas emissions, the International Maritime Organization said in a March 5 briefing following a week-long environmental meeting in London.

The IMO's Marine Environment Protection Committee (MEPC) met from February 27<sup>th</sup> to March 2<sup>nd</sup>, tasked with steering the world's shipping industry closer to global consensus on reducing greenhouse gas emissions. International shipping accounts for 870 million metric tons of carbon dioxide, about 2.7 percent of total global CO<sub>2</sub> emissions, according to the latest IMO figures.

Key to the meeting was discussion on MBM proposals that would include a levy on all carbon dioxide emissions from international shipping or an emission cap-and-trade system, the IMO said in a February 22<sup>nd</sup> briefing previewing the week-long meeting. As with previous MEPC meetings, the persistent stumbling block over MBMs was the insistence of developing nations that the concept of common but differentiated responsibilities that applies under the Kyoto Protocol be applied to the shipping sector.

The next IMO debate on MBMs will be at the MEPC's 64th session, slated to run October 1-5.

MEPC also adopted four sets of guidelines to assist in the implementation of the mandatory Regulations on Energy Efficiency for Ships in MARPOL Annex VI, which calls for the reduction of harmful emissions from ships. The guidelines are expected to enter into force on January 1, 2013. The four guidelines cover the method of calculation of the attained Energy Efficiency Design Index (EEDI) for new ships; development of a Ship Energy Efficiency Management Plan

(SEEMP); survey and certification of the EEDI; and the calculation of reference lines for use with the EEDI.

EEDI is a non-prescriptive, performance-based mechanism that leaves to industry the choice of technologies to use in a specific ship design, as long as the required energy-efficiency level is attained, the IMO said.

SEEMP establishes a mechanism for operators to improve the energy efficiency of ships.

### **75. Transportation Unlikely to Play Important Role at Rio+20 Meeting, U.N. Official Says**

On March 15<sup>th</sup>, Elizabeth Thompson, the United Nations' executive coordinator for the summit in Rio de Janeiro, said that transportation, while an important part of efforts to build more sustainable communities, is unlikely to be a top agenda item at the June Rio+20 conference in Brazil. She noted that there is "some" mention of transportation issues in draft negotiating text being readied for the June 20-22 conference, but transport is essentially being addressed under the meeting's broader themes, which are building a green economy and poverty eradication.

The high-level meeting in Brazil will mark the 20th anniversary of the 1992 U.N. Conference on Environment and Development—also held in Rio—and the 10th anniversary of the U.N. World Summit on Sustainable Development held in Johannesburg.

The U.N. official said she recognized the challenge of making significant progress on sustainability efforts "without sustainable transportation being part of that process." But Thompson, who spoke at a forum held by the Carnegie Endowment for International Peace that drew officials from the U.S. State and Transportation departments, said transport is unlikely to play a prominent role at the Rio+20 talks.

International negotiators began hammering out draft negotiating text in January in preparation for the Rio+20 meeting and will resume those talks March 19-23 in New York.

Dan Sperling, a member of the California Air Resources Board and a visiting scholar at the Carnegie Endowment, said the relative lack of attention likely to be given to the transportation sector at the Rio+20 meeting stands in stark contrast with the five-year "action agenda" outlined by U.N. Secretary General Ban Ki-moon in January. That agenda specifically identifies sustainable transport as one of the key building blocks to sustainable development. The secretary general's agenda called on representatives from "aviation, ferry, rail, road, and urban public transport providers, along with Governments and investors" to develop more sustainable transportation systems to address "rising congestion and pollution worldwide, particularly in urban areas."

### **76. Chronic Exposure to Fine Particles Continues To Show Adverse Impacts on Mortality**

Epidemiologic studies have reported associations between fine particles (aerodynamic diameter  $\leq 2.5\mu\text{m}$ , PM<sub>2.5</sub>) and mortality. Perhaps the most important of these has been the Harvard Six Cities Study. However, concerns have been raised regarding the sensitivity of the results to model specifications, lower exposures, and averaging time. The authors addressed these issues using eleven additional years of follow-up of the Harvard Six Cities study, incorporating

recent lower exposures.<sup>11</sup> They replicated the previously applied Cox regression, and examined different time lags, the shape of the concentration-response relationship using penalized splines, and changes in the slope of the relation over time. They then conducted Poisson survival analysis with time-varying effects for smoking, sex, and education.

Results: Since 2001, average PM<sub>2.5</sub> levels, for all six cities, were below 18µg/m<sup>3</sup>. Each increase in PM<sub>2.5</sub> (10µg/m<sup>3</sup>) was associated with an adjusted increased risk of all-cause mortality (PM<sub>2.5</sub> average on previous year) of 14% (95% confidence interval (CI): 7, 22), and with 26% (95%CI: 14, 40) and 37% (95%CI: 7, 75) increases in cardiovascular and lung cancer mortality (PM<sub>2.5</sub> average of three previous years), respectively. The concentration-response relationship was linear down to PM<sub>2.5</sub> concentrations of 8µg/m<sup>3</sup>. Mortality rate ratios for PM<sub>2.5</sub> fluctuated over time, but without clear trends, despite a substantial drop in the sulfate fraction. Poisson models produced similar results.

Conclusions: These results suggest that further public policy efforts that reduce fine particulate matter air pollution are likely to have continuing public health benefits.

### **77. Japan, European Commission, Norway Join Coalition Battling 'Short-Lived' Pollutants**

Five transformational initiatives aimed at accelerating and scaling-up action against a range of health, crop and climate-damaging pollutants were given the go-ahead by ministers meeting in the Swedish capital Stockholm in late April. The initiatives, which mark the beginning of the implementation phase of the new Climate and Clean Air Coalition, will fast track momentum towards reducing black carbon or 'soot', methane and a range of fluorinated gases called HFCs. Further momentum was catalyzed with the announcements of Colombia, Japan, Nigeria, Norway and the European Commission that they are joining the Coalition along with the World Bank.

It brings to 13 the number of partners who have joined, expanding the initial membership founded by Bangladesh, Canada, Ghana, Mexico, Sweden and the United States and the UN Environment Program (UNEP).

The Coalition was launched on February 16 at an event hosted by US Secretary of State Hillary Clinton.

Five other countries-Australia, Denmark, Finland, the Republic of Korea and the United Kingdom along with delegates from the private sector -also attended as observers at the meeting to learn first-hand the Coalition's plans.

More than 10 years of scientific research and assessment indicates that substances such as black carbon or 'soot' and methane are triggering wide-ranging health, climate and crop-damaging impacts. Introducing cost effective and environmentally-friendly alternatives to fluorinated gases known as HFCs are also part of the Coalition's aims as a result of their high potential to impact climate change if widely taken up over the coming years.

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<sup>11</sup> Lepeule J, Laden F, Dockery D, Schwartz J 2012. Chronic Exposure to Fine Particles and Mortality: An Extended Follow-Up of the Harvard Six Cities Study from 1974 to 2009. *Environ Health Perspect*:-. <http://dx.doi.org/10.1289/ehp.1104660>

Fast action to reduce short lived climate pollutants can have a direct impact on climate change with the potential to reduce warming by up to 0.5 degrees Celsius by 2050 and help keep global temperature increases below 2 degrees Celsius.

Reductions of SLCPs would also allow for addressing rapid melting in the Arctic and in mountain regions with glaciers, like the Himalayas.

By around 2030, fast action can potentially prevent millions of premature deaths from for example inhalation of black carbon while avoiding an estimated 30 million tons of crop losses.

The Coalition emphasizes that the climate benefits need to be backed by cuts in other greenhouse gases including CO<sub>2</sub> if temperature increases over the 21st century are to be held below 2 degrees C. However, addressing near term warming from SLCPs may be crucial to avoid the most serious impacts over the coming decades.

The announcement of new national partners was made at the end of the first Ministerial meeting of the Coalition which has been taking place in parallel with Stockholm+40-a conference marking four decades after the UN Conference on the Human Environment which took place in the Swedish capital in 1972. The meeting and conference also comes in advance of Rio+20-two decades after the 1992 Earth Summit that set the course for contemporary sustainable development.

Lena Ek, the Swedish Environment Minister, said: "Sweden is committed to continue working actively with this important coalition. Furthermore we are happy to announce our contribution to the Coalition Trust Fund with 1.4 MSEK for the UNEP Secretariat and 10 MSEK to concrete projects". (11.4 million Swedish Krona is around \$1.7 million.)

The meeting assessed around a dozen initiatives proposed by developed and developing countries for fast and federated action on short lived climate pollutants including many happening already at the national level.

Delegates took forward five to be approved for rapid implementation by Ministers on the final day. Those approved included:-

- Fast action on diesel emissions including from heavy duty vehicles and engines

Studies show that reductions are possible by addressing emissions from the freight transportation supply chain, through city action plans, and adoption of a range of measures for reducing sulfur in fuels and vehicle emissions

- Upgrading old inefficient brick kilns which are a significant source of black carbon emissions

Mexico has for example [20,000] small and medium-sized brick kilns and the design of many of the [6,000] in Bangladesh hark back to the 1900s.

- Accelerating the reduction of methane emissions from landfills

World-wide the waste management sector contributes about 11% of global methane emissions, and the coalition will work with cities to reduce methane emissions from landfills by improving strategic municipal solid waste planning and providing technical assistance.

- Speeding up cuts in methane and other emissions from the oil and gas industry

Natural gas venting and leakage from the oil and gas industry accounts for over one fifth of global man-made emissions of methane: Flaring at oil installations generate both methane and black carbon emissions. An estimated one third of leaks and venting can be cut using existing technologies at low cost.

- Accelerating alternatives to HFCs

HFCs are being rapidly introduced as replacements to chemicals that can damage the ozone layer—the Earth's protective shield that filters out hazardous ultra violet light. But HFCs are also powerful greenhouse gases. The Coalition aims to fast track more environmentally-friendly and cost effective alternatives and technologies to avoid HFC growth.

Additional initiatives - including a proposal by Ghana on agricultural/forest open burning and a proposal by Bangladesh on cook stoves - would be further developed over the coming weeks.

To support the Coalition's efforts, a new Trust Fund managed by a UNEP-hosted secretariat was also agreed.

Initial financing pledges for the Coalition now amount to some \$16.7 million with significantly more funds expected over the coming 12 months.

Sound science has underpinned the formation of the Coalition and will guide its work into the future. Ministers today asked three luminaries involved in short lived climate pollutant work to advise them on the formation of a dedicated world-class Science Advisory Panel to provide scientific advice to the Coalition. The advice will be provided by Drew Shindell of NASA's Goddard Institute for Space Studies, Mario Molina, the distinguished Mexican chemist and 1995 Nobel Prize co-winner and Veerabhadran Ramanathan, chair of the UNEP Atmospheric Brown Cloud project based at the University of California San Diego,

U.S. Special Envoy for Climate Change Todd Stern told reporters on a conference call that the coalition is focused more on national policies to reduce short-lived pollutants than on individual projects.

More than one-third of rising global temperatures can be attributed to short-lived pollutants, Stern said. Researchers also have linked some of those pollutants—emitted from wood-based cook stoves, diesel vehicles, and the open burning of agricultural waste—to millions of premature deaths each year around the world.

Working groups set up under the coalition will meet sometime in July, Stern said. The coalition plans another ministerial-level meeting in late 2012.

## **78. Prenatal Exposure to Air Pollution Linked To Childhood Obesity**

Overall, 17% of children in the United States are obese, and in inner-city neighborhoods, the prevalence is as high as 25%. While poor diets and physical inactivity are the main culprits,

there is new evidence that air pollution can play a role. A study by Columbia University's Mailman School of Public Health finds that pregnant women in New York City exposed to higher concentrations of polycyclic aromatic hydrocarbons, or PAH, were more than twice as likely to have children who were obese by age 7 compared with women with lower levels of exposure. PAHs, a common urban pollutant, are released into the air from the burning of coal, diesel, oil and gas, or other organic substances such as tobacco.<sup>12</sup>

"Obesity is a complex disease with multiple risk factors. It isn't just the result of individual choices like diet and exercise," says the study's lead author Andrew G. Rundle, Dr. P.H., a professor of epidemiology at Columbia's Mailman School of Public Health. "For many people who don't have the resources to buy healthy food or don't have the time to exercise, prenatal exposure to air pollution may tip the scales, making them even more susceptible to obesity."

Researchers recruited 702 non-smoking pregnant women through prenatal clinics at New York-Presbyterian Hospital and Harlem Hospital. The women were 18-35 years old, identified themselves as either African-American or Dominican, and lived in areas in Northern Manhattan or the South Bronx that are predominantly low income. Over the course of two days during their third trimester, they wore a small backpack equipped to continually sample the surrounding air; at night they placed it near their bed.

Children of women exposed to high levels of PAH during pregnancy were nearly twice as likely (1.79 times) to be obese at age 5, and more than twice as likely (2.26 times) to be obese at age 7, compared with children of mothers with lower levels of exposure. The 7-year-olds whose mothers were in the highest exposure group had, on average, 2.4 lbs. more fat mass than children of mothers with the least exposure.

"Not only was their body mass higher, but it was higher due to body fat rather than bone or muscle mass," says Dr. Rundle.

These findings fit with evidence from animal studies and tissue sample experiments. Mouse studies have shown that exposure to PAH causes gains in fat mass, while cell culture studies have shown that exposures to PAH prevent normal lipolysis, the process by which fat cells shed lipids and shrink in size.

Previous research at the Columbia Center for Children's Environmental Health (CCCEH) at the Mailman School found that prenatal exposure to PAHs can negatively affect childhood IQs and is linked to anxiety, depression and attention problems in young children. PAHs also disrupt the body's endocrine system and are known carcinogens.

Fortunately, there are ways to reduce PAH exposure. Certain fuels release more of the chemicals than others, explains Dr. Rundle, and efforts in New York City to take diesel buses off the streets and retrofit oil furnaces so they burn cleaner fuel is already starting to help.

Despite known linkages between socioeconomic status and obesity levels, the researchers found the impact of PAH on risk of obesity was not influenced by household income or

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<sup>12</sup> "Association of Childhood Obesity With Maternal Exposure to Ambient Air Polycyclic Aromatic Hydrocarbons During Pregnancy", Andrew Rundle, Lori Hoepner, Abeer Hassoun, Sharon Oberfield, Greg Freyer, Darrell Holmes, Marilyn Reyes, James Quinn, David Camann, Frederica Perera and Robin Whyatt, Department of Epidemiology, Mailman School of Public Health, Columbia University, *Am. J. Epidemiology*. (2012) First published online: April 13, 2012.

neighborhood poverty. They also ruled out the influence of cigarette smoke in the household and proximity to highly trafficked roads.

Robin Whyatt, DrPH, the paper's senior author, notes that the study is one of the first to present evidence that chemicals in the environment can contribute to obesity in human beings. Future research will focus on identifying other examples of these "obesogens" and ways to reduce them, says Dr. Whyatt, who is deputy director at CCCEH and professor of clinical environmental health sciences at the Mailman School.

### **79. Scientists Fear That Global Warming Is Close To Becoming Irreversible**



The world is close to reaching tipping points that will make it irreversibly hotter, making this decade critical in efforts to contain global warming, scientists warned recently at the "Planet Under Pressure" conference in London. Scientific estimates differ but the world's temperature looks set to rise by six degrees Celsius by 2100 if greenhouse gas emissions are allowed to rise uncontrollably.

As emissions grow, scientists say the world is close to reaching thresholds beyond which the effects on the global climate will be

irreversible, such as the melting of polar ice sheets and loss of rainforests. "This is the critical decade. If we don't get the curves turned around this decade we will cross those lines," said Will Steffen, executive director of the Australian National University's climate change institute, speaking at the conference.

Despite this sense of urgency, a new global climate treaty forcing the world's biggest polluters, such as the United States and China, to curb emissions will only be agreed on by 2015 - to enter into force in 2020.

"We are on the cusp of some big changes," said Steffen. "We can ... cap temperature rise at two degrees, or cross the threshold beyond which the system shifts to a much hotter state."

- For ice sheets - huge refrigerators that slow down the warming of the planet - the tipping point has probably already been passed, Steffen said. The West Antarctic ice sheet has shrunk over the last decade and the Greenland ice sheet has lost around 200 cubic km (48 cubic miles) a year since the 1990s.
- Most climate estimates agree the Amazon rainforest will get drier as the planet warms. Mass tree deaths caused by drought have raised fears it is on the verge of a tipping point, when it will stop absorbing emissions and add to them instead. Around 1.6 billion tons of carbon was lost in 2005 from the rainforest and 2.2 billion tons in 2010, which has undone about 10 years of carbon sink activity, Steffen said.
- One of the most worrying and unknown thresholds is the Siberian permafrost, which stores frozen carbon in the soil away from the atmosphere. "There is about 1,600 billion

tons of carbon there - about twice the amount in the atmosphere today - and the northern high latitudes are experiencing the most severe temperature change of any part of the planet," he said. In a worst case scenario, 30 to 63 billion tons of carbon a year could be released by 2040, rising to 232 to 380 billion tons by 2100. This compares to around 10 billion tons of CO<sub>2</sub> released by fossil fuel use each year.

Increased CO<sub>2</sub> in the atmosphere has also turned oceans more acidic as they absorb it. In the past 200 years, ocean acidification has happened at a speed not seen for around 60 million years, said Carol Turley at Plymouth Marine Laboratory. This threatens coral reef development and could lead to the extinction of some species within decades, as well as to an increase in the number of predators.

### **80. Air Pollution and Tuberculosis May Be Connected**

In a new study, scientists have determined a possible link between exposure to a common component of urban air pollution and a change in the function of important immune cells that protect against the bacteria that cause tuberculosis. In their finding, a team of researchers, led by Dr. Stephan Schwander, of the University of Medicine and Dentistry of New Jersey - School of Public Health (UMDNJ-SPH) scientists describe that exposure to diesel exhaust particles (DEP) suppresses the function of phagocytic immune cells (a type of white blood cells that ingest foreign particles, such as bacteria) on a cellular level.

They conclude that this exposure probably causes exposed individuals to be less able to fight off new *Mycobacterium tuberculosis* infections or to suppress a reactivation of a latent infection by these bacteria.

"In laboratory experiments using DEP generated from an automobile diesel engine as model air pollutant particles, and blood samples gathered from 20 healthy individuals, we demonstrated that exposure to DEP makes cells less responsive," Schwander said. "The cells, in effect, became desensitized to stimulation with the bacteria that cause TB.

"This effect was even greater in cells that had prior exposure to DEP than in those that had concurrent DEP and *Mycobacterium tuberculosis* exposure," he said.

Tuberculosis is estimated to afflict approximately 8-10 million people and to cause 1.5 million deaths each year worldwide. The incidence of the disease is particularly high in low- and middle-income countries that are experiencing rapid industrial growth and increases in motor vehicle traffic in densely populated urban areas. By the year 2030, scientists estimate that 50 percent of the world's population will live in urban environments.

"Because there is already epidemiological evidence that connects tuberculosis to cigarette smoking and some forms of indoor air pollution, it seemed logical to look at outdoor air pollution for a similar correlation. "The models we used indicated that this may, in fact, be the case. The next step is to see if these results can be confirmed by larger epidemiological studies, conducted in a real world environment," Schwander added.

The study has been published in the *Journal of Immunology*.

### **81. WHO Issues Report On Health Effects of Black Carbon**

Following decision 2010/2 of the Executive Body for the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/106/Add.1, Para 8(b) (i)), the Task Force on Health Aspects of Air Pollution working under the Convention conducted an assessment of the health effects of black carbon (BC) as a component of fine particulate matter (PM2.5).<sup>13</sup>

The main sources of BC are combustion engines (especially diesel), residential burning of wood and coal, power stations using heavy oil or coal, field burning of agricultural wastes, as well as forest and vegetation fires. Consequently, BC is a universal indicator of a variable mixture of particulate material from a large variety of combustion sources and, when measured in the atmosphere, it is always associated with other substances from combustion sources, such as organic compounds. The spatial variation of BC is greater than that of PM2.5. Although, in general, ambient measurements or model estimates of BC reflect personal exposures reasonably well and with similar precision as for PM2.5, the differences in exposure assessment errors may vary between studies and possibly affect estimates of risk.

The systematic review of the available time-series studies, as well as information from panel studies, provides sufficient evidence of an association of short-term (daily) variations in BC concentrations with short-term changes in health (all-cause and cardiovascular mortality, and cardiopulmonary hospital admissions). Cohort studies provide sufficient evidence of associations of all-cause and cardiopulmonary mortality with long-term average BC exposure.

Health outcomes associated with exposure to PM2.5 or thoracic particles (PM10) are usually also associated with BC (and vice versa) in the epidemiological studies reviewed. Effects estimates (from both short- and long-term studies) are much higher for BC compared to PM10 and PM2.5 when the particulate measures are expressed per unit of mass concentration ( $\mu\text{g}/\text{m}^3$ ). Effect estimates are, however, generally similar per inter-quartile range in pollutant levels. Studies of short-term health effects show that the associations with BC are more robust than those with PM2.5 or PM10, suggesting that BC is a better indicator of harmful particulate substances from combustion sources (especially traffic) than undifferentiated PM mass. In multi-pollutant models used in these studies, the BC effect estimates are robust to adjustment for PM mass, whereas PM mass effect estimates decreased considerably after adjustment for BC. The evidence from long-term studies is inconclusive: in one of the two available cohort studies, using multi-pollutant models in the analysis, the effect estimates for BC are stronger than those for sulfates, but an opposite order in the strength of relationship is suggested in the other study.

There are not enough clinical or toxicological studies to allow an evaluation of the qualitative differences between the health effects of exposure to BC or to PM mass (for example, different health outcomes), of quantitative comparison of the strength of the associations or of identification of any distinctive mechanism of BC effects. The review of the results of all available toxicological studies suggested that BC (measured as EC) may not be a major directly toxic component of fine PM, but it may operate as a universal carrier of a wide variety of, especially, combustion-derived chemical constituents of varying toxicity to sensitive targets in the human body such as the lungs, the body's major defense cells and possibly the systemic blood circulation.

The Task Force on Health agreed that a reduction in exposure to PM2.5 containing BC and other combustion-related PM material for which BC is an indirect indicator should lead to a reduction in the health effects associated with PM. The Task Force recommended that PM2.5 should continue to be used as the primary metric in quantifying human exposure to PM and the

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<sup>13</sup>[http://www.euro.who.int/\\_data/assets/pdf\\_file/0004/162535/Health-Effects-of-Black-Carbon.pdf](http://www.euro.who.int/_data/assets/pdf_file/0004/162535/Health-Effects-of-Black-Carbon.pdf)

health effects of such exposure, and for predicting the benefits of exposure reduction measures. The use of BC as an additional indicator may be useful in evaluating local action aimed at reducing the population's exposure to combustion PM (for example, from motorized traffic).

## **82. Long-Term Exposure to Air Pollution May Increase Risk of Lung, Heart Disease**

Older adults may be at increased risk of being hospitalized for lung and heart disease, stroke, and diabetes following long-term exposure to fine-particle air pollution, according to a new study by researchers at Harvard School of Public Health (HSPH).<sup>14</sup> It is the first study to look at the link between long-term effects of exposure to fine particles in the air and rates of hospital admissions.

Prior studies have reported an association between hospitalization and short-term air particle exposure (i.e. exposure to air particles on day of hospital admission or several days before). However, these short-term studies left unclear how many extra admissions occurred in the long run, and only included people who live near air pollution monitors, typically located in cities. No studies of long-term exposure to fine air particles (over the course of a year or two years) and rates of hospitalizations had been done.

"Our study found that long-term rates of admissions for pneumonia, heart attacks, strokes, and diabetes are higher in locations with higher long-term average particle concentrations," said lead author Itai Kloog, a research fellow in the Department of Environmental Health at HSPH.

Kloog and his colleagues, including senior author Joel Schwartz, professor of environmental epidemiology at HSPH and director of the Harvard Center for Risk Analysis, used novel prediction models, based on satellite observations, emissions, traffic, and weather data to predict levels of fine air particles in the air all over New England, which allowed the researchers to include rural and suburban areas. The researchers compared their findings with hospital admission records on all Medicare patients, ages 65 and older, admitted to 3,000 hospitals throughout New England from 2000-2006.

The researchers estimated zip code concentrations of fine air particles known as PM<sub>2.5</sub>. These particles, such as soot from vehicles, and other particles from power plants, wood burning, and certain industrial processes, are a significant health risk when they lodge in the lungs, causing inflammation there and in the rest of the body, and contributing to lung and heart disease.

The results showed an association between long-term exposures to fine air particles for all hospital admissions examined. For example, for every 10- $\mu\text{g}/\text{m}^3$  increase in long-term PM<sub>2.5</sub> exposure, the researchers found a 4.22% increase in respiratory admissions, a 3.12% increase in cardiovascular disease admissions, a 3.49% increase in stroke admissions, and a 6.33% increase in diabetes admissions.

"Particulate air pollution is one of the largest avoidable causes of death and illness in the United States, and unlike diet and exercise, does not require behavioral change. Off-the-shelf technology can be retrofitted onto sources of pollution at modest cost, with a large health benefit. This study shows that in addition to avoiding deaths, such measures will reduce chronic disease and medical care costs," said Schwartz.

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<sup>14</sup> "Acute and Chronic Effects of Particles on Hospital Admissions in New England," Itai Kloog, Brent A. Coull, Antonella Zanobetti, Petros Koutrakis, and Joel D. Schwartz, PLoS ONE, online April 17, 2012.

Other HSPH researchers in the study included Antonella Zanobetti, senior research scientist in the Department of Environmental Health, Brent Coull, professor of biostatistics, and Petros Koutrakis, professor of environmental sciences.

The study was funded by the Harvard Environmental Protection Agency Center, the National Institutes of Environmental Health Sciences, and the Environment and Health Fund Israel.

### **83. Report: Pollution Masked Warming In Eastern US in 20th Century**

Pollution in the eastern United States helped to mitigate climate warming in the region, says a new study. Climate scientists at Harvard found that particulate pollution in the late 20th century allowed the effects of global warming in the region to be masked.

Apparently, global temperatures rose by around 0.8 degrees Celsius from 1906 to 2005, yet in the eastern US, the temperature fell by about one degree between 1930 and 1990. Scientists at Harvard are attributing this to a "warming hole" that delayed global warming in the region.

"What we've shown is that particulate pollution over the eastern United States has delayed the warming that we would expect to see from increasing greenhouse gases," said lead author of the study Eric Leibensperger of Harvard University. "For the sake of protecting human health and reducing acid rain, we've now cut the emissions that lead to particulate pollution but these cuts have caused the greenhouse warming in this region to ramp up to match the global trend."