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EUROPE

1. Dutch Study Highlights Air Pollution Impacts in Pursuing Climate Policies

Climate change policies in the Netherlands could help to reduce the level of air pollutants as well, although technologies such as carbon sequestration and combined heat and power, or cogeneration, facilities could result in increases in some pollutants, according to a study by the Netherlands Environmental Assessment Agency.¹ Measures that boost energy saving and efficiency or the use of nuclear, wind, solar, and geothermal power also benefit air quality, because they reduce the need to burn fossil fuels, the agency said. Depending on the policies that are implemented, emissions of sulfur dioxide could fall from 48 kilotons per year to 32 kilotons by 2020, while emissions of nitrogen oxides could drop from 199 kilotons to 184 kilotons as a result of climate policies.

Benefits to Dutch air quality are likely to be less if the Netherlands chooses to purchase more carbon dioxide emissions credits from abroad to meet reduction targets, rather than invest in domestic projects that help to curb greenhouse gas emissions, the study said.

Meanwhile, plans by the Dutch government to become a hub for carbon sequestration, while decreasing sulfur dioxide emissions, could lead to an increase in emissions of nitrogen dioxide and ammonia. Non-methane volatile organic compounds may also increase with the take-up of combined heat and power. CHP facilities recycle the waste heat from traditional power generation to use as an additional energy source.

In addition, replacing fossil fuels with biofuels would reduce sulfur dioxide emissions, but could increase emissions of nitrogen dioxide, ammonia, and non-methane volatile organic compounds. The use of biofuels in road transport is expected to have a negligible effect on air polluting exhaust emissions.

The European Union wants 10 percent of transport fuel to come from renewable sources by 2020. Although it does not specifically mention biofuels in its climate change legislation, they are the only viable source so far.

2. Climate Change Will Impact Future Air Quality Over Europe

Climate change is likely to significantly affect future air quality over Europe. Although emissions from human activities are a major cause of climate change, climate change is, in turn, affecting the concentration and spread of pollutant emissions in the atmosphere resulting in a feedback loop between climate and chemistry in the atmosphere. According to a recent European study, for example, climate change alone is likely to significantly increase ozone pollution in Europe and by as much as 50 $\mu\text{g}\cdot\text{m}^{-3}$ over central France in July by the year 2100, compared with 1990 levels.²

¹ Co-impacts of Climate Policies on Air Polluting Emissions in the Netherlands, published Nov. 30

² Carvalho, A., Monteiro, A., Solman, S. *et al.* (2010) Climate-driven changes in air quality over Europe by the end of the 21st century, with special reference to Portugal. *Environmental Science & Policy*. 13: 445-458

Partly conducted under the EU projects ACCENT³ and COST7282⁴, this study investigated the impact of climate change on two major pollutants affecting air quality, ground-level ozone and particulate matter (PM), over Europe.

In addition to being a greenhouse gas (GHG) that contributes to climate change, ozone is a potent secondary pollutant formed from other pollutants (precursor emissions) in the presence of sunlight, which negatively affects human health and the ecosystems. Global ozone levels have increased by 35 per cent since pre-industrial times, primarily due to increases in emissions of nitrogen oxides.

Particulate matter, i.e. PM10 and PM2.5, are of concern because they have harmful impacts on human health, especially people with lung conditions. Increasing levels of direct emissions of PM and secondary formation of PM in the atmosphere are contributing to high levels of PM in Europe.

Using combined chemistry-transport and global atmospheric circulation models, the study simulated the impact of climate change on air quality at the regional level in the year 2100 (compared with a reference year of 1990). A worst-case climate scenario was assumed (IPPC A2 scenario), where human-induced air pollution emissions remained at the same levels as in the year 2003. This method revealed changes in air quality solely caused by climate change.

Modeling results suggest monthly average levels of ozone could reach around 110µg.m⁻³ over central France in July 2100, an increase of 50µg.m⁻³ from the year 1990. Large areas of south-western Europe will experience average ozone levels of around 110-125µg.m⁻³ in July 2100, up from 95-105µg.m⁻³ in July 1990. Projected increases (and decreases) in PM levels depended on the region and month. The highest levels are likely to occur over land in October, while over water, the concentration of PM will decrease.

Factors that could explain these changes could be an increase in relative humidity, and changes in the atmospheric mixing layer height in 2100 climate, compared with the reference year of 1990. These changes could lead to stagnant conditions in which high concentrations of PM build up near the surface of the Earth.

The approach of this study, which incorporates local and regional conditions, is essential if climate change impacts on air quality are to be managed in order to meet European air quality standards.

3. Turkey's Refiners Will Switch to Lower Sulfur Diesel on January 1

Turkey's refiners will have to produce cleaner diesel fuel as the country switches to a lower sulfur grade from January 1st. Turkish refiners are required to reduce the sulfur content in diesel fuel to 10 parts per million at this time. Distributors and retailers will be allowed to sell the motor fuel with higher sulfur content until the end of the first quarter.

The introduction of cleaner fuels in the Turkish market could curb demand for gasoil from Russia, JBC Energy GmbH, a Vienna-based consulting company, wrote in an earlier report.

³ ACCENT (Atmospheric Composition Change: the European Network of Excellence) was supported by the European Commission under the Sixth Framework Program.

⁴ COST728 (Enhancing mesoscale meteorological modeling capabilities for air pollution and dispersion applications) was supported by the European Commission's RTD Framework Program.

Russia exported 115,000 barrels a day of gasoil to Turkey in the first five months of 2010, about 10,000 barrels a day more than in the year-earlier period, according to JBC. "Most of these grades are higher-sulfur material, which would then have to be desulfurized in the region or sent elsewhere," JBC said in the report.

4. EU Leads Top 100 Countries Ranked by Low Sulfur Diesel Limits

The International Fuel Quality Center (IFQC) has updated its ranking of the top 100 countries based on sulfur limits in on-road diesel – Sweden, Germany and Japan, remained first, second and third, respectively. With the EU having 100% market penetration of 10 ppm sulfur diesel fuel since January 1, 2009, these nations are still ranked within the top 10. South Korea and Turkey also ranked alongside European countries, tied at 9th.

Jumping seven spots this year were India (53rd), where 350 ppm sulfur diesel was introduced nationwide in October 2010, and Belarus (43rd). Hong Kong rose three spots to 39th, bumping both the United States (41st) and Canada (40th) down a spot.

Diesel desulfurization dramatically improves tailpipe emissions by allowing for the use of advanced aftertreatment systems. Sulfur compounds emitted as a result of fuel combustion have detrimental environmental and health effects. Industry and policymakers around the world are continuing to reduce sulfur levels in fuels.

5. New ICCT Report Details Life-Cycle GHG Emissions of Crude Oil in Europe

A new report on the carbon intensity of crude oil in Europe highlights dramatic disparities in life-cycle greenhouse gas emissions of crudes produced from different oilfields, and points to significant reductions that could be achieved by infrastructure improvements, technology upgrades, and other measures. By far the largest sources of upstream emissions are natural gas flaring and tar sands extraction.

The report, released by the International Council on Clean Transportation and available at www.theicct.org, provides detailed estimates of the carbon intensity of crude oil down to the level of individual fields and identifies the data needed to make those calculations. It appears as the European Commission nears a decision on the methodology for calculating lifecycle GHG intensity of fossil fuels, as part of the implementation of Article 7a of the Fuel Quality Directive.

Globally, extracting, transporting, and refining crude oil on average account for about 18% of well-to-wheels GHG emissions—that is, the total emissions produced from oilfield to burning fuel to move a car. That equates to roughly five times the CO₂ emissions of Germany. But these emissions vary significantly with source and type of crude and production methods. For the highest intensity crudes, extraction-to-refining constitutes around 40% of the overall carbon footprint, about 50 grams CO₂ per megajoule. This compares to only about 5% or 4 grams of CO₂ per megajoule, for the lowest intensity crudes.

"The magnitude of the difference between the most and least polluting operations is enormous—a factor of ten," said Drew Kodjak, executive director of the ICCT. "The European Commission has an opportunity now to require that companies report the data necessary for those calculations."

As this report vividly confirms, the highest upstream GHG emissions are caused by natural gas flaring and the development of unconventional oil sources. Flaring, which releases the potent

greenhouse gas methane as well as CO₂, is primarily an infrastructure issue, related in part to lack of sufficient local demand to justify additional production facilities and pipelines. Extraction of unconventional oil, such as tar sands, requires substantial energy inputs. While at present unconventional sources make up only a fraction of the EU fuel mix, any forward-looking policy must account for them. The U.S. Energy Information Administration projects that 8% of the global supply will come from unconventional oil by 2035.

The report provides technical groundwork for regulations aimed at driving down extraction-to-refining emissions. Based on a life-cycle assessment of approximately 3100 oilfields in countries that supply oil to Europe, the study develops GHG emission factors for five elements of extraction-to-refining analysis: crude oil extraction, flaring and venting, fugitive emissions, crude oil transport, and refining. Centrally, the analysis identifies the parameters that influence GHG emissions throughout the petroleum life cycle and uses them in estimating emission factors for each oil field, based on 2009 data. Those parameters range from oilfield age, gas-to-oil ratio, feedstock, and development type to transport mode and distance.

Realizing the potential reductions spotlighted in the report would deliver substantial progress toward lowering overall transportation-sector GHG emissions. And, though the report does not make the connection explicitly, capitalizing on opportunities to address extraction-to-refining emissions could provide fuel suppliers with an important alternative to biofuels in slashing EU-average lifecycle GHG emissions from fuels 6% by 2020, as is required by the FQD.

California's Low Carbon Fuel Standard (LCFS) set a precedent by establishing a single, simple reporting threshold for high-carbon-intensity crudes. But the factors that determine aggregate GHG emissions from crude oil—extraction, flaring and venting, fugitive emissions, transport, and refining—vary greatly between both oilfields and production facilities. Any approach that assigns defaults based on a limited number of simple characteristics forfeits significant opportunities to mitigate CO₂ emissions.

6. EU Exec Plans More Action on Unsustainable Biofuel

The European Union's executive said it was looking at further measures to tackle the unwanted side-effects of biofuels production, which compromise the fuels' green credentials. After a two-year investigation, the European Commission said the complex issue of "indirect land use change" could lessen carbon savings from biofuels, but it stopped short of immediately recommending new barriers against unsustainable biofuels. Instead, it will recommend six months more of studies before announcing a new strategy next summer to complement existing tough measures to ensure biofuels do not promote deforestation and push up food prices, which were set this June.

"The report acknowledges that indirect land use change can reduce greenhouse gas emissions savings associated with biofuels, but also identifies a number of uncertainties," the Commission said in a statement. "The Commission will continue to conduct work in this area in order to ensure that policy decisions are based on the best available science," it added.

The report follows a one-year internal battle among experts within the Commission, which has thrown into doubt EU plans to create a \$17-billion-a-year market for biofuels from producers such as France, Germany, Brazil, Malaysia and Indonesia. Investment in European biofuels has slowed to a halt due to doubts over the sector's green credentials and the challenging investment climate.

The Commission has run 15 studies on different biofuel crops, which on average conclude that over the next decade Europe's biofuels policies might have an indirect impact equal to 4.5 million hectares of land -- an area the size of Denmark. If that was gained by clearing wild land, as economics often dictate, it could result in a one-off release of at least 200 million tons of carbon -- about the same as the annual fossil-fuel emissions of Germany, according to calculations.

The Commission will now consider four options, ranging from simply monitoring the situation to introducing new sustainability requirements or penalties for the least sustainable biofuels.

7. West London's Traffic May Rise as Congestion Charge Extension Is Removed

Motorists in the western section of London's congestion charge zone will no longer be required to pay for driving in the area from tomorrow. The removal of the extension, which includes parts of Westminster, and Kensington and Chelsea, may result in 10 percent to 15 percent more daytime traffic entering the area, London Mayor Boris Johnson said in response to questions in the London Assembly last year.

"The removal of the extension follows a public consultation on its future that was promised by the Mayor in his election manifesto, and that saw 62 percent of respondents back its removal," the Mayor's office said in a statement on its website on December 22nd.

London's congestion charge was introduced in February 2003, and extended west in 2007. Motorists who drive within its area of operation currently pay a daily charge of 8 pounds (\$12), set to rise to 10 pounds from January. London residents living in the extension, who are currently entitled to a 90 percent discount on the charge, will pay full price from Jan. 1 onwards if they drive into the central area which remains in operation.

8. Air Pollution Causes Early Death of 200,000 Lives in UK

A new report, by the Committee on the Medical Effects of Air Pollutants (COMEAP), an independent advisory group of experts reporting to the Department of Health, has been published on the health effects of air pollution in the UK. It considered data from 2008 and estimated a loss of 340,000 years of life in that year, which is equivalent to 29,000 deaths. COMEAP stressed that along with other factors, air pollution was likely to have taken an average of just under two years off the lives of 200,000 people.

Removing just one microgram per cubic meter would increase life expectancy by around 20 days, COMEAP said, adding that if it were possible to remove all human-made particulate matter, the UK would see a six-month increase in life expectancy from birth.

The report comes just days after the release of a new Air Quality Strategy for London, which drew criticism from green groups who claimed it did not do enough to cut the high levels of pollution in the capital that have drawn repeated reprimands from the EU. Campaigners Environmental Protection UK said today's report demonstrated Mayor Boris Johnson's strategy must be much tougher on airborne pollution or risk subjecting Londoners to further health problems.

The Committee acknowledges that expressing the effects of air pollution numerically is difficult but says the report is the most detailed examination of the problem yet.

The UK has repeatedly failed to meet EU air pollution targets over the decades with more than 20 towns and cities found to be emitting pollution at twice the WHO limits. Of particular concern are dusts, sulfates and nitrates from road traffic and other sources, known as particulate matter. These small particles can be carcinogenic and are able to pass through the lungs into the bloodstream, causing inflammation and other more serious conditions. Twice as many people today suffer from lung disease and asthmatic conditions caused by air pollution than did 20 years ago.

Air quality campaigners have been fighting hard for the government to publish annual statistics on the premature deaths from air pollution and accuse officials of underestimating the health impacts.

James Grugeon, from Environmental Protection UK, said the latest figures were 'unequivocal' about the massive impact that air pollution has on the health of the UK public. Simon Birkett, who has long-campaigned for action to clean-up London's air pollution, said officials now had little excuse not to act, given the statistical evidence of the health burden. 'For the first time we can compare easily the health impact of long-term exposure to dangerous airborne particles with the Government's estimates for the number of premature deaths attributable to alcoholism (15,000 to 20,000 in England), obesity (9,000 in England) and smoking (87,000 in England) and understand the complexities of these metrics,' he said.

Both Defra and the Department for Health responded to the Committee findings saying they recognized the impact poor air quality was having on public health. However, they have been accused by campaigners of 'inertia' in dealing with the issue.

The UK faces a £300 million fine for failing to meet new EU targets for reducing air pollution and has desperately sought to delay its deadlines. The Department for Health insisted it was 'committed to working towards full compliance with EU air quality standards'.

9. Ostrava Citizens Protest Against Pollution

Some 500 citizens of the Czech industrial city Ostrava protested recently against high air pollution in the city centre. The students who organized the demonstration said people must press on politicians otherwise no improvement would come. "The limits set by law are exceeded several times. Does it mean that the law is not valid?" the organizers asked.

They said the biggest polluter was the ArcelorMittal steelworks. The factory produced the most emissions during the night when "nobody is watching and nobody is measuring it." "If the emission limits are permanently and several times exceeded, it means that either people cannot live here or factories cannot be here... It seems that both people and factories would stay here but the situation must really be dealt with," said Jiri Zahuta, one of the participants in the protest.

Ostrava councilors decided that public transport would be free if the smog level increased and no highway toll would be paid in Ostrava to make vehicles use it instead of driving through the streets of the city. But the organizers of the protest said these measures were insufficient.

"We, inhabitants of Ostrava, don't need public transport for free. We don't need a free drive on the highway either. We need laws to be observed. The city and the region should use its powers to guarantee that set emission limits are not exceeded in the long term," organizer Jakub Sosna said.

Ostrava Mayor Petr Kajnar attended the protest and he fell down after a hustle with the organizers. Kajnar said he only slipped and fell. The commotion started when Kajnar wanted to address the crowd that gathered. The organizers did not want to let him speak in the microphone. "We stated in advance that the demonstration would be independent. I guaranteed that no politicians would make speeches. We tried to push the mayor away from the mike but not to use violence," Sosna said.

In the nearby mining town of Karvina, the locals also protested against pollution. They also rejected the plan to build an incineration plant in the area.

The air in the Moravia-Silesian Region has been the worst in the Czech Republic for years. The situation is critical mainly in winter. Local inhabitants are exposed to a higher concentration of pollutants that have a negative impact on their health.

Ostrava even filed a complaint against the Czech government and the environment and transport ministries over air pollution in the city earlier this year since the state did not take sufficient measures to improve the situation, according to the local authority.

10. Baltic Countries Request NO_x Controls from IMO, Air Pollution Convention

Countries surrounding the Baltic Sea are using two international forums to call for further controls on nitrogen oxide emissions from ships and long-range transport, which they say are contributing to algal blooms that are the biggest threat to the water body. The Helsinki Commission (HELCOM), the organization of states surrounding the Baltic Sea, plans to submit to the International Maritime Organization a request to designate the sea as a NO_x Emission Control Area under the International Convention for the Prevention of Pollution from Ships, or MARPOL. HELCOM also has made a separate request to the Convention for Long-range Transboundary Air Pollution, calling for tighter nitrogen oxide emissions targets that take into account the effects of eutrophication in water systems.

HELCOM has set an objective to see the Baltic Sea unaffected by eutrophication by 2021, with a reduction of total annual nitrogen inputs from the 740,000 tons average from 1997-2003, to a maximum allowable level of 600,000 tons by 2016, a reduction of about 20 percent. The members of HELCOM are Denmark, Estonia, the European Union, Finland, Germany, Latvia, Lithuania, Poland, Russia, and Sweden.

The joint application to the IMO will be made on behalf of all the HELCOM countries and is expected to be submitted in March. HELCOM is currently performing the economic impact analysis for the proposal, which would mean an 80 percent reduction in nitrogen oxide emissions from shipping within the area. The Baltic Sea already has been designated an emissions control area for sulfur oxides.

The group estimated that emissions from ship engines contribute around 6 percent of the total nitrogen input into the Baltic Sea. Excess nitrogen can cause eutrophication, or an excess of nutrients in the water, which can result in algal blooms that take up oxygen from the water and suffocate animal life.

Nitrogen control strategies for ships in the Baltic Sea have been envisioned since the preparation for an application to the IMO for a nitrogen oxide emission control area designation was initiated in 2008. The Swedish group Air Pollution & Climate Secretariat in 2009 published an analysis that described the effectiveness of market-based mechanisms in getting the needed

reductions from shipping. Emissions charges or a cap-and-trade system for nitrogen oxide emissions could drive adoption of the most efficient technologies and allow for flexibility in response, according to the particular vessels that need to be addressed, since a variety of technological options are available, according to the report, Market-based Instruments for NOx Abatement Mechanisms for the Baltic Sea. The group recommended possible adoption of differentiated en-route charges tallied through a ship registry for each commercial vessel. Another possibility is a port charge.

Any scheme would need to be backed by a common agency in charge of registration, monitoring, and enforcement, the report said. No such authority currently exists, it said.

On December 13th, HELCOM submitted a request under the Convention for Long-range Transboundary Air Pollution to strengthen nitrogen emissions targets for countries subject to the Gothenburg protocol, which includes controls on air pollutants. The request said that a quarter of the nitrogen load to the Baltic Sea comes from air-borne pollution and almost 40 percent arrives from sources outside the region. Parties to the convention include the European Union, Russia, and the United States.

The request said Baltic Sea countries are taking many “heavy-weight” actions to clean up the sea, but they cannot do it alone and need reductions from air-borne emissions. “We are not able to act on sources that are located outside our own countries and for this reason the strengthening of nitrogen emission targets of the Gothenburg protocol must take into account the kinds of large scale environmental problems that we have in the Baltic Sea with the effects of nitrogen,” the request to the convention said. “The targets of the Protocol should be adjusted so as to take into account the need to reduce overall nitrogen load to the Baltic Sea by about 20 percent by 2016.”

11. EU Weakens Fuel Efficiency Standards for Vans

The automotive industry, backed by the governments of Germany, Italy and France has succeeded in severely weakening an EU law setting CO2 standards for new vans. The deal, agreed at a behind-closed-doors meeting of representatives of the European Commission, Parliament and member states, will lead to higher fuel costs for millions of small businesses across Europe and runs counter to evidence of rapid progress in car emissions in recent years according to Transport & Environment (T&E).

The 'trilogue' agreement between representatives of the three European institutions is for the average new van sold in the EU to emit 175g CO2/km in 2017. Limits will be phased starting in 2014, when 70 percent of manufacturers' van fleets should meet the 175 grams per kilometer target. The original Commission proposal of 135g CO2/km in 2020 was weakened under enormous pressure from car making nations, led by Germany. Berlin forced a weakening of the strategy to make it easier for its big automakers Mercedes and Volkswagen.

The proposed legislation also would introduce a target for 2020 of 147 grams of carbon dioxide per kilometer, though this is subject to confirmation when a review of the legislation takes place in 2013. Carbon emissions from vans in the European Union averaged about 203 g/km in 2007.

Kerstin Meyer, senior campaigner at T&E said: “The industry said it couldn't make a 14% improvement in van efficiency over nine years, meanwhile it managed to improve car efficiency

at more than three times that rate last year.⁵ Policymakers must do a better job of holding the industry to account when it makes such claims. “

Because CO2 emissions and fuel efficiency are directly linked, weaker emissions standards mean vans will use more fuel. Fuel is a major cost to small businesses that depend on vans to run their operations. Unlike the automotive industry, which has received billions of Euros of taxpayers' money during the financial crisis, small businesses have received little help.

Meyer commented: “The automotive industry, which has benefited from billions of Euros of taxpayers' money in subsidies, low interest loans and research grants, has once again bullied politicians into getting an easy ride. Meanwhile, thousands of small businesses that have received little help in the crisis but depend on vans to run their operations, will suffer from higher fuel bills for years to come. “

The vehicle industry claims that it would be prohibitively expensive to make vans more fuel efficient. But research carried out for T&E by TNO/CE Delft showed that by simply returning to the engine power levels of 1997, fuel costs and CO2 emissions could be cut by up to 16%, vehicle purchase costs by up to 10%, and total cost of ownership by up to 12%. The changes required could also be introduced quickly and in existing models.⁶ In short, the cost of buying and running vans would go down rather than up.

"The EU's competitiveness will not be strengthened if we weaken environmental policy," said Swedish ambassador Jan Olsson. "Consumers and medium sized enterprises would benefit from vehicles that need less fuel." Germany's environment minister said he thought a good compromise had been reached for all sides. "It achieves substantial CO2 reductions, to my knowledge 27 percent," Norbert Roettgen told EU ministers. "It is feasible, it is a technological challenge, but it keeps us in a leadership position."

The measure will be finalized if the European Parliament adopts it in a plenary vote scheduled for Feb. 15.

The emissions limit would apply to commercial vehicles weighing up to 2,610 kilograms when empty. Manufacturers that fail to meet the limit would be fined €95 (\$125) per vehicle for each gram over the threshold.

12. Paris Autolib Electric Car Hire Scheme Accelerates

Parisians who flocked to use the popular Velib bike hire scheme will also be able to zip down the Champs-Elysees in environmentally friendly electric cars when a self-service car hire scheme gets underway next autumn. French conglomerate Bolloré, whose interests range from media to logistics, led by industrialist and businessman Vincent Bolloré, has won a contract to provide its small four-seater electric cars for the scheme.

The bubble-shaped Bluecars, designed by Italian partner Pininfarina, are powered by lithium polymer metal batteries produced by Bolloré, and have a range of 250 km (155 miles) in the city between charges, which will take about four hours.

⁵ See T&E carmaker CO2 report 2009: <http://www.transportenvironment.org/news/2010/11/carmakers-exaggerated-time-needed-for-co2-cuts>. Cutting van emissions to average 175g CO2/km by 2016 reflects a 14% reduction on their 2007 level of 203g CO2/km.

⁶ See report briefing: http://www.transportenvironment.org/Publications/prep_hand_out/lid/587

As governments seek cleaner air for cities and carmakers battle to reduce the carbon dioxide emissions of their fleets, electric vehicles are taking on a more important role. Major carmakers like Renault, Nissan, PSA Peugeot Citroen and General Motors are introducing electric models.

The Velib self-service bike hire scheme was launched in 2007 and quickly grew, despite problems including theft and vandalism, to become a fixture of Parisian streets, with many commuters choosing one of the heavy grey bikes over a bus or metro ride. The name Velib combines French for bike -- "velo" -- with "liberte" -- freedom.

Autolib will see 3,000 electric vehicles take to the streets, with drivers able to pick up a car from one of the 1,000 stations in Paris and its suburbs.

Autolib drivers, who will need a driving license, and will have to subscribe to the scheme, will be able to reserve a car in advance or take their chances at one of the stations spread throughout the city and the Ile-de-France region. An annual subscription costs 12 Euros (\$15.87) per month, while using the car costs 5 Euros for the first half hour, four Euros for the next and six for the following half-hours, to encourage short journeys.

Fifty-eight percent of Parisians do not have a car, said Paris city hall, which awarded the contract. A study by Paris urban consultancy APUR showed a car spends on average 95 percent of its time parked and that 16 percent of Parisians use their car less than once a month, the city hall added.

13. UK Names Nine Electric Cars Eligible for Subsidy

The British government revealed the first nine electric vehicles that will be eligible for their purchasers to receive subsidies of up to 5,000 pounds (\$7,935) under a plan to promote low-carbon transport. Under the scheme, the government has pledged 43 million pounds (\$68.24 million) until the end of March 2012 to help British motorists shift to low-carbon vehicles.

They will receive up to 5,000 pounds toward the purchase of a low-carbon car from January 2011 to the end of March 2012. Subsequently, the level of the grant will be reviewed according to vehicle cost and the development of the market.

Eligible vehicles are Mitsubishi's iMiEV, Daimler's smart fortwo electric drive, Peugeot's iON, Citroen's CZero, the Nissan Leaf, the Tata Vista electric vehicle; the Toyota Prius Plug-in, Vauxhall's Ampera and General Motors' Chevrolet Volt. The government said it will announce more eligible cars next year.

Five regions -- the Midlands, Greater Manchester, east England, Scotland and Northern Ireland -- have successfully bid for a share of a 20 million pound fund to install local charging points for electric vehicles, the government added.

14. Russia Rules Disputed Road Go Ahead, Despite Protests

Russia has decided to restart work on a disputed motorway cutting through one of the last forests in Moscow's sprawling suburbs, overruling protests that prompted President Dmitry Medvedev to delay the project. Medvedev's order in August to suspend construction in Khimki Forest was seen as a rare Kremlin concession to protesters and raised the hopes of environmentalists and other activists. The decision to go ahead will disappoint them and could

deal a blow to the image of the president, who had championed the idea of giving activists and ordinary Russians a stronger voice in a nation known for top-down rule.

Kremlin spokeswoman Natalya Timakova told reporters that after reviewing possible alternatives, the government had told Medvedev it had decided in favor of the original route through the forest in Moscow's northern suburbs. Deputy Prime Minister Sergei Ivanov said the government would spend up to 4 billion rubles (\$130 million) making good some of the ecological damage to the forest. "This is such a high-profile affair ... that additional ecological measures will be taken: additional saplings will be planted and roadside infrastructure will be banned along an 8-kilometre section through the forest," Ivanov was quoted by Russian news agencies as saying.

15. Web Portal to Aid EU Vehicle Procurement Decisions

On December 3rd, the European Commission opened a "clean vehicles" web portal, designed to help public authorities in the European Union implement legislation on the green procurement of buses, cars, and vans. The portal allows users to search a database of thousands of vehicles and to identify the lifetime energy and environmental costs of individual makes and models, including fuel costs, as well as the impacts of emissions of carbon dioxide and other pollutants. The portal is intended to support the implementation of the EU Directive on the Promotion of Clean and Energy-Efficient Road Transport Vehicles (2009/33/EC), which obliges public authorities to include environmental criteria when making vehicle purchasing decisions. The directive came into force on December 4th, 2010, and was formally adopted in March 2009. European Transport Commissioner Siim Kallas said the directive marked the first attempt to introduce "sustainability obligations into public procurement" and would "accelerate the market penetration of clean vehicles." The European Union's clean vehicles web portal is available at <http://www.cleanvehicle.eu/>.

16. Germany's Electric Vehicle Plan Reportedly Requires Billions of Euros

Germany's goal to put 1 million electric cars on the roads by 2020 will require €4 billion (\$5.2 billion) in government funds for development and research for the period ending 2013, according to a progress report issued on November 30th by the ministries of economics, transport, research, and environment. According to the Progress Report of the National Platform on Electric Mobility, the German automobile industry, with total annual revenue over €260 billion (\$341 billion), is one of the country's most important, making development of the electric car market crucial for the country's ability to compete. The report also pointed to ambitious electric vehicle programs being developed in countries such as China, Japan, Korea, the United States, and France.

Germany's Cabinet launched its electric car initiative in August 2009. The government currently supports the development of electric cars with a €500 million (\$656 million) allocation.

Matthias Wissmann, president of the German Association of the Automotive Industry (VDA), said "It is crucial that Germany develops a battery and cell production system that's competitive worldwide. This requires a well-directed support of the industry as well as the development of pilot productions with a significant production volume."

The progress report was compiled for the ministries by working groups and committees with representatives from the industry and science. The German Cabinet expects to receive a

second progress report in spring 2011 that will focus on the development of battery-charging stations.

17. EU Commission Urges France and Hungary to Comply With EU Air Quality Rules

The European Commission is urging France and Hungary to comply with EU air quality standards. These Member States have so far failed to effectively tackle excess emissions of PM₁₀. On the recommendation of Environment Commissioner Janez Potočnik, a reasoned opinion is therefore being sent. France and Hungary have two months to take appropriate action. Failure to do so could result in the Commission referring them to the European Court of Justice.

Directive 2008/50/EC on ambient air quality and cleaner air for Europe, requires Member States to comply with certain limit values for PM₁₀. These limits, which were to be met by 2005, impose both an annual concentration value (40 µg/m³), and a daily concentration value (50 µg/m³) that must not be exceeded more than 35 times per calendar year.

Member States may apply for exemptions from the PM₁₀ limit values until June 2011, but these exemptions are subject to a number of conditions. A Member State must demonstrate that it has taken steps to achieve compliance by the extended deadline and that it is implementing an air quality plan setting out the relevant abatement actions for each air quality zone.

Information available to the Commission shows that the limit values for PM₁₀ have not been respected in several zones throughout France and Hungary since 2005. While both Member States applied for time extensions, the Commission considered that the conditions for granting them had not been met for all non-compliant air quality zones. France has re-applied for time extensions. The Commission is still in the process of assessing this request.

Airborne particles (PM₁₀) are mainly present in pollutant emissions from industry, traffic and domestic heating. They can cause asthma, cardiovascular problems, lung cancer and premature death.

18. Proposed Bill Would Bring Poland in Line With European PM_{2.5} Directive

Poland is accelerating legal work to incorporate the European Union's 2008 directive (2008/50/EC) on ambient air quality and cleaner air for Europe after missing the June 2010 deadline for compliance, a government official told the press on November 23rd. Barbara Toczko, an official with the monitoring department of the State Environmental Inspectorate (GIOS), said Polish government ministers have approved a draft amendment that, like the EU directive, focuses on fine particulates, those 2.5 microns in diameter or smaller (PM_{2.5}). "We are going to have a specified and admissible limit of PM_{2.5} particles around 25 micrograms per one cubic meter, which cannot be exceeded after January 1, 2015," Toczko said.

The EU directive on ambient air quality and cleaner air for Europe (CAFE) set out new guidelines for PM_{2.5}. Other air pollutants also are covered under the directive, but it did not change existing air quality objectives for sulfur dioxide, nitrogen oxides, lead, benzene, or carbon monoxide, according to Toczko. "But Poland will set such limits which it will not allow to be exceeded," Toczko said.

A. Law to Take Effect in Early 2011

On November 16th, Poland's Council of Ministers approved a draft amendment to the Law on Environment, giving a guideline on how to incorporate the EU directive into Polish law. A written statement issued after the Council of Ministers meeting said the draft is expected to be processed on a fast legal track and approved by the Parliament by the end of 2010 so it can take effect on January 1st.

But the monitoring department at GIOS said final passage may take a couple months longer. "In our opinion, it may take effect in the first quarter of 2011, taking into account the amount of problems we have to resolve and consultations with experts we are going to have," Toczko said. "Poland failed to meet the [June 11, 2010] deadline" to incorporate the CAFE directive into Polish law, Toczko said. "We are late."

B. Increased Monitoring of Fine Particulates

Toczko said the country's monitoring stations have largely been checking levels of coarse particulates, those larger than 2.5 microns in diameter and smaller than 10 microns in diameter (PM₁₀), without detailed research on PM_{2.5}.

"We have started installing more measuring tools in the 168 zones [in Poland where air quality is monitored] to better monitor PM_{2.5} emissions," Toczko said. Fine particulates make up about 70 percent to 80 percent of all particulates that are smaller than 10 microns in size, Toczko said.

Andrzej Jargusiewicz, Poland's chief environmental inspector, said on November 19th that air quality in the country is "not good" but did not offer specific figures. "There are 168 zones in Poland where air quality is monitored and in one-third of them air quality standards were poor," Jargusiewicz said.

According to the draft amendment, the chief environmental inspector will be required to prepare a report every year on the amount of emitted PM_{2.5} in each of the 168 zones and to present it to the environment minister. Reports also will be analyzed by the National Health Ministry.

The draft also said the gradual modernization of the Polish power industry, 90 percent of which is fueled by coal, will contribute to the reduction of hazardous emissions, including PM_{2.5}.

C. Biomass Could Add to Pollution

But Toczko said, "It is not so simple." According to her, the European Union's climate change package, which requires the 27 EU member states to collectively reduce their greenhouse gas emissions 20 percent from 1990 levels by 2020, could present a new challenge from renewable energy. The package also requires the European Union to meet 20 percent of its energy needs from renewable sources by 2020. That likely will include energy from wind, solar, and biomass. "Biomass will definitely reduce emissions of CO₂, but its use will increase generation of PM-2.5," Toczko said.

19. Russia to Craft Comprehensive Air Quality Management Plan

The United Nations Economic Commission for Europe is launching a program that will help Russia, Belarus, and Kazakhstan develop cost-effective air quality measures that will be promoted to government officials for passage into law, according to commission consultant Sunny Uppal. The two-year program is aimed at getting the countries to ratify and implement legally binding protocols on heavy metals, persistent organic pollutants, and other hazards

covered by the Convention on Long-range Transboundary Air Pollution. Systems for monitoring, reporting, and inventorying emissions will be developed, along with expertise and capacity to implement emissions reduction policies.

The program will target emissions of cadmium, lead, and mercury from industries, combustion processes, and waste incineration. Emissions of dioxins, furans, and polycyclic aromatic hydrocarbons from incineration of municipal, hazardous, and medical waste will also be a focus.

In accordance with the convention's Gothenburg multipollutant protocol, "stringent limit values for specific emissions sources," along with installation of best available control technologies, will aim to cut emissions of sulfur dioxide, nitrogen oxides, volatile organic compounds, and ammonia from both stationary and mobile sources, according to a project plan approved by the countries in April. "Parties whose emissions have a more severe environmental or health impact and whose emissions are relatively cheap to reduce will have to make the biggest cuts," the project plan said.

The Russian government is financially backing the project and has laid the groundwork for participation in the protocols through passage in August 2009 of the law "On Measures Aimed at Environmental Protection in Terms of Ecological and Nuclear Safety in the Russian Federation." It contains provisions specifically aimed at cooperation with the Convention on Long-range Transboundary Air Pollution.

Russia is a party to the convention, but only in the past two years has it become active in ratifying and implementing the convention's more recent protocols, the program documents said. The government is also developing a new national law, "On Protection of Ambient Air," with specific provisions on transboundary air pollution. The measure passed the upper chamber of the Duma in 2009, according to the project documents.

The program is part of a broader agenda that aims to extend participation in the air pollution protocols to Eastern Europe, the Caucasus, Central Asia, Albania, Bosnia and Herzegovina, Serbia, and Macedonia. The countries are at various stages in the process of adopting the protocols.

This effort is a central goal of the convention. The convention is expected to make other key decisions concerning its future direction at a meeting in December, including whether to include particulate matter and black carbon in the Gothenburg Protocol. This could lead to the development of first-time policies to address both air quality and climate change.

Also on the agenda for modifying the convention are changes that would make the various emissions requirements easier for the countries to meet. "While most nations in Eastern Europe have signed the Convention, they have had difficulty in ratifying and complying with the pollutant targets set out by the Convention's protocols," according to materials highlighting the treaty's 30th anniversary. "In response to this concern, the POPs, Heavy Metals, and Gothenburg Protocols are being revised and will include more flexibility with their targets, with the aim of helping these nations replace outdated technology and successfully meet the Protocol's goals."

Documents from meetings with parties involved in the project show concerns about the cost of environmental programs, with the countries saying application of best available technologies is costly and complex. The concerns highlighted the need for external funding as well as technological assistance, though the countries are being urged to get started and to gain political support for the policies as a top priority.

Countries in the region are working to create environmental indicators covering such things as air pollutant emissions, greenhouse gas emissions, household water use per capita, reuse and recycling of fresh water, forest coverage, and energy intensity. The program's first phase focuses on development of a legislative, policy, and scientific framework. This is to be followed by a second phase promoting the framework at the high governmental level.

The Russian Scientific Research Institute for Atmospheric Air Protection in St. Petersburg is implementing the project in Russia. The project is limited to the Eastern European part of Russia, which encompasses about 79 percent of the population and accounts for 52 percent of all air pollutant releases, of which 60 percent are attributed to mobile sources.

20. French President Shakes Up Cabinet, Shrinks Environment Ministry; Borloo Gone

On November 15th, French President Nicolas Sarkozy announced a major Cabinet shake-up that significantly reduced the size, responsibility, and prestige of the Ministry of Ecology. In the new government, Prime Minister François Fillon retained his job after weeks of speculation he would lose it. The biggest surprise was that Jean-Louis Borloo, the minister of ecology, energy, sustainable development, and the sea, decided to quit the government after losing a highly publicized bid for Fillon's job.

By splitting ministerial authority over ecology and energy matters, the shake-up could undermine France's much-touted climate and energy goals, environmental organizations said. However, the country's new ecology minister, Nathalie Kosciusko-Morizet, said she intends to continue work on these.

Borloo was the architect and biggest cheerleader of the country's Grenelle Environment program, which produced two major framework laws in three years and several groundbreaking climate and energy programs. He was also France's top representative in international climate negotiations. (The latest U.N. climate summit began on November 29th in Cancun, Mexico.)

"Who is going to represent France in Cancun in less than one month, and what policy will that person have to defend?" France Nature Environment (FNE), the Bird Protection League (LPO), and the labor union CFDT asked in a joint statement.

Kosciusko-Morizet, who briefly served as secretary of ecology under Borloo, now replaces him, but in a smaller Ministry of Ecology, Sustainable Development, Transport, and Housing, with a proportionally smaller budget and clout. As minister of state and No. 2 in the government, Borloo headed a so-called super ministry, combining ecology, energy, sustainable development, the sea, and climate change negotiations. Kosciusko-Morizet does not have the minister of state title.

The shake-up sent the energy portfolio to Eric Besson, the new subminister of industry under the Ministry of Economy. Besson will also be in charge of the digital economy portfolio, Kosciusko-Morizet's previous post.

The "sea" was dropped from the Ecology Ministry portfolio, with the Ministry of Agriculture taking back authority for fisheries and aquaculture. The junior minister position of secretary of ecology was eliminated, sending its previous occupant, Chantal Jouanno, to head the Ministry of Sport.

Sarkozy announced plans for the shake-up back in March, after his ruling UMP (Union Pour Un Mouvement Populaire) party took a pummeling in regional elections.

Borloo led the government's successful campaign for passage of Grenelle 1, an environmental road map that became law in August 2009 and the Grenelle 2 law in July, which provided the legal nuts and bolts to implement the road map. Grenelle also produced major changes in green taxation. Hatched at a national environment summit hosted by Sarkozy in October 2007, the two laws grew out of a package of 268 "commitments" designed to push France toward sustainable production and consumption, particularly of energy.

Among other things, Grenelle aims to increase France's energy efficiency by 20 percent by 2020 and increase renewables' share in total energy consumption to 23 percent by that year. It also aims to reduce the country's greenhouse gas emissions by 75 percent by 2050.

Environmental organizations questioned what the scaling down of the Ministry of Ecology means for reaching these goals. Borloo, they noted, frequently said that any progress on climate change would have to involve progress on clean energy.

FNE expressed concerns that Besson would seek to make expansion of nuclear energy the driving energy policy.

"Why is energy now at Industry?" FNE, LPO, and CFDT asked in their statement, warning the minister of industry not to treat energy as only an industrial issue. "Energy is a problem for all society and the best solutions are to be found in better balance between local and centralized production, and above all in promotion of renewable energy and energy efficiency," they said.

The Action Climate Network warned that the shift of energy to the Ministry of Economy, at a time of a major budget crisis, indicates that the government is preparing to reduce funding for renewable energy and energy efficiency projects just as they are getting off the ground.

Kosciusko-Morizet vowed that Grenelle implementation will continue. "What is important is to maintain the fight against climate change and the implementation of Grenelle commitments, particularly on renewable energy," she said.

Borloo is now considered a possible presidential rival to Sarkozy in 2012, as leader of the Radical Center party.

21. EU Reports Biggest Ever Fall In Car Emissions In 2009

Average carbon dioxide emissions from new cars sold in the European Union dropped by 5 percent last year, the biggest one year fall ever recorded, European climate Chief Connie Hedegaard has announced. The EU, home to 500 million people, has set a target for cutting average emissions from new cars to 130 grams of CO₂ per km by 2015. "The latest data shows ... that the car industry is on track to achieve the 2015 target and most likely several major manufacturers will be able to do so well in advance," said Hedegaard.

Emissions dropped due to a combination of the economic crisis, the scrappage schemes that some governments introduced to boost buying of new cars and a shift in buying patterns to favor greener vehicles, she added in a statement. The findings mirror a report last week by green transport campaign group T&E, which also found Japanese carmakers making the fastest progress in the quest to hit the EU targets. T&E analyzed official EU data to show Toyota Motor

Co had reduced the average carbon dioxide from its cars by 10 percent in 2009, more than five times the pace achieved last year by the previous leader, Germany's BMW.

Suzuki Motor Corp made the second biggest emissions cuts last year at 9.1 percent, followed by Mazda Motor Corp with 5.4 percent.

Toyota's average CO2 emissions in 2009 were 132 grams per km, putting it alongside Peugeot Citroen and Fiat SpA as one of the carmakers best-placed for complying with the EU's 2015 goal.

22. EU Ports to Cut Fees For Low-Emission Ships

A group of European ports will offer reduced fees for ships with lower pollutant emissions from next year. The discounts will apply for ships arriving at the Dutch ports of Amsterdam, Moerdijk, Dordrecht and Rotterdam from 1 January. The ports of Antwerp in Belgium, Hamburg and Bremen in Germany and Le Havre in France intend to follow suit later in the year.

The ports will base charges for visiting vessels partly on emissions performance under a new, voluntary assessment scheme, the Environmental Ship Index (ESI). This was launched recently by the International Association of Ports and Harbours (IAPH), which hopes to see it used across the world. Precise details are not yet available but IAPH managing director Fer van de Laar told reporters he expected potential reductions in charges of up to 5% for the cleanest ships. Although this is a small margin, it should be enough to provide an economic incentive to cut emissions.

The ESI offers a simple and easily established score of emissions performance, which can be applied to all kinds of ship. It compares a ship's emissions of nitrogen oxides (NOx) and sulfur oxides (SOx) to legal standards. The system places the most emphasis on NOx performance. Points are also awarded for reporting energy efficiency, as there are no legal limits on carbon performance. Particulate output is not covered as it is closely associated with sulfur emissions.

A ship that just meets current emissions standards, set by the International Maritime Organization for open waters and by the EU at berth, would have a rating of 0. Another ship that has no pollutant emissions and which also reports its energy efficiency would be given 100 points.

Emissions from shipping are an important source of air pollution around the world, leading to limits on fuel sulfur content. A number of EU member states have established economic incentives for port operators to supply electricity to ships, enabling them to switch off their engines and improve local air quality.

NORTH AMERICA

23. California Gives Green Light to Carbon Trade

California has approved rules for a multibillion-dollar carbon market, in what proponents hope and detractors fear will be a turning point for the United States toward building a national program to address global warming. After Congress failed to pass a climate change law last year, California is the vanguard of the nation's effort to address global warming and its bid to build alternative energy and related industries.

California has mandated that a third of its electricity come from renewable sources like solar and wind. It is also encouraging "low carbon" auto fuels, like some biofuels and natural gas, and has now approved rules for the carbon market. "This is what makes us the leader," Governor Arnold Schwarzenegger, who signed the state's climate change law in 2006 and helped convince voters to crush a ballot box challenge to it last month, told regulators. California is struggling with a budget shortfall, but it is creating "green" jobs and garnering the lion's share of venture capital investment thanks to its environmental efforts, he said.

The rules adopted by the Air Resources Board, the state's climate change regulator, limit emissions of carbon dioxide and other greenhouse gases and let power plants, factories and eventually refiners and others to trade permits to pollute in a program generally known as cap-and-trade. California will become the second-largest carbon market in the world, following a European system. Point Carbon forecasts the market will grow from \$1.7 billion in 2012 to nearly \$10 billion in 2016, with prices rising from \$10 a metric ton in 2012 to \$18 per ton in 2016.

Calls to force companies to buy permits at auctions have largely been rebuffed due to the weak economy. Most permits will be given away, especially in the first three-year period.

Factories and power producers will be able to bear some of the burden for cutting emissions with credits for projects that soak up carbon, known as offsets. There is already a market in such offsets, and prices have jumped in the last several weeks to about \$8 a ton, traders said. A substantial number of manufacturers still view the program as a disaster that will raise costs and hurt the state's competitiveness. Companies will have to buy more and more permits at auctions as the multi-year program continues.

A number of studies have shown the net effect on the economy of cap-and-trade will be modest, but it could be disruptive in the short term.

Canadian provinces Ontario, Quebec and British Columbia are working to join California in 2012. They are members of a group called the Western Climate Initiative, and some California backers hope to join forces with a small U.S. Northeast plan and a developing Midwest program.

24. California Regulators Weaken Control of Diesel Pollution

The California Air Resources Board has adopted several amendments to its regulations to reduce soot from diesel engines. The amendments complement earlier emission control measures that assure that diesel particulate matter emissions will be reduced from today's levels by 50 percent by 2014 and 70 percent by 2020.

Over the past year, ARB staff held 20 public workshops throughout the state to solicit stakeholder input and discuss options for revising diesel control measures affecting commercially owned trucks, buses, port trucks, tractor trailers and off-road vehicles, including construction and large-spark ignition equipment (e.g., forklifts). The resulting amendments are summarized below.

Statewide On-Road Truck and Bus Regulation:

Approved in December 2008, this regulation will clean up emissions from the nearly one million heavy duty diesel trucks that operate in California. Key amendments will:

- Reduce overall compliance costs by about 60 percent as California recovers from the recession;
- Exempt about 150,000 lighter trucks from having to retrofit with particulate filters;
- Delay initial compliance date for the retrofitting of heavier trucks and allow them to operate another 8 years before being required to use a truck that meets 2010 emissions standards; and,
- Expand credits for fleet downsizing, adding cleaner vehicles ahead of any regulatory requirements, and for installation of early retrofits.

In addition, the Board voted to require all school buses greater than 14,000 lbs. GVWR to be retrofit with diesel filters by 2014. If no retrofit is available, the buses have until 2018 to be replaced by vehicles with a 2010 model year engine or emissions equivalent.

Off-Road (e.g., construction equipment) Regulation:

First approved in July 2007, this regulation is aimed at reducing diesel emissions from the state's estimated 150,000 "off-road" vehicles used in construction, mining, airport ground support and other industries. The state's economic downturn, which began after this regulation was adopted, heavily impacted this sector, causing emissions to decline primarily due to fewer pieces of equipment in use, along with reduced activity of the remaining equipment. As amended, the regulation will:

- Delay implementation for all fleets by four years;
- Reduce costs by 97 percent in next 5 years;
- Expand or extend credits for businesses that comply before their deadline or have downsized; and,
- Ease annual requirements to clean up engines (e.g., small fleets can extend phase-out period for oldest equipment over 10 years, from 2019 to 2029).

Port Truck Regulation:

Approved in December 2007, the port truck (or "drayage") regulation was adopted to modernize and clean up some of the oldest, dirtiest trucks in the fleet – those that serve the state's busiest ports and rail yards. The regulation has already had an impact by banning pre-1994 trucks from these facilities and requiring diesel particulate filters on others earlier this year, enabling adjacent communities to breathe a little easier. The new amendments will:

- Assure that all trucks serving the ports, including the smaller Class 7 trucks, will have diesel particulate filters by 2014; and,
- Expand the regulation to include trucks operating outside port or rail yard properties to prevent non-compliant trucks from receiving cargo from clean trucks in those areas.

California's diesel emissions control measures were adopted under the ARB's Diesel Risk Reduction Plan, which was approved by the Board in 2000, two years after diesel exhaust was declared a toxic air contaminant by the state's Scientific Review Panel. The ARB has already passed measures addressing urban buses, garbage trucks, school bus and truck idling, stationary engines, transport refrigeration units, cargo handling equipment at ports and rail yards, ship engines, harbor craft and fuel.

25. Clean-Air Rules on Diesel Trucks May Be Helping California Keep Its Cool

New data show that two decades of air-pollution regulations in California for trucks running on diesel fuel have cut levels of black carbon, the main component of soot, in half. And models suggest that the soot reduction may also have cut into the warming of the state's climate in an unexpectedly big way.

Soot comes mainly from diesel engines and the burning of wood, charcoal or other biomass. In recent years, scientists have learned that black carbon, which traps both direct sunlight and heat reflected from the ground, has powerful warming effects: Methane, ozone in the lower atmosphere and particulate black carbon together warm the planet as much as carbon dioxide. And as much as half of the loss of snow and ice in the Arctic may be due to black carbon.

Breathing black carbon also harms people's health: The United Nations blames soot on 1.5 million deaths per year globally.

Research published in the journal *Atmospheric Environment* by atmospheric scientist V. Ramanathan of the Scripps Institution of Oceanography and colleagues analyzed how black carbon levels in California fluctuated from 1988 to 2008. During that period, laws requiring cleaner-burning fuels and catalytic converters led to diesel engines that polluted less. Black carbon levels were slashed in half even though diesel fuel consumption in the state rose steadily.

More unexpected is the effect on the climate. Globally, greenhouse gases produce warming by trapping two to four watts of power from heat given off by the planet per square meter of Earth's surface. Ramanathan's group calculated that, on average, the removal of the black carbon prevented an estimated 1.4 watts per square meter of heating, which they say presumably would have added to greenhouse-gas warming in California. Ramanathan called that amount "surprising" and said that it shows how powerful a tool controls on black carbon could be.

Controlling diesel emissions and making cleaner-burning cook stoves, he says, could help limit warming of the planet if scaled up. Because black carbon settles out of the atmosphere in a few weeks, instead of the centuries for which carbon dioxide persists in the air, cutting soot emissions could quickly put the brakes on warming while nations rev up efforts to cut CO2 emissions.

26. US Pumps 100% ULSD Compliant

It took about four years, but as of December 1st, all highway diesel fuel in the U.S. is ultra-low sulfur diesel (ULSD) fuel. ULSD, which has a lowered sulfur content (from 500 ppm to 15 ppm), became standard in 2006. At that time about 85 percent of highway diesel was ULSD.

According to EPA's pump survey, the highway transition to ULSD was completed a few weeks ago with 100 percent of the fuel testing at or below 15 ppm. Over the next few years, off-road diesel will be completing a similar transition.

27. NY Judge Blocks Mandate to Retrofit Diesel Trucks

New York Supreme Court Justice Donald A. Greenwood ruled in favor of private industry, economic development and the people of the state of New York on December 15th. The judge ruled on behalf of the plaintiff, Riccelli Enterprises Inc., saying heavy duty vehicles owned and operated by private companies doing business with NYS are not required to comply with

onerous and expensive regulations promulgated by the Department of Environmental Conservation.

“Unlawful regulations would have cost billions of dollars to an already damaged economy. A number of major businesses would have been out of business and thousands of employees and ultimate consumers would have suffered.”

Kendra Adams, Executive Director of the NYS Motor Truck Association stated: “This is a landmark decision. From the beginning, we’ve felt that the regulations extended much further than the original intent behind the legislation. NYSDEC really took broad strokes in their interpretation of the new legislation.”

When the Legislature passed the legislation in 2006, was intended to require advanced emission control systems for government-owned trucks because federal money was available to pay for the retrofit. Private industry did not have federal money to pay for such retrofits, but the DEC still expanded the legislative intent of the law to include private-sector heavy duty trucks.

In its decision, the court ruled that the Legislature did not grant NYSDEC the statutory authority to require diesel retrofits to vehicles that were not owned, leased or operated by the state or a limited number of private companies that contract with the state.

28. EPA Postpones Smog Rule Until July

The Environmental Protection Agency has announced it was again delaying its final rule on smog limits, with the rule now expected by the end of July 2011. This is the third time the agency has delayed the smog standards, originally slated to be finalized in August.

The initial standards proposed near the start of this year would limit ground-level ozone, or smog, to between 60 and 70 parts per billion measured over eight hours. The proposal was stronger than 2008 standards the Bush administration set. Environmental groups criticized those for being less stringent than government scientists recommended.

An EPA spokesman said the agency needs time to complete a scientific review. EPA head Lisa Jackson plans to ask the agency’s independent team of scientists for more guidance on studies used to make their recommendations.

The proposed rules would require factories and oil, gas and power companies to cut emissions of nitrogen oxides and other chemicals called volatile organic compounds. Smog forms when those compounds react with sunlight.

Industry groups have attacked the proposed rules, arguing they have already spent billions of dollars to lower emissions. The American Petroleum Institute, the major lobbying group for oil and gas, cheered the delay.

EPA said the proposal would cost \$19 billion to \$90 billion to implement. But it said it would save \$14 billion to \$100 billion from healthcare bills for asthma, lung damage, and other diseases as well as lost work costs.

29. Diesel Emissions Reduction Act of 2010 Passes Congress

On Tuesday December 21, 2010, the Diesel Emissions Reduction Act (DERA) of 2010 won final approval from Congress. This bill is a vital piece of legislation necessary to extend a national and state-level grant, rebate, and loan program that would create jobs, save lives, and significantly improve the nation's air quality.

The legislation reauthorizes and modernizes the Diesel Emissions Reduction Act of 2005 (DERA), which was set to expire at the end of the fiscal year 2011. The bill not only authorizes a five year extension of current operations, but also includes several important modifications to expand the program and increase eligibility.

Originally passed with strong bipartisan support as part of the 2005 Energy Policy Act, the program is widely considered one of the most cost-effective federal programs in the nation. The EPA has estimated that in California alone, the program returns an average of more than \$13 in health and economic benefits for every \$1 spent. Since DERA funding began in 2007, more than 3,000 projects across the nation have benefitted. Additionally, it is projected that an estimated 2,000 lives will be saved by 2017 because of improved air quality attributable to DERA.

In addition to extending the current program of grants and loans, the legislation includes a rebate program and will simplify the application process for each funding source. It also expands the program by adding eligibility for the District of Columbia and the territories, eliminates the requirement for 50% of funding to go towards public fleets, and reduces the cap for emerging technologies from 10% to 5%.

30. U.S. Issues Timetable for Carbon Emissions Cuts

Environmental regulators have released a plan for the nation's power plants and refineries to cut greenhouse gas emissions, pressing ahead with the Obama administration's strategy of tackling the pollution in the absence of federal climate legislation. The Environmental Protection Agency said it would propose so-called performance standards on greenhouse gas emissions on both new and existing plants beginning in July for power plants and for oil refineries by December. The fossil fuel plants emit about 40 percent of U.S. greenhouse gases.

The plan resulted from an agreement with states, including California and New York, and environmental groups that had sued the agency to regulate emissions of gases blamed for warming the planet. The standards, the specifics of which have not been established, are also the latest stage of President Barack Obama's effort to drive U.S. policy to combat global warming. The strategy stems from the EPA's ruling a year ago that greenhouse gases were a threat to human health and welfare, which has come under fire from industry groups and Republicans in Congress.

The new rules will come on top of regulations starting on January 2nd that require the biggest polluters to get permits for emitting greenhouse gases.

"This is about taking a look at what technologies are available that can cost-effectively achieve reductions in greenhouse gases ... it's not establishing a tonnage (of emissions) that should be emitted or shouldn't be emitted," said Gina McCarthy, an EPA assistant administrator on air and radiation. McCarthy said there were no specifics on the proposed rules and that the timeline was not a first move in setting up a cap-and-trade market on emissions. The performance standards will be finalized in May 2012 for power plants, and November that year for refineries. New and existing plants can choose available technologies to reduce emissions.

Separately, the EPA said it will issue greenhouse gas permits for Texas, which had refused to adopt rules on emissions. EPA also said it will issue permits in Arizona, Arkansas, Florida, Idaho, Kansas, Oregon, and Wyoming until state or local agencies are ready to do the job themselves.

The performance standards would add jobs to the economy because they would require many of the hundreds of big fossil fuel plants across the country to adopt new technologies to make their plants more efficient, McCarthy said. The standards may also require utilities to switch to cleaner fuels, such as from coal to natural gas, but McCarthy said it was also too early to estimate how many aging coal plants might be pushed into retirement.

But Republicans, set to take over the House of Representatives and seats in the Senate in January, have vowed to stop or postpone the EPA from regulating the gases, saying it will harm the economy. (See below)

31. Republicans Plot Death of EPA Climate Rules

Republicans poised to take power in Congress are planning a rapid attack against a climate change initiative the Obama administration wants to launch on January 2nd, according to members of the Senate and House of Representatives. Their resolve could harden further after President Barack Obama's Environmental Protection Agency announced a second layer of regulation ratcheting up Washington's fight against global warming. (See above) "I think we ought to start with a two-year pause" in upcoming U.S. Environmental Protection Agency regulations, said Representative Mike Simpson, the Republican who is expected to head a House panel that controls EPA's budget.

One year ago, environmentalists were hopeful of winning comprehensive legislation in Congress to force reductions in emissions of carbon dioxide and other greenhouse gases blamed for global warming. That effort crashed, however, prompting the White House to go ahead with a back-up plan: EPA rules forcing electric utilities, refineries and large factories to get permits for the carbon dioxide they emit. They also would be required to use the most advanced "clean" technology when expanding or building new facilities.

Now, with Republicans taking control of the House on January 5th and expanding their seats in the Democratic-controlled Senate following election wins, they are aiming to scuttle the EPA regulations, which they say would raise consumer prices for energy and put U.S. companies at a competitive disadvantage. "I think we're going to have a very amiable and frankly enjoyable time addressing these things," said a confident Republican Senator James Inhofe, a leading critic of steps to address global warming, which he has dismissed as a hoax.

Representative Simpson said that the first opportunity to tackle EPA will be on a partial-year spending bill the new Congress will have to pass early in 2011 to avoid government shut-downs after March 4. The Idaho congressman noted that previously a two-year suspension of EPA rules for smokestack emissions of carbon dioxide failed in a House panel on a tie vote. "I suspect it would have a much better chance in this coming Congress," Simpson said.

Environmentalists are hoping that with Democrats continuing to control the U.S. Senate and White House, some meaningful steps are still possible. They also contest Republican claims that the EPA regulations would ruin U.S. companies and the fragile economy. "What EPA is doing is putting out guidance that is going to help...business find ways to be more (energy)

efficient. There's no regulatory hammer there," said Tony Kreindler, a spokesman for the Environmental Defense Fund.

Inhofe, the senior Republican on the Senate Environment and Public Works Committee that oversees climate change policy, warned that Obama could face a stiffer challenge next year in the Senate than many anticipate. He noted that several Democratic senators from coal-producing and coal-consuming states are up for re-election in two years and they might cooperate with Republicans working to kill the EPA regulations. "Those Democrats who are up for reelection in 2012, they can't continue to walk the plank with Obama," Inhofe said.

32. Upton to Chair Important House Energy Panel; Not a Friend of EPA

Representative Fred Upton was chosen by a Republican organizing panel to become the next chairman of the House of Representatives' Energy and Commerce Committee, considered one of the most powerful panels in the U.S. Congress. Upton of Michigan would head the influential panel that has oversight of energy policy, as well as healthcare and telecommunications. He would replace Democratic Chairman Henry Waxman when Republicans take control of the chamber in January from President Barack Obama's Democrats.

Shortly after his victory over former committee Chairman Joe Barton, Upton said in a statement: "The Obama administration is on notice -- they will not be allowed to regulate what they have been unable to legislate." That comment was likely aimed at the Environmental Protection Agency, which in January could move ahead with new regulations forcing large manufacturers to reduce their carbon dioxide pollution emissions.

During the 2009 fight in the House over a climate bill, Upton vigorously opposed it, saying it would worsen unemployment, which already was at high levels in Michigan.

Underscoring his support for conservative views, Upton has called for opening the Arctic National Wildlife Refuge to oil and gas drilling, scaling back government aid for renewable energy and voiced opposition to requiring electric utilities to use alternative energy for some of their power generation.

33. United States Seeks Controls On Ship Emissions Off Caribbean Islands

The U.S. government has asked the International Maritime Organization to designate an emission control area in the waters off Puerto Rico and the U.S. Virgin Islands to curb air pollution from large ships, with the IMO slated to vote on the proposal in July 2011, the Environmental Protection Agency said. In seeking the designation, EPA Region 2 said, the government is asking for requirements that any large ships operating in those waters use much cleaner fuel or install better pollution control technology to cut emissions of nitrogen oxides, sulfur oxides, and particulate matter.

Tankers, container vessels and cruise ships are major sources of air pollution in the two U.S. territories located in the Caribbean, the agency said.

In March, EPA said, a U.S. proposal to designate North American coastal areas as an emission control area was accepted by the IMO, a United Nations body responsible for maritime safety and ship pollution prevention.

Together with the expected designation of U.S. Caribbean Sea waters, the North American emission control area is a key part of a comprehensive EPA program to address harmful air pollution from large ships, the agency said.

“The sulfur, soot, and other harmful air pollutants from large ships reach from ports to inland communities,” EPA Regional Administrator Judith Enck said in a statement. “The designation will result in cleaner air for residents of Puerto Rico and the U.S. Virgin Islands and the millions of tourists who visit these beautiful islands.”

EPA estimated that by 2020, the requirements for the emission control area will have reduced sulfur dioxides from ships by 96 percent, fine particles by 86 percent and nitrogen oxides by nearly 30 percent.

The Port of San Juan in Puerto Rico moves approximately 11 million metric tons of goods on nearly 3,800 vessel trips annually, EPA said. It is also a major destination for over 1 million cruise ship passengers, the agency added. St. Thomas is the largest cruise port in the U.S. Virgin Islands, with over 2 million cruise passengers and over 800 cruise ship arrivals, EPA said.

A treaty amendment for the U.S. Caribbean emission control area has been approved by the IMO Marine Environment Protection Committee and will be circulated until July 2011 prior to a final vote by the organization, EPA said.

34. Transport Canada Seeks Comment on Locomotives Emissions Regulations

On December 1st, Transport Canada launched public consultations on the development of regulations under the Railway Safety Act to limit emissions of criteria air contaminants from locomotives. The consultations will focus on a paper that outlines the context for the proposed regulations, which will subsequently be published in draft form for further comment in the Canada Gazette, Part I, Minister of State of Transport Rob Merrifield said in a written statement.

Comments are due by Feb. 14. The department hopes to finalize and implement the regulations later in 2011, Merrifield said.

The regulations would address emissions of particulate matter and nitrogen oxides, as well as other contaminants, including hydrocarbons, volatile organic compounds, sulfur dioxide, and carbon monoxide. The regulations would affect railway companies, parts manufacturers, suppliers, emissions testers, and remanufacturers.

Particulate matter and nitrogen oxides are key components of smog and acid rain and have been linked to premature mortality, asthma, some forms of heart disease, and aggravated cardiac and respiratory diseases, Transport Canada said in the consultation paper on the proposed regulations.

“The transportation sector is a substantial emitter of criteria air contaminants. Canada’s transportation sector produces over 54 percent of our nitrogen oxides emissions. Canada’s rail sector is responsible for about 9 percent of these nitrogen oxides emissions,” the department said.

Since 1995 the rail industry has entered into voluntary agreements with the federal government to limit emissions, the department said. The first agreement, which lasted from 1995 to 2005, committed the railways to keeping nitrogen oxides emissions below a cap of 115,000 metric

tons per year. Although emissions remained below that level in many of those 10 years, freight traffic grew by 38 percent and nitrogen oxides emissions increased by 3 percent over that time, it said.

The industry and government signed a second agreement in 2007 for the 2006–2010 period that committed the industry to reduce a large group of criteria air contaminants emissions and greenhouse gas emissions. That was meant to provide a transition period while emissions regulations were being developed, the department said. The proposed regulations are intended to take effect when the current agreement with the rail sector ends.

Development of the regulations will be completed in two phases, the department said. In the first phase, regulations will be developed that will align with those of the U.S. Environmental Protection Agency to limit, effective in 2011, the release of criteria air contaminants. The second phase will develop regulations to limit emissions of greenhouse gases that will also be aligned with EPA rules, it said.

“Strict [U.S.] criteria air contaminant regulations aimed at reducing air emissions that can lead to smog and acid rain apply to U.S. locomotive manufacturers, which supply Canadian railways with new locomotives, and these standards are set to become increasingly strict for future model years as better and more efficient technology is developed. Canadian regulations will ensure that Canadians receive the full benefits of these new technologies,” the department said.

Transport Canada noted that in 2007, about 437 railway companies were operating in Canada, including two major Class 1 freight railways (Canadian National Railway and Canadian Pacific Railway), about 60 short-line and regional railways, a number of inter-city passenger railways (including VIA Rail), commuter railways in major cities, industrial railways, and tourist and recreational railways.

35. U.S. Renewable Energy Tax Grants Extended For 1 Year

The renewable energy industry cheered the passage of the U.S. tax bill, which included a provision to extend a generous grant program for projects in the fast-growing sector. The grant program allows qualifying renewable energy projects such as solar and geothermal power plants to apply for a Treasury Department grant that covers up to 30 percent of costs. Until President Barack Obama signed the bill into law, the program was slated to expire on December 31, 2010.

The solar and geothermal industries also praised the provision's passage, saying it would help them drum up business and create new jobs. The Solar Energy Industry Association said the grant program has already helped install about 1,000 megawatts of solar-electric capacity this year, sustaining thousands of jobs in construction and installation and supplying enough power for about 200,000 homes.

Many solar developers were racing to meet the December 31 deadline for the grant, only to find they couldn't start construction by the December 31 deadline, typically due to difficulties or delays lining up financing. The situation affects many of the high-profile utility-scale solar plants that were on a fast track for regulatory approval. While local and federal regulators met the December 31 deadline, many companies have not broken ground on their projects.

The program was created last year under the American Recovery and Reinvestment Act. Under an already existing program, developers of renewable-energy initiatives could apply for

investment tax credits that cover up to 30 percent of a project's costs. The Recovery Act tweaked that program so that applicants could apply for cash grants instead of tax credits. To qualify for a grant, projects must start construction by December 31 2011, compared with December 31 2010 before the extension passed in the tax bill.

36. U.S. Automakers Sue EPA Over Higher Ethanol Blends

U.S. automakers and engine makers sued the Environmental Protection Agency for allowing higher blends of ethanol for newer cars, saying it could confuse consumers at fuel pumps and lead to damage of engines in older vehicles. The suit asks the federal appeals court in Washington to send the decision back to the EPA and asks the court to review whether the decision violates the Clean Air Act.

The EPA decided in October to allow cars built in 2007 or later to burn gasoline containing 15 percent ethanol, or E15. Current legal levels are 10 percent. The EPA may decide as soon as January to allow E15 for cars built in 2001 and later.

Growth Energy, an ethanol industry group, had asked the EPA for a waiver for the sale of the fuel because the business faces a glut of the alternative motor fuel. Allowing more ethanol could benefit makers such as Archer Daniels Midland, Green Plains and privately held Poet. But a new coalition that filed the suit, called the Engine Products Group, said the EPA's decision to allow higher blends for some cars could confuse consumers. Engines in some vehicles, boats, lawnmowers and chain saws could be damaged if they get the wrong fuel, they said.

The coalition includes the Alliance of Automobile Manufacturers, the Outdoor Power Equipment Institute, the National Marine Manufacturers Association, and others who say they collectively represent some 400 million engine products used by Americans.

Higher ethanol blends can corrode fuel lines and other parts in engines that have not been adjusted to run on the new fuels, they say.

The suit is the latest hurdle for the U.S. government and ethanol producers to increase the amount of renewable fuel to be sold in the country with E15. Last month, food groups, including the Grocery Manufacturers Association and the National Meat Association, filed a suit seeking to overturn EPA's October decision. They said allowing E15 could push up food prices because ethanol in this country is mostly made from corn, also a feed for livestock. Already more than 30 percent of the U.S. corn crop goes to making ethanol, and corn futures prices are already near two-year highs.

A bigger hurdle will be that filling stations may choose not to sell the fuel because it could force them to invest in new pumps and tanks and open them up to lawsuits from customers who filled up with the wrong fuel. Still, ethanol makers are confident the higher blends can edge into the market.

37. Senate Votes to Extend Ethanol Subsidy For 2011

The Senate voted in favor of a one-year extension of the ethanol tax credit and the ethanol import tariff at existing rates, despite complaints the subsidies were wasteful. The bill will be welcomed by the struggling ethanol industry and by American farmers who supply the corn to produce the fuel that is blended into automotive gasoline. The extension was part of a larger bill

extending the Bush-era expiring personal tax cuts. The bill sailed through the Senate in an 81 to 19 vote and was subsequently approved by the House of Representatives.

The 45-cent-a-gallon tax credit and the 54-cent tariff were to expire on December 31. A one-year extension means Congress will face the contentious biofuels question again next year. Senator Dianne Feinstein was rebuffed in a last-ditch attempt to cut the tax credit and the tariff to 36 cents each. Senate leaders declined to call a vote on her amendment.

The ethanol industry welcomed the extra life for the incentives.

The Senate bill also extends for one year the 10-cent a gallon small-producer credit and revives through 2011 the \$1 a gallon biodiesel tax credit that expired at the end of 2009.

The ethanol incentives will cost \$7 billion and Feinstein said her amendment would have saved \$2 billion. She argued there was no need for ethanol subsidies, because a 2007 law guarantees renewable fuels a share of the motor fuel market, rising to 36 billion gallons (163.7 billion liters) in 2022.

Foodmakers, livestock producers and environmentalists wanted the ethanol subsidies to expire. They say the tax credit drives up the cost of livestock feed and results in more runoff of fertilizer and pesticides from farmland.

There are more than 200 ethanol plants in two dozen states but production is centered in the U.S. Midwest. Ethanol producers say the average plant employs four dozen people and laud their industry as a valuable source of jobs in rural America and a key component of the agribusiness economy. Nearly 40 percent of U.S. corn is used to make ethanol.

38. Oil Industry Loses Vs EPA on Ethanol Standard

A federal appeals court rejected a challenge from U.S. oil companies and refiners against the Environmental Protection Agency for retroactively imposing ethanol blending levels and volume requirements for gasoline sales. Federal law requires the EPA to set by November 30 each year the amount of ethanol that must make up U.S. gasoline sales for the following year. For 2010, biofuels have to account for 8.25 percent of gasoline sales.

The oil industry sued because the EPA did not finalize the ethanol renewable fuel standard for 2010 until March 26 of this year, almost four months past the deadline set by Congress. The oil industry said it was not trying to challenge the important role biofuels play in the U.S. fuel supply, but was questioning the fairness of EPA rulemaking.

U.S. biofuels use is supposed to increase annually, rising from nearly 13 billion gallons this year to 36 billion gallons in 2022.

In its 40-page ruling, the court said oil companies and refiners had plenty of time to meet the EPA's renewable fuel standard and the ethanol law had no provision requiring the EPA to create a "proportionally reduced obligation" for using biofuels.

39. U.S. At Risk Of Rare Earths Supply Disruptions

The United States risks major supply disruptions of rare earth metals used in clean energy products unless it diversifies its sources of the minerals, the Energy Department warns in a new

report. The United States and other countries are worried that China, which controls 97 percent of the world trade in rare earth metals, will use those supplies as a political weapon and cut back their export when it is in a dispute with another country or to grow China's clean energy technology sector.

"The availability of a number of these materials is at risk due to their location, vulnerability to supply disruptions and lack of suitable substitutes," U.S. Energy Secretary Steven Chu said in a report unveiled at a rare earth metals conference at the Center for Strategic and International Studies.

The release of the report coincides with trade talks in Washington between the United States and China. U.S. officials are expected to push Chinese officials to loosen export restraints on rare earth elements. (See story below) China, which said it planned to raise export taxes on some rare earth metals, holds 37 percent of known rare metal reserves, the United States has 13 percent and the rest is in other countries.

The 17 rare earth metals, with exotic names like lanthanum and europium, form unusually strong lightweight materials and are used in a wide range of applications including high-tech and defense products, car engines and clean energy.

China has vowed that it would not use its dominance of rare earth supplies as a bargaining tool with foreign economies but it has cut its exports of the materials on environmental grounds. U.S. Secretary of State Hillary Clinton raised U.S. concerns over Beijing's export policy with Chinese Foreign Minister Yang Jiechi during a visit to Asia at the end of October.

The Energy Department said in its report that it looked at the use of rare earths in wind turbines, electric vehicles, solar cells and energy efficient lighting because these clean technologies are expected to be deployed substantially on a global basis over the next 15 years, increasing demand for rare earth metals. It said that in order to manage the risk of rare earth supply disruptions, the United States must increase its domestic extraction and processing of the materials. There is only one U.S. rare earths producer, Molycorp Inc. It is the largest non-Chinese rare earths firm and the only rare earth oxide producer in the Western Hemisphere.

The report said the United States must work closely with its international partners, including Europe and Japan, to boost their production of the materials. "Diversified global supply chains are essential," the report said.

However, mining rare earth metals can be very expensive and the lead times for new mining operations are long, ranging from two to 10 years. "Whether a deposit can be mined economically will depend on a number of factors, including rare earth prices, regulatory requirements and improvements in extraction and separation technologies," the report said. Recycling and reusing the rare earth metals could also significantly lower world demand for the materials.

Traditional energy sectors are also at risk from rare earth supply problems, the report said. Rare earth ores are used in the fluid cracking catalysts that convert heavy oils in the refining process into more valuable gasoline, distillates and lighter products. Rare earth elements are used in catalysts to produce higher yields of more valuable products such as gasoline. A disruption in rare earth supplies could have a noticeable impact on refinery yields and require oil refinery owners to make investments so the fluid cracking process will work without the rare earth materials, the department said.

The department said it will develop an updated strategy by the end of next year for increasing supplies of critical rare earth metals.

40. Improved Car Batteries 5 Years Off: Energy Chief

Cars that run on batteries will begin to be competitive with ones that burn petroleum fuels in about five years, the U.S. energy secretary said at the annual U.N. climate talks. "It's not like its 10 years off," Secretary Steven Chu said at a press conference on U.S. clean energy efforts on the sidelines of the climate talks. "It's about five years and it could be sooner. Meanwhile, the batteries we do have today are soon going to get better by a factor of two," said Chu, a Nobel Prize-winning physicist.

Chu is one of three Obama administration officials that will briefly visit the talks among 190 countries being held at a Mexican beach resort through December 10. Agriculture Secretary Tom Vilsack and Nancy Sutley, the head of the White House's Council on Environmental Quality, are the other two.

Chu's Department of Energy, or DOE, is supporting several approaches seeking to improve car batteries. A battery race has developed between U.S. companies like Massachusetts-based A123 and ones in Asia, like China's BYD, of which Warren Buffett's Berkshire Hathaway owns 10 percent. South Korea's LG Chem is supplying General Motors with batteries for the automaker's electric Volt car.

Petroleum-powered transportation emits about a third of the world's greenhouse gases. Scientists say battery-powered cars reduce emissions of carbon dioxide, even if they are powered by coal-burning power plants. As more natural gas-fired plants are built, they will become even cleaner.

Right now electric cars do not go as far as ones powered by internal combustion engines, which could limit sales if there are no improvements. Even so, GM said last month it is stepping up production of the Volt to meet "huge demand," without giving details. GM had planned to build 10,000 Volts in 2011 and 45,000 in 2012.

Chu said car battery companies have to develop units that last 15 years, improve energy storage capacity by a factor of five to seven, and cut costs by about a factor of three in order to make electric cars comparable to cars that run on gasoline and diesel.

While the technology may improve, it is not certain that there will be ample materials to build the batteries to support a massive move to such cars. BYD is looking for new sources of lithium, an important ingredient in advanced batteries. Lithium supply is expected to be tight by 2050 if drivers give up their cars and go for battery-powered cars, according to a European Commission study of raw materials for high technology goods.

One unit of the U.S. DOE called the Advanced Research Projects Agency-Energy is making investments in batteries and other technologies considered too risky for the private sector, but that have big potential. Chu said if one out of every 10 projects in that program, which received \$400 million from President Barack Obama's economic stimulus package, made it into the market, they could help the world improve energy security and cut emissions.

41. Regulation Is Deficient In Canada's Oil Sands: Study

Reclamation in Canada's oil sands is not keeping pace with rapid development and that could leave the public vulnerable to major financial burdens in years to come, a scientific panel said recently. The study by Royal Society of Canada scientists, the latest report on the effects of the country's multibillion-dollar oil sands sector, also concluded that governments and regulators are lagging world standards in their ability to oversee the industry and monitor its environmental impact.

"Current government of Alberta policy on financial security for reclamation liability leaves Alberta vulnerable to major financial risks, which are exacerbated by the current state of reclamation, which is not keeping pace with the rate of land disturbance," the panel said in its report. Alberta's oil sands are the largest source of crude outside Saudi Arabia, and are the target of billions of dollars of spending by the world's oil industry. However, the environmental impact of the rush to develop the oil is under intense scrutiny by environmentalists and politicians.

The seven-member panel, chaired by Steve Hrudehy, professor emeritus of analytical and environmental toxicology at the University of Alberta, pointed out uncertainty in the industry's ability to reclaim wetlands, given current methods. It pointed out that technology to manage tailings ponds, the toxic byproducts of oil sands extraction, has improved over the past decade, despite recent incidents involving the deaths of hundreds of ducks that landed on a toxic pond. However, the government should move forward with efforts to improve financial liability programs for both mining and thermal oil sands developments by putting extraction and upgrading plants on the list of facilities that must be reclaimed, the report said.

It said environmental assessment practices are deficient, based on guidelines from such agencies as the International Association for Impact Assessment, the Organization for Economic Co-operation and Development, and the World Bank. Overall risk assessments for natural disasters, community health assessment and cumulative ecological effects are inadequate, the panel said.

Controversy about water monitoring around the developments in northern Alberta has intensified in recent months after a renowned water ecologist said his studies showed regional pollution was not naturally occurring, as the industry and government-supported Regional Aquatics Monitoring Program (RAMP) had long asserted. Federal and provincial environment ministers have both formed scientific panels to study the impact of operations on water as well as how rivers and streams are monitored. Their reports have yet to be released.

The Royal Society report said the current evidence shows that development is not an immediate threat to the Athabasca River ecosystem, but noted that concerns about RAMP and how it collects and monitors data need to be addressed.

The group said there is no current evidence to support fears that oil sands contaminants cause cancer in native people who live downstream, an emotional and contentious issue. However, more rigorous study is needed, it said.

42. Canada Vows Stricter Look at Oil Sands Pollution

Canada said it will design a system to better monitor whether northern Alberta's huge oil sands projects are polluting waterways after an independent scientific panel found major flaws in the current monitoring system. Environment Minister John Baird made the announcement after the

panel reported "there was no evidence of science leadership to ensure that monitoring and research activities are planned and performed in a coordinated way."

Ottawa set up the scientific panel in September after an academic report concluded oil sands plants were sending toxins, including mercury, arsenic and lead, into the watershed. The report also attacked the credibility of a government-supported and industry-funded water-monitoring agency. "For far too long we have heard concerns about the quality of water downstream of the oil sands," Baird told a news conference, saying Ottawa and the Alberta provincial government would design an effective water monitoring system within 90 days. "We will then consult with a group of independent scientists to ensure that the proposed design is appropriate and then move immediately to implementation," he said.

The panel's report is not expected to have any immediate impact on production in oil sands, the largest source of crude outside Saudi Arabia.

The energy industry is pouring billions of dollars into developing the oil sands, and argues it follows environmental best practices. Environmentalists say the projects produce vast amounts of greenhouse gases and toxic waste.

The panel said current problems include fragmentation of the monitoring system as well as a lack of leadership and coordination. "Until this situation is fixed there will continue to be uncertainty and public distrust in the environmental performance of the oil sands industry and government oversight," it said. The panel stopped short of concluding that the oil sands were polluting waters in Alberta. It also did not say further development should be restricted.

Output from the region, the largest single source of U.S. oil imports, is expected to about double to 3 million barrels a day by 2020. The extra production will come from new projects and the expansion of existing facilities run by Royal Dutch Shell Plc, Total SA, Suncor Energy Inc, and ConocoPhillips among others.

The panel was particularly critical of the Alberta government's current monitoring system, the Regional Aquatic Monitoring Program, saying it suffered from a lack of scientific leadership. "It is not producing world-class scientific output in a transparent, peer-reviewed format and it is not adequately communicating its results to the scientific community or the public," the panel said.

Alberta announced a separate effort to create a monitoring system that would complement federal efforts. The minority federal Conservative government is firmly behind the oil sands industry.

43. Nissan Delivers First Electric Car in Challenge to GM

Japan's Nissan Motor Co delivered the first mass-market all-electric car to a technology entrepreneur in California recently as the company tries to get a jump in the nascent green vehicle race. The first customer, Olivier Chalouhi, has been riding an electric bicycle to work, and he plugged his new car in for the cameras outside San Francisco City Hall. The charge point, one of 400 in the region, had a green official city sign near it that said, "Green Vehicle Showcase: Cars that make a difference."

The Leaf is one of a handful of mass-market fully electric or extended range plug-in vehicles slated to reach consumers in the next year. The battery-powered Leaf, with an EPA-certified battery-only range of 73 miles is due to hit showrooms this month in a limited roll-out -- along

with Chevy Volts by General Motors Co. Ford Motor Co expects to deliver its first electric Focus compact cars late next year.

Carlos Taveras, the North American head of Nissan, said his company would focus on satisfying the first 20,000 Leaf customers before opening up for more orders next year. "We are not in a rush," he told reporters, reasserting Nissan's plan to go straight to zero-emission cars, as opposed to the Volt with its gasoline engine that can recharge the battery to give it more range.

The Leaf and Volt are seen as the spearheads of the greening of automobiles. But gasoline and diesel-powered cars with better fuel economy are seen as having more immediate impact on lowering greenhouse gas, mainly because of their greater numbers.

California, the most populous U.S. state, is the biggest market for conventional cars and is expected to be the biggest one for electric vehicles as well. The fact the Leaf is eligible for the California rebate, while the Volt is not, will be a selling point for Nissan. The Leaf is also set to be delivered to Oregon, Seattle, Tennessee and Arizona, followed by Hawaii and Texas shortly after that.

As a pure electric car, the Leaf tops the Volt in the category on the EPA label that tracks greenhouse gas emissions from the vehicle. Since it carries no combustion engine, the Leaf has no such emissions, although greenhouse gases would be produced by the power plants used to recharge the car.

The Leaf will be priced at about \$32,780 before a federal tax credit can bring the sticker price to about \$25,280 and, in California, a rebate that can reduce it to about \$20,280.

Journalists named it the 2011 European Car of the Year, the first electric vehicle to be chosen for the award. Chevy's Volt -- named Green Car of the Year and Motor Trend car of the year -- is rated at 84 grams of carbon dioxide per mile, less than one-tenth of the industry's worst-performing vehicle on that score.

The Volt is designed to run for 35 miles on a full charge of its 400-pound (181-kg) lithium-ion battery pack supplied by a unit of Korea's LG Chem. After that, a 1.4-liter engine extends the driving range to about 379 miles. GM plans to build 10,000 Volts next year, 45,000 in 2012 and has begun discussing ways it could increase the production should there be more demand. Capturing the fuel-economy leadership from Toyota Motor Corp's hybrid Prius would give GM bragging rights it has sought throughout the Volt development effort.

44. EPA Proposes Updates to Greenhouse Gas Reporting Program

The U.S. Environmental Protection Agency (EPA) is proposing actions under the greenhouse gas (GHG) reporting program to address issues about the public availability of certain data that some businesses may consider to be confidential. The total emissions for each facility is still required to be reported to EPA and released to the public.

In July 2010, EPA proposed to determine that information included in emissions equations are "emissions data" and cannot be protected as confidential business information under the Clean Air Act. Under the proposed determination, EPA would have to make these data available to the public once they are submitted to the agency.

EPA is soliciting comments from stakeholders seeking more specific information about claims of business sensitivity regarding inputs to emissions equations and proposing to defer the deadline for reporting that data until March 2014. The new information and reporting deferral would allow EPA to assess the issue and make final decisions on how to treat the data elements in question. The proposals will not change the requirement that facilities retain these data so that EPA may directly follow up with facilities through on-site audits.

EPA is taking comment on the proposal to delay reporting of sensitive data for 30 days after publication in the Federal Register, or 45 days if a hearing is requested, and is accepting comments in response to EPA's request for information for 60 days after publication in the Federal Register.

EPA's greenhouse gas reporting program, launched in October 2009, requires the reporting of GHG emissions data from large emission sources and fuel suppliers across a range of industry sectors. The data will help guide the development of programs to reduce these emissions.

45. Lawsuits Abound In State-Federal Battle Over Texas Air Pollution

Texas and the federal government are showing no signs of reaching a compromise, as briefing proceeds in several court battles over the state's handling of a federal law that requires companies to take costly actions to reduce pollution. "Although the Clean Air Act grants the states considerable latitude in developing emissions limitations, it nonetheless subjects the states to strict minimum compliance requirements," according to an Environmental Protection Agency brief filed in the 5th Circuit Appeals Court.

Texas, along with several industry groups, sued the Environmental Protection Agency this summer for throwing out a state air quality program that the federal agency says has allowed companies to skirt federal rules for 16 years.

But the case is only one of several forceful legal steps taken by industry, Texas, EPA and environmentalists over whether the Lone Star State is denying its citizens health protections granted by U.S. law. Texas and industry say the state has developed a lawful and effective — albeit creative — solution for the state's environmental challenges.

EPA stands by its ruling that the state programs for industrial air permits violate the Clean Air Act. This includes the flexible permit program, which allows companies to modify their facilities without submitting to an often-costly technological review, as long as pollution doesn't exceed a plant-wide cap.

Outside of court, the Texas Public Policy Foundation (TPPF), a conservative think-tank, frames the EPA's intervention in the state as a violation of the Constitution's limit on federal powers contained in the 10th Amendment. TPPF is a favored organization of D.C. critic Gov. Rick Perry, who is donating the proceeds from sales of his book *Fed Up!* to the organization.

At issue in the potential citizen suit are 43 permits for chemical plants, oil refineries and other industrial facilities. EPA has already objected to the permits, which the state issued, but Texas is digging in its heels. The environmentalists say the 43 permits include several flexible permits, as well as other flaws, such as emission limits that are higher than the law allows.

46. GM Says Used Batteries Can Have Second Life in Other Applications

On December 8th, the president and managing director of General Motors Canada said the company is working to ensure that components of electric cars, including batteries, can be reused in other ways when the vehicles' life is over. Kevin Williams was in Vancouver to launch GM's electric Volt, which operates gas-free from a battery power source with zero tailpipe emissions.

He told reporters that GM is working with government agencies "as part of our key market strategy to make sure we have meaningful policies in place to handle those batteries." GM corporate communications manager Jason Easton said the company expects used electric-car batteries to have a second life in other applications.

GM and the power and automation technology company ABB announced in September that they were jointly researching ways to employ used car batteries to store wind and solar power, electricity generated during off-peak periods to supplement demand during high-peak operation, and electricity that could be used by communities during power outages caused by storms or natural disasters.

Williams called avoidance of landfill waste "a priority" for GM and said the company has focused on environmentally friendly practices in its production process and supply chain. He said plants have adopted clean fuel technologies, water is reused in facilities, and paint facilities are emissions-free. "It's ensuring that we're good stewards of the environment," Williams said. "We're seeking to be the most environmentally friendly car company in the world."

Williams told attendees at a Vancouver Board of Trade luncheon that GM is also working on biofuel, plug-in hybrid, and hydrogen fuel-cell technologies. "While we are developing tomorrow's fuel cell technology, we realize we must improve today's internal-combustion engine," Williams said. "The engines will remain the mainstream for some time."

The head of the International Energy Agency, Nobuo Tanaka, said at an October forum on advanced vehicles that some 1 billion electric and plug-in hybrid vehicles will need to be on the road around the world by 2050 as part of a comprehensive clean energy effort to hold global warming to levels considered less risky for the planet.

47. California Climate Law Survives Challenge at Polls

One of the world's most ambitious laws to combat global warming survived a challenge in the recent elections as California voters overwhelmingly rejected a measure that would have put the state's plans for more renewable energy and a market to curb greenhouse gases on ice. The defeat of Proposition 23 marked a big victory for Silicon Valley investors, who poured millions of dollars into defending California's AB 32 law and protecting their massive investments in green technologies ranging from solar power to electric cars.

After the failure of federal climate legislation in Congress this year, the fate of California's law was viewed as a U.S. turning point -- either away from addressing global warming or toward stronger action to curb greenhouse gases.

Opponents of Prop 23 also cheered Tuesday's election of Jerry Brown as California governor. Brown has said he supports a target of deriving 33 percent of California's electricity from renewable sources like solar and wind.

Supporters of the measure said it would halt a dangerous rise in energy costs at a time when California -- hit hard by the recession, financial crisis and housing meltdown -- can least afford it.

With 48 of precincts reporting, the "no" vote on Proposition 23 stood at 59 percent, with 41 percent in the "yes" column.

Prop 23, largely funded by oil companies, would have put AB 32 on ice until double-digit unemployment falls to 5.5 percent or less for four straight quarters. That scenario has happened rarely in California in the last 20 years, the measure's opponents argued.

The "No on 23" campaign also claimed the measure would have taken critical support away from a green business community that has generated billions of dollars in investment and created millions of jobs in the state.

Silicon Valley investors, who have heavily funded solar and wind energy, biofuels and electric cars, poured money into defeating Prop 23 in recent weeks. In total, the campaign raised more than \$25 million. Notable donors to the "No on 23" campaign in the last few weeks included Microsoft Corp co-founder Bill Gates, Google Inc co-founder Sergey Brin, Intel Corp co-founder Gordon Moore and "Avatar" filmmaker James Cameron.

The "Yes on 23" camp, in contrast, raised more than \$10 million, much of which came from oil companies Valero Energy and Tesoro.

48. U.S. Car Fuel Economy Up, CO₂ Drops for Sixth Year

A boost in U.S. auto fuel economy standards slashed carbon dioxide emissions by 14 percent per mile over the last six years and reduced gasoline use by 16 percent, the government has announced. A new report from the Environmental Protection Agency found that CO₂ emissions have decreased while fuel economy has increased every year since 2005, reversing the trend of the previous eight years. Average CO₂ emissions fell by 64 grams per mile to 395 grams in the last six years, while vehicle fuel economy rose by 3.1 miles per gallon to 22.5 mpg.

The numbers are expected to keep improving as the government requires higher fuel economy and lower greenhouse gas emission emissions for vehicles. By 2016, average fuel economy is set to reach 35.5 mpg and emissions will be lowered to 250 grams per mile.

49. Chevy Volt tops Prius in Fuel Economy Rating

General Motors has announced that its Chevy Volt plug-in hybrid will carry an overall fuel economy rating of 60 miles per gallon, topping the Toyota Prius, the industry's long-time fuel economy leader. The EPA fuel-economy rating, which will be displayed on stickers on each Volt sold, was one of the last hurdles for a vehicle that GM has made the center of its effort to restart its reputation for technology and innovation.

The Volt has been named Green Car of the Year and Motor Trend car of the year in recognition of the automaker's four-year effort to develop a first-of-its-kind, mass-market hybrid that can run on both electric power and gasoline. It edged out the Nissan Leaf and three other gas-sipping cars for the prize, which is awarded by Green Car Journal. Winning Green Car of the Year is yet another feather in the cap of the recovering 102-year-old automaker, which went from near-death in 2008 to a 2009 government bailout and bankruptcy to 2010 unlikely Wall Street flotation favorite.

The Nissan Motor Co Ltd Leaf is a plug-in that runs fully on electric power. The Leaf will, on full charge, run for 100 miles or so, depending on road and weather conditions. Other finalists for the award included Ford Motor Co's new Fiesta, which can achieve 40 miles per gallon in highway driving. It was the only finalist not to use electric drive. Two hybrids, the Hyundai Motor Co Sonata Hybrid and Ford's Lincoln MKZ Hybrid, were also in the running.

The panel for selecting the Green Car of the Year included Sierra Club Chairman Carl Pope, Natural Resources Defense Council President Frances Beinecke, "Tonight Show" host and car enthusiast Jay Leno and car designer Carroll Shelby, among others.

The release of the U.S. Environmental Protection Agency rating on the Volt came as GM rolled out a television commercial to thank Americans for its taxpayer bailout, a week after an initial public offering of GM shares. The tagline of the ad reads: "We all fall down. Thank you for helping us get back up."

Capturing the fuel-economy leadership from Toyota Motor Corp's hybrid Prius will give GM bragging rights it has sought throughout the Volt development effort. But the Volt's EPA fuel economy ratings also highlight aspects of the vehicle's performance that GM had been accused of overhyping. In August 2009, just after it emerged from bankruptcy, GM ran a series of ads to trumpet that the Volt was capable of getting 230 miles per gallon in city driving based on a preliminary EPA test. The EPA gave the Volt a "miles-per-gallon-equivalent" -- or MPGe -- rating of 93 in all-electric mode, just below the rating of 99 for the Nissan Leaf assigned earlier. The EPA also rated the Volt's range when powered by the 400-pound lithium-ion battery pack at 35 miles, less than the 40 mile range GM had used in its earlier descriptions of the car.

Nissan Motor Co Ltd's battery-powered Leaf, which also goes on sale in December, has an EPA-certified battery-only range of 73 miles. GM said it would continue to describe the Volt's battery range as between 25 miles and 50 miles, depending on conditions. For longer trips, and in some other situations, the Volt also has a 1.4-liter engine that kicks in to give drivers an estimated 379 miles of total driving range, said the GM executive in charge of electric car projects.

Running on gasoline alone, the Volt will have a traditional EPA fuel economy rating of 37 miles per gallon in combined city and highway driving. After accounting for the share of the average trip expected to include some pure electric driving, the EPA gave a combined 60 miles-per-gallon rating to the Volt, GM said. By comparison, Toyota's 2011 model-year Prius has an EPA rating of 51 miles per gallon in city driving and 48 in highway driving.

In creating fuel economy rankings for upcoming vehicles like the Nissan Leaf and the Chevy Volt, the EPA and automakers struggled to find labels that would convey more information than traditional stickers without overwhelming consumers. The Volt label, for instance, gives its projected cost per year in all-electric mode (\$601) and in all-gas mode (\$1,302). As a pure-electric car, the Leaf tops the Volt in the category on the EPA label that tracks greenhouse gas emissions from the vehicle. Since it carries no combustion engine, the Leaf has no such emissions although greenhouse gases would be produced by the power plants used to recharge the car. The Volt is rated at 84 grams of carbon dioxide per mile, less than one-tenth of the industry's worst-performing vehicle on that score.

GM had said it would build 10,000 Volts in 2011 but has said more recently that output would be increased to meet strong demand. Speaking at an event where the Volt was named Motor

Trend magazine's 2011 Car of the Year, GM product chief Tom Stephens said: "If you look at where we were originally, in terms of what we thought the volume would be, we have stepped it up." Stephens declined to give a new production forecast but he confirmed that GM had asked South Korea's LG Chem, which began supplying batteries for the Volt in September under a six-year exclusive contract, to increase its production.

Governments in Europe, Asia and the United States are offering subsidies to consumers and producers of a wave of electric vehicles, soon to include offerings from Ford Motor Co and Toyota. Sales of electric cars, including plug-in hybrids like the Volt, are expected to account for a single digit share of auto sales over the next decade, according to most industry estimates.

50. Obama Pauses at NATO Summit to Tout New GM Hybrid

President Barack Obama took time out from a NATO summit in Lisbon to tout a new hybrid electric car which General Motors plans to roll out in Europe next year. Obama found himself acting as salesman-in-chief for GM Opel's Ampera model just days after he declared in Washington that U.S. taxpayers would get their money back for saving GM in a bailout that was broadly unpopular.

Calling the Ampera an "example of GM technology," Obama said: "This is the future."

"This is a car made in America," he said after inspecting an Ampera at the convention center where he was wrapping up a two-day NATO summit. "We're going to start selling it in Europe."

GM last week was refloated as a public company amid heavy investor demand, and the White House sought to take credit for what it saw as a successful turnaround. Public anger over the bailout, along with rescue packages for Wall Street banks, contributed to heavy losses for Obama's Democrats in the November 2nd congressional election. But the stock sale capped GM's recovery from near-collapse, thanks to a \$50 billion government rescue.

51. GE To Buy 25,000 Electric Cars, Including GM Volts

General Electric Co plans to buy 25,000 electric vehicles from makers including General Motors Co over the next five years, in a move it said could spark demand for the charging equipment it sells. The largest U.S. conglomerate aims to swap out half its fleet of 30,000 cars -- used by sales people and technicians, for instance -- with electric vehicles and to start shifting customers who lease fleets of vehicles over as well.

GE, which over the past five years has made a major push into green businesses, said it hopes the move will speed acceptance of electric cars by getting more of them on road more quickly and prompting investment in the equipment that users will need to charge them. The company, which earlier this year unveiled a car charger it calls the WattStation and owns a stake in battery maker A123 Systems, estimated that it could generate \$500 million in electric vehicle-related revenue over the next three years.

GE plans to buy 12,000 vehicles from GM, including its forthcoming Chevrolet Volt, as well as from other makers as they launch electric cars. The Fairfield, Connecticut-based company called its plan the largest commitment yet by any buyer of electric vehicles. The volume could help manufacturers of cars and batteries to drive their costs down more quickly, observers said. GE plans to buy cars both for its own use and to lease out as corporate fleets to smaller companies through GE Capital.

The high-powered batteries used in electric vehicles make them a pricey initial proposition -- the Volt, which also has a gasoline engine to extend its range, carries a \$41,000 sticker price. But corporate users tend to focus on the long-term costs of operating a vehicle, rather than just the purchase price. By drawing power from the electric grid, plug-in vehicles like the Volt or Leaf could operate more cheaply than gasoline-powered cars. These cars represent the next generation of vehicle electrification, following on gasoline-electric hybrids such as Toyota Motor Corp's Prius. Businesses that use large fleets of vehicles have been embracing these technologies as a way to cut fuel costs, as well as lower their emissions of carbon dioxide. United Parcel Service Inc and FedEx Corp, for instance, have both been phasing hybrids into their fleets of delivery trucks.

52. U.S. Corn Ethanol "Was Not a Good Policy": Gore

Former vice-president Al Gore said support for corn-based ethanol in the United States was "not a good policy", weeks before tax credits are up for renewal on December 31st. U.S. blending tax breaks for ethanol make it profitable for refiners to use the fuel even when it is more expensive than gasoline.

Total U.S. ethanol subsidies reached \$7.7 billion last year according to the International Energy Industry, which said biofuels worldwide received more subsidies than any other form of renewable energy.

"It is not a good policy to have these massive subsidies for (U.S.) first generation ethanol," said Gore, speaking at a green energy business conference in Athens sponsored by Marfin Popular Bank. "First generation ethanol I think was a mistake. The energy conversion ratios are at best very small. "It's hard once such a program is put in place to deal with the lobbies that keep it going."

He explained his own support for the original program on his presidential ambitions. "One of the reasons I made that mistake is that I paid particular attention to the farmers in my home state of Tennessee, and I had a certain fondness for the farmers in the state of Iowa because I was about to run for president."

U.S. ethanol is made by extracting sugar from corn, an energy-intensive process. The U.S. ethanol industry will consume about 41 percent of the U.S. corn crop this year, or 15 percent of the global corn crop, according to Goldman Sachs analysts. A food-versus-fuel debate erupted in 2008, in the wake of record food prices, where the biofuel industry was criticized for helping stoke food prices.

Gore said a range of factors had contributed to that food price crisis, including drought in Australia, but said there was no doubt biofuels have an effect. "The size, the percentage of corn particularly, which is now being (used for) first generation ethanol definitely has an impact on food prices." "The competition with food prices is real."

Gore supported so-called second generation technologies which do not compete with food, for example cellulosic technologies which use chemicals or enzymes to extract sugar from fiber for example in wood, waste or grass. "I do think second and third generations that don't compete with food prices will play an increasing role, certainly with aviation fuels."

Gore added did that he did not expect a U.S. clean energy or climate bill for "at least two years" following the mid-term elections which saw Republicans increase their support.

53. EPA Finalizes 2011 Renewable Fuel Standards

The U.S. Environmental Protection Agency (EPA) has finalized the 2011 percentage standards for the four categories of fuel under the agency's renewable fuel standard program, known as RFS2. The Energy Independence and Security Act (EISA) amended the Clean Air Act to greatly increase the total required volume of renewable fuels each year, reaching a level of 36 billion gallons in 2022. To achieve these volumes, EPA calculates percentage-based standards for the following year. Based on the standards, each producer and importer of gasoline and diesel determines the minimum volume of renewable fuel that it must ensure is used in its transportation fuel.

The final 2011 overall volume and standards are:

- Cellulosic biofuel - 6.6 million gallons; 0.003 percent
- Biomass-based diesel - 800 million gallons; 0.69 percent
- Advanced biofuel - 1.35 billion gallons; 0.78 percent
- Renewable fuel - 13.95 billion gallons; 8.01 percent

Based on an analysis of expected market availability, EPA is finalizing a lower 2011 cellulosic volume than the statutory target. Overall, EPA remains optimistic that the commercial availability of cellulosic biofuel will continue to grow in the years ahead.

54. EPA To Further Delay Decision on Ethanol-Blended Gas

The Environmental Protection Agency has announced that it will delay until January a decision whether gasoline blended with up to 15 percent ethanol is safe for 2001-06 cars and light trucks, a key verdict for boosting sales of higher blends. The EPA approved so-called E15 for vehicles made since 2006 on October 13. If the blend is approved for vehicles since 2001, it would cover 60 percent of cars and trucks.

A decision initially was expected in December but the Energy Department said it needed more time to test older vehicles due to mechanical failures in test vehicles unrelated to fuel. It said it expected to complete the additional testing by the end of December. "EPA will make its decision shortly after receiving that data," the agency said.

Ethanol groups requested EPA approval of higher blends in March 2009, expecting a decision within nine months. The EPA announced its decision more than 11 months late, saying it wanted to conduct a thorough review.

More ethanol is already required to come on the market as Congress has mandated that the amount blended gradually increase from 12 billion gallons this year to 15 billion gallons by 2015. The 2012 target is 12.6 billion gallons. However, many service stations are reluctant to offer E15 because most fuel pumps have not been certified to sell it. Service station owners could also be sued by consumers if E15 harms the engines of cars, boats or chainsaws.

To help clear any confusion with drivers, the EPA plans to place E15 labels on gasoline pumps.

55. Environmental Groups Say Canada Opposes Low-Carbon Standards to Protect Oil Sands

The Canadian government has been lobbying against regulations in the United States and the European Union that favor low-carbon fuels over oil extracted from Canadian oil sands, a process that is greenhouse-gas-intensive, according to a report released on November 22nd by Climate Action Network Canada. The environmental coalition said Canada sought to ensure that U.S. regulators interpreted a provision in a 2007 energy bill analyzing greenhouse gas emissions from various fuels in such a way that it would not restrict use of oil sands in the U.S. government fuel supply and lobbied against the implementation of a fuel standard in California.

The Canadian government also has developed outreach plans to emphasize the ways the environmental effects of the oil sands are mitigated, the coalition said in the report, *The Tar Sands' Long Shadow: Canada's Campaign to Kill Climate Policies Outside Our Borders*.

The Canadian government's advocacy for its oil sands resources has previously been documented. Canadian Prime Minister Stephen Harper has said that the oil sands will continue to be a part of the country's energy portfolio; the government of Alberta has been vocal in promoting trade laws that would allow for exports of oil from the sands and took U.S. senators on a tour of the sands earlier this year.

Climate Action Network Canada said that its study of government documents and disclosure forms showed that the effort spans multiple government agencies. "Over the last few years, Canada's federal government has systematically tried to kill clean energy and climate change policies in other countries in order to promote the interests of oil companies," the report said.

The report focused on efforts by the Canadian government to influence the implementation of Section 526 of the Energy Independence and Security Act (EISA) of 2007 (42 U.S.C. Section 17142), California's Low Carbon Fuel Standard, and the European Union's 2007 Fuel Quality Directive. Section 526 of the energy act requires that fuel purchased by the U.S. government that comes from an unconventional source, such as oil sands, have life-cycle greenhouse gas emissions that are less than or equal to emissions from conventional fuel sources

The report cited several documents from Canadian officials. A February 2008 letter from Canadian Ambassador to the United States Michael Wilson to U.S. Secretary of Defense Robert Gates, for example, stated that Canada "would not want to see" an interpretation of Section 526 that would prevent the use of oil from the sands. A 2009 letter from Canada's then-Natural Resources Minister Lisa Raitt to California Gov. Arnold Schwarzenegger (R) said the California fuel standard could "be perceived as creating an unfair trade barrier between our two countries." The report also cited a Natural Resources Canada internal briefing memo from late 2007 or early 2008 that said the agency "is developing a work program" to do more outreach about the ways the environmental effects of the oil sands are mitigated, particularly in light of Section 526 and California's fuel standard. The briefing memo cited those measures as evidence of successful lobbying from environmental advocates. "Although no official outreach has occurred at this stage, officials from the oil sands industry and the province of Alberta are aware and pleased that this process is underway at NRCan," the memo said.

The environmental coalition has 84 member organizations, most of which are environmental groups, including the Canadian offices of Greenpeace, Friends of the Earth, and the Sierra Club. Other members include the National Union of Public and General Employees, the United Steelworkers of America, and the United Church of Canada.

ASIA-PACIFIC

56. HEI Report: Air Pollution Exceeds Healthy Limits in Big Asian Cities

Air pollution in major cities in Asia exceeds the World Health Organization's (WHO) air quality guidelines and results in more than 530,000 premature deaths a year, according to a new Health Effects Institute report. The study found that elderly people with cardiopulmonary and other chronic illnesses were especially vulnerable and they tended to die prematurely when their conditions were exacerbated by bad air.

The study took into account three main pollutants -- particulate matter of 10 micrometers and smaller, nitrogen dioxide and sulfur dioxide. Not a single city in Asia had all three pollutants within limits considered acceptable by the World Health Organization. Although sulfur dioxide and nitrogen dioxide in Dhaka were within safety limits, particulates in the capital of Bangladesh were more than five times over WHO guidelines. The same was true in Singapore, whose particulates exceeded WHO guidelines by 50 percent.

“Special Report 18, Outdoor Air Pollution and Health in the Developing Countries of Asia: A Comprehensive Review”, is the first comprehensive literature review to come out of HEI's Public Health and Air Pollution in Asia (PAPA) program. The review builds on an initial assessment conducted in 2004 and describes the current scope of the Asian literature on the health effects of outdoor air pollution, enumerating and classifying more than 400 studies. In addition, the report includes a systematic and quantitative assessment of 82 time-series studies of daily mortality and hospital admissions for cardiovascular and respiratory disease. The studies covered in the current review include the PAPA time-series studies in four Asian cities (Research Report 154), as well as a first-ever critical and qualitative analysis of Asian studies of long-term exposure to air pollution and chronic respiratory disease, lung cancer, and adverse reproductive outcomes. The report also provides a broad overview of the status of and trends in air pollution sources, emissions, and exposures in the developing countries of Asia, as well as factors related to urban development, population health, and public policy that set the context for the public health effects of air pollution. The review concludes by placing the Asian health effects studies in the context of the worldwide literature, identifies gaps in knowledge, and recommends approaches by which to address them.

Recognizing solid progress in improving air quality in many Asian cities, the report emphasizes that urbanization and aging will continue to increase the number of people most susceptible to the health effects of air pollution. There is a growing burden of disease from chronic noncommunicable diseases – such as ischemic heart disease (IHD), cerebrovascular disease, chronic obstructive pulmonary disease (COPD), and cancer – all of which have been associated with long term exposure air pollution. Increased tobacco smoking, higher rates of obesity and dietary changes also result in increased population vulnerability.

Robert O’Keefe Vice President of HEI noted: “The report also documents for the first time Asia’s strengthening base of scientific evidence on air pollution and health, an important tool that can be used to inform policy in the region and define gaps in understanding as a guide to future research”.

Over 400 health effects studies have been published over the past 3 decades and available studies of the effects of short and long term exposure – including a new multi-city meta-analysis

of results included in this report – find that effects are broadly consistent with the larger global body of evidence

57. Japan to Retain Limits on Nitrogen Dioxide, Particulates, Toughen Tailpipe Emission Rules

Although most areas in Japan have reduced nitrogen dioxide and suspended particulate matter in the air to levels demanded by law, Japan's Ministry of the Environment will “not raise the bar” after the current regulation period expires, a ministry official told the press on December 13th. Daisuke Arii, manager of the Automobile Environment Policy Division of the ministry's Atmosphere Environment Bureau, said the ministry plans not only to retain the tolerance levels but to lengthen the regulation period. Arii suggested that the ministry, which had been pro-environment for years, now is more willing to be lenient to Japanese industry.

In the next regulation period, “we will not raise the bar because there still are observation stations that have not met” air quality standards, Arii said. The ministry said in a December 9th report that about 90 percent of nitrogen dioxide and particulate observation stations across Japan had met maximum density tolerance standards as of March 2010.

The current eight-year regulatory period under the Special Law on Gross Reduction of Nitrogen Oxides and Particulate Matter in Designated Areas, which went into effect in 2002, expires in March. Arii said the new compliance period would retain the same standards but would be extended to 10 years in length.

The hourly national ambient air quality standard for nitrogen dioxide is 0.04-0.06 parts per million, as set by ministry ordinance. The hourly limit for suspended particulate matter is 0.10 milligrams per cubic meter. Arii said retention of the standards does not mean Japan is backpedaling on its effort to reduce emissions from motor vehicles. The ministry, jointly with other ministries, is preparing tougher tailpipe emission regulations on nitrogen dioxide, sulfur oxides, carbon dioxide, and particulates that makers and importers of new heavy-duty, diesel-powered vehicles as well as ethanol-powered vehicles (E10 fuel) must meet by the end of 2016, he said. A senior official of the Japan Automobile Manufacturers Association told the press the industry lobby expects the next regulations to be introduced in close coordination with the European Union and the United States, probably in 2011.

Asked to clarify why the ministry is not considering toughening the atmospheric nitrogen dioxide and particulate tolerance levels while toughening the tailpipe emissions, Arii said scientific studies have established that stricter standards would not necessarily improve air quality for human health but would mean “higher costs” for Japanese industry. He also said the auto industry is expected to be able to meet the new tailpipe levels with new technology.

58. Hong Kong's 2010 Pollution Level Is Worst on Record

Hong Kong will record the worst year for roadside pollution since the city started collecting readings in 1999, based on government data. Roadside smog reached “very high” or “severe” levels on the city's air pollution index, triggering government health warnings, at least 12.6 percent of the time at monitoring stations this year, even without including data collected in December. That compares with very high or severe roadside pollution recorded 10.62 percent of the time during the whole of 2009.

Business leaders including the General Chamber of Commerce have said pollution is harming the city's ability to recruit top executives to Hong Kong. About 25 percent of respondents to a survey published earlier in December said smog has led them to consider leaving the city because of concerns over their health.

"It's obvious from the roadside pollution we've seen this year that efforts to tackle this problem need to be redoubled," said Joanne Ooi, chief executive officer of the advocacy group Clean Air Network. "The chief executive and government have acknowledged that this is a problem, but quicker and stronger action needs to be taken," she said.

The pollution index topped 100 at all three of the city's roadside monitoring stations recently, as it has every day since December 20th. "Very high" or "severe" levels of roadside pollution were recorded 1.86 percent of the time in 2000, the first full-year of publicly available data.

The higher incidence of roadside pollution is due to an increase in levels of nitrogen dioxide, created by older vehicles' exhaust emissions and higher levels of ozone in the atmosphere, a statement from the government's Environmental Protection Department said. Measures to tackle the problem announced by the Chief Executive Donald Tsang in October included fitting equipment to clean exhaust fumes from older buses and a pilot project to set up low-emission zones in parts of the city, the department said.

Levels of roadside pollutants including sulfur dioxide fell 36 percent from 2005 to 2009 after the government improved emission standards for new vehicles and offered subsidies to encourage drivers to buy newer, cleaner diesel trucks, according to the statement.

Truck drivers buying cheaper and dirtier diesel fuel in mainland China and emissions from ships' engines in the harbor contribute to the smog, according to Michael DeGolyer, an academic at Hong Kong Baptist University who studies the issue. "When you combine ships being unloaded onto trucks, then you really have some sections of Hong Kong where the roadside pollution is extremely high," DeGolyer said today in an interview with Bloomberg Television.

If smog reaches "very high" levels at roadside, the government warns Hong Kong's 7 million people that anyone with heart or respiratory illnesses should avoid prolonged stays and reduce physical exertion in heavy traffic areas.

People in the city are the unhappiest in the world with their air quality, with 70 percent of those polled expressing discontent about the levels of smog, according to a Gallup survey of adults in 153 countries released in April. The next most disgruntled country was Chad.

About 774 people died prematurely in Hong Kong due to illnesses related to air pollution so far this year, according to an estimate from the Hedley Environmental Index, a Web site run by the School of Public Health at the University of Hong Kong.

59. Air Pollution Engulfs China's Shanghai after Expo

A month after China's commercial hub of Shanghai finished its World Expo, with a theme of "better city, better life," the city is setting records for air pollution that some warn could scare off investors. The city suspended work at factories and construction sites and kept vehicles off the streets to ensure clean air for the six-month, multi-billion dollar expo, at which Shanghai presented itself to the world as China's most developed city. But since the expo ended on

October 31, a blanket of brown haze has settled over the city and pollution is more than triple levels of a few weeks earlier.

Media, including the state-owned China Daily, have reported that air pollution in November has been the worst for five years. "During the Expo, the government was very conscious about our air quality and wanting to give foreign visitors a good impression," said Lisa Jin, a student at East China Normal University in Shanghai. "But after the Expo they have become lax and do not seem to care about the air quality."

Recent foul smelling air in part of the city, caused by a gas leak at a nearby oil refinery, according to the Shanghai Daily, has compounded the pollution woes.

The problem could threaten to scupper the hopes of city officials and residents who proudly see their city as a fast-growing global financial center.

Shanghai's environmental protection agency, in a statement to reporters, blamed the pollution on cold weather from the north and said the months of November and December always bring bad air. While an increase in coal burning during the winter, and winter weather patterns, contribute to pollution, industry experts say the resumption of factory work after the expo and the increase in vehicle emissions are the biggest culprits.

"The extreme measures the government takes are temporary measures aimed at a particular event for a short period of time. They are not realistically sustainable," said Mike Murphy, chief executive of clean technology firm IQAir China. "I don't believe that in the near term that the air pollution in Shanghai is going to be reduced by any measurable amount. Even as older factories are shut down or relocated, there are still a large number of vehicles entering the road every day," he said.

60. China Updates Pollution Prevention Rules for Ships; Hong Kong Lines Cut Fuel Sulfur

China's Ministry of Transport has released updated regulations on the prevention and control of maritime pollution related to shipping to meet obligations under its Marine Environment Protection Law and international treaties. The regulations, posted on the ministry's website on December 2nd, cover pollution control measures related to loading and unloading of ships; ballast water management; ship cleaning; fuel quality; reduction of airborne shipping emissions and waste; the building, salvaging, and recycling of ships; the transportation of hazardous materials; and surface and underwater construction of ships within its jurisdictional waters.

China, which is a signatory to the International Maritime Organization's (IMO) International Convention for the Prevention of Pollution from Ships (MARPOL), expects to officially adopt the regulations on February 1st.

The updated regulations are related to IMO's adoption Oct. 1 of revised MARPOL Annex III guidelines on the safe transportation or shipment of dangerous goods.

In a related development, 15 shipping lines operating in the Hong Kong Special Administrative Region have signed a two-year voluntary agreement, known as the Fair Winds Charter, to use fuels with lower sulfur content in some of their ships while in the region's jurisdictional waters, a member of the group that drafted the agreement told reporters on December 9th.

Veronica Booth of Civic Exchange said discussions are under way with Hong Kong's Transport and Housing Bureau (the region does not have a port authority body) about regulations that would create a mandatory emissions control area for the administrative region's waters before the voluntary charter expires in late 2012. The shipping industry wants mandatory regulations on sulfur content in fuels to level the playing field in Hong Kong, Booth said. This would probably require subsidies of 50 percent to 100 percent of the cost of using lower-sulfur fuel (0.1 percent sulfur content), she said.

However, Hong Kong authorities are worried that shipping would move to other ports that lack the same restrictions, Booth said. Because of this, Booth said her group is urging Hong Kong to engage with mainland authorities in the Pearl River Delta to craft an emissions control area that would cover the entire marine region. This could possibly be created under the Hong Kong-Pearl River Delta Framework Agreement, which features joint environmental and pollution control initiatives as an important component, Booth said.

61. China to Release Hourly Air Quality Data for Cities

The 113 cities in China's national air quality data network are preparing for the release of hourly readings on levels of sulfur dioxide, nitrogen dioxide, and coarse particulate matter to the public starting January 1st, the state-run Xinhua news agency reported. The China National Environmental Monitoring Center, which is in charge of collecting and releasing data from the more than 2,000 monitoring points in the national network, started preparing for the hourly readings in May, Xinhua said in its November 25 report. Currently only daily averages are released in the middle of each day. Coarse particulate matter (PM-10) measures between 2.5 microns and 10 microns in diameter. According to the China Motor Vehicle Pollution Control Annual Report released in November, urban air quality in the 113 cities rated "good" or better 66.7 percent of the time in 2009. Still, one-third of the cities failed to meet overall national air quality standards, largely due to motor vehicle emissions, the ministry said.

62. Chinese, Indian Refining To Grow; Region Looks to Mideast for Crude

Refineries for national oil companies (NOCs) in China and India continue to expand capacities as 2010 closes. Japanese refiners, on the other hand, are heading into a second round of capacity reductions. These are among the conclusions in a study of Asian refining recently released by FGE-FACTS Global Energy, Honolulu. The study also said up to 5 years will pass before any new major capacity will be commissioned by Asian refiners, securing crude from the Middle East is becoming more important for Asian refiners, and conversion capacity is added far more quickly than primary distillation capacity in the Asia Pacific.

FGE-FACTS said China will add about 6 million b/d of new refining capacity from the start of 2010 to yearend 2020. Chinese NOCs' investment in refining is not entirely driven by refining economics, and they have the financial resources and strategic intentions to make their planned refineries become reality.

Indian state refiners also have firm plans to expand refining capacities to meet domestic demand growth, said the study, while Essar Oil, a key Indian private company, will carry out its Vadinar Phase II expansion for export.

On the other hand, Japanese refiners JX Group, Idemitsu, and Showa Shell have announced plans to close 600,000 b/d of refining capacity to meet an ordinance from Japan's Ministry of

Economy, Trade, and Industry promulgated under the July 2009 law. The ordinance requires refiners to meet a cracking/crude-distillation-unit capacity ratio of 13% or higher by March 2014.

TonenGeneral Group (ExxonMobil) and Cosmo Oil's strategies to meet the ordinance are key to the country's industry reorganization, says the FGE-FACTS study. If all refiners follow the METI ordinance, 1.1-1.3 million b/d of refining closures in Japan are likely by 2014.

The study also says that 4-5 years' breathing space is in store for Asian refiners, since no new major capacity is scheduled for commissioning before 2015. As a result, the refining surplus in Asia will shrink. Refining margins, however, will drop sharply again as new large complex Middle Eastern export refineries start to come online after 2015.

Indeed, says the study, securing crude supplies from the Middle East is becoming increasingly important for Asian refiners' profitability and survival. A large mismatch between Asian refiners' designed crude slates and additional availability of Middle Eastern crudes, especially after 2015, is likely, as Middle East export refineries start to come online.

Asian refiners may need to compete with each other for Middle Eastern crudes; some will be forced to use sub-optimum crudes. Also, the light, heavy, and sweet-sour crude differentials will narrow. At the same time, conversion capacity is being added far more quickly than primary distillation capacity among Asia-Pacific refiners. As a result, light-heavy product and light-heavy crude differentials will be lower.

A larger surplus in transportation fuels and larger deficit in fuel oil will create opportunities for trading companies based in Singapore.

63. Beijing Attempting To Control New Vehicle Explosion and Congestion

Data from the Beijing Municipal Commission of Traffic (BMCT) shows there were only 78,000 cars in Beijing in 1978 and 200,000 in 1985. However, the number of cars soared after the country entered the 21st century amid fast economic growth and urbanization. Within 13 years, the number of cars in Beijing more than quadrupled to 4.7 million in 2010 from 1 million in 1997.

In 2009, some 515,000 new cars were driven onto Beijing's already over-crowded roads, equivalent to the car population in Hong Kong. And this year, another 760,000 new cars will be added to the traffic gridlock.

More than 20,000 vehicles were sold in the first week of December alone, more than twice the number during the same period last year. Beijing buyers snapped up roughly 96,000 cars throughout November, a year-on-year rise of 33 percent. That figure is expected to hit 100,000 in December as residents rush to get cars before new restrictions are imposed.

Before the publication of the draft plan, rumors spread that Beijing will take a leaf out of Shanghai's book and limit the granting of license plates. One particular rumor suggested that anyone without a Beijing permanent residence permit would not be allowed to register a plate. Shanghai granted 8,500 car license plates in November, with an average price above 45,200 Yuan (\$6,800) for each plate, the Financial News reported. But Beijing charges just 500 Yuan for each plate. This is blamed in part for the sudden surge.

Aiming at reducing the increasingly severe traffic congestion, a draft plan released on December 6th started soliciting public opinion. According to the plan, the measures include

speeding up construction of infrastructure, improving traffic management and limiting car purchases or use, to improve the city's traffic conditions, according to a Xinhua report. The draft rules also proposed that parking fees be hiked in central Beijing and "congestion fees" be charged in areas prone to traffic jams. This has triggered widespread concern among citizens, who think that extra-charges should be the last resort in easing the city's traffic gridlock problem.

The draft of Beijing's traffic management plan also states government agencies will be barred from buying more vehicles during the 12th Five-Year Plan (2011-2015). Municipal authorities own about 700,000 vehicles, almost 15 percent of all those registered in the capital, show officials statistics. China has been pushing forward the reform on government- and institution-owned cars, but little progress was made, said Lu Ximing, director with the Shanghai Urban Traffic Planning Research Institute. "What is more important is that the government will set an example in reducing traffic congestion by limiting usage of government fleet cars," Lu added.

An official with the Beijing Municipal Commission of Traffic (BMCT) said the congestion fee and hiking of parking fees would effectively restrain people from excessive use of cars. Another official with the same institute further pointed out that a limit on the number of cars allowed in Beijing is needed in combating traffic problems. "The Beijing municipal government has been focusing on limiting the usage, rather than buying of cars, since 2005," said Li Xiaosong, deputy director with the BMCT.

As the year came to a close, Beijing announced that it would issue only 240,000 new license plates next year, a third of this year's number, in the final version of the traffic-improvement plan. The final plan envisions miles of underground highways, higher center-city parking fees, vastly expanded subway and bicycle networks, and a lattice of new downtown streets — as well as a cap on new vehicle registrations. The monthly quota, 20,000 licenses, will be distributed among fleet buyers and first-time private buyers, according to a statement posted on the municipal government's website. Only permanent residents of Beijing as well as those in police and military services are eligible and government agencies will not be allowed to buy new vehicles in the next five years, it added.

In Beijing's enthusiasm to address its smothering traffic jams, it appears that Huang Wei has



succeeded too well. Mr. Huang, Beijing's vice mayor for traffic management, resigned Thursday and was reassigned to remote western China, the exile destination of choice for those out of favor. The demotion followed a record splurge on new-car purchases by Beijingers, who apparently anticipated that the city was about to tackle its traffic jams by limiting registrations of new vehicles. Beijingers reacted to hints of a cap on new registrations by rushing to buy cars at a record rate. Last week, the city registered

30,000 new vehicles, the most ever, and 50 percent more than in the preceding week. Mr. Huang's role in the preparation of the traffic plan was unclear, but the timing and site of his reassignment suggested that higher authorities were displeased with the surge in car buying.

Beijing has made great progress in building more infrastructure developing mass transit systems, optimizing traffic networks, and other measures since 2004, said Li. "However, these achievements were overshadowed by the unusual increase in cars in recent years that has brought tremendous pressure on traffic," he said. Li attributed the traffic congestion in Beijing to the excessive use of cars, low ratio of roads and concentrated car use in downtown areas.

In fact, Beijing has been trying to find new solutions for its gridlocked traffic congestion for the past 10 years. Back in December 2001, a massive traffic congestion caused by a sudden snowfall marked the beginning of the nightmare. In 2005, Beijing made a plan to give priority to the development of public transportation as one response to the traffic congestion. And in October 2008, Beijing launched a policy to limit motor vehicle use based on tag numbers, which was once considered one of the most important measures in dealing with the city's traffic jams. In April this year, Beijing decided to continue the policy for two more years.

In addition to Beijing, the traffic problem is also raging in Shanghai, Chongqing, Guangzhou and other second- and third-tier cities in China. Therefore, as the capital of the country, Beijing's ambitious new plan is not just a scheme for the city, but could be a blueprint for China's other cities in helping ease traffic congestion.

Smaller Chinese cities are experiencing the same traffic troubles as larger ones, even though they are far less populated and underdeveloped, China Business News recently reported. Yichang, a third-tier city in Central China's Hubei province with a population of 1 million -- 1/17 of Beijing's -- is troubled by traffic jams, despite the fact that its total number of cars pales in comparison with first-tier cities such as Beijing, Shanghai and Guangzhou. The number of cars in the city increased more than 30 percent almost every month over the past several years.

Boosting public transport is the fundamental resolution to ease traffic pressure in Beijing, according to Professor Zhang Zhuting, a member of the legal consulting committee of the Ministry of Transport. Authorities should provide more rights to public transport with legal policy, said Zhang. On a four-lane road, one lane should be specially allocated for public convenience and two at rush hours, he maintained.

Although the expense of using public vehicles has reached the lowest level throughout the country, many citizens still complain about taking buses in Beijing. "It takes 30 to 40 minutes' walk before getting to a bus stop under some circumstances", said Yang Xinmiao, a researcher at the Institute of Transportation Engineering of Tsinghua University in Beijing. Some citizens also blame the inconvenience on excessively long waiting times.

Increasing the transport capacity and speeding up construction of traffic infrastructure can encourage more people to use public traffic vehicles, said professor Zhang. "And thus the pressure of traffic can be basically alleviated."

64. Wheels of Change in the 'Kingdom Of Bicycles'

China's title as the "kingdom of bicycles" is being lost to Denmark, as a richer Chinese generation swaps its two-wheel transport for four and as more average citizens buy electric bicycles. Today, only 18 percent of Chinese people choose to ride bicycles compared to 63 percent of commuters in 1986, industry figures show. Last year, China's domestic bicycle sales were less than 30 million, a sharp decline from the 40 million bicycles sold in 2008.

In Denmark, there are 5.5 million residents and more than 4.2 million bicycles.

But this year the wheels have turned a corner, according to the China Bicycle Association (CBA). By the end of 2010, Chinese production numbers are expected to be up 4 million more than in 2009, showing signs of recovery, says Ma Zhongchao, chairman of the CBA.

"The bicycle industry got hit last year largely due to the financial crisis, but it's not the only reason," Ma says. He says safety on China's crowded roads is becoming an increasing concern for cyclists, who are staying off the roads in record numbers. According to a survey published by the Beijing Transportation Research Center, many cyclists are quitting their two-wheel machines because cars are illegally using bicycle lanes to beat traffic jams.

"Apart from safety concerns, some people believe that cars are more suitable for their social status and riding old bikes is seen as cheap and less prestigious," Ma says.

But he says new cycling trends are also emerging thanks to more recreational riding. "Biking is now enjoying a change of face and new designs," Ma says. "Following the emergence of new bicycle types such as mountain bikes and racing bikes, bicycles are gradually transforming from a transportation tool to an eco-friendly way of exercise and entertainment."

To encourage bicycling and reduce emissions, more policies are being employed around China for areas to become more user-friendly for riders. After the 2008 Olympic Games, Beijing initiated a bicycle revival plan to increase the number of cycling commuters to 23 percent by 2013. One important step was to actively promote rental services outside selected subway stations along Line 4 and Line 5. Rental points were set up every 500 meters and, by 2012, authorities hope that commuters and tourists will have access to 20,000 bicycles at 1,000 sites.

There are already a number of bike rental companies in Beijing, but not all have been successful. Fangzhou Bicycle closed its doors in November because the company said it "lacked government support". But two other bike rental companies in Beijing, Lantu Suobei and Yongjiu, are still operating.

Beijing public transportation officials issued a plan in August to make public bikes available for rental near subway lines by the end of this year. It will be one of the first few times local authorities are offering public bike-lending services. The same bicycle rental plans are being rolled out in many cities like Shanghai, Hangzhou and Shenzhen.

To help raise bicycle awareness, a grand "low-carbon China" bicycle ride was hosted by the CBA in May. Twelve cyclists embarked on a 4,300 km journey from Beijing to Shenzhen in Guangdong province. The 47-day ride covered 125 cities and spread the word to millions. "With its eco-friendly and health-improving attributes, cycling is just in the early stages of a full-blown renaissance," Ma says.

As the world's largest exporter of bicycles, China has significantly increased shipments to many other countries and blocs over the past decade, except to the EU. Bicycle exports to EU countries fell from 3 million units in 1992 to 720,000 in 2009, merely taking up 1.56 percent of the total export volume of Chinese bicycles.

European trade protection against Chinese bicycles dates back to 1993, when a 30.6 percent anti-dumping duty was imposed. In 2005, the EU raised it to the current level of 48.5 percent.



The EU also launched a review of the 48.5 percent tariff in July and is now in the process of deciding whether to extend the measure for five more years, following a request from the European Bicycle Manufacturers' Association.

"Without help from the government, the chance of Chinese companies winning the case is slim. After failing twice, many companies have already given up responding to the charges," says Zhang Peisheng, senior commissioner with the China Chamber of Commerce for Import

and Export of Machinery and Electronic Products.

However, the EU has currently no tariff on bicycles imported from Vietnam, Bangladesh and some other Asian countries under a policy to spark economic development in these developing nations.

Guo Haiyan, vice-secretary general with the China Bicycle Association, says the "virtual embargo" of bicycles from China over the past two decades has caused losses of more than \$3 billion (2.3 billion Euros) to Chinese manufacturers and stripped the country of millions of jobs.

"This is unfair not only to Chinese manufacturers but also to European customers," Ma says. "They have been deprived of the right to choose a good and cheap bike and the price of a bike in Europe is almost one-third higher than in the US."

65. 3rd China-US Symposium on CO2 Emissions Control Science & Technology Kicks Off In Hangzhou

To combat climate change and reduce CO2 emissions, China and the US have been joining hands since they signed the China-US Fossil Fuels Protocol ten years ago. Since then, two symposiums with rich fruits were held in 2001 and 2007.

The 3rd China-US Symposium on CO2 Emissions Control Science & Technology was just held in Hangzhou, capital city of east China's Zhejiang province, from Dec 11-12. Over 130 delegates from China/US universities, research institutes and enterprises attended the symposium.

The discussion mainly covered five subjects: advanced power generation technology and poly-generation system; collection, transit and purification of CO2; storage of CO2; application of CO2, and practice and policies of carbon trade.

Both parties made a commitment to strengthen their cooperation on the CO2 emissions control and application and expressed their willingness to hold the fourth in Hangzhou.

The symposium was jointly hosted by the Department of High and New Technology Development of the Ministry Science and Technology and the US National energy technology laboratory.

66. China's Top Legislature Reviews Clean-Energy Vehicle Tax Bill

China's top legislature has received over 97,000 comments from the public on the draft law on vehicle and vessel taxation, one month after it released the full draft and invited opinions. Members of the public generally acknowledged the draft's significance in helping determine fair levels of tax burdens for tax-payers and in standardizing China's taxation system, the National People's Congress (NPC) Standing Committee said in a statement.

Questioning the rationality of vehicle taxes being levied on the basis of engine capacity, some people, however, said the nature of the taxation should be further ascertained, which in the bill was defined as a property tax. Some suggested the depreciation in the value of vehicles and vessels should be considered a factor in taxation, while others said taxes could be levied based upon criteria which combined engine capacity and market prices of vehicles.

The full text of the draft law was available on NPC's official website for public comment from October 28th to November 30th.

Passed at an executive meeting of the State Council, China's cabinet, on October 12th, the draft law is set to replace current tax regulations on vehicles and vessels that took effect in 2007. The draft law reduces taxes on energy-savings and clean energy-powered vehicles and increases taxes on large cars.

China defines motor vehicles as motorcycles, tractors, trucks and cars and the country has 199 million motor vehicles on its roads, including more than 85 million automobiles.

67. BYD Sees "Sizeable" New Energy Car Profit From 2015

Chinese car maker BYD Co Ltd, backed by U.S. billionaire Warren Buffett, is banking on renewable energy cars to reap a "sizeable profit" in about five years and is focusing on green buses next year. "We have two e-buses running in Shenzhen now and are in talks to sell to Hong Kong and exports overseas, including Europe and the United States," spokesman Paul Lin told reporters in an interview on the sidelines of an autoshow in China's southern city of Guangzhou.

BYD also estimated its car sales to be more than 500,000 units this year, which would be lower than a revised sales target of 600,000 units. The company had not set a target for next year, Lin said. Lower-than-expected car sales have put pressure on BYD's stock, which has fallen by nearly half from its 52 week high of HK\$84 to close at HK\$42.6 on Monday.

BYD shipped a total of 467,000 vehicles to dealers in the first 11 months of 2010, up 20 percent, but its November sales fell nearly 19 percent to 41,200, based on data from China Association of Automobile Manufacturers.

The company cut its 2010 sale target earlier this year by 25 percent due to a time lag for parts manufacturing to catch up.

"We are more focused on quality this year and next," Lin added.

BYD makes its all-electric bus K9 in its Changsha plant, where Warren Buffett and Bill Gates paid a visit in September. The plant can make about 1,000 buses a year and has orders to sell 500 to Shenzhen and 500 to Changsha. "This will be a major growth area for us next year," Lin said. The selling price for a BYD electric bus will be 2-3 million Yuan (\$300,000-\$450,000), but China's government subsidies could be up to 1.2 million Yuan, he said. The 12 meter long K9 has a silver body with tinted glass and can run about 250 km by one charge.

BYD exported about 16,000 cars to more than 70 countries this year, up 250 percent, and hopes to double exports next year. However, the sale of its electric car e-6 to the United States would have to wait until 2012 following sales to corporations and taxi drivers.

68. China Has Announced Fuel Price Hikes Of About 4 Percent.

The National Development and Reform Commission, the country's top economic planner, said gasoline prices would rise by \$46.55 a ton and diesel prices by \$45 a ton. The NDRC said the price hike was intended to restrain increases in the country's oil consumption while boosting energy conservation. It estimated that China's dependence on imported oil is likely to hit 55 percent by the end of this year, from 33 percent in 2009.

The hike follows an earlier NDRC announcement that China's apparent oil consumption -- domestic production plus imports minus exports -- rose 15.2 percent year on year to 20.07 million tons in November.

"It is a choice made for the general economy and long-term development," the director of the China Center for Energy Economics Research at Xiamen University told People's Daily Online. "The purpose is to further reform the price-forming mechanism of resources and restrain excessive growth of domestic demand for refined oil."

The price hike "was unexpected, but reasonable," Ding Shaoheng, an analyst at PetroChina's research unit, told Xinhua, China's state-owned news agency.

Beginning in 2009, the Chinese government adopted an oil pricing mechanism whereby the NDRC adjusts the country's retail fuel prices when the international crude oil price changes by more than 4 percent over 22 consecutive working days. International oil prices have increased by more than 8 percent in the past two months.

The fuel hike comes as China faces rising inflation, after the country's consumer price index rose 5.1 percent in November, a 28-month high. Yet officials said the fuel increase wouldn't further worsen inflation.

Liu Zhenqiu, vice director of the NDRC's price department, said the fuel hike had been postponed after considering "the current consumer price level and the overall supply and demand condition in the domestic oil market," noting that China's fuel prices were not closely following international pricing trends, China Daily reports.

Public transportation systems wouldn't be allowed to raise fuel surcharges as a result of the nationwide fuel hike, the NDRC said.

The International Energy Agency said in a July report that China had surpassed the United States as the world's largest energy consumer. It predicts China's hunger for energy will rise by 75 percent until 2035, when it will account for more than one-third of global demand.

69. Malaysian Ministry Sets Up Committee to Curb Diesel Subsidy Abuse

The first meeting between two joint committees from several ministries to curb rampant diesel subsidy abuse will convene next month. In disclosing this to The Malay Mail, Domestic Trade, Cooperatives and Consumerism (DTCC) Minister, Datuk Seri Ismail Sabri Yaakob, said: "The committee will review distribution and delivery of diesel subsidies among those entitled to it and study a proposal to standardize the diesel subsidy price across the board as well as the subsidy allocation, fleet card and delivery mechanism in the country. Right now, there are different rates for fishermen, and those in the transport and industry sectors.

"We will also study their actual monthly usage, entitlement and purpose. It will be a thorough review as we do not want people to capitalize on loopholes. If necessary, we will initiate policy amendments."

The committee comprises representatives from DTCC, the Agriculture and Agro-based Industry Ministry, Transport Ministry, Commercial Vehicle Licensing Board (CVLB) and the Malaysian Anti-Corruption Commission (MACC).

"The second committee will focus on the enforcement aspect and intelligence information-sharing among relevant enforcement agencies," said Ismail Sabri, adding that representatives would comprise DTCC's enforcement unit, CVLB, MACC, police, Anti-Drug and Smuggling Unit (ADSU), Road Transport Department (RTD), Customs Department, Malaysian Maritime Enforcement Agency (MMEA) and Fisheries Development Authority of Malaysia (LKIM).

"Joint efforts are vital for more effective enforcement. The government is serious about acting against errant fishermen, and operators of lorries, buses and taxis."

Ismail Sabri said enforcement would be intense, and cover border towns and rural areas.

"We are aware that some bus and taxi operators in the Klang Valley have been abusing their diesel subsidy in collusion with criminal syndicates and we are going full force to curb this menace."

Diesel smugglers are devious but their modus operandi is well-known to DTCC enforcement officers. "Big-time diesel smugglers use palm oil tankers as a cover while small-time smugglers resort to hiding diesel containers in their car boot," said a ministry officer. Last month, 27 people suspected of smuggling diesel were arrested in Selangor, Perak, Kedah, Perlis and Pahang during joint operations by the ministry and the MACC. Also seized were 414,000 liters of subsidized diesel worth more than RM500, 000.

The DTCC officer said some lorry, bus and taxi operators abused their supply of subsidized diesel. "We have caught some of them in the act as the drivers would stop along expressways, trunk roads and even rest areas, and wait for their accomplices to siphon diesel from the lorry, bus or taxi petrol tanks into containers," he said.

"Normally, they siphon about 10 liters per vehicle. On the average, if 40 vehicles do this each day in each State, the total amount each year would be phenomenal."

70. India Offers Incentives for Electric Vehicle Makers to Cut Fuel Bills, Carbon Emissions

India's federal government has announced incentives worth 95 crore rupees (\$21 million) for manufacturers of electric and hybrid vehicles. The government is offering financial incentives of up to 20 percent of ex-factory prices (excluding retail-related expenses) of all types of electric and hybrid vehicles sold in India until March 2012, subject to a cap on the number of vehicles subsidized, Sohail Akhtar, a director in the federal Ministry of New and Renewable Energy in New Delhi, told the press.

The incentives, announced on November 11th and available as of November 12th are expected to make the fuel-efficient vehicles cheaper as manufacturers pass on at least part of the incentive to customers. Akhtar said the government hopes to boost research and development and supply chain expansion in the sector, which the government aims to promote both to curb its burgeoning oil import bill and to fight climate change by reducing carbon dioxide emissions.

All types of electric vehicles qualify for the incentives, provided the manufacturer is registered with the ministry and can certify that at least 30 percent of the vehicle components are made in India, the guidelines said. The indigenous content requirement will provide a boost to manufacturing as at present most e-vehicle makers import critical components like batteries and electric motors.

Incentives are up to Rs 4 lakh (\$8,700) for electric buses, up to Rs 1 lakh (\$2,200) for electric cars, up to Rs 60,000 (\$1,304) for three-wheeled vehicles, Rs 4,000 (\$86) for low-speed two-wheeled vehicles, and Rs 5,000 (\$108) for high-speed two-wheelers.

Manufacturers must furnish details of their retail operations and after-sales system, as well as a verifiable system for accounting for actual sales.

The incentives enhance the amounts offered to manufacturers under an existing subsidy system and expand the pool of vehicles that can qualify. In June, the government announced subsidies for three- and four-wheelers, which it has now extended to two-wheelers. Also, the earlier incentives applied only to purchases by institutional buyers such as governments, private corporations, educational institutions, and nongovernmental organizations. Now, sales to individuals are also covered.

However, there is a ceiling on the number of vehicles that can qualify. In the remaining part of the 2010–11 fiscal year, ending March 31, the government will subsidize 20,000 low-speed electric two-wheelers, 10,000 high-speed two-wheelers, 100 three-wheelers, and 140 passenger cars. In 2011-12, the incentives will apply to 80,000 low-speed two-wheelers, 20,000 high-speed two-wheelers, 166 three-wheelers, and 700 passenger cars. There is no limit on the number of buses; this will be decided by how much of the budget remains after incentives for other types of vehicles are paid.

The government hopes to spur dissemination of battery-operated vehicles, research and development, technology demonstration, and other activities “in the area of Alternative Fuels for Surface Transportation at a total cost of Rs 95 crore during the remaining period of the 11th Plan,” the notification said. The 11th Five Year Plan ends in March 2012.

The New Delhi-based Society of Manufacturers of Electric Vehicles, which has been seeking a 33 percent incentive on the cost of each vehicle, welcomed the government's move. Director Sohinder Singh Gill, who also is chief executive officer of Hero Electric, one of the country's foremost electric vehicle manufacturers, said he expects sales of electric two-wheelers to double in the coming months. Manufacturers are likely to pass on some part of the incentive to consumers to boost sales, he said.

About 85,000 electric vehicles were sold in the year ending March 2010. The number showed no increase from the previous year, and electric vehicle makers have long complained they would be unable to survive without government support.

Akhtar at the renewables ministry also told the press that the Ministry of Heavy Industries and Public Enterprises will seek Cabinet approval before the end of 2010 to set up a National Council for Electric Vehicles as well as a National Board for Electric Mobility. These two bodies would further institutionalize the incentive schemes for electric vehicles while stimulating research and development, he said.

71. Petrol Import Taxes Continue Decreasing In Vietnam

Import taxes on petrol and oil products would be cut from the start of next year to help petrol and oil dealers overcome trading difficulties, said the Ministry of Finance. The new rate would fall from 12 to 6 per cent for petrol products and from 5 to 2 per cent for kerosene and diesel oil.

The measure was aimed at reducing domestic trading losses, following a Government decision to stabilize the price of petrol and oil products by the end of the first quarter next year, said the ministry. Petrol and oil dealers are currently operating at a loss, losing VND2, 400 per liter of petrol and VND1, 850-1,900 per liter of oil, due to an increase in the world oil price. On the Singapore market, A92 petrol is at US\$95.65 per barrel and oil is up to \$100 per barrel, said the Viet Nam National Petroleum Corporation (Petrolimex). (1 barrel = 159 liters)

The tax cut was the latest measure the Government had taken to stabilize the domestic market with the continued increase of the world oil price, said Nguyen Tien Thoa, head of the Ministry of Finance's Price Control Department. The government had earlier granted dealers VND1, 200 per liter of petrol from the price stabilization fund to discourage them from increasing prices, he said.

72. Ministerial Panel Meeting on Diesel Price Hike in India Put Off

A meeting of a panel of ministers on raising the price of diesel has been put off because of the unavailability of Railway Minister Mamata Banerjee and Kamal Nath, minister for roads and highways, according to a government official familiar with the development.

The Empowered Group of Ministers, headed by Finance Minister Pranab Mukherjee, was expected to decide on raising the price after crude oil prices traded near \$90 (about Rs 4,100) a barrel. State-controlled Indian Oil Corporation Ltd (IOC), Bharat Petroleum Corporation Ltd (BPCL) and Hindustan Petroleum Corporation Ltd (BPCL) have already increased prices of petrol by Rs 2.95 a liter. The Oil Ministry has sought to increase the price of diesel to help oil marketing companies cut their losses from selling fuel below the cost of production, said a senior ministry official who declined to be identified. He expects the meeting to be rescheduled early next month.

Raising the price of diesel may fuel inflation as most commodities including grains, fruits and vegetables are transported by trucks and railways that use diesel. Indian Railways is the biggest purchaser of the fuel. The government has retained the right to change the price of diesel even as it freed petrol prices from state control in June.

Inflation in November rose at the slowest pace in almost a year. The Wholesale Price Index rose 7.48 per cent last month from a year earlier compared with an 8.58 per cent gain in October.

Currently, oil marketing companies like IOC, BPCL and HPCL are losing Rs 5.40 for every liter of diesel they sell. The government partly compensates these companies by giving them bonds or cash. Even after the recent price increase in petrol, the oil marketing companies are still making a loss of Rs 1.10 a liter. The loss on kerosene is Rs 17.72 a liter and Rs 272 on every cylinder of cooking gas sold.

The last increase in auto fuels, including diesel, was in June, when the government ended state control on pricing of petrol. It had then increased prices of diesel by Rs 2 a liter, while promising to eventually give up control on pricing of diesel as well.

Crude oil prices, which traded at about \$76 a barrel in June, have surged to reach a two-year high of about \$90 a barrel.

73. Gasoline, Diesel Up NT\$0.1 per Liter in Taiwan on Oil Price Increase

Taiwan's refiners have raised the price of gasoline and diesel fuel by NT\$0.1 a liter, effective immediately. With the adjustment, the prices of 92-, 95- and 98-grade unleaded gasoline sold at both CPC Corp. and Formosa Petrochemical Corp. have increased to NT\$30.6, NT\$31.3 and NT\$32.8 a liter, respectively. The price of super diesel fuel is now NT\$28.4 a liter.

According to the CPC, the price increase is the result of a rise in international oil prices, itself a result of lowered reserves after a deep freeze in Europe.

Dubai and Brent Crude, which account for 70 percent and 30 percent respectively on CPC's floating price mechanism, both rose by a greater margin than West Texas Intermediate, CPC noted. The two suppliers averaged US\$89.8 a barrel this week, an increase of NT\$0.62 from last week's US\$89.18.

Formosa Petrochemical, Taiwan's largest private refiner, raised its prices by the same margin as CPC after it announced its price hike.

74. U.S. Threatens WTO Action on China Rare Earth Curbs

China has refused repeated U.S. requests to eliminate export restraints on rare earths that have rattled its trading partners, according to the U.S. Trade Representative's office. "Going forward, the United States will continue to pursue vigorous engagement with China on this issue and will not hesitate to take further action, including WTO dispute settlement, if appropriate," the trade representative's office said in an annual report on how well China has complied with commitments made when it joined the World Trade Organization in 2001.

The warning came one day after the U.S. trade representative's office said it had begun a legal challenge at the WTO against certain Chinese subsidies for wind power equipment manufacturers.

U.S. officials said they could file additional cases against questionable China policies in the clean energy sector, and the new report amplifies U.S. concerns about China's export restrictions on rare earths. It said the United States most recently pressed China to eliminate its export restraints on rare earths during the high-level U.S.-China Joint Commission on Commerce and Trade meeting in Washington.

"But to date China has not been willing to change its policies," the U.S. trade office said.

China controls 97 percent of global supplies of the elements and uses quotas and taxes to limit exports. China slashed the export quota by 40 percent this year and plans to trim it further next year. It has already announced increased export taxes on rare earths in 2011.

China's export restrictions have caused "world prices for some of the rare earths to rise dramatically higher than China's domestic prices," which has hindered efforts in other countries to develop expertise in the manufacturing of clean technology products, USTR said. "In September 2010, China reportedly imposed a de facto ban on all exports of rare earths to Japan, causing even more concern among China's trading partners," USTR said.

China says its curbs are for environmental reasons and to manage supplies.

75. Australia Pledges Stable, Long-Term Supply of Rare Earth Minerals for Japan

Australia's foreign minister has pledged to work with Japan to provide the Asian country with a long-term, reliable supply of rare earth minerals used in "green" technologies, a Japanese Foreign Ministry spokesman confirmed on November 29th.

Several Japanese companies announced plans in November to develop rare earth extraction projects in Australia and Mongolia. Japan and other nations have begun trying to lessen their dependence on rare earth imports from China, which controls 95 percent of the world's supply.

Australian Foreign Minister Kevin Rudd made his remarks at a joint news conference with Japanese Foreign Minister Seiji Maehara and Australian Trade Minister Craig Emerson in Canberra on November 23rd. Claiming that Australia has "a range of these rare earths by way of our own deposits," Rudd said, "Australia stands ready to be a long-term, secure, reliable supplier of rare earths to the Japanese economy."

Japan's effort to diversify its sources also has extended to Mongolia, which is believed to have more rare earth deposits than China's Inner Mongolia. On November 19th, Mongolian President Tsakhia Elbegdorj and Japanese Prime Minister Naoto Kan released a joint statement agreeing to strengthen their economic ties, including joint development of rare earth and other mineral resources in Mongolia.

Japan is believed to import more than half of China's rare earth exports, which were estimated at about 120,000 metric tons in 2009.

Even before China's curtailing of rare earth exports, Japan had been preparing—albeit modestly and quietly—to widen its rare earth supply sources. Japan's Ministry of Economy, Trade, and

Industry last summer held talks with Kazakhstan for joint production of rare earths, with Tokyo extending financial support to a joint venture project by Sumitomo Corp. of Japan and Kazakhstan's national nuclear power company, Kazatomprom, to produce neodymium and dysprosium for electric motors for hybrid vehicles, a ministry official said November 29th. Toshiba Corp., a developer of nuclear power stations, met with Kazatomprom in June to discuss a joint venture to extract rare earths from uranium mines, a Toshiba spokesman said.

76. Sustainable Growth Formula Eludes Many China Cities

Some Chinese cities are failing to meet the challenge of sustainable development, posing a risk to Beijing's strategy of relying on mass urbanization to drive economic growth, according to a new study. Sustaining urban growth without exhausting an already degraded environment is critical for China. More than 1 billion people are likely to be living in cities by 2030, compared with 600 million in 2008 and 380 million in 1990.

The Urban China Institute, a new think tank, found that a number of cities are making rapid progress in the right direction, but others are in serious danger of falling behind. "Without strenuous efforts to improve performance, this gap will only grow, with serious implications for the country's overall living standards and the environment," its report said.

The institute examined data between 2004 and 2008 from 112 cities to assess their progress toward sustainable development according to 18 criteria, such as access to safe water, waste recycling and efficiency in using resources. China's cities have made strides, especially in providing basic needs such as healthcare and education. But they are still well behind the developed world in areas where the tradeoffs between income and environment are starker. Air pollution and sulfur dioxide emissions are far from meeting World Health Organization norms.

Part of the policy conundrum is that economic history offers few models of sustainable development during the early and middle stages of urbanization, according to the think tank.

On the positive side of the ledger, Chinese cities are relatively dense, which makes it more attractive for governments to invest in better public transport and smart grid technologies. The study also found that three-quarters of the cities examined spent more on environmental protection from 2005-2008.

The report singled out Shenyang, Tianjin, Nanning and, especially, the eastern port city of Qingdao for diversifying their economies away from urban industry toward services, increasing energy and resource efficiency in the process.

77. China Yuchai International Introduces National V Compliant Diesel Engines

China Yuchai International has announced that its first 50 diesel engines compliant with National V emissions standards are in commercial operations in buses operated by Beijing Public Transportation Holdings, Ltd. These diesel engines are part of an order for 100 National V emissions certified diesel engines awarded to China Yuchai's main operating subsidiary, Guangxi Yuchai Machinery Company Limited ("GYMCL") by Beijing Public Transportation Holdings at the end of 2009.

Since 2007, Beijing Public Transportation Holdings has purchased more than 3,000 buses containing National IV certified engines produced by GYMCL. The selection of GYMCL's diesel engines compliant with National V emissions standards demonstrates that GYMCL's green

energy innovations are highly recognized thus reducing the technical gap between domestic and foreign produced diesel engines.

The Beijing Public Transportation Holdings sets very high standards for vehicle emissions as part of their engine procurement efforts and has imported diesel engines meeting National II, III and IV emissions standards in the past due to the inability of domestically produced diesel engines to meet its stringent standards. However, GYMCL has worked closely with Beijing Public Transportation Holdings to ensure that its standards measure up to the latter's requirements resulting in GYMCL becoming the only domestic engine supplier to the Beijing Public Transportation Holdings.

This development officially marks the commercial entrance of GYMCL's National V emissions compliant engines at a time when most diesel engine manufacturers are still introducing new engines to meet the lower National IV emissions standard. The National V diesel engine was independently designed and developed by GYMCL who has, since 2006 been driving the development of green energy diesel engine technology to reduce engine emissions and protect the environment.

78. China Issues First Motor Vehicle Pollution Control Annual Report

Air pollution from motor vehicles in China's urban areas remained "basically stable" in 2009 compared with the prior year, according to annual data on 113 cities released by the Ministry of Environmental Protection. However, 14 cities were singled out as needing to improve their environmental oversight, policies, and mitigation actions.

According to the China Motor Vehicle Pollution Control Annual Report, urban air quality rated "good" or better 66.7 percent of the time in 2009. Still, one-third of China's cities failed to meet overall national air quality standards, largely due to motor vehicle emissions, the ministry said.

Motor vehicle pollution in the 113 cities "is serious" and has "become a major source of urban air pollution" due to the rapid increase in the number of automobiles on China's roads, the ministry said in its annual report, which was released on November 5th.

The report singled out 14 cities needing improvement in managing vehicle traffic and pollution. Urban air quality in five cities—Taiyuan in Shanxi province, Zigong in Sichuan province, Yuxi in Yunnan province, Jiaying in Zhejiang province, and Bozhou in Anhui province—was designated "low" and in need of improvement. Nine other cities need to reduce traffic noise or to improve their environmental management systems, the ministry said.

Overall, about 25 percent of vehicles on the road in China meet China III emissions standards (comparable to Euro III), which cover carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter. Another one-third of vehicles meet China II standards, 26 percent meet China I standards, and about 17 percent are older vehicles that fall below the country's emission control standards.

While the overall level of vehicle emissions is growing because of increased car ownership, the rate of growth had slowed since 2000 because of the adoption of more stringent emissions standards and the phasing out of older, higher-emission vehicles, the ministry said.

79. China Sets Up Real-Time Air Quality Monitoring Network

China has put into use its latest air quality monitoring system which provides hourly air quality information of the country's major cities. According to a statement of the China National Environmental Monitoring Center (CNEMC), the new system provides air quality information on 113 key cities which will be accessed via the Internet, including indexes of sulfur dioxide, nitrogen dioxide and particulate matters.

The country started weekly air quality reports in 1998 and then daily reports in 2000. The report is published on www.cnemc.cn.

Currently, China has more than 2,000 air monitoring stations.

80. New Car Numbers Surge in Beijing

In a recent week, Beijing saw 18,000 new cars, or about 2,571 per day, on its roads according to the Beijing Traffic Management Bureau. The increase was nearly 50 percent higher than the daily average of 1,900 new cars on the roads for the first three quarters of the year. Aside from the sharp rise in cars on the roads, about 10,000 people obtained driving licenses that same week.

By Nov 21, there were 4.67 million cars and 6.197 million people with driving license in Beijing. The bureau predicted that, by the end of this year, the total amount of cars in Beijing would reach 5 million.

"Taxes soon to be increased on large cars and the rumor that Beijing might increase the license fee for cars in 2011 resulted in more new cars purchased," said Guo Yong of Beijing Asian Games Village Auto Market, one of the largest auto sellers in Beijing. China's top legislature last month released a draft law on vehicle and vessel taxation. The draft law reduces taxes on energy-saving and clean energy-powered vehicles and increases taxes on large cars.

Beijing is among the most congested cities in the world. It has moved to ease congestion by implementing measures such as odd-even number traffic controls, the introduction of staggered working hours and increased parking fees in downtown areas.

81. China to Cut Lead-Acid Battery Recyclers - Assn

China will cut the number of firms it allows to recycle lead-acid batteries for refined lead production, according to a top industry official. Industry sources estimate China will only allow around 20 battery recyclers to operate in the future, compared with the many hundreds of firms currently operating.

"The government will do it for sure in the future," Cao Guoqing, vice general secretary of the China Battery Industry Association, told reporters on the sidelines of a conference in Shenzhen city, Guangdong province. He did not say when the government was likely to introduce the regulations, but said it aims to improve environmental standards in the battery industry, the top user of refined lead in China.

China is the world's biggest producer and consumer of refined lead. By 2015, China's production of lead-acid batteries will hit 240 million kilowatt hours, double 2009 levels, Cao estimated. China used 2.35 million tons of refined lead for lead-acid battery production in 2009, accounting for about 70 percent of the country's total refined lead consumption that year, he said.

The country's recycled refined lead production will rise to 1.75 million tons in 2011, 1.93 million tons in 2012, and 2.69 million tons in 2015, from 1.49 million tons in 2010 and 1.24 million tons in 2009, he said.

82. Chinese Government Eyes Market Forces to Help Curb Emissions, Energy Use

China is considering all methods to battle rising greenhouse gas emissions and energy usage, including a cap-and-trade system and a tax on emissions of carbon dioxide, a senior researcher affiliated with the central government has said. In a news briefing about China's latest master plan for economic growth and development, Zhang Junkuo said energy consumption and environmental protection are critical issues. Zhang is head of development strategies and regional economic studies at the Development Research Center of China's State Council.

Overall, planners want to consider what measures will work best for the next stage of China's development as it transitions to a higher-income country. Zhang said the country's new five-year plan will promote more efficient-energy technology, like wind, solar, and nuclear power. Use of coal and other older production means will be discouraged, he said.

Zhang spoke about the details of the 12th Five-Year Plan, the central government's overall strategy for development in the years from 2011 to 2015. The plan, due to be approved by the next National People's Congress in March, is in the final drafting stage and has not been released for public review. Some details have been released unofficially and scholars like Zhang are involved in the drafting process.

As both the world's leading producer of carbon emissions and a fast-emerging economy, China faces a balancing act. Zhang said planners are considering carbon emissions reduction targets for the largest polluters, who could then trade for credits. That kind of system, Zhang said, puts much of the onus for emissions reduction directly on the polluters and gives them an incentive to clean up.

"Energy intensity targets and also CO₂ targets will be included in the plan," he said. Energy intensity is a measure of energy use per unit of gross domestic product.

Zhang said that even though the country has not met its targets to reduce greenhouse gas emissions and energy consumption under its current five-year plan, which runs from 2006–2010, the next plan will include specific reduction targets that could be as high as 15 percent to 17 percent per year. He said those figures are not yet known, but the government will take new and creative steps to help meet them, rather than relying on past measures alone.

"We want to rely on market forces to help address this issue," he added. Carbon taxes are another alternative, Zhang said, adding that everything is on the table.

83. Vietnam Taking Steps to Curb Air Pollution

Air pollution and its harmful impact on human health is becoming increasingly serious, especially in big cities. Socioeconomic development, overland traffic and construction have been identified as the main sources of air pollution.

Based on the results of research on the impact of air pollution on human health, the National Institute of Occupation and Environmental Health (NIOEH) estimated that every year in Vietnam

626 people die and 1,500 suffer from respiratory diseases related to air pollution. Bui Cach Tuyen, Deputy Minister of Ministry of Natural Resources and Environment Vietnam the head of the Vietnam Environment Administration, said, "Air pollution not only has a harmful impact on human health and the economy but also is one of the reasons leading to climate change. Research results show that climate change occurs due to not only natural factors but also human activities such as the use of fossil fuels in industrial production, transport, agricultural production, which cause carbon dioxide (CO₂) emissions."

Nguyen Van Thanh, the deputy head of the Industrial Safety Techniques and Environment Agency (ISEA), said, "Five provinces of Vietnam (Hanoi, Ho Chi Minh City, Binh Duong, Da Nang and Hai Phong) are suffering the heavy effects of air pollution caused by industrial production, transport and construction activities. Air pollution is attributed partly to rapid development of industrial zones, and ineffective treatment of gas emissions and wastewater." Fossil fuels such as coal, fuel oil (FO) and diesel oil (DO) are still used in production and transportation, discharging into the environment large volumes of CO₂, SO₂ (sulfur dioxide) and NO₂ (nitrogen dioxide), which directly harm human health.

Currently, Vietnam has only 21 air surveillance stations and activities in this field remain ineffective, making it difficult to control dust pollution. Concerned ministries and many localities have proposed solutions to control and minimize pollution. The Ministry of Science and Technology has implemented a project aiming to improve the effectiveness of energy use by small and medium-sized companies in 2006-2010. As a result of this project, 500 companies nationwide have undergone technological changes to reduce energy consumption and prevent the emission of about 962,000 tons of CO₂. With support of the project, 40 localities nationwide have replaced old-styled brick furnaces with continuous vertical brick kilns and made a shift from using coal-burning stoves to using gas-burning stoves.

The People's Committee of Hai Duong Province has issued documents providing guidelines for concerned authorities to deal with air pollution caused by cement plants that use vertical shaft kilns. Following the guidelines, concerned authorities have helped cement producers find the main reasons leading to pollution. To minimize environmental pollution, four cement plants using vertical shaft kilns have invested in building facilities to treat gas emissions, smoke and dust that come from clinker furnaces. Cement plants have also been required to invest in upgrading the roads leading to production facilities as well as in planting green trees inside and around production facilities.

The Hanoi People's Committee is focusing attention on dealing with three pollution-related matters, including air pollution, giving priority to setting up a network of satellite surveillance stations in order to define the urban areas that are most seriously polluted.

To minimize air pollution in the future, in the opinion of experts and environmental managers, it is necessary to launch large-scaled propaganda campaigns to improve people's environmental awareness and make them understand that humans are the victims of air pollution but it is human activities that are one of the factors leading to air pollution. The State must put in place policies that encourage the popularization of transport means using new and renewable energy resources and restrict the discharge of air polluting wastes from production facilities. On their side, businesses must seriously abide by regulations on environmental production as well as the norms set for waste emissions.

84. India to Develop National Plan to Cut Carbon Emissions from Transportation Sector

On November 11th, India's government launched a \$3.49 million effort to develop a national action plan for lowering carbon dioxide emissions from transportation and to design low-carbon mobility plans for four major cities. The three-year project, endorsed by the federal Ministry of Environment and Forests, is being funded by the German International Climate Initiative. The United Nations Environment Program will provide technical assistance.

The national action plan component will include the development of sustainability indicators; an assessment of transportation sector emissions and projections of future emissions until 2050; and formation of policy recommendations and a road map for developing a sustainable transport system, including identifying technological and financial needs and international cooperation options.

The cities component will be coordinated with the federal Ministry of Urban Development. It will produce a methodology for developing low-carbon mobility plans at the city level for Delhi, Kolkata, Chennai, and Mumbai and will identify infrastructure and technology options for reducing emissions and adapting to climate change.

An online network will be created to share information, facilitate cooperation among stakeholders, and encourage public engagement.

The project is expected to create a transportation plan that could serve as a model for other developing countries. Delhi's switch to compressed natural gas in public transportation, instituted gradually since 1993, is already a model recommended for cities across the developing world. However, it has not been replicated widely, even within India.

Population growth and rapid urbanization in India in the last two decades have been coupled with a rapid increase of private vehicles and a switch from rail to road transport for both freight and passengers. Creating mass transit systems in its burgeoning cities and making transport greener are considered crucial to help India reduce its greenhouse gas emissions, improve the quality of urban life, and make the urban economy sustainable.

India's National Action Plan on Climate Change recognizes the need to lower greenhouse gas emissions from transportation through enhanced fuel efficiency, more use of biofuels, sustainable urban planning, improved public awareness, and promotion of public transportation.

India has been adopting urban transport regulations piecemeal, including measures to phase out outdated engine technology and low-quality fuels. The new program is expected to produce an overarching, broad-based plan.

MIDDLE EAST

85. Serious Pollution in Tehran May Be Linked to Fuel Quality

Pollution is a serious problem in Tehran, which sprawls at the foot of the Middle East's highest mountains. Criss-crossed with urban highways, its population of some 9 million swells to 12 million during the day as people flock in to work. Recently, Tehran has been experiencing alarming levels of air pollution for more than a week and officials made last Wednesday a public holiday in their first attempt to tackle the problem. But despite reduced traffic, which continued into an annual religious holiday Thursday and the weekly day of rest on Friday, pollution levels have remained high.

After initially issuing flat denials of a problem and then blaming a typical winter temperature inversion — despite above-average temperatures throughout November and early December — the Iranian government has since resorted to drastic compensatory measures like sudden two-day public holidays and harsh traffic-control directives.



But even as such measures have begun to counter the worst of the pollution, a trickle of recent statements from politicians and officials have raised suspicions that the smog is of Iran's own making, as officials ordered at least five of the country's major petrochemical plants to switch production to

gasoline after Western pressure led many of the world's top refining companies to cut off Iran's imports.

According to e-mails circulated to industry experts and reproduced on unofficial news sites and blogs, Iran's new supply of domestic gasoline may contain high levels of aromatics — more than twice the level permitted by Iranian law. Burning aromatics in car engines produces exhaust packed with high concentrations of "floating particles" or "particulates" that, added to the typical smog caused by nitrous oxides and ozone, can cause a range of health problems, from headaches and dizziness to more serious cardiac and respiratory complaints.

Abdolhossein Bayat, the managing director of Iran's National Petrochemical Company, told the state news media that pollution in the capital was unrelated to the gasoline being produced by petrochemical complexes, stating that the domestic product met and even exceeded international standards.

But Mohammad-Reza Rezai, a Member of Parliament who supports the Ahmadinejad administration, seemed to acknowledge that the government had increased domestic production of gasoline and that dangerous levels of air pollution were a price worth paying to maintain Iran's independence from foreign powers. "The increase in pollution is natural but, unfortunately, there are some who fail to see the main issue," he said in comments delivered to Parliament on Monday and published on the unofficial Asr Iran news Web site. "The important thing is that we have begun to produce gasoline, and this is a very valuable thing." "Without a doubt there are problems and impurities," he added, "but with continued production the problems will be solved and we will achieve production of standard gasoline."

Despite having the world's third-largest proven oil reserves, Iran has failed to expand its aging refineries to accommodate the nation's rapidly expanding demand for gasoline, an appetite that has been whetted by low subsidized prices and a rapidly growing population of young adults who crave the independence that a motor vehicle provides.

Fuel prices were raised drastically recently, as Tehran tries to phase out subsidies. But the roads remained jammed nonetheless, despite unconfirmed reports of a truckers' strike, and after a marked improvement in Tehran's air quality in recent days — after consecutive weeks of public holidays and traffic controls — the government has resumed issuing warnings about unsafe levels of particulates.

While continuing to deny that home-produced gasoline could have anything to do with record-breaking pollution levels, members of the Ahmadinejad administration have admitted that public health is at greater risk than ever before. Late last month, Health Minister Marzieh Vahid-Dastjerdi reported a 30 percent increase in pollution-related health problems and an 18 percent increase in emergency hospital admissions, though she did not say over what period.

However, within days, an official in Tehran's municipal government leaked Health Ministry statistics for pollution-related deaths on his personal Web site — more than 3,600 in the first nine months of the Iranian calendar year — figures that until now had never been released to the Iranian public.

GENERAL

86. New Research Links Rise in Autism to Living Near Freeways

Living near a freeway may be associated with increased risk of autism, according to a study published by a team of researchers from Children's Hospital Los Angeles, the Keck School of Medicine of the University of Southern California (USC) and the UC Davis MIND Institute. The paper will appear online in the journal *Environmental Health Perspectives* very soon.

"Children born to mothers living within 309 meters of a freeway appeared to be twice as likely to have autism," said Heather Volk, Ph.D., MPH, and first author on the study.

Autism is a developmental disorder that has long been ascribed to genetic factors. While changes in diagnostic criteria and increased awareness have been thought to contribute to the rising incidence of the disorder, these factors alone cannot explain the dramatic increase in the number of children affected.

The Centers for Disease Control reported a 57 percent increase between 2002 and 2006. This study supports the theory that environmental factors, in conjunction with a strong genetic risk, may be one possible explanation for the increase.

While little is known about the role of environmental pollutants on autism, air pollution exposure during pregnancy has been seen to have physical and developmental effects on the fetus in other studies. Exposure to air pollution during the first months of life has also been linked to cognitive developmental delay. However, the authors said that this study is the first to link exposure to vehicular pollutants with autism risk, though direct measurements of pollutants were not made.

Data from children with autism and typically developing children, who served as controls, were drawn from the Childhood Autism Risks from Genetics and the Environment (CHARGE) study, a population-based case-control study of preschool children. Children were between the ages of 24 and 60 months at the start of the study and lived in communities around Los Angeles, San Francisco and Sacramento. Population-based controls were recruited from state of California birth files, and were frequency matched to the autism cases by age, gender, and broad geographic area.

Each participating family was evaluated in person. All children were assessed; assessment of autism was done using well validated instruments.

The study examined the locations where the children's families' lived during the first, second and third trimesters of their mothers' pregnancies, and at the time of the baby's birth and looked at the proximity of these homes to a major road or freeway. The participants' gestational ages were determined using ultrasound measurements and prenatal records.

Dr. Volk and her colleagues found that living within 309 meters of a freeway (or just over 1000 feet) at birth was associated with a two-fold increase in autism risk. This association was not altered by adjustment for child gender or ethnicity, maximum education in the home, maternal age, or prenatal smoking. The researchers found no consistent pattern of association of autism with proximity to a major road.

Traffic-related air pollutants have been observed to induce inflammation and oxidative stress in toxicological and human studies. The emerging evidence that oxidative stress and inflammation are involved in the pathogenesis of autism supports the findings of this study.

"We expect to find many, perhaps dozens, of environmental factors over the next few years, with each of them probably contributing to a fraction of autism cases. It is highly likely that most of them operate in conjunction with other exposures and/or with genes," said Irva Hertz-Picciotto, Ph.D., chief of the division of environmental and occupational health in the Department of Public Health Sciences at UC Davis, and principal investigator on the CHARGE study.

Gayle Windham, chief of the epidemiology surveillance unit with the California Department of Health Services Environmental Investigations Branch, said the study did not directly implicate air pollution as a risk factor for autism because it did not have a way of measuring how much pollution the mothers were exposed to during pregnancy. "They are using a proxy measure for air pollution, which is distance to a freeway," she said. "But you still don't know how much time the women spent at home or working or commuting." Windham was not involved in the study.

Windham was the lead author of a 2006 study, also published in *Environmental Health Perspectives*, that found that children with autism were about 50% more likely to have a birth residence in an area with hazardous air pollutants. The study was based on air pollution data from the Environmental Protection Agency that was matched to birth records in the San Francisco Bay Area.

Research like this suggests environmental factors need more attention, said Clara Lajonchere, vice president of clinical programs for the advocacy group Autism Speaks. Lajonchere was not involved in the study. "The implication could be very far reaching in terms of prevention and public health concerns," Lajonchere said. "I think it's pretty well established that genes play a huge role in autism. But there is something going on beyond genetics."

Chronic exposure to air pollution during pregnancy is thought to have physical effects on the fetus. High levels of carbon monoxide, nitrogen dioxide and particulate matter have been linked to a higher risk of preterm birth and low birth weight. Chemicals such as ozone, sulfur dioxide and polycyclic aromatic hydrocarbons, or PAHs, have also been identified as harmful to a developing fetus.

"We know there are some chemicals in air pollution coming from diesel exhaust that might be a good forerunner to look at," Volk said. "But right now we really don't know what it is about air pollution that is associated with autism."

Families residing close to freeways may have to wait for more research before scientists can issue advice or recommendations on what to do about this potential risk, Volk said. For one thing, this study requires replication, she said. In addition, future studies will attempt to identify the level of exposure to particular pollutants.

87. Airline Industry Sounds Alarm about Environmental Taxes, Emissions Trading

The international airline industry's recovery from the economic downturn is being threatened by increased taxes and charges—including environmental levies—imposed by cash-strapped governments, the International Air Transport Association has warned.

IATA Director-General Giovanni Bisignani said at his organization's December 14th media day that the industry saw “major increases” in taxation during 2010, particularly in Europe, where Austria, Germany, and the United Kingdom all imposed new departure and passenger taxes on environmental grounds.

The airline industry is just starting to pull out of a financial tailspin. IATA predicted that industry profits for 2010 will reach \$15.1 billion. However, that figure is expected to slip to \$9.1 billion in 2011 due to anemic economic growth in advanced economies, increased fuel costs, and new tax measures, the association said.

In September the German government adopted a new departure tax that IATA predicted would cost \$3.1 billion in 2011 and 2012. In November the British government decided to increase its Air Passenger Duty by an estimated 2.5 billion pounds (\$3.9 billion) annually. The Austrian government decided the same month to impose a new departure tax expected to raise €90 million (\$119 million) each year. Bisignani said these new taxes can account for up to 5 percent of the price of an airline ticket.

The aviation sector is being targeted in particular by levies aimed at reducing greenhouse gas emissions, IATA said, with the biggest immediate threat to the industry being inclusion in the European Union's Emission Trading System (ETS). Starting in 2012, all flights into, out of, and within the European Union will be subject to carbon emission limits, with airlines buying or selling greenhouse gas emissions permits as needed.

IATA is projecting that in 2012, airlines will purchase 68.4 million metric tons of carbon emissions allowances on top of their allocation of about 180 million metric tons. Annual allowance purchases are expected to increase to 133 million metric tons by 2020. Assuming an average cost of €15 (\$20) per ton of carbon dioxide equivalent, airlines would be required to purchase about €1.03 billion (\$1.36 billion) of emissions allowances in 2020, IATA said. This figure could rise to €4 billion (\$5.3 billion) if the cost of the permits rises to €30 per ton, and more than €13 billion if carbon prices increase more than anticipated or if the European Union reduces the number of free emissions allowances allocated to airlines.

Bisignani denounced the European Union's “illegal plans” to extend the ETS to the aviation sector, noting that more than 100 governments have voiced opposition. He said inclusion in the ETS violates the 1944 Chicago Convention on International Civil Aviation by attempting to extend EU sovereignty into other countries' airspace. The Air Transport Association of America filed a lawsuit challenging the inclusion of U.S. airlines in the ETS as contrary to international law. That challenge is now being considered by the European Court of Justice.

According to IATA, the airline sector's 2010 greenhouse gas emissions are expected to total 660 million metric tons when tallied in 2011, up 4.5 percent from 2009 despite 6 percent industry growth.

Paul Steele, director of IATA's aviation environment section, said India, Brazil, and Thailand are now considering adopting "green" taxes on the aviation sector, while Australia, Japan, South Korea, Taiwan, and Ukraine are considering setting up their own emissions trading schemes for the aviation sector. China also is examining the possibility of an emissions trading scheme, although Steele said it was not clear whether it would apply to airlines.

This "uncoordinated patchwork" of environment-related taxes emerging around the world is leading to double-counting and double-charging for emissions, he said. "If this trend continues, it will present a huge administrative and cost burden to our industry," Steele said.

Not all green taxes have been successful. The Netherlands rescinded its air passenger ticket tax in July 2009 after a government-commissioned report concluded the tax would cost €1.3 billion in lost revenue, far more than the €300 million it was expected to raise. IATA said the tax led to an 18 percent drop in traffic at the country's main airports.

Steele noted the industry's standing complaint that green taxes do little for the environment, with the revenue often going into central government treasury funds rather than environment-specific programs. In some cases the taxes are badly designed and contribute to market distortions, Steele added, citing the example of the United Kingdom's ADP. That tax is based on the distance from the capital city of the departure country to the capital city of the destination country. The result, Steele said, is that a flight from the United Kingdom to Hawaii is taxed less than a flight from the United Kingdom to the Caribbean.

IATA has set a target to increase fuel efficiency in aircraft by 1.5 percent per year through 2020. That would reduce carbon emissions by 728 million metric compared to the expected growth trajectory. IATA's long-term goal is to reduce net carbon dioxide emissions from the aviation sector by 50 percent from 2005 levels by 2050.

In addition to improved fuel efficiency, the industry is banking on the emergence of new biofuels to reduce emissions and even new levies, as biofuels are considered carbon-neutral under the European Union's ETS. Bisignani said widespread production and use of biofuels could eventually reduce the airline industry's carbon footprint by up to 80 percent. Michael Baljet, IATA's assistant director of operations, said the industry expects a new aviation biofuel to be certified for commercial use early in 2011. The product, hydroprocessed renewable jet fuel (HRJ), can be substituted for conventional jet fuel up to 50 percent. Baljet noted that Lufthansa has said it will operate commercial flights using biofuel between Hamburg and Frankfurt in 2011, while Jet Blue, Mexico's Interjet, Brazil's Azul, and Canada's Porter all have announced plans for biofuel flights.

Still, the high cost of biofuels remains a major barrier to widespread commercial use. The current price for HRJ is in the range of 80 cents to \$2 per liter, two to three times the price of conventional jet fuel, Baljet said. However, the price of biofuel production is expected to reach parity with conventional jet fuel sometime after 2020, he added.

88. Formula One Puts More Green into Racing

Whatever the color of the car, from Fernando Alonso's red Ferrari to Michael Schumacher's silver Mercedes, Formula One is picking up speed toward a greener future. While the lifting of a ban on 'team orders' made the headlines, the more momentous news emerging from a meeting of the governing International Automobile Federation (FIA) in Monaco was to do with future engine rules.

The FIA announced that from 2013, engines would be reduced from the current 2.4-liter V8s to four-cylinder 1.6-liter turbocharged units with a rev limit of 12,000rpm and linked to hybrid kinetic energy recovery systems (KERS). The switch, it said, underlined "a commitment to improving sustainability and addressing the needs of the automotive industry." It also re-positions the sport in a much more environmentally-friendly arena with the engines, whose development cost has been put at around \$150 million, consuming at least 35 percent less fuel.

"Formula One has had a hard look at itself and said 'We've got to be more relevant'," Team Lotus owner Tony Fernandes, whose cars are already painted green, told reporters in an interview at the weekend. "I think with this new engine technology we become much, much more relevant.

"I think it's a fantastic time. I think it's great that Formula One is now going to be a driver and a leader in terms of environmental technology," added the Malaysian aviation entrepreneur. "Thirty-five percent less fuel is amazing. Imagine what that would do to the world if the technology being used in Formula One can be brought to all cars and reduce fuel consumption by 35 percent."

Those thinking that their regular 1,600cc family runabout has as much, if not more, poke should think again. According to independent engine maker Cosworth, the combination of the turbo engine and hybrid systems will produce more than 700bhp and deliver the same speeds as at present. With low drag setup, lap times could even be quicker. And all with far less of a thirst for fuel.

Put in ordinary motoring terms, the 35 percent saving should translate into a reduction of 85-90 liters of fuel per car per race. "If you think that the average road car has a 70-75 liter fuel tank, then more than a tank of fuel is not going to be used. It's massive," Cosworth F1 head Mark Gallagher told the press.

The engines will sound very different -- a big consideration to petrol heads who treat the high-pitched scream of a V8 at full throttle with the same rapt reverence as a classical music devotee listening to the Vienna Philharmonic. However, as Gallagher pointed out, the twin turbo cars used by drivers such as Alain Prost and Ayrton Senna in the early 1990s also produced only 12,000 rpm, and that period is regarded with considerable nostalgia.

The changes are all part of FIA president and former Ferrari team boss Jean Todt's determination to move Formula One far from the old image of a gas-guzzling, cash-burning, fossil-fuel-dependent sport that cared little for its surroundings.

Plenty has been done already by individual teams in the last few years. McLaren announced that they had become the first Formula One team to earn Carbon Trust certification for achieving annual savings of more than 1,500 tons of CO2 emissions. Gallagher said Cosworth had bought five sets of equipment so that they could use less polluting but slower sea freight rather than air transport. Teams have also agreed to reduce the number of staff attending races.

Todt's mission is to speed up things globally. "I feel sometimes the motorsport community has not yet completely understood that the times are changing," he told reporters back in October. "If you are looking at what is happening at the Paris motor show, there are a lot of electric, hybrid, hydrogen cars and I really feel that racing must be a display for all those technologies." And it will probably encourage manufacturers either to stay, join or come back," he said. Honda, Toyota and BMW have all left Formula One in recent years for cost and strategic reasons but the engine changes could revive the sport's allure for manufacturers and sponsors alike. Volkswagen, whose Audi brand has long been courted by F1, have already made encouraging noises after being involved as outsiders in drawing up the new engine specification. "The conditions for a possible entrance of the Volkswagen group have been created," the company's motorsport head Hans-Joachim Stuck told German media, while adding that nothing was decided yet.

KERS, tried out in 2009 but dropped by all the teams for this season as part of cost-saving measures, will be back next year and is here to stay. "I think in a second iteration it will be quite a lot better," said Williams's co-owner Patrick Head. "One can say 'isn't it just a load of bullshit?' and 'is it really appropriate for Formula One?'. But tell me one motoring magazine now that isn't full of all the electric vehicles or hybrid vehicles."

Gallagher agreed all the changes in the pipeline would help to shift the sport into a better place. "There is more fuel burned by spectators attending the Tour de France (cycle race) than in the entire Formula One world championship," he said. "Formula One has an unfair image of gas-guzzling and this new technology absolutely nails that criticism."

89. Climate Talks End With Modest Steps, No Kyoto Deal

The world's governments agreed to modest steps to combat climate change and to give more money to poor countries, but they put off until next year tough decisions on cutting greenhouse gas emissions. The deal includes a Green Climate Fund that would give \$100 billion a year in aid to poor nations by 2020, measures to protect tropical forests and ways to share clean energy technologies. Ending a marathon session of talks in the Mexican beach resort of Cancun, almost 200 countries also set a target of limiting a rise in average world temperatures to below 2 degrees Celsius (3.6 F) over pre-industrial times. But there was no major progress on how to extend the Kyoto Protocol, which obliges almost 40 rich nations to cut greenhouse gas emissions.

The failure to resolve the central problem of emissions dismayed environmental groups. It was also unclear how the \$100 billion a year for the Green Climate Fund will be raised.

The first round of Kyoto expires in 2012; it does not include China and the United States -- the world's two biggest emitters -- and there is no consensus over whether developing countries should have binding targets to cut emissions or whether rich countries have more to do first.

The main success in Cancun after two weeks of talks was simply preventing the collapse of climate change negotiations, promoting support for a shift to low carbon economies and rebuilding trust between rich and poor countries on the challenges of global warming.

Major players were relieved there was no repeat of the acrimonious failure seen at the Copenhagen summit last year, but they warned there was still a long way to go. The Cancun accord builds on a non-binding deal by 140 nations in Copenhagen.

- "The most important thing is that the multilateral process has received a shot in the arm, it had reached an historic low. It will fight another day," Indian Environment Minister Jairam Ramesh told reporters. "It could yet fail."
- "We have a long, challenging journey ahead of us. Whether it's doable in a short period of time, to get a legally binding deal, I don't know," the European Union's climate commissioner Connie Hedegaard said of a deal beyond 2012.
- U.S. President Barack Obama, whose domestic plans to legislate cuts in greenhouse emissions have stalled, said the Cancun meeting was a success and advances the world's response to climate change.

Carbon offset markets worth \$20 billion depend on Kyoto emissions caps to drive developed countries to pay for cuts in greenhouse gases in developing nations as a cheaper alternative to cutting their own greenhouse gases. The Cancun agreement would "build upon" such markets, giving them some support despite the doubt over Kyoto itself. Abyd Karmali, global head of carbon markets for the Bank of America Merrill Lynch said the deal lays the foundation for progress.

But experts said that current pledges for curbs in greenhouse gas emissions were too weak for the 2 Celsius goal. Existing government policies will lead to a rise in world temperatures of about 3.6 degrees Celsius above pre-industrial times, according to Niklas Hoehne, director of energy and climate policy at consultancy Ecofys.

The agreement set no firm deadlines for an elusive legally binding accord to succeed Kyoto. The next major global climate talks will be in South Africa at the end of 2011 and ministers will not meet on Kyoto before then, although lower-level negotiations are possible. China's top climate negotiator, Xie Zhenhua, said the agreement shows the Kyoto Protocol is still alive. "At the South Africa conference, we'll undertake discussions and negotiations over the substantive content of the second commitment period of the Kyoto Protocol," he said, adding that developing countries hoped for further progress on the issues of funding, technology and protecting forests.

Earlier, Japan, Canada and Russia said they would not extend Kyoto, demanding instead that all major emitters including the United States, China and India join in a new global deal. Developing nations insist that rich Kyoto countries, which have burned the most fossil fuels since the Industrial Revolution, must extend the agreement beyond 2012 before the poor agree to measures to curb their emissions.

The Cancun talks were held as evidence of global warming mounted. Michael Jarraud, the head of the U.N.'s World Meteorological Organization, told the conference that this year could be the warmest year since records were first kept in 1850. It also caps a record-warm decade.

Environmentalists worry that global leaders are not moving fast enough to tackle the big climate issues. "Cancun may have saved the process, but it did not yet save the climate," said Wendel Trio, Greenpeace's international climate policy director.

Britain's energy and climate secretary, Chris Huhne, said the advances in Cancun made it more likely that the European Union would toughen cuts in greenhouse gas emissions, to 30 percent below 1990 levels from a current 20 percent. "I think it definitely makes an agreement on 30 percent in the EU more likely," he said.

Bolivia's government was alone in objecting to the Cancun accord. It had demanded far deeper cuts in greenhouse gases by rich nations and accused them of "genocidal" policies causing 300,000 deaths a year. Under the U.N.-led negotiations, all agreements are supposed to have consensus support, but Bolivia was sidelined with the accord simply noting its concerns.

Cancun rejected calls by small island states, which fear they will be washed off the map by rising sea levels, to set a deadline for a treaty when environment ministers next meet in Durban, South Africa, in a year's time.

Opposition in the U.S. Senate to President Barack Obama's calls to legislate curbs on U.S. emissions makes it hard to imagine a new U.N. treaty in coming years -- it would need 67 of 100 Senate votes to be ratified.

Durban is likely to be the scene of a battle between developed and developing nations about how to extend or replace the U.N.'s Kyoto Protocol, which obliges nearly 40 developed nations to cut emissions until December 31, 2012.

Cancun made little progress toward resolving splits over Kyoto, long-term curbs on greenhouse gases or ways to bolster fragmented carbon markets that are intended to drive trillion-dollar shifts in investments from fossil fuels.

All sides agreed that a main success in Mexico was to get the 190-nation talks back on track after the U.N.'s Copenhagen summit in 2009 failed to agree a treaty and merely came up with a nonbinding deal among 140 countries. "Another 'failure' would have been crippling, if not fatal, to the whole enterprise," said Elliot Diringer of the Pew Center on Global Climate Change. Another step forward was that Washington and Beijing, at odds on issues ranging from trade to interest rates in 2010, did not bicker in Cancun.

In a tussle over shifting global influences in the 21st century, when China has overtaken Japan in economic influence, emerging powers insist that rich nations must extend Kyoto first before they agree a less onerous deal.

The Cancun Agreements also included measures for developing nations to report their greenhouse gas emissions and to have their actions to curb emissions verified, a provision long pushed by the United States, which has said that strong requirements to measure, report, and verify developing nations' actions should be part of any global climate deal.

The agreements, made up, in part, from the outcome of the negotiating track known as the Ad-Hoc Working Group on Long-Term Cooperative Action (AWG-LCA), will implement a registry for developing nations to record pledges to reduce their emissions, Figueres said.

Under the agreements, developing nations such as China and India would have to measure and report their greenhouse gas emissions and submit the actions they take to address their emissions to independent verification, with the assumption that they would contribute to global action by at least slowing the growth of their emissions.

The agreements called for verification of actions, supported by international assistance and progress reports on those actions every two years. By contrast, domestic efforts by China and other rapidly developing nations that do not get such technical or financial assistance could be verified domestically.

A separate ad-hoc group, representing nations that agreed to the Kyoto Protocol, reached a deal to continue negotiations with the aim of ensuring there is no gap after the protocol's first emissions reduction commitment period expires at the end of 2012.

The Cancun texts also set a collective goal to reduce greenhouse gas emissions by 25 percent to 40 percent compared to 1990 levels by 2020 and recognized the need for countries to “raise the level of the emissions reductions” to achieve those goals.

While the U.N. talks were scheduled to conclude on December 10th, the negotiating texts were shuttled back and forth into the early hours of December 11th, between the high-level plenary and two working groups before they were formally adopted by the COP, which represents the 194 nations that negotiate actions to address climate change under the U.N. framework convention.

A binding agreement is still at least a year or more away, but getting agreement on the half-dozen or so key issues in Cancun established hope for significant progress in November 2011, when climate negotiators will resume high-level talks at COP-17 in Durban, South Africa.

Delegates from Japan said they would continue to push for a single agreement based on the LCA track, which would require action by a wider range of countries, rather than the 3 dozen countries that currently have obligations under the Kyoto Protocol. Meanwhile, delegates from poorer countries said they believed a full extension of the Kyoto Protocol, perhaps with a broader scope, was the best result.

One highlight of the Cancun decisions was long-awaited action on reducing deforestation and forest degradation, which accounts for about 20 percent of global greenhouse gas emissions. The COP decisions out of Cancun marked the first step to create a formal forest protection program, known as Reducing Emissions from Deforestation and Degradation (REDD).

The REDD decision, known as Policy Approaches and Positive Incentives on Issues Relating to Reducing Emissions From Deforestation and Forest Degradation in Developing Countries, also set the stage to allow for “subnational” actions by states, provinces, and other local governments to protect forestland. Those would be allowed— at least in the initial years of the program—to count toward a nation's overall forest protection effort.

Subnational actions could be counted “as an interim measure,” according to the text, signaling that the ultimate goal of REDD will be to recognize only national efforts to reduce deforestation. The REDD text represented a victory for many environmental groups that have seen forest protection language stripped out of the last several rounds of U.N. climate negotiations, including at the Copenhagen climate summit in December 2009.

Brazil climate negotiator Luiz Alberto Figueiredo Machado told reporters hours before the final negotiations concluded, that Brazil, one of the key voices on the REDD issue, was satisfied with the text. The next step, he said, is “the whole issue of long-term financing for REDD, which will be the object of further negotiations.” “We need many sources, different sources” to fund REDD efforts, the Brazil negotiator said, with projected public and private financing falling well short of what is currently needed to launch a global program with enough support to protect forestland and restore degraded forests.

The issue of whether or not to allow for carbon emissions credits to be granted under the Kyoto Protocol's Clean Development Mechanism (CDM) for investments in Carbon Capture and

Storage technology concluded with a step toward approval. But further decisions will be required on a dozen conditions, including a requirement that methodologies and rules for CCS be decided on an international level and that social and environmental impacts are taken into consideration on an ad-hoc basis. Delegates said final approval on the issue would likely come at COP-17 in South Africa.

As things stand, the schedule for 2011 is made up of just two meetings: the mid-year subsidiary bodies meeting at UNFCCC headquarters in Bonn and the COP-17 talks, scheduled for Nov. 28–Dec. 9, in Durban, South Africa. But U.N. officials said that one or two more meetings were likely to be added to the schedule, with the dates and locations to be determined early in 2011.

90. Heavy-Duty Manufacturers Seek Harmonized Fuel Efficiency Efforts

The world's leading manufacturers of heavy-duty commercial trucks and engines called for increased cooperation among European, Japanese and American regulators as a key element necessary to effectively improve energy efficiency and reduce fuel consumption associated with on-road freight transport. Meeting in Chicago, the chief executives of over a dozen manufacturers discussed fuel efficiency and greenhouse gas emission reductions, diesel fuel specifications, and topics related to heavy-duty engine and vehicle regulation and certification.

The meeting was hosted by Mr. Daniel C. Ustian, Chairman, President, and Chief Executive Officer of Navistar, Inc. This was the eighth meeting of the chief executives to discuss global issues and recommend solutions to address critical challenges facing commercial vehicle manufacturers.

Even as the industry faces significant challenges brought on by worldwide economic conditions over the last three years, the chief executives recognized the importance of moving forward to improve fuel efficiency and reduce greenhouse gas emissions. One key to that effort is working to harmonize vehicle and fuel requirements across governments and regions so that manufacturers can achieve economies of scale and work towards uniform specifications and requirements.

Summarizing the meeting, Mr. Ustian stated “As we enter the second decade of the new millennium, engine and vehicle manufacturers have successfully reduced emissions, while maintaining fuel efficiency, through the application of new, clean diesel technology. Our efforts now focus on improving fuel efficiency to better serve our customers and the global environment. We can best accomplish that when government and industry work together toward a common goal, measured by an established set of compatible global standards and measurement procedures.”

The manufacturers agreed to pursue efforts across the globe to develop harmonized fuel, testing, and certification practices and procedures related to fuel efficiency improvements and greenhouse gas reductions. “As key participants in the goods movement and freight transport sectors, the world's leading commercial vehicle manufacturers assembled here today recognize the importance of energy security, improved fuel efficiency and climate change,” continued Mr. Ustian. “Conflicting and inefficient regulatory requirements and different specifications and testing requirements hinder our ability to introduce innovative technologies and make needed improvements. Today's meeting made significant progress towards advancing our efforts to promote harmonized improvements across the globe.”

Continuing the progress made at previous meetings, the chief executives discussed topics related to:

- adoption of a world-wide heavy-duty emissions certification procedure,
- harmonization of fuel specifications and regulations,
- fuel efficiency improvements and greenhouse gas reductions, and
- requirements for certification of heavy-duty hybrid vehicles.

Among the principles agreed to at the meeting regarding fuel efficiency regulations were:

- the need for uniform regional programs, coordinated internationally,
- common metrics based on work performed,
- cost effective and implementable programs that provide lead-time and stability, and
- programs that are compatible with the complexities of the heavy-duty marketplace.

The chief executives of the assembled companies agreed to continue their joint efforts to work with government bodies to promote harmonized global standards. Cooperative efforts between industry and governments that cross country or regional boundaries can serve to promote positive improvements for customers and the global environment.

Mr. Yoshio Shirai, President of Hino Motors, Ltd., Japan, extended an invitation to the chief executives to hold their 2011 meeting in Japan.

In addition to the participation of the chief executives, the meeting brought together representatives of the European Automobile Manufacturers Association (ACEA), the Japan Automobile Manufacturers Association (JAMA), the Engine Manufacturers Association (EMA) and the Truck Manufacturers Association (TMA).

91. Combustion Powertrains Predicted To Dominate the Decade

By 2020, 93 percent of the new cars sold in Europe will have a traditional powertrain. That is the conclusion made in a report by J.D. Power and Associates analysts, who also predict that just 3 percent of Europe's total car registrations will be battery-powered electric vehicles (BEVs) and 4 percent will be gasoline- and diesel-electric hybrids by 2020.

Even with government incentives, BEVs and hybrids are – and will remain – very expensive for at least the next decade. Therefore, their coming arrival will have a tiny effect on reducing overall automotive emissions during the next 10 years.

Meanwhile, improvements to the internal combustion engine have led to the launch of dozens of models that emit less than 100 grams of CO₂ per kilometer. Most of these cars cost about 15,000 Euros (about \$21,000). That is roughly half the promised European starting price – with incentives – of the Nissan Leaf battery-powered hatchback.

The bottom line is that the millions of affordable, low-CO₂ fuel-powered cars that will be sold in the next 10 years will have a greater impact on cutting overall emissions than a couple hundred thousand pricey EVs and hybrids.

92. Toyota Lays Out Big Green-Car Push with Hybrids, EVs

Toyota Motor Corp unveiled big plans for staying in front in clean-car technology as rivals race to play catch-up, saying it would launch 11 new hybrids and a rechargeable Prius that may cost as little as \$36,000.

Having dominated the hybrid field for over a decade with the iconic Prius and 13 other models so far, the world's top automaker has won a reputation as the most advanced car maker in next-generation technology. But with governments tightening environmental and fuel economy standards, competitors are turning up the heat with new technologies including battery electric cars and "range extenders" such as General Motors's Volt, which generates electricity on-board with a gasoline engine.

Toyota said one of its 11 new hybrid cars to be rolled out by the end of 2012 would be a compact with fuel efficiency exceeding 40 km/liter (94 mpg) measured under Japanese test cycles -- the highest for a gasoline-electric model.

Building on its hybrid technology, Toyota said it would begin selling a Prius-based plug-in hybrid by early 2012 mainly in Japan, the United States and Europe, targeting sales of more than 50,000 units a year. The car, which unlike a conventional hybrid can be plugged in to enable longer-distance driving using only electricity, is expected to cost as little as 3 million yen (\$36,000) in Japan, Toyota said. GM has priced its Volt at \$41,000, while Nissan Motor Co's all-electric Leaf will start at 3.76 million yen before subsidies.

Smaller car makers meanwhile have poured much of their efforts into improving internal combustion engines, with Mazda Motor Corp planning to launch a subcompact gasoline model next year that gets fuel economy of 30 km/liter -- equivalent to Honda Motor Co's Fit hybrid car in the same segment.

With \$23 billion of cash on hand, Toyota is among the few car manufacturers able to spend on research and development across the range of technologies.

In the field of battery electric vehicles, which Nissan and its French partner, Renault SA, are aiming to lead, Toyota confirmed it would begin selling a model based on the tiny iQ in the United States, Japan and Europe in 2012, initially targeting urban commuters. It expects annual sales to start off at a few thousand units. Toyota is also considering launching electric cars in China, the world's biggest car market, with road trials planned in 2011.

Further out, Toyota said it would begin selling fuel-cell vehicles, which are also all-electric but run on hydrogen fuel, in the same three markets from around 2015. Their high costs are a hurdle, but Toyota said it expected to be able to offer the sedan for under 10 million yen -- about one-tenth of what the zero-emission vehicle cost at the beginning of the decade.

Toyota is also working on developing next-generation batteries in-house, an ambition that had been held by the group's late founder, Sakichi Toyoda. Having established a separate battery division in January with about 100 researchers, Toyota said it had made some progress toward creating a full solid-state battery in a compact package, as well as determining the reaction mechanism of lithium-air batteries. Application of such batteries, however, is still decades away, executives said.

93. Toyota EV to Go Over 100 Km on Single Charge: Report

Toyota Motor Corp's compact electric car due to go on sale in 2012 will have a range of more than 100 km (62 miles) on a full charge and a top speed of about 120 km (75 miles) per hour, according to the Chunichi newspaper.

Toyota said in early 2009 it would sell a compact electric car in the United States from 2012 based on the FT-EV concept car, which shares vehicle underpinnings with the tiny iQ urban commuter car. It gave few other details on the car. Its top research and development executive had said then that Toyota would also sell the car in Japan and Europe by 2012.

A spokeswoman said the company could not confirm the report. The FT-EV concept, however, was conceived with a range of more than 90 km and a top speed of over 100 km/hour, she said. The newspaper did not mention a price or sales target for the car.

Toyota, the leader in hybrid cars, has increasingly warmed up to battery-run electric cars, announcing a surprise tie-up with EV startup Tesla Motors Inc earlier this year. Toyota will unveil the RAV4 electric concept fitted with a Tesla electric powertrain at the Los Angeles auto show next week. The car is due to go on sale in the United States also in 2012.

94. Honda CEO Sees Potential in Electric Car Market

The head of Honda Motor Co said there could be plenty of demand for battery-powered electric cars, making the strongest endorsement yet of the technology that his predecessor had long shunned as impractical and unrealistic. Japan's second-biggest automaker announced in July plans to launch a plug-in hybrid and pure electric car in 2012, but had stopped short of laying out a roadmap of how they would contribute to its business.

"It's starting to look like there will be a market for electric vehicles (EVs)," Takanobu Ito, who took over as chief executive last year, told a small group of reporters at a test-drive event north of Tokyo. "We can't keep shooting down their potential, and we can't say there's no business case for it."

Under Takeo Fukui and other former CEOs, Honda had been a strong proponent of hydrogen fuel-cell cars as the best zero-emission alternative to today's combustion engine cars because they have a similar driving range of 500-600 km (310-375 miles), unlike battery EVs' limited reach. Nissan Motor Co's Leaf, which will become the world's first mass-volume electric car when it goes on sale next month, can only be driven for 160 km (100 miles) on a full charge since packing more batteries to extend the range would make the car prohibitively expensive.

"The thing is, not everybody needs to drive 500 km a day," Ito said, echoing the argument made by Nissan and its partner, Renault SA, to sell battery EVs in big volumes around the world.

Ito stopped short of predicting how big the EV market could be, and how soon. But he added that pure electric cars made more sense than plug-in hybrids, which are hybrid cars that carry more batteries that can be charged from an outside source. "Plug-in hybrids are essentially for people who drive short distances, but it has the handicap of having an engine, a motor and a stack of batteries," he said. "Why wouldn't you just drive an EV?"

In a move that could further accelerate the industry's drive toward EVs, Ito is due to take the wraps off a new electric car concept at the Los Angeles auto show on November 17. It would be the first time for a Honda CEO to unveil a new model at the annual show. California has some of

the world's strictest environmental regulations, and Honda had said it would sell battery-run EVs there only to meet the state's zero-emission requirements.

95. International Body Seeks to Forge Policies Linking Air Pollution, Climate Change

The executive body of the Convention on Long-range Transboundary Air Pollution is set to adopt a long-term strategy to create international governance to control pollutants affecting both air quality and climate change. The Convention seeks to play a key role in setting a new policy agenda based on scientific evidence that four traditional air quality pollutants—particulate matter, ozone, methane, and carbon monoxide—play important roles in climate change as so-called short-lived climate forcers, according to a September 30th advance copy of the draft long-term strategy for the Convention.

The Convention's executive body will vote in December on the strategic plan, along with revisions to its protocols to allow the new direction, such as adding particulate matter as a pollutant controlled under the treaty, with the possible inclusion of black carbon.

“The important links of climate change and air pollution have received little attention in international climate negotiations,” the draft long-term strategy for the Convention said. “However, as the links between pollutants, sources and effects of air pollution and climate change are more and more clearly demonstrated, opportunities will open up for the Convention to play a significant role in addressing the most important environmental problem facing society today.”

Many policymakers have long regarded consideration of the global warming effects of air pollutants to be a distraction from the already difficult task of setting limits on carbon dioxide emissions. The Convention now sees itself as stepping into this policy gap, with a calculation that it is more effective in terms of both cost and emission reductions achieved to address all pollutants together, given that multiple pollutants are emitted from a single source.

The Convention is organized under the United Nations Economic Commission for Europe and has 51 parties, including the countries of the European Union, the United States, Russia, the Caucasus region, and Central Asia. It has eight legally binding protocols, including the Gothenburg Protocol, a multipollutant program that went into force in 2005 and which is credited with achieving decreases of 70 percent of sulfur dioxide emissions and up to 35 percent of nitrogen oxides emissions in Europe.

The draft long-term strategy is focused on the Convention's role as a regional policy instrument, as it encompasses most of the Northern Hemisphere. It said the body will continue to “concentrate on pollutants best controlled at a regional level.” But it also is looking ahead to other issues, given the “recent emergence of hemispheric and intercontinental transport of pollution as an important issue for the Convention.”

The draft strategy said links with the United Nations Framework Convention on Climate Change will be strengthened “in order to establish longer-term cooperation on a more strategic level.”

The proposed changes to the Convention emerged from a multiyear effort to better understand the ways in which ozone, methane, carbon monoxide, and particulate matter travel globally and contribute to climate change.

A report by the Convention's Task Force on Hemispheric Transport of Air Pollution, set to be published on December 1st, said that, on average, about one-quarter of local ozone is transported from sources outside the region, though that proportion varies widely by location and season. Ozone concentrations are expected to increase globally despite large reductions in the United States and Europe. Some scenarios showed that incoming air flow already exceeds air quality standards in some areas.

“In most cases, mitigating local or regional emission sources is the most efficient approach to mitigating local and regional impacts of these pollutants. However, without further international cooperation to mitigate intercontinental flows of air pollution, many nations are not able to meet their own goals and objectives for protecting public health and environmental quality,” the draft executive summary of the task force report said.

The Convention also formed an Expert Group on Black Carbon to assess the latest science on the climate and health effects of the pollutant, which is one component of particulate matter. The panel recommended specific inclusion of black carbon in the Gothenburg Protocol, adoption of monitoring and reporting requirements specific to black carbon, and consideration of a “non-binding statement outlining even more ambitious” actions to quickly reduce the pollutant that could include “potential actions outside the [Convention's] region,” the draft report said.

The Convention's executive body will meet in Geneva on December 13–17th.

96. Ministers Vow to Speed Up Technologies for Clean Transport, Sustainable Packaging

On November 9th, Ministers from 25 countries and representatives of a half-dozen multilateral organizations agreed to work toward speeding up the development of clean transportation technologies and more sustainable ways to package goods destined for international trade. A two-day Ministerial Conference on Global Environment and Energy in Transport concluded with a statement outlining shared goals, particularly in regard to reducing greenhouse gas emissions and air pollution from transportation without slowing economic development.

The annual forum, inaugurated in 2009 in Japan, was attended by ministers from 25 industrialized countries, several observers from developing countries, and delegates from an array of multilateral groups including the International Maritime Organization, International Civil Aviation Organization, International Transport Workers' Federation, and United Nations Framework Convention on Climate Change.

According to Italian Minister of Infrastructure and Transport Altero Matteoli, who chaired the talks, the closed-door meetings in Rome focused on how to speed up the implementation of the Intelligent Transport System, or ITS, which adds information and communications technology to transport vehicles to increase efficiency and coordinate loads and schedules, and how to reduce costs and fuel consumption.

The next meeting will take place in late 2011 in France, organizers said.

97. Air Pollution Is Associated With Eye Vessel Changes Indicative of Cardiovascular Disease

It is known that fine particle air pollution is associated with an increased risk of cardiovascular disease; a study by Sara Adar, and colleagues (University of Washington/University of

Michigan), published in this week's PLoS Medicine, takes this association further by showing that older people living in areas with long-term air pollution, or even exposed to short term pollution, are more likely to have narrowing of their retinal arterioles — microvascular changes associated with an increased risk of cardiovascular disease.⁷

The authors took digital retinal photographs of participants in the Multi-Ethnic Study of Atherosclerosis—which includes people aged 45 years of various ethnic backgrounds who had no cardiovascular disease symptoms when they enrolled in the study—to measure the diameter of retinal blood vessels. The authors modeled the long-term outdoor concentration of fine particle pollution at each participant's house for the 2-year period preceding the retinal examination; outdoor measurements taken the day before the examination provided data on short-term fine particle pollution levels. Of the 4,607 participants for whom complete data was available, retinal arteriolar diameters were narrowed among those who lived in regions with increased levels of long- and short-term fine particle pollution. In addition, increased retinal venular diameters were weakly associated with long-term (but not short-term) high concentrations of fine particle pollution.

The authors conclude: "Residing in regions with higher air pollution concentrations and experiencing daily increases in air pollution were each associated with narrower retinal arteriolar diameters in older individuals." They continue: "These findings support the hypothesis that important vascular phenomena are associated with small increases in short-term or long-term air pollution exposures, even at current exposure levels, and further corroborate reported associations between air pollution and the development and exacerbation of clinical cardiovascular disease."

98. Cities Sign Global Accord to Cut Emissions, Adapt to Climate Change

Mayors and local leaders from around the world concluded a trio of meetings on November 21st with a pledge to work to mitigate and adapt to the effects of climate change. The Global Cities Covenant on Climate laid out 10 actions cities can take to reduce their greenhouse gas emissions and to adapt to a warming climate, including a commitment to develop ways for cities to access international funding for local actions. The voluntary agreement, known as the Mexico City Pact, also highlighted the important role in addressing climate change played by the world's cities, which accounted for more than 70 percent of the Earth's greenhouse gas emissions in 2006, according to the International Energy Agency.

Cities that signed onto the agreement agreed to report any actions they take in a new carbonn Cities Climate Registry (cCCR). The registry will be operated by the Bonn Center for Local Climate Action and Reporting—hence the use of “carbonn” in the name. The registry was launched the same day the pact was signed, during the first World Mayors Summit on Climate, hosted by Mexico City.

The Mexico City Pact also envisioned the establishment of a Global Cities Covenant on Climate Secretariat that would encourage more cities to join the agreement and would follow up on actions laid out in the pact.

⁷ Adar SD, Klein R, Klein BEK, Szpiro AA, Cotch MF, et al. (2010) Air Pollution and the Microvasculature: A Cross-Sectional Assessment of In Vivo Retinal Images in the Population-Based Multi-Ethnic Study of Atherosclerosis (MESA). PLoS Med 7(11): e1000372. doi:10.1371/journal.pmed.1000372

The one-day summit was sponsored by Mexico City, the World Mayors Council on Climate Change, the ICLEI-Local Governments for Sustainability, and United Cities and Local Governments (UCLG). The meeting also marked the final day of a pair of related meetings of mayors and local leaders. The Third Congress of United Cities and Local Governments and the Local and Regional Leaders World Summit both concluded six-day meetings in Mexico City with the Nov. 21 signing of the pact at the World Mayors Summit.

The trio of meetings attracted some 3,000 city officials from 114 countries.

Earlier in the week, Mexico City Mayor Marcelo Ebrard discussed the importance of an international fund to help cities fight global warming. "Today, almost all global credits are for nations, not cities," Ebrard said. "For that reason, cities have great difficulty in accessing resources from the international communities. So this is a very interesting, new initiative that is also being adopted in this meeting."

The objective is to promote investments in city climate change programs as quickly as possible, rather than waiting for an international accord that appears to be foundering, Ebrard told Radio Formula, a local radio station. "We can change energy, reduce auto emissions, and take other steps in our cities ... and not wait for an international pact that we see is not coming and is being delayed," Ebrard said.

Ebrard said the financing architecture used today is too slow and that the new fund for cities would speed up the allocation of resources to municipalities, where greenhouse gas emissions are highest and climate change is affecting more people. He did not specify how it would do so.

99. Greenhouse Gases at Record Levels: UN Agency

Concentrations of the main greenhouse gases in the atmosphere have reached their highest level since pre-industrial times, the World Meteorological Organization (WMO) has announced. Concentrations of the gases continued to build up in 2009 -- the latest year of observations -- despite the economic slowdown, the U.N. weather agency said in its latest Greenhouse Gas Bulletin.

Rises in the amount of greenhouse gases increase radiation in the atmosphere, warming the surface of the Earth and causing climate change. Total radiative forcing of all long-lived greenhouse gases -- the balance between radiation coming into the atmosphere and radiation going out -- increased by 1.0 percent in 2009 and rose by 27.5 percent from 1990 to 2009, the WMO said.

The growth rates for carbon dioxide and nitrous oxide were smaller than in 2008, but this had only a marginal impact on the long-lasting concentrations. It would take about 100 years for carbon dioxide to disappear from the atmosphere if emissions stopped completely.

Carbon dioxide is the single most important greenhouse gas caused by human activity, contributing 63.5 percent of total radiative forcing. Its concentration has increased by 38 percent since 1750, mainly because of emissions from burning fossil fuels, deforestation and changes in land use, the WMO said.

Natural emissions of methane due for example to the melting of the Arctic icecap or increased rainfall on wetlands -- themselves caused by global warming -- are becoming more significant, it said. This could create a "feedback loop" in which global warming releases large quantities of

methane into the atmosphere which then contributes to further global warming. These natural emissions could be the reason why methane has increased in the atmosphere over the past three years after nearly a decade of no growth, the WMO said. Human activities such as cattle-rearing, rice planting, fossil-fuel exploitation and landfills account for 60 percent of methane emissions, with natural sources accounting for the rest.

The average concentration for carbon dioxide was measured at 386.8 parts per million (ppm), the average for methane at 1,803 parts per billion (ppb), and the average for nitrous oxide at 322.5 ppb. "These values are greater than those in pre-industrial times (before 1750) by 38 percent, 158 percent, and 19 percent respectively," the WMO said.

The U.N. agency noted that atmospheric growth rates for carbon dioxide—the main contributor to global warming—and nitrous oxide in 2009 were consistent with recent years but lower than in 2008. WMO scientific officer Oksana Tarasova said the lower growth rate was likely due more to natural variations than to human activity. While the recent global economic downturn has resulted in lower-than-expected emissions of greenhouse gases, the impact on reducing concentrations of greenhouse gases has been limited, she said.

About 55 percent of carbon dioxide emissions stay in the atmosphere, while 45 percent is absorbed by the terrestrial biosphere and the oceans, she noted. "The growth rate varies from year to year, and it's mostly connected with natural processes, like changes in natural uptake and biospheric uptake," Tarasova said. "The changes in emissions which took place during the economic crisis were reported as a decrease of 1 to 1.5 percent, which creates a change in variability of CO₂ of 0.04 ppm. That is an order of magnitude less than natural variability."

In contrast, atmospheric methane has increased over the past three years after nearly a decade of no growth, the WMO said. "The reasons for renewed growth of atmospheric methane are not fully understood, but emissions from natural sources (from northern latitudes and the tropics) are considered potential causes," the WMO said. Tarasova said it is unclear whether the thawing of the permafrost in the northern latitudes over recent years or increased precipitation in tropical zones, where wetlands are a contributor to methane emissions, was the main cause of the increase. "But the source is definitely natural," she said. "At least for the past two years we can report that it's connected to natural processes."

100. Carbon Emissions Dip In 2009, To Jump In 2010

Global emissions of planet-warming carbon dioxide are on track to hit a record in 2010, according to a leading annual study, driven largely by booming economies in China and India and their reliance on coal. The Global Carbon Project, a consortium of international research bodies, also said annual emissions dipped 1.3 percent in 2009 from 2008 because of the global financial crisis. But the fall was less than half the decrease estimated a year ago. "The real surprise was that we were expecting a bigger dip due to the financial crisis in terms of fossil fuel emissions," said Pep Canadell, executive director of the Global Carbon Project and one of the co-authors of the study published in the latest issue of the journal *Nature Geoscience*.

The findings come a week before the start of U.N. climate talks in Mexico aimed at trying to find a way for nations to agree on a tougher pact to curb greenhouse gas emissions.

But Canadell also said new data and reduced loss of tropical rainforests showed that emissions from deforestation had declined and now comprised about 10 percent of mankind's greenhouse gas pollution. Previous studies have said 12 to 17 percent.

In 2009, declines in fossil fuel emissions were largest in developed nations. For example, emissions from the United States, the world's second largest carbon polluter, fell 6.9 percent, Britain fell 8.6 percent and Japan fell 11.8 percent. But emissions from the world's top carbon polluter China rose 8 percent, while India's increased 6.2 percent and South Korea 1.4 percent.

Despite the slight dip in emissions in 2009, the study showed concentration of carbon dioxide in the atmosphere continued rising, reaching a record of 387 parts per million (ppm). This is compared with levels of about 280 ppm at the start of the Industrial Revolution two centuries ago.

Data shows the world has already warmed on average about 0.7 degrees Celsius over the past century and scientists say the globe is on track to suffer more powerful storms, higher sea levels and severe droughts and floods that could disrupt food supplies.

The findings also show that in 2009 the global economy had slipped in terms of energy efficiency because of an increased share of fossil fuel CO₂ emissions from emerging economies. The study says the carbon intensity of global gross domestic product improved in 2009 less than half of the long-term average. Carbon intensity refers to fossil fuel emissions per unit of GDP.

101. Troposphere Is Warming Too, Decades of Data Show

Not only is Earth's surface warming, but the troposphere -- the lowest level of the atmosphere, where weather occurs -- is heating up too, U.S. and British meteorologists reported. In a review of four decades of data on troposphere temperatures, the scientists found that warming in this key atmospheric layer was occurring, just as many researchers expected it would as more greenhouse gases built up and trapped heat close to the Earth.

This study aims to put to rest a controversy that began 20 years ago, when a 1990 scientific report based on satellite observations raised questions about whether the troposphere was warming, even as Earth's surface temperatures climbed. The original discrepancy between what the climate models predicted and what satellites and weather balloons measured had to do with how the observations were made, according to Dian Seidel, research meteorologist for the U.S. National Oceanic and Atmospheric Administration. It was relatively easy to track surface temperatures, since most weather stations sat on or close to the ground, Seidel said from NOAA's Air Resources Laboratory in Silver Spring, Maryland, outside Washington. Measuring temperature in the troposphere is more complicated. Starting in the late 1950s, scientists dangled weather instruments from big balloons, with the data sent back to researchers by radio transmission as the balloons rose through the six miles of the troposphere.

The first satellite data on troposphere temperature was gathered in 1979, but neither weather balloons nor these early satellite weather observations were accurate measures of climate change, Seidel said. "They're weather balloons and weather satellites, they're not climate balloons and climate satellites," she said. "They're not calibrated precisely enough to monitor small changes in climate that we expect to see."

When the 1990 study was published, showing a lack of warming in the troposphere especially in the tropics, it prompted some to question the reality of surface warming and whether climate models could be relied upon, NOAA said in a statement.

This latest paper reviewed 195 cited papers, climate model results and atmospheric data sets, and found no fundamental discrepancy between what was predicted and what is happening in the troposphere. It is warming, the study found.

This study is one of several published this year pushing back against those who doubt the reality of climate change and the role human activities play in it. Scientists at NOAA, the United Kingdom Met Office and the University of Reading contributed to the paper, just published in Wiley Interdisciplinary Reviews - Climate Change, a peer-reviewed journal.

102. G-20 Leaders Reaffirm Their Commitment to End Subsidies for Fossil Fuels by 2020

Phasing out subsidies for fossil fuels remains a goal for the Group of 20 industrialized and emerging economies, national leaders affirmed Nov. 12 at a summit in Seoul. "They recognized the substantial progress that has already been made in the last 14 months and agreed to monitor their progress over the next year," the White House said in a statement on the summit action.

In Pittsburgh in 2009, the G-20 leaders committed to gradually eliminate fossil fuel subsidies. Since then, member nations have been developing strategies and time frames to meet the commitment. In Seoul, the G-20 received a report saying substantial progress had been made in the launching of policies for phasing out the subsidies, but that the value of fossil fuel consumption subsidies remained greater than \$300 billion in 2009, according to the White House. The report was put together by the International Energy Agency, the World Bank, and the Organization for Economic Cooperation and Development.

The G-20 leaders asked those international organizations to update their report and assess progress being made in advance of the G-20 summit in 2011.

"A gradual multilateral removal (by 2020) of existing fossil fuel subsidies could result in global greenhouse gas emissions dropping by 10 percent by 2050 relative to what is otherwise expected," the White House said. "President Obama is committed to working with Congress to phase out over \$3 billion a year in preferential tax incentives for the coal, oil, and gas industries, consistent with the FY2010 and FY2011 budget proposals," the White House said.

103. World Should Eradicate Fossil Fuel Subsidies: IEA

Abolishing fossil fuel subsidies would boost the world's economy, environment and energy security, the International Energy Agency said, referring to a pledge made by G20 countries. (See above.) "Eradicating subsidies to fossil fuels would enhance energy security, reduce emissions of greenhouse gases and air pollution, and bring economic benefits," said the IEA, the energy watchdog to 28 industrialized countries, in its annual World Energy Outlook.

The report estimated such subsidies at \$312 billion in 2009, mostly in developing countries, compared with \$57 billion in subsidies for renewable energy. Fossil fuel subsidies were on course to reach \$600 billion by 2015, and renewables subsidies more than \$100 billion, said Fatih Birol, IEA chief economist and lead author of the report. Eliminating fossil fuel consumption subsidies by 2020 would cut global energy demand by 5 percent, compared with no action, and reduce carbon emissions by nearly 6 percent by then, said the IEA report.

Economists say that governments should penalize fossil fuels, to take account of the damage that greenhouse gas emissions will cause the climate, and blamed subsidies for encouraging waste and undermining greener alternatives. Achim Steiner, head of the U.N. Environment Programme, said that a G20 push to phase out subsidies for the fossil fuel industry would be a "good start" to slow climate change.

Cash-strapped western countries are struggling to raise cash for renewable energy, which is often more expensive than conventional alternatives. The option of eliminating fossil fuel subsidies may appear more attractive. Renewable energy needed support, said the IEA, especially given an expected, 10-year glut in gas which would suppress power prices and make renewables even less competitive.

If recently announced policies to curb carbon emissions were enacted, under a "new policies scenario," renewable energy would reach one third of global power generation by 2035, catching up with coal, compared with 19 percent now, requiring \$5.7 trillion of cumulative investment, the report found. The use of biofuels would increase four-fold, meeting 8 percent of transport fuel up from 3 percent now.

The IEA said that pledges made by countries at last year's Copenhagen summit to curb carbon emissions would not meet the goal of limiting average global warming to 2 degrees Celsius, and that the cost of meeting that goal had risen by \$1 trillion because of the extra carbon-cutting effort which would be needed after 2020.