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EUROPE

1. EU Eyes New Motorcycle Rules to Cut Pollution

The European Commission wants European motorbikes to come with advanced braking systems, cleaner engines and daytime headlights from 2013 as part of a phased crackdown on road deaths and pollution. EU Industry Commissioner Antonio Tajani presented proposals on the new set of standards; they must be debated and approved by EU member states and the Parliament before becoming law.

Europe's motorcycle industry employs about 150,000 workers and includes brands such as Italy's Ducati and Germany's BMW. The sector has been hit hard by the economic crisis, with sales about one third below pre-crisis levels, so industry body ACEM called for costly regulations to be phased in slowly. Around 90 percent of manufacturing takes place in France, Italy, and Spain, including in some of Europe's worst-hit regions.

Toxic emissions from mopeds and motorbikes, such as nitrogen oxide and hydrocarbons, are to be tackled from 2014 onwards. The Commission's proposals do not currently foresee a cap on the main gas blamed for climate change, carbon dioxide. Instead it wants manufacturers to start reporting CO2 output and fuel efficiency from 2013 -- a typical first step that comes before a green labeling system to help consumers make fuel efficient choices.

The Commission dropped earlier suggestions that the power of motorcycles be capped, saying there was insufficient evidence that high powered motorbikes were more dangerous. Medium- and high-performance bikes will have to be fitted with anti-lock braking systems to minimize skidding during emergency braking. Lower performance bikes will also face braking standards.

Over 5,500 motorcyclists died in 2008, at a rate 18 times greater than for car passengers. Every year in the EU between 30,000 and 72,000 motorcycle riders suffer a serious injury.

2. Italian Cities See Drop in Environmental Quality

Every large Italian city except one showed an erosion of its urban environment over the past year, according to a report from environmental groups Legambiente and Ambiente Italia, in conjunction with Il Sole 24 Ore, an Italian financial daily. The 17th edition of the Urban Ecosystem Report looked at 71 cities with a metropolitan area population of at least 500,000 and measured environmental factors such as air quality, recycling levels, water treatment, sewage treatment, limited traffic zones, the use of traffic-free areas, and the prevalence of public transportation. Only the northern city of Turin showed improvement compared to the previous year, according to the report. Turin's performance improved because of recent investments in mass transit and a new set of zoning laws that made operating dirtier industries in the center of the city less attractive. Most of the worst performing cities—including the bottom five—were in the poorer southern part of the country. Catania in Sicily was worst in the nation, followed by Crotone in Calabria, Palermo in Sicily, Naples in Campania, and Salerno in Campania. All are south of Rome. The main negative aspects cited in the report included a lack of investment in urban infrastructure, possibly related to the worldwide economic downturn, along with an overall worsening in national air quality and a growing urban population. The report called for new zoning laws to encourage clean development in city centers and more investment in green transportation and water and sewage treatment.

3. EU Panel Backs Carbon Limits for Vans, Light Commercial Trucks in 2014

On September 28th, lawmakers on the European Parliament's Environment Committee approved draft legislation that would see EU laws capping carbon dioxide emissions from cars extended to vans and light commercial vehicles starting in 2014. The committee backed less stringent targets for vans than initially proposed by the European Commission, the European Union's executive branch. In a 32-25 vote, lawmakers set the emissions limit at 140 grams of carbon dioxide per kilometer (7.9 ounces per mile) compared to 135 grams per kilometer (7.7 ounces per mile) as recommended by the Commission.

The committee was also more lenient than the Commission when setting fines for noncompliance by manufacturers, backing a levy of €95 (\$128.80) per vehicle for every gram over the limit, rather than €120 (\$162.70). Fines will be phased in starting in 2014, by which time van makers must ensure that 75 percent of their vehicles comply. In 2020, all new light commercial vehicles sold in the European Union would have to comply.

In other respects, such as allowing manufacturers to pool efforts and calculate their average emissions across a wider fleet of vehicles, and allowing an exemption for manufacturers selling fewer than 22,000 vehicles per year, the Environment Committee broadly followed the Commission's proposal, which was published in October 2009.

The draft legislation is seen as filling a gap in EU carbon dioxide emissions limits for vehicles by preventing a situation in which some vehicles could be labeled vans and escape regulation. The limit for vans would apply to all light commercial vehicles weighing up to 2,610 kilograms (5,754 pounds). Rules on carbon dioxide limits for private cars were finalized at the end of 2008.

Kerstin Meyer of Transport & Environment said the version of the legislation backed by the committee did not take into account recent van fuel consumption improvements and would be "bad news for the millions of companies that could benefit from fuel efficient vans to save on fuel bills."

To be finalized, the legislation must be approved by the EU Council, which represents the governments of EU countries. The Council is expected to decide its position on the legislation at a meeting of member state environment ministers on December 20th.

4. European Truckmakers Fear EU's Tough CO2 Curbs

Producers of heavy trucks protested recently at European Union plans to impose strict curbs on emissions of carbon dioxide from the vehicles, saying they were unrealistic and ill-designed. The chiefs of Volvo, Fiat's unit Iveco and DAF said they had asked the European Commission and the European Parliament to redesign the planned law, warning them of chaos in an industry employing 250,000 people.

The 27-nation EU wants to cut emissions of CO₂ by 20 percent from their 1990 level, by 2020, in its battle against global warming. Reducing pollution from heavy trucks is to be part of the plan, which the Commission is likely to propose next year.

The EU is debating plans to cut emissions from vans and light trucks to 175 grams of CO₂ per km by 2016, and the CEOs fear a similar scheme might be imposed on heavy trucks. "They result from perceptions that trucks are just big cars. This can push regulation in the wrong way,"

Volvo CEO Leif Johansson told reporters. Iveco chief Paolo Monferino said: "Those numbers are scaring us. We don't have the technology to achieve them."

The truckmaking executives said the plan in its current shape would encourage companies to produce lighter trucks and fewer large ones. As a result, there would be more vehicles on the roads, more congestion and more CO2 emissions. A better measure would be counting CO2 in grams per ton of carried freight per km, Monferino said.

The truckmakers said they would carry on with plans to increase fuel efficiency in heavy trucks by 20 percent by 2020. They also reiterated the heavy truck industry is getting back on its feet after several disastrous years. "We have endured the worst years in the history of our industry," Johansson said, adding sales fell by 80 percent in 2007. "But we are coming back."

5. European Council Approves Green Taxes on Freight; Parliament Next

On October 15th, EU transportation ministers representing the European Council approved a revised measure to allow EU member states to impose a series of new taxes on freight-hauling trucks by increasing road tolls based on air emissions—including carbon dioxide—and noise criteria, as opposed to the cost of the use of highways, as is currently the case. Despite intense opposition by some EU member states and the European trucking industry, the Council of Transport Ministers approved measures that employ, for the first time, the "polluter pays" principles for road taxes. As a result, the EU "Eurovignette" directive would give EU member states the right to increase road taxes, which currently average between 10 and 15 cents a mile, by another 2 to 3 cents.

The new taxes, which still must be approved by the European Parliament, would only apply to approximately 20,000 miles of European motorways where electronic toll systems are used. The new taxes would be based on the exhaust standards of a vehicle. The legislation also would allow EU member states to lower the green taxes if the trucks are traveling on the highways at nonpeak times, such as at night or on Saturday.

"These new rules send the right signals to operators," European Transport Commissioner Siim Kallas said in an October 16th statement. "The aim is to motivate a shift in behavior so companies invest more in efficient logistics, less polluting vehicles, and more sustainable transport at large.

"The air and noise pollution charges will have to be calculated according to a common method and respect caps defined in the directive to avoid abusive practices," Kallas added.

Countries such as France, Germany, Belgium, the Netherlands, and Austria, which experience heavy transit flows of trucks, were heavily in favor of the legislation, which was originally proposed by the European Commission in 2008 but has been blocked until now in the Council of Ministers. Others, led by the United Kingdom, backed the proposals as a way to help the European Union reduce carbon dioxide emissions.

To get approval, Belgium, which holds the rotating EU presidency, proposed a compromise that would allow an exemption for trucks that meet the highest EU emissions standards for light and heavy vehicles ranging between 3.5 and 12 tons. Another last minute compromise dropped requirements for the extra revenue to be used only for research into making road transport more sustainable.

The exemptions drew criticism from the leading nongovernmental organization in the EU promoting sustainable transportation policies. "Transportation ministers took the bizarre decision to exempt current generation trucks from air pollution charges," said Transportation and Environment official Nina Renshaw in a statement. "That is rather like exempting smokers of low-tar cigarettes from smoking bans." Renshaw urged the European Parliament to drop the exemptions when it votes on the legislation in the coming months. Any differences between the European Parliament and the Council of Ministers must be worked out in a conciliation committee before legislation becomes law.

The agreement sets the council up for a conflict with the European Parliament, which adopted a first reading position last year. MEPs want to see a congestion charge equivalent to that for air and noise pollution and they also want mandatory earmarking for toll revenues. The commission supports the presidency's proposal.

6. Swedish Budget Plan Includes Increased Green Car Subsidies, Carbon Taxes

On October 12th, Sweden's government announced a 2011 budget plan that includes new subsidies for low-emissions cars, changes to the carbon tax on vehicles, and new standards for vehicle fuels. The plan also would increase funding for the nation's chemical agency (KEMI), in part to cover the writing of an action plan designed to speed up the phase-out of hazardous chemicals. The Environment Ministry said that overall, 5.1 billion Swedish kronor (\$773.6 million) would be allocated for environmental initiatives in 2011.

The 2011 budget plan would extend graded subsidies for environmentally friendly vehicles and would impose new tax rates for higher-emissions models. The Finance Ministry said in a written statement that starting Jan. 1, 2011, subsidies worth up to SEK 40,000 (\$6,055) per vehicle would be available for the most environmentally friendly vehicles. Additional incentives would continue for vehicles using electricity or a gas other than liquefied petroleum gas (LPG), the ministry said. Gasoline-fueled vehicles are not eligible for these incentives.

The budget plan is expected to be approved by the end of the year and most measures are due to take effect on Jan. 1, 2011.

The ministry said that the country's carbon dioxide-based vehicle tax would increase from SEK 15 (\$2.30) to SEK 20 (\$3) for each gram of carbon dioxide emitted per kilometer (g/km) starting in 2011, while the level at which the levy begins to be imposed would be increased from 100 g/km to 120 g/km. As of Jan. 1, 2011, new light trucks, buses, and motor homes would also be included in the carbon dioxide vehicle tax. The government already has pledged not to increase the nation's general carbon dioxide tax above inflation-related adjustments during its four-year term in office.

The government said Sweden would implement the European Union's 2009 revisions to the 1998 Directive on Fuel Quality (2009/30/EC), which increases the permissible amount of ethanol in gasoline, amends petrol and diesel specifications, and establishes sustainability criteria for biofuels. The revisions, which must be adopted by 2012, require changes to Sweden's Act on Vehicle Emission Control and Engine Fuels (2001:1080).

SEK 50 million (\$7.6 million) per year would be allocated to a national demonstration program for electric cars and hybrids between 2011 and 2014 to speed up their introduction into the marketplace. The program would encourage the development of new standards to "create a level playing field" for the required charging infrastructure, the government said.

Other notable measures include a SEK 25 million increase (\$3.8 million) in the annual funding of the Chemicals Agency, whose total budget would be SEK 190 million (\$28.7 million) in 2011, and the formation of a marine protection agency located in Gothenburg.

The lack of contentious measures means that the budget plan likely will be approved by Parliament before its December recess.

7. EU Consults on Low CO2 Future, Marine Fuels

The European Commission's climate department is seeking stakeholder input for the development of its roadmap for a low-carbon economy by 2050. The roadmap is due for publication by next summer. The consultation ends on December 8th.

The roadmap will outline how rapidly greenhouse gas emissions should be cut between now and 2050. The EU has pledged to cut emissions by 80-95% by then. A study has shown transport emissions could drop by 89% compared with 1990 levels.

The commission wants to know what legislation and technologies are anticipated to be the most effective in 2020 and beyond. It also seeks views on the role of emissions trading and how a range of EU policies can be adapted to climate change.

Another consultation on proposals to update a 1999 directive on the sulfur content of marine fuels was also launched. This would align it with stricter international standards agreed by the International Maritime Organization (IMO) in 2008. The sulfur content of marine fuels for general use will drop to 3.5% in 2012. Even stricter requirements will apply for fuels used in the North Sea, English Channel and Baltic Sea sulfur emission control areas (SECAs), with content falling from the existing 1% IMO limit to 0.1% at the latest by 2015. Otherwise, ships may use alternative fuels or employ emissions abatement.

Under existing EU law, ships may use 1.5% sulfur fuel in SECAs – a discrepancy which needs to be removed. Additionally, abatement may only be used in short-term trials. The consultation asks if abatement may be used permanently, and if state aid provisions need clarifying. It also asks if further SECAs should be designated.

8. European Commission Outlines Plan to Change Tax Rules for Energy, Vehicles

On October 27th, the European Commission outlined a plan to revitalize the European Union's single market that includes revamping EU energy taxation rules. The taxation initiatives, part of more than 40 initiatives set out in the Single Market Act, will be pursued over the course of the next two years, European Internal Market and Services Commissioner Michel Barnier said at an October 27th news conference. The energy taxation directive would be revised to ensure that EU climate change goals are achieved, as well as boost renewable energies by including carbon dioxide, the commission said.

“The legislation as it is now does not allow member states to use the tax tool for optimal material,” the commission plan said. “The proposal will, in particular, ensure consistent treatment of energy sources and thus provide true equality of treatment between energy consumers regardless of source or energy used. This will also ensure there is no duplication between the taxation of energy and the system of trading greenhouse emissions.”

9. German Cabinet Backs Plan to Raise Limit on Biofuel in Gas to 10% in January

On October 27th, the German Cabinet adopted a proposal to raise the maximum level of bioethanol in gasoline to 10 percent from the current 5 percent starting in January 2011. The measure requires the approval of the legislative Bundesrat, which represents Germany's federal states. A decision is expected in mid-December.

Environment Minister Norbert Roettgen and Peter Meyer, president of the German Automobile Association ADAC, said in a statement that higher bioethanol content would reduce greenhouse gas emissions linked to climate change and would help preserve shrinking oil reserves. The measure also would help Germany comply with EU legislation on renewable energy (Directive 2009/28/EC), which requires biofuels to make up 10 percent of each nation's transportation fuels by 2020.

"Effective climate protection is only possible if all aspects of daily life contribute to it, including fuel," Roettgen and Meyer said in the October 24th statement. "Therefore, the EU decided to raise the level of biofuel in the transport sector, which is now being implemented in Germany. "We want to reduce carbon dioxide emissions from exhaust emissions by raising the level of bioethanol obtained from plants, and we also want to preserve mineral oil reserves that are getting shorter." Increased use of biofuels would decrease the need for imported oil. Most raw materials needed to produce bioethanol, such as grain, can be grown in Germany or elsewhere in Europe.

Starting in January, gas with a 10 percent bioethanol blend labeled "E10" will be offered at German gas stations, in addition to conventional gas products. E10 can be used in about 90 percent of older cars without any restrictions, and in new cars without any problem, according to the Environment Ministry.

10. Portugal Adopts Renewable Energy, Vehicle Efficiency, Ecodesign Measures

On October 21st, Portugal's Council of Ministers approved measures dealing with renewable energy targets, vehicle efficiency, and ecodesign requirements for energy-related products to comply with EU requirements and national energy goals. The three decree-laws and one resolution, for which numbers are pending, will enter into force following publication in the Diário de República, Portugal's national register.

- One decree-law calls for 31 percent of energy produced in Portugal to come from renewable sources by 2020. It also says 10 percent of fuel used for transportation must come from renewables by 2020, as required by EU Directive 2003/30/EC on the promotion of the use of biofuels or other renewable fuels for transportation.
- A separate resolution establishes measures to facilitate energy production at 12 biomass plants through the use of forest waste. It emphasizes sustainable rural development and forest management to ensure that waste is made available for biomass generation.
- Another decree-law aims to promote the use of less polluting, more energy-efficient vehicles by requiring public sector entities to consider energy use and environmental impact when they purchase or rent vehicles. By aiming to reduce the consumption of raw materials and to cut greenhouse gas emissions, this measure is in line with Portugal's National Sustainable Development Strategy and the National Green Public Procurement

Strategy. Likewise, it transposes into national law EU Directive 2009/33/EC on the promotion of clean and energy-efficient road transport vehicles.

- The final decree-law defines ecodesign requirements for products related to energy consumption to promote greater energy efficiency and consumer awareness of the environmental impact and sustainable use of products. This transposes EU Directive 2009/125/EC, which establishes a framework for setting ecodesign requirements for energy-related products.

The government said the approvals marked an important step in implementing Portugal's 2020 National Energy Strategy. The strategy aims to reduce dependence on foreign energy sources by cutting energy imports by 25 percent and boosting Portugal's renewable energy industry, which will "ensure a gross added value of €3.8 billion [\$5.3 billion] and add 100,000 new jobs beyond the 35,000 already existing," the government said. All of these measures fit into its overall plan to make Portugal among Europe's top five renewable energy leaders and to develop a renewable energy industry "with strong export capacity."

11. Spain Proposes to Increase Mandatory Biofuel Blend

On October 22nd, Spain's Ministry of Industry, Tourism, and Commerce sent the National Energy Commission a proposal to increase minimum biofuel content requirements in transportation fuels for 2011–2013. Under the new plan, mandatory biofuel content would increase from the current 5.75 percent to 5.9 percent in 2011, 6 percent in 2012, and 6.1 percent in 2013. Spain's Hydrocarbons Law (Law 34/1998) established annual goals through 2010. The new rules would help the government comply with the European Union's Directive 2003/30/EC on the promotion of the use of renewable fuels for transportation. By 2020, member states must increase to 10 percent the share of energy derived from renewable sources for transportation. To ensure that older vehicles can remain in use, the ministry said it would require the sale of unleaded gasoline 95, which works with all vehicles, through December 31, 2013. To protect production at Spain's 46 biodiesel plants, the government said it is working on an order to set individual plant production goals and to exclude the use of imported biofuels to meet national goals.

12. EU Leak Indicates Delay Green Barrier to Canada Oil Sands

Europe has yielded to Canadian pressure by delaying possible green trade barriers to Canada's highly polluting oil sands, but only for one year, a leaked document indicates. Canada has repeatedly warned that draft EU standards to promote greener fuels will harm the market for its oil sands -- tar-like oil that is trapped in sediment and forms the world's second-largest proven crude reserves after Saudi Arabia. A recent draft of the European Union's "fuel quality directive" calculates greenhouse gas emissions from myriad transport fuels, from hydrogen to diesel, but says oil sands will only be evaluated some time before December 31, 2011 -- a year later than plans made as recently as June.

All other fuels will be dealt with by the end of this year, with the aim of guiding industry on which fuels are best suited to the EU's goal of cutting carbon emissions to one fifth below 1990 levels over the next decade.

The European Union and Canada are in the middle of free trade talks, and the issue of tar sands has become hot. Relations are already strained after the EU banned imports of seal products last July on animal welfare grounds, a move Canada is challenging at the World Trade Organization.

Environmentalists oppose the industry, saying the extra energy needed to extract oil from the north Alberta sands intensifies the damage they do to the climate, while wastes from extraction harm wildlife and pollute rivers. But Canada has written to EU environment officials warning any attempt at green regulation could create "barriers to trade."

Europe seems to have taken the advice.

"The Commission shall propose by December 31, 2011 how to address high greenhouse gas intensity sources," says the document seen by the press. "This proposal shall, in particular, introduce default values for fossil fuels derived from tar sands and oil shale." The Commission had initially proposed that tar sands be ascribed a greenhouse gas value of 107 grams per megajoule of fuel, making it clear to buyers that it had far greater environmental impact than diesel at 87.4 grams or petrol at 85.8 grams. But the Commission -- which acts as the European Union's executive -- has since dropped the oils sands value, and now argues the science is too uncertain to act.

Politicians in the European Parliament accuse the Commission of bowing to industry and thereby undermining its own climate objectives. They cite 12 scientific studies that put the impact close to 107 grams.

"We are talking about an activity that is expected to destroy...one quarter of the intact forests of this world," Greek socialist politician Kriton Arsenis told Philip Owen, one of the Commission's top climate officials, in a debate last week. Dutch Green politician Bas Eickhout added: "If you know the number for investment in tar sands in the coming years: it's 379 billion Euros. If the Commission does not send out a signal now that we are putting forward a value on tar sands, we are giving the wrong signal."

Owen warned against impatience and said the work was underway. "We are saying that by the end of 2011, which is not so far away, there will be a default value for tar sands," Owen replied. "This is already a very clear sign to the industry."

13. Seven States Failing To Implement Aviation Law

Seven member states have still not implemented a 2008 directive on the inclusion of the aviation sector in the EU's emissions trading scheme (ETS), a European Commission official has announced. Member states had until 2 February to do so. The non-compliant countries are France, Slovakia, Cyprus, Estonia, Hungary, Greece and Poland. The official said the commission will "pursue as usual every measure that is in its power to make countries [comply]", but declined to elaborate on whether it is considering infringement actions against non-compliant states at this stage.

The EU executive will propose an emission cap for aviation by the end of the year. It is still working on calculations. Airline emissions in 2012 will be capped at 97% of average emissions in 2004-06, equivalent to an estimated 210-220 million tons.

14. Aviation Deal Clears Way for Emissions Scheme: EU

A recently struck global deal on emissions curbs by airlines will allow the European Union to press ahead with plans to charge airlines for emissions permits from 2012, the European Commission has announced. The EU agreed in 2008 that airlines should be included in its

emissions trading scheme (ETS), which forces industry to pay for permits for each ton of carbon dioxide they emit into the atmosphere.

The ETS is the EU's main tool for combating climate change and it wants to see the system adopted worldwide. Aviation is responsible for some 2 percent of the world's carbon emissions. Some U.S. airlines had challenged the EU's right to include their flights into and out of Europe within the ETS.

The International Civil Aviation Organization (ICAO), a United Nations agency, has adopted a new resolution to reduce aviation emissions with a "roadmap" up to 2050 for the 190 member states. The aviation sector would seek to become 2 percent more fuel-efficient every year and to cap emissions from 2020.

European Commissioners for Transport Siim Kallas and for Climate Action Connie Hedegaard said in a statement they welcomed the breakthrough after almost a decade of deadlock with a deal to cover over 90 percent of worldwide air traffic. "Crucially, ICAO has refrained from language which would make the application of the EU's ETS to their airlines dependent on the mutual agreement of other states," the Commission said, adding this had led to stalemate at the last ICAO assembly in 2007.

"This time, the EU agreed to engage constructively in dialogue with third countries during the implementation of its ETS, notably regarding how to deal with emissions from incoming flights from third countries," she continued.

15. Commission Sets New ETS Emission Cap For 2013

The European Commission has revised a greenhouse gas emission cap announced in July for installations covered by the EU's emissions trading scheme (ETS) in 2013. Emissions will now be capped at 2.039 billion tons, the commission said. The revised cap takes into account installations that will join the ETS in 2013. These are plants producing bulk organic chemicals, hydrogen, ammonia and aluminum. The previous cap was based on installations covered in the 2008-12 trading period.

The scheme will also be extended to cover N₂O emissions from the production of nitric, adipic and glycolic acid and perfluorocarbons from the aluminum sector. The ETS currently only covers carbon dioxide emissions except for Austria and the Netherlands which include N₂O from certain installations.

The scheme's extended scope raises the emission cap by about 113 million tons compared with the figure announced in July. The 2009 ETS directive requires that emissions fall by 1.74% annually during the period 2013-20, or 37.43 million tons.

Further small adjustments may be needed for a number of reasons, for example, if new entrants join the ETS before the end of 2012 – new entrant reserves are not taken into account in the cap – or if member states exclude certain small installations from the scheme because other measures to cut their emissions are in place.

The cap would also have to be revised if the EU decides to increase its emission reduction target to 30% by 2020 without conditions. However, this is unlikely to happen any time soon as member states are showing great reluctance to make deeper cuts.

The commission will propose a separate cap for the aviation sector by the end of year. A spokesperson said the EU executive was still working on calculations. It initially planned to announce it last year. Airline emissions in 2012 will be capped at 97% of average emissions in 2004-06, equivalent to an estimated 210-220 million tons.

16. Cost of Damage to Crops from Ozone Pollution Found To Be High

The policy implications of agricultural losses caused by high concentrations of ground level ozone have been highlighted by a recent study.¹ The study modeled ozone impacts on 14 of the most important crops grown in the Greater Thessaloniki area of Greece. The results provide information about differences in scale of losses and economic impacts across the region which may be useful in designing agricultural subsidy schemes.

Damage to agricultural crops caused by ozone is a well-documented problem in Southern Europe and can be catastrophic for farmers. For example, 100 per cent crop loss for lettuce and chicory was reported in the Acharnes area of Greece following a high ozone episode in 1998. Ozone damage can reduce both crop yield and quality, lowering the value of the crop. The effect of ozone on plants varies with many factors, including plant age, light levels, humidity and soil conditions but studies indicate that the combination of peak ozone level and the duration of exposure to high levels are the most significant factors.

The new study models the distribution of ozone using well-established atmospheric chemistry and circulation models, based on the known emissions sources and topography of the Thessaloniki region. Using GIS (Geographical information systems), these data are matched with crop distributions around Thessaloniki (which represents around 7 per cent of Greek agricultural production). Figures were calculated for the year 2002 and future scenarios based on published targets for reduced emissions were used to allow the researchers to estimate figures for the year 2010.

Crop damage was estimated using appropriate plant growth models, and the local economic impacts estimated from the values of each crop. Calculated losses are assumed to be lower-bound estimates, as they ignore other ozone impacts, other pollutants and secondary impacts such as damage to livestock feed production.

The model revealed prolonged high levels of ozone over the region throughout the 3 month summer period May-July. The most ozone-sensitive crops, such as cotton, lettuce and tomatoes, suffered the greatest agricultural losses, at 10-20 per cent in 2002. Economic impacts were also dominated by cotton and tomatoes, with damage costing €16million and €9million. The economic cost of damage to wheat and rice was also significant at €4million each. The total losses for 2002 were estimated at €42 million. However, reductions in ozone levels between 2002 and 2010 have reduced the impact of ozone on crops. The researchers estimate that these improvements reduced the economic impact of ozone by €2.3million and €5million in 2010 (compared to the estimated economic impact had ozone reduction policies not been implemented).

The GIS mapping technique allowed regional variation in pollution impacts to be visualized and monetized clearly. Policy measures, such as education and training for local farmers, are suggested as a means of encouraging economically-robust crop choices, whilst the method

¹ Vlachokostas, Ch., Nastis, SA, Achillas, Ch. et al. (2010). Economic damages of ozone air pollution to crops using combined air quality and GIS modeling. *Atmospheric Environment*. 44:3352-3361.

could also provide crop production forecasts. The uneven distribution of losses may also be important for the design of agricultural subsidy and compensation schemes, as well as integrated environmental, industrial and urban planning structures to maintain regional economic activity while reducing ozone production.

17. Russia Proposes Environmental Strategy for Sustainable Development

The Russian Ministry of Natural Resources is refining a plan to implement an environmental regulatory framework that includes a focus on market mechanisms and international standards for industry. The draft policy framework, Principles of Ecological Policy in Russia for the Period to 2030, responds to a May 27th directive issued by President Dmitri Medvedev that called for the adoption of an environmental plan by the end of 2010. It was drafted by an interagency working group that included government officials and experts from environmental groups. The plan aims to bring Russia into adherence with the environmental standards of the European Union—for example, those on fuel efficiency.

The draft plan calls for a number of market-oriented mechanisms to promote environmental sustainability, both voluntary and mandatory, including pollution charges, fines, the formation of an internal market of quotas for air pollutant emissions and discharges into bodies of water, environmental insurance, and a voluntary system of certification and participation in voluntary agreements.

The document also focuses on environmental monitoring, increased public access to information and public awareness, support for science and ecological policymaking, and cooperation with other countries in implementing regulations and programs.

In particular, the draft document said Russia should focus on increasing energy efficiency, promoting green growth of the economy and technical modernization, and developing market mechanisms for environmental protection. There is also a stress on enforcing environmental standards and increasing penalties for violations of environmental laws. Technical standards for industry should be assessed for possible revision every five years, according to the plan.

The framework calls for the “transition to modern indicators of economic and social development, using principles of sustainable development.” Possible indicators of balancing economic growth with environmental protection include establishing water use limits per unit of output for major users, such as pulp and paper mills. Another key area of focus is the treatment and recycling of waste to reduce the amount deposited into landfills.

Implementing a national environmental policy to realize these goals will take a division of power among the federal government and the regional and municipal authorities, the draft plan said.

18. Public Cuts Won't Hit UK Green Energy Targets: Secretary Huhne

Britain's coalition government will stick to its promise to be the greenest ever despite huge cuts in public spending, Secretary for Energy and Climate Change (DECC) Chris Huhne recently told reporters. Government departments have been told to cut their budgets by 25 to 40 percent over the next four years to help reduce the national deficit, with the results of the spending review due soon. The review could impact funding for renewables energy schemes such as an offshore wind port infrastructure competition and solar power feed-in tariffs.

"We're not going to be put off by the small matter of the public spending review," Huhne said on the sidelines of the European Future Energy Forum conference. But he declined to comment on whether the 60 million pound (\$94.69 million) port competition would go ahead, despite media reports that it would survive the cuts. The previous Labor government introduced the port fund to develop docks to handle offshore wind farm construction, with turbine makers Siemens and General Electric citing the subsidy as one of the factors behind investing nearly 200 million pounds in UK manufacturing bases.

Huhne's department announced earlier that it would not fund the Severn tidal power project and also cut the number of potential new nuclear sites to eight from 10.

19. Cold Winter Predicted For West Europe: WSI

Temperatures are likely to average lower than normal in Western Europe from November to January, Weather Services International (WSI) has announced. Scandinavia and Eastern Europe are likely to average warmer than normal, WSI said.

U.S.-based WSI -- which in October 2009 accurately predicted Britain would see a very cold start to 2010 -- said that an unusually strong negative phase of the North Atlantic Oscillation (NAO) was the main reason why it expects another cold winter this year. Although last January was one of the coldest in Britain on record, January 2011 looks likely to be milder than average after a cold end to 2010, WSI said.

Because most homes in Britain are heated with natural gas, demand in Europe's biggest gas market is largely driven by the weather, with wholesale gas prices often rising sharply in bitter cold spells.

The NAO is a natural climate phenomenon that influences temperature and rainfall in Europe. A negative NAO points to cooler weather for northern Europe.

WSI, which specializes in forecasts for the energy industry, predicts regional temperature anomalies as follows:

NOVEMBER

- Scandinavia - Warmer than normal Norway/Sweden, cool Finland
- UK - Colder than normal
- North Mainland - Colder than normal, except for east
- South Mainland - Cooler than normal, except for east

DECEMBER

- Scandinavia - Warmer than normal
- UK - Colder than normal
- North Mainland - Warmer than normal, except for west
- South Mainland - Warmer than normal, except for west

JANUARY

- Scandinavia - Colder than normal

- UK - Warmer than normal
- North Mainland - Warmer than normal
- South Mainland - Warmer than normal

20. EU Agency Says Air Pollutant Emissions To Exceed Limits

In 2010, around half of the European Union's Member States expect to surpass one or more of the legal limits set by the National Emission Ceilings Directive (NEC Directive). The annual status report released recently by the European Environment Agency (EEA) confirms that 11 countries anticipate an exceedance of their ceilings for NO_x — some by more than 40 %.

Of the four pollutants covered by the [NEC Directive status report 2009](#), EU Member States have the greatest difficulty meeting the emission limits for nitrogen oxides (NO_x). Only 16 expect to remain within their respective NO_x ceilings, with road transport bearing much of the blame. The road transport sector contributed around 40 % of total EU-27 NO_x emissions in 2008 and although its overall emissions have decreased since 1990, the reduction has not always been as large as originally anticipated. This is partly because the sector has grown more than expected and partly because vehicle emission standards, especially those for diesel vehicles, have not always delivered the foreseen level of NO_x reductions.

Several Member States, including Slovenia, Sweden and the United Kingdom, expect to exceed their respective NO_x ceilings by small margins (less than 5 %). In contrast, France and Spain expect to exceed their ceilings by 261 kilotons and 236 kilotons respectively — equivalent to surpluses of 32 % and 28 %. Other countries, expecting lower surpluses in absolute terms, would exceed their limits by even larger margins, notably Austria (42 %), Belgium (43 %) and Ireland (47 %).

Overview of WM projections ⁽¹⁾ as reported by the EU-27 Member States

Member State	NO _x	NM VOC	SO ₂	NH ₃
Austria	X	x	√	√
Belgium	X	√	√	√
Bulgaria	√	√	√	√
Cyprus	√	√	√	√
Czech Republic	√	√	√	√
Denmark	√	√	√	√
Estonia	√	√	√	√
Finland	√	√	√	√
France	X	√	√	√
Germany	x	√	√	X
Greece	√	√	√	√
Hungary	√	√	√	√
Ireland	X	√	√	√
Italy	√	√	√	√
Latvia	√	√	√	√

Lithuania	√	√	√	√
Luxembourg	X	√	√	√
Malta	X	√	X	√
Netherlands	√	√	√	x
Poland	√	√	√	√
Portugal	√	x	√	√
Romania	√	√	√	√
Slovakia	√	√	√	√
Slovenia	x	√	√	√
Spain	X	X	√	x
Sweden	x	√	√	√
United Kingdom	x	√	√	√
√	16	24	26	24
x	11	3	1	3

A '√' indicates that the Member State anticipates remaining within its emission ceiling for a pollutant, while 'x' indicates that a ceiling is expected to be exceeded. The larger 'X' indicates those instances where a Member State anticipates exceeding its ceiling by more than 10%, the smaller 'x' denotes exceedances of less than 10 %.

(¹) Member State emission ceilings are compared against reported 'with measures' (WM) projections. WM projections take into account currently implemented and adopted policies and measures. Where Member States have instead reported only 'business as usual' (BAU) projections, it is assumed for comparison with the ceilings that these are equivalent to a WM projection. Not all Member States have fully incorporated the effects of the recession into their projections for 2010. For these countries, decreased economic activity may improve the chances of meeting their obligations.

The EU NEC Directive sets pollutant-specific and legally binding emission ceilings (limits) for four main air pollutants: sulfur dioxide (SO₂), nitrogen oxides (NO_x), non-methane volatile organic compounds (NMVOCs) and ammonia (NH₃). These pollutants harm both human health and the environment by contributing to the formation of ozone and particulate matter and leading to acidification and eutrophication. Member States must meet the NEC Directive's ceilings by 2010 in order to deliver the originally agreed health and environmental benefits.

The Thematic Strategy on Air (TSAP) adopted by the Commission in 2005 lists a revision of the NEC Directive as an important action to achieve the health and environmental targets of the TSAP by 2020. This revision is expected to propose stricter emission ceilings for 2020 in order to protect health and the environment further. It could also, for the first time, introduce a ceiling for fine particulate matter (PM_{2.5}). In the absence of new legislation, however, the NEC Directive remains in force and requires that future emissions stay below national ceilings after 2010.

Separately, discussions over setting new 2020 national emission ceilings for European countries have started within the [UNECE's Convention on Long-range Transboundary Air Pollution](#).

21. French Decree Outlines Process to Assess Carbon Tax for Non-Corporate Cars

The French Ministry of Economy, Industry, and Employment issued a decree (No. 2010-1043) on September 3rd setting out the collection and certification processes for an annual €160 (\$206) carbon dioxide tax on non-corporate, high-emission vehicles. The annual tax was established in 2009 under Article 1011 of the general tax code. However, Article 1011 did not specify how the tax would be assessed or collected. The decree makes the government, rather than the vehicle owner, responsible for identifying who owns, rents, or possesses a vehicle subject to the tax.

Owners of vehicles emitting 250 grams of carbon dioxide per kilometer (402.3 grams per mile) or those with high-powered engines are required to pay the tax for vehicles registered in 2009. The threshold drops to 245 grams per kilometer (394.3 grams per mile) for vehicles registered in 2010 and to 240 grams per kilometer (386.2 grams per mile) for 2012 registrations. The tax is assessed the year after the registration year.

The carbon tax applies to private individuals and business people who own, rent, or otherwise possess affected vehicles. But it does not apply to companies subject to a potentially much stiffer corporate vehicle tax that was established in 2005.

Specifically, the decree sets out informational requirements for the Ministry of Interior to provide to the General Directorate of Public Finances to identify people who possess affected vehicles, as well as information on the vehicles' carbon dioxide emissions levels. The ministry must submit the information to the directorate by January 31st of each year. The directorate then has to assess and collect the tax and the local prefecture must deliver a certificate to the car owner, by April 30 of the first tax year after the registration date, certifying that the tax is paid, according to the decree.

Those who sell or rent vehicles are required to provide the government with identifying information, which also is collected when people renew their license plates or receive their vehicle registration stickers.

Companies subject to a separate corporate vehicle tax, established by Article 1010 of the tax code in 2005, are exempt from the new carbon tax set out in Decree No. 2010-1043. The new tax also does not apply to vehicles possessed by people with cards identifying them as handicapped. Article 1010 of the tax code sets corporate vehicle levies ranging up to €4,500 (\$5,800), depending on a vehicle's horsepower. The corporate tax on high carbon-emitting vehicles applies to vehicles registered after 2006.

The carbon tax figures into France's so-called Grenelle Environment process, a vast government program set out in two major framework laws that aim to change consumer habits and to reduce the country's greenhouse gas emissions, among other goals. The carbon tax on non-corporate vehicles comes on top of France's so-called bonus-malus program, which awards a one-time financial bonus, or assesses a one-time penalty, to buyers of new vehicles, depending on the vehicle's carbon dioxide emissions. The program has been one of Grenelle's most successful measures, with a near quintupling of the number of low carbon-emission car models in France.

22. France to Invest €750 Million for Manufacture of Low-Carbon Vehicles, Batteries

France plans to invest €750 million (\$1 billion) to develop “vehicles of the future,” batteries, and charging systems and to make sure they are manufactured in France, Minister of Industry Christian Estrosi said on September 22nd. Manufacturers said continued state aid will be crucial to creation of a large market for low-carbon vehicles.

During the government's weekly council of ministers, Estrosi said several new electric and rechargeable hybrid vehicles will be released in 2011 thanks to some €700 million (\$944 million) invested in the past two years as part of France's framework Grenelle Environment Process. Combined with the additional €750 million just announced, the total investment comes to €1.45 billion (\$1.96 billion).

Estrosi told the council that because of these measures a large range of vehicles manufactured in France will be available starting in 2011. The new vehicles include the Peugeot 008 hybrid diesel, to be available in spring 2011; the Renault Kangoo ZE (for zero emissions) and Mia by Heuliez Electrique, available in mid-2011; the Smart by Daimler, also in 2011; and the Renault Zoé, beginning 2012.

French manufacturers also will make batteries and charging systems, the minister said.

Among other goals, the Grenelle program seeks to promote decarbonized vehicles as a way to reduce transportation-related greenhouse gas emissions, while at the same time supporting struggling automakers and parts manufacturers and boosting employment.

Axelle de Ladonchamps, a spokeswoman for Renault SAS, said state loans and other aid for development of zero carbon vehicles have given a major boost to the auto industry during the economic crisis and will help to gradually build up market demand. “Without state support it would not be possible to install the charging infrastructure,” she said, noting that in France the installation of charging stations has mostly been a project of the national energy company, Électricité de France.

De Ladonchamps also noted the benefits of bonuses available under the government's bonus-malus program, which provides a one-time financial bonus to buyers of vehicles with low carbon dioxide emissions, or imposes a one-time penalty for the purchase of higher emitting vehicles. The Renault spokeswoman said the €5,000 (\$6,740) bonus for buyers of electric vehicles will allow Renault to sell the electric Kangoo ZE at essentially the same price as the equivalent gasoline-powered model, roughly €15,000 (\$20,225), before taxes.

However, this price does not include the €72 (\$97) monthly rental cost for the electric vehicle battery. Charging of a vehicle battery will cost €1 to €2 (\$1.35 to \$2.70) and will last roughly 160 kilometers (99.4 miles), she said.

PSA Peugeot Citroën spokesman Jean-Marc Sarret told the press in a telephone interview that French automakers have gotten good government support for their electric-vehicle programs. Sarret said continued government support is necessary, at least in the short term, while the market builds up volume to bring down costs. The battery is a key component of the cost of the vehicle, he said.

Unlike Renault, PSA plans to lease the electric car and battery in one package. So the Peugeot ION will be able to be rented for €499 (\$673) per month, including the battery, in a mandatory five-year lease. The Citroën C-ZERO will rent for €454 (\$612) per month. In both cases, the €5,000 bonus will go directly to PSA as part of the deal, he said.

23. Amsterdam, Renault-Nissan Alliance Sign Deal to Promote Electric Car Use

On September 22nd, the city of Amsterdam and the Renault-Nissan Alliance announced an agreement to promote the use of electric vehicles in the city, aiming to register some 1,000 sales in 2011. Under the partnership, the alliance committed to making three models of zero-emission electric vehicles available for sale or lease in Amsterdam beginning in 2011, while Amsterdam committed to expanding its charging infrastructure by some 2,000 charging points, according to Pauline Koerselman, a spokeswoman for Amsterdam's Air Quality Bureau.

The Renault-Nissan Alliance said the program aims to spread the word that electric vehicles make a significant contribution to reducing energy-related carbon dioxide emissions that contribute to climate change.

The alliance "chose Amsterdam to begin introducing these cars to the market because we have already done so much to put a charging infrastructure in place," Koerselman said. Amsterdam has installed some 100 public charging points since November 2009. Of the 2,000 to be added, 1,000 will be in public areas such as streets, parking lots, and park-and-ride sites. The rest will be in garages, at companies, and in other "semi-public" places, Koerselman said.

Also in 2011, the city will install a 50 kilowatt quick charger capable of recharging a battery to 80 percent capacity in about 30 minutes, Koerselman said. Amsterdam is offering free electricity at public charging posts, as well as free parking at such posts, until March 2012. "That's a good deal, because parking costs quite a lot here," she said.

Established in 1999, the alliance is an industrial and commercial partnership between the French company Renault and the Japanese automaker Nissan.

According to a joint statement by the city and the alliance, Nissan will deliver 100 Nissan LEAFs, an electric compact family car, to business customers in Amsterdam starting in February 2011. Deliveries to individuals will begin in June 2011. Deliveries of Renault's Fluence ZE (for zero emissions) and Kangoo Express ZE models will start shortly thereafter, with a total sales target of 1,000 electric vehicles for the year.

Since March 2009, businesses purchasing an electric vehicle have been eligible for a subsidy from the city. They also qualify for national incentives, including zero registration tax and zero road tax. For businesses, that means the Nissan LEAF is available for less than €30,000 (\$40,000), including the battery, the city and the alliance said.

The Renault-Nissan Alliance also agreed to establish a sales-and-service network for electric cars in the Amsterdam area, to manage the Netherlands' EV Pilot Program, and to jointly run, with the city, an Electric Mobility Education Program to promote zero-emission travel, the groups' said.

According to Renault, the alliance has signed more than 60 agreements worldwide with institutions, governments, and businesses aimed at preparing markets and infrastructures for the mass launch of electric vehicles starting in 2011.

Rochelle Chimenes, a spokesperson for Renault SAS, said the Renault-Nissan Alliance project in Israel, announced in 2008, is one of the most advanced, planning tens of thousands of charging points across the country. Renault plans to introduce cars there beginning in 2011.

Israel, which levies an 83 percent tax on the purchase of a car, has reduced that tax to 10 percent for electric vehicles. "That's a very big incentive," Chimenes said.

The Palo Alto, Calif.-based electric vehicle services company Better Place, which is managing operations in the Israel project, has developed software to connect cars to the electric grid, even allowing drivers to reserve a charging place ahead of time, she said.

24. Toyota Reportedly To Build Hybrid Yaris Car in France

Toyota Motor Corp plans to begin producing a hybrid version of the Yaris subcompact at its factory in France in the business year starting next April, the Mid-Japan Economist newspaper said. The gasoline-electric Yaris, called Vitz in Japan, will be sold in Europe, the paper, owned partly by Toyota, reported without saying where it obtained the information.

A Toyota spokeswoman said the automaker could not comment on future product plans.

A year ago, France's La Tribune newspaper ran a similar report citing Toyota's plans to build a small hybrid car at its Valenciennes factory, which builds the Yaris subcompact. A spokesman at the time had denied that such a plan was under consideration.

Toyota has said it plans to add the hybrid option across its entire lineup by around 2020, but has not announced plans for a gasoline-electric Yaris/Vitz.

Rival Honda Motor Co is due to launch a hybrid version of competing subcompact Jazz/Fit in the coming months, with plans to unveil the Jazz hybrid at the Paris motor show this month.

25. European Union Sued Over Biofuels

A number of European environmental groups led by the environmental law organization ClientEarth have sued the Council of the European Union and the European Commission for lack of transparency and for attempts to manipulate the science guiding European biofuels policy. The lawsuit challenges the Commission's failure to release documents containing previously undisclosed information on the negative climate impacts of widespread biofuels use in the European Union.

"Our efforts to understand and influence EU biofuel policy have been repeatedly hampered by attempts to restrict access to documents. The Commission is running an opaque operation. Citizens are being denied the right to participate in decisions that affect flagship climate policies," said Tim Grabel, senior lawyer at ClientEarth.

According to studies by the Joint Research Centre (JRC)—the Commission's own research organization--Europe's biofuels policy could cause unwanted side effects equal to as much as 1.5 billion tons of greenhouse gases, roughly the annual emissions of Russia or India.

The concept of "indirect land-use change" (ILUC) is one of the central uncertainties as to the overall greenhouse gas effect of biofuels. The indirect land-use change refers to unintended release of carbon in the process of converting land to grow biofuel crops. It can range from increased N₂O emissions due to fertilizer use to the extreme example of forest burning to clear land for palm tree plantations.

NORTH AMERICA

26. Obama Administration Opens Next Round of Fuel-Economy, GHG Rulemaking

The U.S. Department of Transportation's (DOT) National Highway Traffic Safety Administration (NHTSA) and the U.S. Environmental Protection Agency (EPA), announced they will begin the process of developing tougher greenhouse gas and fuel economy standards for passenger cars and trucks built in model years 2017 through 2025. This will build on the success of the first phase of the national program covering cars from model years 2012-2016.

The program is a key part of the administration's energy and climate security goals, which call for the increased domestic production and use of existing, advanced, and emerging technologies to strengthen the auto industry and enhance job creation in the United States. Continuing the national program will help make it possible for manufacturers to build a single national fleet of cars and light trucks that satisfies all federal and California standards, while ensuring that consumers have a full range of vehicle choices.

In a May 21, 2010 memorandum, President Obama directed EPA and DOT to issue a Notice of Intent (NOI) that would lay out a coordinated plan, to propose regulations to extend the national program and to coordinate with the California Air Resources Board (CARB) in developing a technical assessment to inform the NOI and subsequent rulemaking process.

Consistent with the presidential memorandum, the NOI includes an initial assessment for a potential national program for the 2025 model year and outlines next steps for additional work the agencies will undertake. Next steps include issuing a supplemental NOI that would include an updated analysis of possible future standards by November 30, 2010. As part of that process, the agencies will conduct additional study and meet with stakeholders to better determine what level of standards might be appropriate. The agencies aim to propose actual standards within a year.

The national program is intended to save consumers money by cutting down on fuel costs, improve our nation's energy security by reducing dependence on petroleum, and protect the environment by reducing greenhouse gas pollution that leads to climate change. Climate change is the single greatest long-term global environmental challenge, according to EPA. Cars, SUVs, minivans, and pickup trucks are responsible for 57 percent of U.S. transportation petroleum use and almost 60 percent of all transportation-related greenhouse gas emissions.

The results of the interim technical assessment are summarized in the NOI and presented in a separate document, which NHTSA, EPA and CARB also jointly released. To achieve further annual greenhouse gas reductions, the automotive industry could choose from a variety of advanced technologies.

The assessment also considers the costs and effectiveness of applicable technologies, compliance flexibilities available to manufacturers, potential impacts on auto industry jobs, and the infrastructure needed to support advanced technology vehicles. This assessment was developed through extensive dialogue with automobile manufacturers and suppliers, non-governmental organizations, state and local governments, and labor unions.

The administration is also preparing to issue new fuel economy standards and the first-ever greenhouse gas limits for large trucks and buses. EPA and DOT sent draft rules last month to the White House Office of Management and Budget that would limit heavy-duty vehicles' greenhouse gas emissions and boost fuel economy standards for medium- and heavy-duty

trucks. Obama has urged the agencies to issue final standards for trucks and buses by July 30, 2011.

27. US Government Proposes Landmark Regulation of Truck GHGs

The U.S. Environmental Protection Agency (EPA) and the U.S. Department of Transportation (DOT) have announced the first national standards to reduce greenhouse gas (GHG) emissions and improve fuel efficiency of heavy-duty trucks and buses. This comprehensive national program is projected to reduce GHG emissions by about 250 million metric tons and save 500 million barrels of oil over the lives of the vehicles produced within the program's first five years.

"These new standards are another step in our work to develop a new generation of clean, fuel-efficient American vehicles that will improve our environment and strengthen our economy," EPA Administrator Lisa P. Jackson said. "In addition to cutting greenhouse gas pollution, greater fuel economy will shrink fuel costs for small businesses that depend on pickups and heavy duty vehicles, shipping companies and cities and towns with fleets of these vehicles. Those savings can be invested in new jobs at home, rather than heading overseas and increasing our dependence on foreign oil."

"Through new fuel-efficiency standards for trucks and buses, we will not only reduce transportation's environmental impact, we'll reduce the cost of transporting freight," said U.S. Transportation Secretary Ray LaHood. "This is a win-win-win for the environment, businesses and the American consumer."

EPA and DOT's National Highway Traffic Safety Administration (NHTSA) are proposing new standards for three categories of heavy trucks: combination tractors, heavy-duty pickups and vans, and vocational vehicles. The categories were established to address specific challenges for manufacturers in each area. For combination tractors, the agencies are proposing engine and vehicle standards that begin in the 2014 model year and achieve up to a 20 percent reduction in carbon dioxide (CO₂) emissions and fuel consumption by 2018 model year.

For heavy-duty pickup trucks and vans, the agencies are proposing separate gasoline and diesel truck standards, which phase in starting in the 2014 model year and achieve up to a 10 percent reduction for gasoline vehicles and 15 percent reduction for diesel vehicles by 2018 model year (12 and 17 percent respectively if accounting for air conditioning leakage). Lastly, for vocational vehicles, the agencies are proposing engine and vehicle standards starting in the 2014 model year which would achieve up to a 10 percent reduction in fuel consumption and CO₂ emissions by 2018 model year.

Overall, NHTSA and EPA estimate that the heavy-duty national program would provide \$41 billion in net benefits over the lifetime of model year 2014 to 2018 vehicles. With the potential for significant fuel efficiency gains, ranging from seven to 20 percent, drivers and operators could expect to net significant savings over the long-term. For example, it is estimated an operator of a semi truck could pay for the technology upgrades in under a year, and save as much as \$74,000 over the truck's useful life. Vehicles with lower annual miles would typically experience longer payback periods, up to four or five years, but would still reap cost-savings.

The innovative technologies fostered by this program would also yield economic benefits, enhance energy security, and improve air quality. New technologies include widespread use of aerodynamic improvements and tire rolling resistance, as well as engine and transmission upgrades.

Margo Oge, director of the EPA's Office of Transportation and Air Quality, told reporters the proposed rules would be a "win-win situation for the country, the economy, climate change and energy security." President Barack Obama was joined by truck manufacturers in the Rose Garden in May when he said the government would release the first-ever proposed standards for greenhouse gas emissions and fuel efficiency for large trucks this year. Obama estimated then that the fuel efficiency of tractor-trailers could be improved by 25 percent using existing technologies.

"This is going to bring down the costs of transporting - for transporting goods, serving businesses and consumers alike," Obama said on May 21, flanked by executives with Daimler Trucks, Volvo, Cummins and Navistar, and trucking industry and union officials.

Environmental groups have pointed to a National Academy of Sciences report this year that said the trucks could make broad improvements during the decade through existing technologies. The report found that using advanced diesel engines in tractor-trailers could reduce fuel consumption by up to 20 percent by 2020 while hybrid versions of garbage trucks and buses could see a 35 percent cut in fuel use by 2020.

"Whether you are a company or an individual truck owner, you will be saving money on day one because you'll be saving more on fuel than increased loan payments on a big truck," said David Friedman, research director for the clean vehicles program of the Union of Concerned Scientists.

28. GOP Plans Attacks on the EPA and Climate Scientists

If Republicans win control of the House (Breaking News: Republicans Won the House!), they plan to go after the Obama administration's environmental policies and the researchers who have offered evidence on global warming, whom they accuse of manipulating data. The GOP's fire will be concentrated especially on the administration's efforts to use the Environmental Protection Agency's authority over air pollution to tighten emissions controls on coal, oil and other carbon fuels that scientists say contribute to global warming.

The attack, according to senior Republicans, will seek to portray the EPA as abusing its authority and damaging the economy with needless government regulations. In addition, GOP leaders say, they will focus on what they see as distortions of scientific evidence regarding climate change and on Obama administration efforts to achieve by executive rule-making what it failed to win from Congress.

Even if Republicans should win majorities in both the House and Senate (Breaking News: Republicans did not win the Senate.), they would face difficulties putting their views into legislative form, since Senate Democrats could use the threat of filibuster to block bills just as the GOP did on climate and other issues during the past year. Also, Obama could use his veto power.

But the GOP's plans for wide-ranging and sustained investigations by congressional committees could put the EPA and administration environmental policymakers on the defensive and create political pressures that could cause Obama to pull back on environmental issues as the 2012 presidential election draws closer.

White House officials said they are considering hiring more lawyers to the Office of Legal Counsel to gird for the possible battles ahead. Yet even with the White House running

interference for the EPA and other agencies, EPA Administrator Lisa P. Jackson conceded that a Republican anti-regulatory campaign could end up effectively hamstringing her agency's work. The new rules EPA has issued over the last year on vehicle emissions and those expected soon for industry, Jackson said, "would be endangered by many, if not all, of the efforts we've seen to take away the agency's greenhouse gas authority."

Over the last two years, the Obama administration and the EPA have stepped up pressure on industry, utilities and states to curtail pollution. A 2007 Supreme Court ruling opened the door for the EPA to use its authority to regulate greenhouse gas emissions, resulting in new rules for vehicle emissions and, starting early next year, regulations for emissions from utilities.

In contrast to the previous administration, the Obama White House has also embraced the broad consensus within the scientific community that human activity, mainly through the emitting of carbon dioxide, has led to global warming.

All that will be up for scrutiny in the event of a Republican takeover of the House. The Republican Party has hammered at the administration's environmental agenda during the campaign. And rejecting the work of climate scientists has become increasingly common among conservatives.

Several key Republican Congressmen - most notably Rep. Darrell Issa (R-Vista), who could take over the chairmanship of the House Oversight and Government Reform Committee - have said they plan to investigate climate scientists they contend manipulated data to prove the case that human activity is contributing to global warming.

In a recent op-ed article, Rep. Fred Upton (R-Mich.), the ranking Republican on the powerful House Energy and Commerce Committee, declared that the GOP is preparing to "declare war on the regulatory state."

Congressional inquiries also offer a platform for energizing the GOP's conservative base in the run-up to the 2012 elections.

House Republicans like Issa and James F. Sensenbrenner Jr. (R-Wis.) of the Select Committee on Energy Independence and Global Warming have criticized the EPA for basing its endangerment finding on what they consider flawed research. Republicans assert that the science on climate change is not yet "settled," despite the vast global scientific consensus about its human causes. Specifically, Issa has said he wants to investigate the "Climategate" scandal that broke late last year, when hackers illegally obtained and released thousands of emails of climate scientists working with a leading British laboratory. Climate skeptics, among them House Republicans like Issa, contend that the sniping and harshness in some emails prove that climate scientists suppressed dissenting studies and that science showing the link between greenhouse gases and climate change is biased and tainted.

Several independent panels abroad and in the U.S. that reviewed the emails cleared the scientists of wrongdoing and found their research to be reliable. The EPA has also said that "nothing in the emails undermines the science upon which" the endangerment findings are based.

29. EPA Again Delays Decision on Tightening Smog Rules

For the second time in three months, Environmental Protection Agency Administrator Lisa Jackson put off deciding whether to adopt the tougher smog standards she had proposed. The move means Ms. Jackson won't be making a politically difficult decision ahead of the midterm elections. Her proposal to tighten the national air quality standard for ozone, a primary ingredient in smog that can lead to breathing problems, was strongly opposed by oil refiners (see below) and manufacturers as well as some Democrats who are running for office.

The decision had been expected before the election — Ms. Jackson's self-imposed deadline — but has been delayed indefinitely. "We will announce the final rule as soon as it is ready — this is an important and complex rulemaking and we're working to ensure we get it right," an EPA spokesman said.

The White House Office of Management and Budget eventually must review any rule changes.

In January, Ms. Jackson said tightening the nation's air-quality standard for ozone was "long overdue" and proposed setting the standard at between 60 and 70 parts per billion, down from 75 ppb currently.

The EPA says a standard of 60 ppb could cost businesses as much as \$90 billion annually in 2020 — for new emissions controls, higher electricity prices and more frequent auto inspections.

Smog isn't the only issue where the EPA is feeling pressure from business groups. Recently, 21 trade associations — including the U.S. Chamber of Commerce, the American Petroleum Institute and the American Farm Bureau — called on Congress to pass legislation during the lame-duck session that would bar the EPA from regulating greenhouse gases. The groups suggested doing so with an amendment to must-pass spending legislation.

30. Surprise: API Sees Problems with EPA's Ozone, GHG Proposals

American Petroleum Institute officials expressed concern that the US Environmental Protection Agency could implement "poorly conceived and inadequately researched" regulations in the next few months. They cited EPA's proposal to reduce allowable ozone levels under the National Ambient Air Quality Standards, its plan to begin regulating greenhouse gases under the Clean Air Act, and its decision to raise allowable ethanol limits in gasoline to 15% for 2007 or newer cars and light-duty trucks.

"We think EPA is responding to politics, particularly with E15," said Howard Feldman, API's regulatory and scientific affairs director. "On greenhouse gases, it may feel compelled to do something but it is trying to push a requirement through without adequate research. The states aren't ready. With ozone, it could have stayed with the most stringent standard ever promulgated, but has chosen not to."

He noted that API and the National Association of Manufacturers funded a study by the Manufacturers Alliance which found that EPA's proposal to reduce ozone non-attainment levels to 60-70 ppb from 75 ppb would cost 7.3 million jobs by 2020 and about \$1 trillion/year during 2020-30. "EPA typically reviews national ambient air quality standards every 5 years, yet it is gearing up to change the current regulations after only 2 years," he noted.

Khary Cauthen, API's federal relations director, said EPA is working from its own schedule, and not necessarily in response to a 2007 US Supreme Court decision, in proposing to begin regulating GHG emissions from stationary sources under the Clean Air Act early in 2011. "We

need climate regulation which is efficient and less costly," he maintained. "We believe the most efficient way to reduce emissions is incrementally through new technology instead of command-and-control measures by various government bureaucrats."

Prentiss Searles, API's downstream and industry operations manager, said that the association is considering its options, including a possible legal action, in the wake of EPA's Oct. 13 decision to issue a partial E15 waiver. He said API was disappointed that EPA did not wait until petroleum and automotive-industry sponsored studies by the Coordinating Research Council conclusively demonstrate whether higher ethanol levels can be safely used.

"Introduction of this new standard without proper research is good politics, but bad policy," he indicated. "EPA also seems to believe that a label on the pump will keep consumers from misfueling. We're not so certain that will be the case."

31. U.S. offers \$1.5 Billion Aid For Biofuel Production

The government is offering more than \$1.5 billion in assistance, from field to filling station, to bring next-generation biofuels to market, Agriculture Secretary Tom Vilsack has announced. Vilsack said the aid would assure renewable fuel consumption reaches 36 billion gallons by 2022, with the bulk of it coming from non-food sources such as grass, algae or woody plants.

During a speech, Vilsack also urged Congress to revive a biodiesel tax credit and to extend, possibly at a lower rate, an ethanol tax credit due to expire on Dec 31. He said a 54-cent-a-gallon tariff on imported ethanol was likely to continue but eventually be phased out.

Biofuels are a favorite cause in the U.S. Midwest, where the ethanol industry is concentrated. Vilsack announced the biofuels aid less than two weeks before mid-term elections when Republicans are expected to gain seats. Two-thirds of the most competitive U.S. House races are in rural districts.

Ethanol makers will produce about 13 billion gallons of the renewable fuel this year, chiefly from corn. A 2007 law requires annual use of 36 billion gallons from 2022 and reserves 21 billion gallons of it for "advanced" biofuels.

"Production of 36 billion gallons of biofuels will require that biorefineries dot the rural landscape," said Vilsack, who linked biofuels with rural prosperity. The number of biorefineries would have to double at a minimum to meet the biofuel goal. There are 204 plants in half of the U.S. states. The average plant employs 40-50 people and spends \$130 million a year on supplies, wages and transportation.

Vilsack listed four steps to expand biofuel production and usage:

- Launch of the Biomass Crop Assistance Program, which pays up to 75 percent of farmers' costs to grow and harvest biomass crops for use in nearby bioengineered or biopower plants. Forestland owners can qualify for payments on materials harvested from forest health or ecosystem restoration and used in bioplants. Cost is estimated at \$461 million over 15 years. Eligible crops include switch grass, miscanthus, woody poplar, jatropha, algae, "energy cane," and pongamia.
- Selection within 60 days of five biorefinery or bioenergy projects around the nation for loan guarantees to assist construction. An Agriculture Department official said \$650

million in guarantees were available and half a dozen projects were under review. USDA awarded two guarantees in 2009.

- Action to make \$281 million available to defray the cost of feedstock to bioplants that increase production. Vilsack said USDA intends to issue a regulation by year's end to make the money available.
- Matching funds to retailers to install 10,000 "blender" pumps and storage systems within five years. Blender pumps can dispense fuel with various amounts of ethanol beyond the 10 percent mix that is standard. The pumps and storage tanks cost around \$25,000 or more. Total cost could be \$250 million.

The largest U.S. ethanol maker, privately owned POET, said the biomass crop program will help launch ethanol made from cellulose. POET is modifying an Emmetsburg, Iowa, plant to use corn cobs and stalks in making ethanol.

Corn growers and ethanol industry officials hailed Vilsack's plan and said the vital first step was extension of ethanol's fuel-tax break, now 45 cents a gallon. They are ready to consider a lower support rate and reforms. Vilsack called for a "fiscally responsible short-term extension" and declined to suggest what the rate should be. Without the incentive, U.S. production will contract and plants will close -- "that's the reality," said Bob Dinneen of the Renewable Fuels Association.

The Air Transport Association of America, representing U.S. airlines, applauded Vilsack's announcement of a five-year agreement with the Federal Aviation Administration to develop aviation fuels from forest and crop residues and other "green" feedstocks. Fuel is a leading cost for airlines.

The Union of Concerned Scientists said ethanol tax incentives should be replaced with performance-based incentives keyed to lower pollution. Livestock groups, food makers, environmentalists and deficit hawks say ethanol incentives are wasteful and should end.

32. Money, Polls Rebuff California Green Law Challenge

Californians lean against ballot Proposition 23 to suspend the state's landmark climate change law, a new poll showed just shortly before the vote, after a week when donations by founders of Microsoft Corp and Google Inc and other technology executives poured in against the measure. Microsoft co-founder Bill Gates, Google co-founder Sergey Brin, Intel Corp co-founder Gordon Moore, "Avatar" filmmaker James Cameron, and the National Wildlife Federation in the last week donated millions to defeat California Proposition 23, state campaign finance records show. (Breaking News: Prop 23 was defeated by a large margin.)

The proposition would put on hold a state renewable energy target, a market for rights to trade greenhouse gases and many other steps adopted under the state's AB 32 climate change law. Its fate is seen as key for California's green business climate and a bellwether for the United States.

The Public Policy Institute of California poll found 48 percent of likely voters oppose Proposition 23 and 37 percent support it. Some 15 percent did not know. A Reuters/Ipsos poll showed similar numbers with a slightly higher percentage of undecided. The Reuters/Ipsos poll found 46 percent against the measure, 35 percent in favor, and 19 percent undecided ahead of the November 2 vote. A Field poll has shown similar results.

While Californians are known for their environmental leanings, the early campaign was dominated by business interests. Contributions from both sides have topped \$33 million, with oil companies backing Proposition 23 and venture capitalists who fund alternative energy companies against it.

The \$8 million surge against Prop 23 in the latest week took the "No" campaign above \$24 million, with donations by environmentalists and technology executives standing out.

Total "Yes" contributions top \$9 million, led by oil companies including Tesoro Corp, Valero Energy Corp and Koch Industries' Flint Hills Resources. The "Yes" contribution total has not changed much in the last week, and the campaign indicated disappointment with the poll results.

Proposition 23 would suspend the climate change law, until double-digit unemployment falls to 5.5 percent or less for four straight quarters. Proponents see it halting a dangerous rise in energy costs while opponents expect the proposition would gut the state's green business industries.

33. California Vote Has Canadian Green Partners On Edge

Canadian provinces moving to cut their greenhouse gas emissions are facing a setback if California, a key partner, decides the battle against global warming should wait for better economic times. British Columbia, Quebec, and Ontario plan to launch a carbon cap-and-trade market with California and New Mexico in 2012 -- a market scheduled to be joined later by Manitoba and at least four additional U.S. states. But Californians will vote in November on a ballot proposition to put the state's climate agenda on hold for years, and the Republican candidate in the gubernatorial race promises a pause as well.

California is the political force behind the Western Climate Initiative, a group of U.S. states and Canadian provinces that plan to set up a carbon trading market, and is by far the group's largest economy. So a step back by California would have both an economic and psychological impact.

"Losing California would be a major blow to the WCI and possibly to carbon trading systems elsewhere in North America ... and quite possibly to the developing international carbon market," Ontario Environmental Commissioner Gord Miller's office warned in a recent report.

Few observers predict the Canadian provinces will scrap their cap-and-trade efforts if California pulls out, but there is concern the loss of such a major player could hinder the market's liquidity and efficiency, possibly leaving it subject to wide volatility in prices. California greenhouse gas emissions traded on the WCI market would be larger than those of the three Canadian provinces combined.

"It certainly will be more challenging, but I think they will move forward... It's always more challenging when there are fewer of you," said Mike Gerbis, chief executive of the Delphi Group, an Ottawa consulting firm that helps Canadian companies develop environmental strategies.

Cap-and-trade systems, which are already in place in Europe and the U.S. Northeast, place a cap on pollution, but let larger emitters help meet their targets by buying credits from other companies and projects that avoid greenhouse gas emissions. The system's supporters say it sets a price for carbon, giving companies an added financial incentive to clean up and develop green technology. The global carbon market was worth an estimated \$144 billion last year.

Proposition 23, on the November 2 election ballot in California, would suspend the law at the heart of state's climate change agenda until California's unemployment rate falls from the current level of more than 12 percent to 5.5 percent or less for four consecutive quarters. That's something it has only done for relatively short periods since 1976.

Republican gubernatorial candidate Meg Whitman wants to pause the 2006 climate change law, AB33, for at least a year to "freeze it and fix it" to protect jobs. But she has also said that she opposes Proposition 23. Whitman trailed her Democratic opponent Jerry Brown 44 percent to 48 percent in a recent poll. Brown would not delay the climate change law. (Breaking News: Whitman was defeated by Brown.)

Canadian political officials are reluctant to weigh in publicly on California's domestic debate, or speculate on the vote's outcome, but they say are committed to the concept of cap and trade.

The Western Climate Initiative's members also include the states of Arizona, Washington, Oregon, Montana, and Utah. The group has pledged to reduce greenhouse gas emissions 15 percent below 2005 levels by 2020. Although the WCI's America footprint is regional, its Canadian members are home to 70 percent of Canada's population and produce about 50 percent of its carbon emissions. New Mexico's rules for participating in the WCI would for all essential purposes require California's involvement for it to push forward in 2012, state officials say.

34. Obama Agrees To Put Solar Panels On White House

President Barack Obama has agreed to put new solar panels on the White House roof for the first time since then-President Ronald Reagan withdrew an array in 1986. Energy Secretary Steven Chu announced that by around late May or early June next year workers will put solar panels that convert sunlight into electricity and a solar hot water heater on the roof of the White House. "It's been a long time since we've had them up there," he said at a clean energy conference at George Washington University.

The White House roof will get an estimated 20 to 50 panels that convert light into power. The systems, which will be put on top of the Obama family's living quarters, will generate more than double the amount of electricity used by the average home in Washington. The costs will be revealed once the Department of Energy selects a company to install the systems, but the administration said the systems should save about \$3,000 a year in fuel bills.

Environmentalists and some businesses criticized Obama when he did not push the Senate hard this year to pass a climate bill that may have spurred development of renewable forms of energy such as wind, solar and geothermal. Obama told Rolling Stone magazine in late September that future U.S. energy policy may have to be done in "chunks" rather than through sweeping legislation.

A renewable power bill faces an uphill battle next year, but Obama is taking steps to bring renewable power to the federal government.

Former President Jimmy Carter, a Democrat like Obama, was the first to put solar panels on the White House roof. Carter unveiled 32 solar thermal panels in 1979, during an oil crisis spurred by strife in oil producer Iran. Reagan, his Republican successor, then had the solar panels removed during repairs. The roof of the country's most famous residence has been panel-free ever since, although in 2003 former President George W. Bush quietly put panels on a

maintenance shed to generate power for the grounds and solar equipment to help heat the swimming pool and cabana.

The Obama administration has trumpeted solar. "Around the world the White House is a symbol of freedom and democracy," Chu said. "It should also be a symbol of American commitment to a clean energy future."

Last month, environmental activist and author Bill McKibben led a group of students from Maine in a van fired by biodiesel to bring one of the original Carter solar panels to the White House. They challenged Obama to re-install the panel, which still works. An official met the group, but the administration decided against putting it back up.

McKibben said the move to put solar on the White House could spark renewable energy in a similar way that First Lady Michelle Obama's White House vegetable garden boosted seed sales. "It could be a trigger for a wave of solar installations across the country and around the world," McKibben said.

35. Scenarios: Republican Election Impact On Climate Control

Republicans are poised to make big gains in the November 2nd congressional elections, putting them in position to reverse Democrats' drive for comprehensive climate control legislation. President Barack Obama's Democrats currently hold majorities in both chambers of the U.S. Congress. But a Republican takeover of either chamber, or even large gains by Republicans, will make it harder, or impossible, for Obama to win legislation imposing mandatory reductions of greenhouse gas emissions from smokestacks and tailpipes. That's especially true if next year's Senate is populated by more skeptics of human-induced global warming.

Even with tough opposition though, Obama will have the power to steer the country away from fossil fuels. And Republican bills that stray too far from Obama's energy and environment goals will surely be vetoed, with little chance of Congress mustering the supermajority needed to override him.

Here are some possible moves to look out for if Republicans do well at the elections.

A. EPA Regulation

Senator John Rockefeller, a Democrat representing the coal-producing state of West Virginia, is pushing for a vote during the "lame duck" session of Congress planned for mid-November that would suspend Environmental Protection Agency, or EPA, regulation of greenhouse gases, including those emitted from burning coal, for two years. Rockefeller says a two-year pause is needed to give the coal industry time to perfect clean technologies. Passage would prevent EPA from regulating pollution from large factories and utilities starting in January.

Forty-seven of the Senate's 100 senators voted in June to permanently strip EPA of its power to regulate greenhouse gas emissions.

If a vote isn't staged during the post-election session this year, Rockefeller is likely to have more Senate colleagues next year, especially Republicans, who would vote with him.

If it were to pass Congress, Obama could veto the bill.

B. Hit EPA Where It Hurts -- Its Wallet

If Republicans take control of the House of Representatives, they likely would try to stop EPA regulation of carbon by explicitly banning the use of EPA funds to administer such regulations. Annual EPA funding bills that Congress writes would be the avenue. Appropriations bills usually begin moving through the House around March or April.

Republicans could target other pending EPA Clean Air Act rules too, such as one setting limits on smog-producing ozone.

The fate of such efforts would depend on which party controls the Senate. And Obama would have the power to veto spending bills.

C. Utilities

Renewable Electricity Standard legislation has bipartisan support and is being pushed by Senate Energy and Natural Resources Committee Chairman Jeff Bingaman as a measure that could demonstrate Congress' ability to do something for the environment, even with more Republican lawmakers. The aim is to require big electric utilities to generate 15 percent of their power from renewable sources, such as solar, wind, geothermal and hydroelectric by 2021.

While the legislation is backed by environmentalists, critics say it would barely put a dent in the overall carbon emissions blamed for global warming. Nevertheless, an RES bill could fit nicely into Obama's latest energy and environment strategy that aims to set new policies in place "in chunks" rather than through comprehensive legislation.

Bingaman, who last month told reporters that comprehensive climate control legislation is dead for years, could push for an RES vote in the lame duck session if he has enough support.

D. The Return Of Cap And Trade?

If Democrats do better than expected in November, that could revive efforts in Congress for some sort of limited carbon control legislation. Senators John Kerry and Joseph Lieberman, an independent who caucuses with Democrats, could bring back their plan to impose a cap on carbon emissions from large electric utilities. Under their bill, pollution permits would be required for each ton of carbon emitted and those permits could be traded on a regulated market, thus setting a price on carbon that in the long-run would make alternative energy sources more competitive.

Their hope would be that with the congressional elections behind them, senators would be emboldened to take some tough votes and pass a bill that they could argue would supplant more distasteful EPA regulations.

E. More Chunks?

Senate Majority Leader Harry Reid, in a tough race for reelection in Nevada, could push an energy-environment bill this year or next, if he ekes out a win on November 2. He has talked about providing more federal incentives for electric cars, trucks fueled by natural gas, and steps to make buildings more energy efficient.

This, too, would fit well with Obama's call for "chunks" of bills rather than 1,000-page comprehensive legislation. Tackling global warming bit by bit also would demonstrate to international global warming talks that the United States is still in the climate control game.

Another chunk that could move is a bipartisan bill slashing emissions of sulfur dioxide, mercury and nitrogen oxide from smokestacks, including coal-fired power plants. The legislation could establish nationwide trading systems for sulfur dioxide and nitrogen oxide pollution permits.

Again, environmentalists, while backing all these steps, do not see them as being enough on their own to effectively tackle climate change. And Wall Street would not win the massive trading scheme for pollution permits that a comprehensive bill, like the one passed by the House in 2009, would provide.

F. Oil Drilling And Nuclear Power

A more Republican Congress is certain to see new moves to expand offshore oil drilling, despite the BP disaster in the Gulf of Mexico that resulted in the worst oil spill in U.S. history. Republicans also would be emboldened to fight off Democratic attempts to lift oil spill liability limits on companies.

The nuclear power industry also could see resurgence with a Republican win in November. The industry already has gotten some Democrats to back new federal incentives to increase nuclear generating capacity, which does not contribute to global warming but presents added concerns over waste disposal.

G. The Power Of The President

No matter how many Republicans populate Congress next year, Obama still has plenty of ways to steer the United States away from oil, coal and natural gas and toward cleaner energy. Some of it is symbolic, such as the installation of solar panels atop the White House after Republican President Ronald Reagan had them removed in the 1980s. Other steps have more bite: Just recently, the Interior Department awarded the nation's first federal licenses for solar plants to operate on public land. Interior Secretary Ken Salazar also signed the first lease for a major offshore wind project, which will be off the coast of Massachusetts.

The administration is moving to require cuts in greenhouse gas emissions from heavy trucks and buses, having already set rules in place requiring a 30 percent decrease in such pollution from cars and light trucks by 2016.

36. U.S., China Sign Agreement to Continue Cooperation on Pollution, Enforcement

On October 10th, U.S. Environmental Protection Agency Administrator Lisa Jackson and Chinese Minister of Environmental Protection Zhou Shengxian signed a memorandum of understanding pledging cooperation between the countries on a range of environmental issues. The memorandum, signed in Beijing during Jackson's first official visit to China, establishes a joint committee co-chaired by Jackson and Zhou that will review progress made as well as plans for future cooperative endeavors, EPA said in a news release. The committee will meet once every two years, with Jackson to host the first meeting in Washington on November 16–17th.

Under the new agreement, EPA said it would continue to work with China's Ministry of Environmental Protection to prevent and to manage air and water pollution as well as pollution from persistent organic pollutants and other toxics. EPA also said it will work with China to manage hazardous and solid waste and to develop, implement, and enforce environmental laws.

The memorandum is a renewal of a 2003 MOU that expired in 2008.

In an October 12th speech to students at Sun Yat-sen University in Guangzhou, Jackson listed climate change; urban air quality; clean water; electronic waste; and "building strong environmental institutions" in governments, corporations, and academia as among her priorities. She urged the students to work toward environmental solutions.

37. Canada Sets Greenhouse Gas Emissions Standards for 2011-2016 Model Years

On October 1st, Canada's environment minister unveiled final regulations to impose progressively more stringent greenhouse gas emissions standards for new passenger automobiles and light trucks for the 2011-2016 model years. The regulations, which largely mirror U.S. standards, will provide greater certainty to the automotive sector while requiring significant technological improvements to vehicles, Minister Jim Prentice said in a statement.

"Canada has worked closely with the U.S. government to establish common North American standards for regulating GHGs [greenhouse gases] from new light-duty vehicles, and we look forward to further collaboration," he said.

The regulations are expected to reduce vehicles' greenhouse gas emissions in the 2016 model year by 25 percent from 2008 levels. They apply to companies that manufacture or import for sale in Canada new passenger automobiles and light trucks for the 2011 and subsequent model years.

They establish fleet average emissions standards aligned with the U.S. national fuel economy program, with special provisions for the 2011 model year; create an emissions credit trading system; and include mandatory annual reporting of fleet average emissions performance. Draft standards were published in April.

The new standards are expected to generate a cumulative reduction of 92 million metric tons of carbon dioxide equivalent and cumulative net benefits of C\$9.2 billion (\$9 billion) over the lifetime of the vehicles produced in the 2011-2016 model years.

The standards represent a key element in meeting Canada's commitment, made in the international Copenhagen Accord of December 2009, to reduce greenhouse gas emissions by 17 percent from 2005 levels by 2020, Prentice said. Automobiles and light trucks account for about 12 percent of Canada's overall emissions of greenhouse gases.

Prentice also released on October 1st a notice of intent committing the Canadian government to continue working with the United States on even more stringent standards for the 2017 and later model years. President Obama the same day issued a similar notice indicating plans to implement emissions reductions over the 2017-2025 model year period.

For the 2011 model year, the regulations require companies to establish a unique fleet average standard based on the size and number of vehicles sold. They require the inclusion only of vehicles manufactured after the date the regulations come into force, but companies may elect

to include all vehicles in the model year. Companies unable to meet the standard may purchase credits from the federal government at a rate of C\$20 (\$19.60) per metric ton of carbon dioxide-equivalent emissions.

For the 2012 and later model years, companies must comply with unique fleet average emissions standards for each model year that become more stringent over time. The regulations also establish, from 2012 on, separate limits for tailpipe emissions of nitrous oxide and methane.

The emissions trading system established in the regulations will provide credits to companies that outperform the annual fleet average standard for a given model year. The credits can be used to offset failure to meet the standard in a given model year. In general, the regulations give emissions credits a five-year life span, permit them to be traded, and require that deficits be offset within three model years.

Special provisions recognize non-conventional technologies to reduce greenhouse gas emissions, such as reducing air conditioning refrigerant leakage or improving the efficiency of air conditioning systems. A special incentive is provided for advanced technology vehicles, including electric, plug-in hybrid, and fuel cell vehicles.

The regulations include early adopter credits for companies that exceed specified standards for the 2008-2010 model years, special rules for companies selling small volumes of vehicles, and treatment of dual-fuel vehicles that is consistent with U.S. regulatory approaches.

38. Canada to Further Tighten Greenhouse Gas Emissions Rules for Vehicles

On October 16th, Environment Canada published formal notice of its intent to develop more stringent greenhouse gas emissions standards for new passenger automobiles and light trucks for the 2017 and later model years.

Nine days later, on October 25th, the agency issued a consultation document outlining proposed elements of future regulations designed to reduce greenhouse gas emissions from on-road heavy-duty vehicles, starting with the 2014 model year. Environment Canada said the consultation is “intended to seek early stakeholders' views on potential elements in advance of developing the proposed regulations,” which it hopes to publish in mid-2011. Final regulations for heavy-duty vehicles are expected to come out in December 2011.

The regulations for both light-duty and heavy-duty vehicles will be developed in collaboration with the United States. The standards for passenger cars and light trucks also will be harmonized with California's standards for model years 2017–2025, Environment Canada said in a notice published in the Canada Gazette, Part I.

The department said development of the new regulations would take into account technological, environmental, and economic factors, including projected composition of the future Canadian new vehicle fleet; cost, emissions reduction potential, and availability of conventional and emerging technologies; the need for flexibility to minimize the compliance burden on industry; and the need for regulatory mechanisms to continue encouraging development and deployment of technologies including electric vehicles, plug-in hybrid vehicles, and fuel cell vehicles.

The proposed regulatory framework for heavy-duty vehicles would apply to any entity that manufactures heavy-duty vehicles or engines in Canada or imports them into the country. They

would not apply to owners or operators of the vehicles, Environment Canada said in the consultation document.

The proposed rules would cover a range of on-road heavy-duty vehicles, including full-size pickup trucks; combination tractors used to haul commercial trailers; vocational vehicles such as freight, delivery, service, cement, garbage and dump trucks; and buses.

Environment Canada said it is working with the U.S. Environmental Protection Agency to develop a "common approach" to regulate greenhouse gas emissions from heavy-duty vehicles, including an emissions testing protocol.

The proposed framework from Environment Canada came the same day that the U.S. EPA and the National Highway Traffic Safety Administration announced a proposal to set fuel economy and greenhouse gas emissions standards for medium- and heavy-duty trucks. The U.S. standards would apply to vehicles in model years 2014 through 2018 and would cut fuel use and greenhouse gas emissions of new trucks by as much as 20 percent by 2018, the agencies said. They also would result in unspecified reductions in emissions of nitrogen oxides, particulate matter, and other pollutants.

39. Ottawa Urged To Beef Up Oil Sands Enforcement

A trio of environmental groups has called on Ottawa to beef up enforcement of legislation in the Alberta oil sands, saying unchecked development is harming Canada's international reputation. In a report, Environmental Defense, Equiterre and the Pembina Institute said lax federal standards and poor policing are causing inter-provincial friction as well.

"Despite occasional 'tough talk' and vague statements about the need for improvements, the federal government has failed to meet its responsibility to enforce existing federal laws and to follow through on promises for new ones," the groups said in the report, entitled "Duty calls: Federal responsibility in Canada's oil sands."

The oil sands represent the largest crude deposits outside the Middle East, and are a growing source of U.S. oil supply. As the industry has worked to expand markets, environmentalists have bolstered campaigns to warn of the impact on air, land, water and local communities.

The industry has said it is spending hundreds of millions of dollars to improve environmental performance in areas such as water use and tailings pond reduction.

The study urged more stringent enforcement of federal environmental assessment, endangered species and fisheries laws as well as binding caps on air pollution in the Canadian Environmental Protection Act. It acknowledged Environment Minister Jim Prentice's move three weeks ago to form a scientific panel to study the quality of water monitoring for the Athabasca River in Alberta's oil sands region, following questions about the reliability of a government-supported, industry-funded monitoring program. But it said that the government had been largely absent in dealing with environmental issues surrounding the oil sands.

"By allowing the oil sands problems to grow in the absence of clear limits to protect the environment, the federal government is instead setting up the industry for even greater controversy and risk in the future," the report said.

40. Canadian Ministers Reach Agreement On Air Quality Management System

On October 20th, Canada's federal, provincial, and territorial environment ministers agreed to establish a national air quality management system that will include more ambitious air quality standards and consistent rules for industrial emissions. The "historic" consensus will lead to a system that includes regionally coordinated air sheds within individual provinces and territories, as well as public reporting and monitoring mechanisms, federal Environment Minister Jim Prentice told reporters in a teleconference at the conclusion of the annual meeting of the Canadian Council of Ministers of the Environment. The air quality management system will also facilitate discussions with the United States on transboundary air pollution issues, he said.

"We wish to see all of the main elements in place in 2011, regulations developed in 2012, and implementation to start in 2013," he said. The agreed-on timing for development of the new system represents a "significant acceleration" from the original time lines that had been discussed, he said. Each government will still have to procure any required approvals within its own jurisdiction, he said.

41. La Nina To Build, Dictate U.S. Winter Weather: NOAA

A strengthening La Nina weather phenomenon will grip the United States this winter, bringing warmer, drier weather across the South and cooler, moist conditions in the far northern and western parts of the country, government forecasters have said. The National Oceanic and Atmospheric Administration said a "moderate to strong" La Nina looks to become one of the strongest on record throughout the winter -- making it the most dominant factor influencing weather across the country.

"I do believe that really the story of this winter is likely to be the dry conditions across the South," said Mike Halpert, deputy director of NOAA's Climate Prediction Center. "It's something we've seen very consistently with many of these La Ninas in the past," he told reporters, adding the dry weather could set the stage for drought or near drought-like conditions early next year.

The weather anomaly could be troublesome for the South, where the potential of drought conditions developing would threaten U.S. crops as farmers sow winter wheat and get fields ready for 2011 spring plantings of grains and cotton.

The winter outlook, covering December through February, was uncertain for the Northeast, the world's largest heating oil market, and the Midwest, where residents depend mostly on natural gas for home heating.

NOAA said the Central, Northeast and Mid-Atlantic regions each have an equal chance of temperatures and precipitation being above, near or below normal this winter, but the agency cautioned its forecast could change.

U.S. consumers already are expected to see home heating bills rise 3 percent to \$986 this winter due to higher fuel prices and colder weather in the Northeast, the U.S. Energy Information Administration said recently. EIA also expects higher costs for heating oil, natural gas, electricity and propane.

NOAA said that, while increased energy demand is forecast this winter in the Northeast, it reflects a return to a more normal seasonal temperature after the region was hit by warmer weather, despite several large snowfalls, last year.

La Nina, which means "little girl" in Spanish, is associated with cooler-than-normal water temperatures in the Equatorial Pacific, unlike its sibling El Nino, which has the opposite effect.

In the hydro-electric dependent U.S. Pacific Northwest, weather is expected to be colder and wetter than average this winter. La Nina often brings lower-than-average temperatures and increased mountain snow to the Pacific Northwest and western Montana during the winter months.

Weather forecasters have predicted colder and wetter than average conditions in the Northern Plains, which could lead to more storms and flooding. In the citrus-producing state of Florida, drier than average conditions, which could lead to an above normal wildfire season, are expected.

42. GM To Repay U.S. \$2.1 Billion, Reduce Debt By \$11 Billion

General Motors has announced that it was prepared to purchase \$2.1 billion of preferred stock held by the U.S. Department of Treasury upon completion of its public offering. The move marks another step by the automaker to repay \$49.5 billion in federal bailout funds.

The automaker also outlined a series of other actions that include a new round of contributions to U.S. pension plans and repayment of \$2.8 billion outstanding on a note provided to the UAW Retiree Medical Benefits Trust. The automaker previously repaid \$6.7 billion in outstanding government loans, and just over \$700 million in dividends and interest.

After the government's \$2.1 billion preferred shares are purchased, GM will have repaid \$9.5 billion to the federal government.

43. Chevy Volt, Nissan Leaf Among Green Car Finalists

The Chevy Volt and the Nissan Leaf, two electric-powered vehicles that will go on sale in the United States later this year are among the five cars named on Thursday as finalists for 2011 Green Car of the Year. Ford Motor Co's new Fiesta, which is the only of the five not to use electric drive, is in the group because it can achieve 40 miles per gallon in highway driving, the Green Car Journal said in announcing the finalists.

The winner will be revealed at the Los Angeles Auto Show in mid-November.

Two hybrid versions were named, the Hyundai Sonata, and Lincoln MKZ.

Ron Cogan, editor and publisher of Green Car Journal, said the finalists "reflect an auto industry in transition. It wasn't long ago when electric drive was a novelty. Now, it's expected that auto manufacturers will include electric drive in some form among their model offerings."

Two of the models are designed to primarily use electric drive -- the Nissan Leaf and the Chevrolet Volt. The Volt is the much-anticipated General Motors Co plug-in vehicle that is designed to run on electric power for up to 40 miles and then rely on a gasoline engine to charge the battery. The Nissan Motor Co Leaf is a plug-in that runs fully on electric power. The Leaf will, on a full charge, run for 100 miles or so, depending on road and weather conditions, says the Japanese automaker.

Both the Leaf and the Volt will be available in some areas of the United States later this year.

The two hybrids are from Korea's Hyundai Motor Co Sonata and Ford's luxury brand Lincoln MKZ. Ford says the Lincoln MKZ Hybrid has the best fuel economy ratings for luxury sedans in North America, at 41 mpg for city driving and 36 mpg on the highway. The Sonata sedan will be the first Hyundai hybrid for the U.S. market. Hyundai says the sedan will get 36 mpg in city driving and 40 mpg on the highway.

All five of the finalists are 2011 models.

44. Toyota To Show New Prius Model In January

Toyota Motor Corp will show off a coming variant of its Prius hybrid in January as it seeks to distance itself from a costly safety crisis that has weakened sales and damaged its once-sterling reputation. Don Esmond, Toyota Motor Sales USA senior vice president for automotive operations, would not say how the upcoming model will differ from the automaker's current market-leading Prius.

The Prius dominates the market for hybrids, accounting for 70 percent of global sales, and Toyota seeks to expand the Prius into a "family" of models.

"We will introduce the next member of the Prius family at the 2011 auto show here in Detroit in January," said Esmond, speaking to the Automotive Press Association at the Detroit Athletic Club. "It's an all-new model with more comfort, styling, versatility, and while still retaining the heritage of the original Prius," said Esmond.

Esmond said the Toyota brand will introduce seven new or updated products in 2011.

Tesla Motors said it has reached a \$60 million deal with Toyota to develop the powertrain for an electric version of the Rav4 sport utility vehicle. Working with Tesla on electric vehicles is "a step in the right direction" for Toyota, Esmond said, but the company will remain focused on hybrids when it comes to alternatives to conventional gasoline vehicles.

Esmond said that Toyota's North American auto plants are now operating at 90 percent of capacity, and will reach full capacity next year. In 2011, Corolla sedans will roll off a new assembly plant in Mississippi, the 10th Toyota plant in North America, Esmond said.

A Japanese newspaper reported that Toyota is considering halting exports from Japan of the Corolla. The sedan is now made in 15 countries and the automaker has been considering halting exports from Japan in part on a weak yen.

U.S. auto sales are on pace for October to be the best month of 2010, a sign that the U.S. economy is slowly recovering, Esmond said. If sales continue through the month at the current pace, October's sales rate on an annualized basis will be 12 million to 12.3 million vehicles, he said. That would eclipse the highest monthly sales so far this year. In March, 11.8 million units sold, on a seasonally adjusted annualized rate.

For 2011, Toyota has said it expects U.S. light vehicle sales to be around 12.3 million vehicles.

45. EPA, DOT Propose New Fuel Economy Labels

As a new generation of cars and light trucks start appearing on the market, the U.S. Department of Transportation (DOT) and the U.S. Environmental Protection Agency (EPA) are jointly proposing changes to the fuel economy labels consumers see on the window of every new vehicle in dealer showrooms. The proposed rule seeks public comment on label design options and related issues.

The goal of the new fuel economy labels is to provide consumers with simple, straightforward energy and environmental comparisons across all types of vehicles, including electric vehicles (EV), plug-in hybrid electric vehicles (PHEV), and conventional gasoline-powered vehicles.

DOT and EPA are looking to provide enhanced information on efficiency and environmental performance – including information about air pollutants, such as smog, that impact public health – to consumers. The Energy Independence and Security Act of 2007 specifically calls on EPA and DOT to rate available vehicles according to fuel economy, greenhouse gas emissions and smog forming pollutants.

EPA and DOT are proposing two new label designs for comment. One label design prominently features a letter grade to communicate the vehicle's overall fuel economy and greenhouse gas emissions performance. The new design will also provide consumers with an estimate of the expected fuel cost savings over five years compared to an average gasoline-powered vehicle of the same model year.

The second proposed label retains the current label's focus on miles per gallon (MPG) and annual fuel costs, while updating the overall design and adding the required new comparison information on fuel economy and emissions.

Both proposed label designs expand on the content of the current label by including new information on fuel consumption, tailpipe carbon dioxide (CO₂) emissions and smog-related emissions. The new labels would provide information on a new web-based interactive tool that can also be accessed by smart phone. This tool would allow consumers to personalize the information about a vehicle's performance.

For EVs and PHEVs, the agencies are proposing to show energy use by translating electricity consumption into miles per gallon equivalent. The proposed label designs for EVs also include energy use expressed in terms of kilowatt-hours per 100 miles.

DOT and EPA encourage public feedback on all aspects of the proposal, including which designs or design features would best help consumers compare fuel economy, fuel costs, and environmental impacts of different vehicles and across different vehicle technologies.

The agencies are proposing that the label only present information on vehicle tailpipe emissions. Upstream emissions, which are associated with electricity generation or refining fuel, would not be displayed on the label. EPA and DOT propose to develop a website to provide consumers additional information on non-tailpipe emissions, while taking comment on other approaches to provide consumer information about lifecycle emissions across various vehicle fuels and technologies. The agencies are aiming to complete the rule in time to allow the new label to appear on the windows of as many 2012 model year vehicles as possible.

DOT and EPA are providing a 60-day public comment period that begins with the proposal's publication in the Federal Register.

46. PM_{2.5} Responsible For 9,000 Premature Deaths In California Each Year

Approximately 9,000 people in California are estimated to die prematurely each year as a result of exposure to fine particle pollution, according to a new report² issued by the California Air Resources Board.

The ARB report and its methodology were based on recent science assessments completed by the U.S. EPA. These assessments were required as part of the federal agency's periodic review of the national air quality standards for fine particle matter, or PM 2.5. The review, undertaken as a public process every five years, was completed this spring and included peer review by the federal Clean Air Scientific Advisory Committee.

As a result of this review, the U.S. EPA concluded that there is a causal relationship between exposure to fine particle pollution and premature death. A causal relationship indicates the highest level of scientific certainty.

This initial U.S. EPA review was followed by a related risk assessment report released in June that estimated premature deaths nationwide from exposure to fine particulate pollution. The U.S. EPA and its Clean Air Scientific Advisory Committee considered evidence from multiple peer-reviewed studies, and the estimates of premature death were based on a key nationwide study of exposure to fine particle pollution involving about 500,000 people and 116 U.S. cities, including Los Angeles and Fresno.

ARB used the same methodology and risk factors the peer-reviewed U.S. EPA report used and applied it to the entire state, drawing on California-specific data from 90 fine-particulate monitoring stations to estimate the number of premature deaths that can be linked to this pollution.

ARB's report estimated that 9,200 premature deaths in California are associated with fine particulate pollution on an annual basis, with a statistical range from 7,300 to as high as 11,000 premature deaths each year. California has the most extensive particulate monitoring network in the nation.

Fine particle pollution, smaller than 2.5 microns is emitted by a variety of sources including diesel engines and is particularly dangerous since it penetrates deep into the lungs where it can enter the bloodstream and harm the heart and other organs. Fine particulate pollution poses an especially critical health danger for children, the elderly, and people with existing health problems. While it is recognized that exposure to PM_{2.5} is linked to cardiovascular disease, the report focused only on premature deaths and did not estimate increased hospitalizations or other health impacts.

ARB efforts to reduce fine particulate pollution are driven by the need to protect public health and also by federal clean air requirements that mandate aggressive action to meet national clean air standards. Missing compliance deadlines could result in the loss of federal transportation funds and other federal sanctions.

In 1998, ARB declared particles in diesel exhaust a Toxic Air Contaminant, a designation that required the Board to take measures to reduce the risk. The Diesel Risk Reduction program

² "Estimate of Premature Deaths Associated with Fine Particle Pollution in California Using the United States Environmental Protection Agency Methodology"

was instituted by ARB in 2000. Since then ARB has adopted many regulations to reduce diesel emissions including those from trucks, construction equipment, cargo handling equipment at ports and rail yards, transit buses and trash trucks among others.

In 2006, voters approved Proposition 1B, a \$1 billion bond initiative to transition to cleaner technologies and clean up emissions from school buses, heavy-duty trucks and diesel equipment. Additionally, up to \$140 million annually is available through the Carl Moyer grants which are designated for early or extra emission reductions. There is also a low cost truck loan program under AB 118 to help truckers access financing before regulatory deadlines.

47. California Adjusts Emissions Data Supporting Off-Road Diesel Equipment Rule

On August 31st, California air quality officials released new emissions data for off-road diesel engines at a workshop at the California Air Resources Board offices in El Monte, Calif., the data project far lower emissions from heavy-duty, in-use construction and industrial equipment than was originally estimated.

Todd Sax, chief of the CARB's Mobile Source Analysis Unit, told reporters that the agency overestimated the level of fuel used by the equipment by about 75 percent. CARB's new analysis considers fuel use data not available when it first wrote the regulations, which are designed to reduce emissions of nitrogen oxides and particulate matter from diesel equipment used in construction, mining, and other industries. It also considers the impact of the recession on the construction industry, Sax said.

The agency's latest analysis of the emissions renewed the Associated General Contractors of America call to repeal the regulations. The group says the rules are no longer needed to meet the state's federal air quality goals. The contractors association petitioned CARB earlier this year to repeal the regulations, citing a report it commissioned that alleged the agency had dramatically overestimated emissions from the diesel equipment. As a result, CARB agreed to revisit its emissions inventory, which is based on the number of pieces of equipment in use, the number of hours the equipment is operated, and fuel use estimates. The agency had planned to reconsider the regulations at its September 22nd governing board meeting, but postponed the hearing until November.

In a news release, AGC said CARB's new analysis indicates emissions of nitrogen oxide from the off-road diesel fleets "will fall well below the levels the state needs to meet its emissions reductions targets for each and every year through 2025." The group also said particulate emissions will stay below the agency's targets through 2015.

CARB spokesman Stanley Young told the press that agency is not considering repealing the regulations. Emissions reductions from off-road equipment are still needed to meet the state's federal air quality requirements and protect public health, he said. Initially set to be phased-in over a 15-year period beginning in March, the regulations require the replacement or retrofitting of diesel equipment to reduce nitrogen oxide and particulate emissions. CARB eased the regulations in July 2009 to give small- and medium-sized businesses relief from the 2011-2012 requirements and allow them to earn permanent credits for fleet upgrades. In February, the agency postponed the March 1 effective date of the regulations, saying it would wait until it receives a Clean Air Act preemption waiver from the Environmental Protection Agency to enforce the rules.

48. Cummins Commences Production Of Tier 4i/Stage III B Engines

Cummins has achieved an industry milestone by commencing production and supply of the first EPA Tier 4 Interim and EU Stage IIIB certified engines and aftertreatment for early installation by off-highway equipment customers. The latest-generation QSB6.7 and QSL9 engines are built at the Cummins Rocky Mount plant in North Carolina for customers in North America and East Asia, with the Darlington plant in the UK supplying European customers.

The new emissions regulations take effect Jan. 1, 2011, for engines over 173 hp (129 kW), with Particulate Matter reduced by 90 percent and Oxides of Nitrogen by almost 50 percent compared with the current Tier 3 and Stage IIIA standard.

The QSB6.7 engine is certified to a higher power output of 300 hp (224 kW), while the QSL9 engine increases output up to 400 hp (298 kW). The 6.7-liter and the 9-liter engines have received EPA and EU emissions certification as integral systems with Cummins Particulate Filter exhaust aftertreatment enabling integration and packaging efficiency.

Before finalization of the engine build specification for production release, the QSB6.7 and QSL9 underwent an extensive series of field tests on commercial operations to validate performance and in-service reliability. The engines achieved up to 5 percent improved fuel efficiency and faster engine response, boosting machine productivity.

The 6.7-liter and 9-liter engines are among the most widely used in the off-highway industry within their power range. Over 30 power ratings will be available for Tier 4 Interim and Stage IIIB applications, with a wide range of installation configurations applicable to all types of construction, agricultural and industrial equipment.

In addition to approval by the U.S. Environmental Protection Agency (EPA) and European Union (EU) regulatory agencies, the QSB6.7 and QSL9 engines have also received California Air Resources Board (ARB) certification to enable 50-state compliance.

49. J.D. Power Finds Increasing Problem Rates In US Truck Engines

Following two rounds of revisions in emissions standards since 2004, problem rates for heavy-duty truck engines in 2010 are nearly twice as high, on average, as rates for engines manufactured prior to these emission changes, according to the recently released J.D. Power and Associates 2010 U.S. Heavy-Duty Truck Engine and Transmission Study. The study finds that 51 percent of owners of one-year-old heavy-duty truck engines in 2010 report experiencing some type of problem. However, prior to the changes in emissions standards that were implemented in 2004 and 2007, only 26 percent of owners of two-year-old truck engines experienced some type of problem.

“Clearly, the emissions requirements have put a burden on engine manufacturers, and the result is that today’s engines—although environmentally improved—are more problematic,” said Todd Markusic, senior director of the commercial vehicle practice at J.D. Power and Associates. “Given the quality issues that arose from the last emission standards redesign in 2007, the new emissions standards in 2010 will no doubt create another challenge for engine manufacturers, but those that best handle the integration of these new standards will have a competitive advantage.”

The study also finds that the number of engine problems increases by 55 percent, on average, after 50,000 miles of usage—up to 80.5 problems per 100 vehicles (PP100) from 51.9 PP100. As a result, satisfaction with engines decreases by nearly 40 points (on a 1,000-point scale) after 50,000 miles.

Now in its 14th year, the study measures customer satisfaction with engines and transmissions in one-year-old heavy-duty (Class 8) trucks. Engines from Detroit Diesel and Navistar perform particularly well.

The most-commonly reported engine problems are issues with electronic control module calibration (cited by 14 percent of owners) and exhaust gas recirculation (EGR) valve (13 percent).

The 2010 U.S. Heavy-Duty Truck Engine and Transmission Study is based on the responses of 1,682 primary maintainers of one model-year-old heavy-duty (Class 8) trucks. The study was fielded in February and March 2010.

50. Western Lawmakers Push Back On EPA Farm-Dust Regulations

A bipartisan group of western lawmakers is pushing back against EPA efforts to toughen regulation of farm dust. The 75 lawmakers — led by Rep. Cynthia Lummis (R-Wyo.) — are concerned about a draft assessment EPA released in July that would establish the guidelines for regulating particulate matter emissions, including farm dust.

The July draft policy assessment “lays the foundation for establishing the most stringent and unparalleled regulation of dust in our nation’s history,” the lawmakers wrote EPA Administrator Lisa Jackson. “We urge the EPA to refrain from going down this path.” There are 13 Democratic cosigners to the letter.

The lawmakers are questioning scientific studies that they say are “at best ambiguous in support of tightening the existing” particulate matter regulation.

Current EPA regulations “have been very difficult and expensive for industries in the Western part of the country to attain, including agricultural and other resource-based industries,” the lawmakers wrote. “The possibility of those same industries having to meet a standard that is twice as stringent causes us great concern, especially when a revision is not required by science.”

The lawmakers want EPA to maintain the current standard for farm dust to preserve economic stability.

51. Agriculture Secretary, Producers Confident On Ethanol Hike

U.S. regulators are likely to approve a higher blend of ethanol in U.S. gasoline shortly, an ethanol producers group and the top U.S. agriculture official each said, and the new fuel mix could be selling at the pump by next spring. Ethanol companies and corn traders are anxiously awaiting a decision from the Environmental Protection Agency -- expected within weeks -- for a waiver to allow cars built in 2007 and after to burn regular gasoline blended with ethanol levels of 15 percent, a fuel that would be known as E15.

The ethanol blend level now is 10 percent.

While proponents have long argued that American automobiles can handle the higher blend without significant damage to the engine, the decision to move to E15 has been delayed twice to allow for more testing.

Growth Energy, an industry group representing a coalition of ethanol producers that petitioned for the higher rate, said it anticipated a positive outcome. The higher blends could be available by March or April of next year assuming the EPA makes two approvals for use of E15 in 2001 cars and newer models by the end of the year, the spokeswoman said.

Asked about the ruling, Agriculture Secretary Tom Vilsack told reporters that he expected the EPA to approve higher blends for some cars by early-to-mid October, in line with a target that the agency itself had given several months ago. "I expect that they will see that E15 is an appropriate fuel for some vehicles. I don't know if they will necessarily say it is appropriate for all vehicles, but for some vehicles which will help us expand the market," he said.

Jackson, the EPA chief, told Growth that the first phase of higher blend testing on cars, which the Department of Energy is conducting, is on schedule and should be completed by the end of September. Jackson said the EPA should decide shortly after that testing is completed whether to allow E15 in 2007- and later-model cars.

Testing on vehicles built between 2001 and 2006 is on track to be completed by the end of November, Jackson said. "At which point we expect to make a decision on a waiver that would cover 2001 to 2006 model year vehicles." she told Growth.

The auto industry has urged the government to conduct full tests for E15 because it is worried that the fuel could corrode fuel lines and damage engines. But ethanol producers are suffering from a glut of the fuel and say they need approval for the higher blends to help draw down supply. They say the oversupply has been created by government mandates, first issued when George W. Bush was president, that require increasing amounts of ethanol to be blended in the overall fuel supply.

The Renewable Fuel Standard requires energy companies to blend 15 billion gallons of corn-based fuel a year into the gasoline supply by 2015, up from 12 billion gallons this year.

52. Canada Adopts Final Renewable Fuel Regulations

Canada has finalized the federal Renewable Fuels Regulations which require gasoline producers and importers to have an annual average renewable fuel content of at least 5% based on the volume of gasoline produced and imported. The 5% requirement will come into force on December 15, 2010.

The Regulations also include provisions requiring an average 2% renewable fuel content in diesel fuel and heating distillate oil, but do not specify a coming into force date for this requirement. Natural Resources Canada is assessing the technical feasibility of renewable diesel fuel use under a range of Canadian conditions through their National Renewable Diesel Demonstration Initiative (NRDDI). Results are expected to be released this fall.

The provisions of the Regulations also include a trading system and administrative, compliance and enforcement provisions such as record keeping and reporting. The administrative

requirements apply to petroleum fuel producers and renewable fuel producers, importers, blenders and sellers of fuels for export.

The Renewable Fuels Regulations are a key initiative in support of the Government's commitment to reduce Canada's total greenhouse gas emissions by 17% from 2005 levels by 2020. The Regulations are estimated to result in an incremental reduction of GHG emissions of about 1 MT CO₂e per year.

Environment Canada said it expects the content requirement to cost the Canadian petroleum refining sector C\$768 million (\$743 million) over the next 25 years. That includes an estimated C\$108 million (\$104 million) in investments to produce gasoline stock for blending with the renewable fuels, C\$214 million (\$207 million) in incremental operational and maintenance costs, and C\$345 million (\$334 million) in additional transportation costs.

Those costs are expected to be offset by as much as 10 percent by increased sales volume due to the lower energy content of ethanol-blended gasoline and there will also be positive impacts on the renewable fuel production sector, including more jobs, the department said in a regulatory impact analysis statement accompanying the finalized regulations in the September 1st issue of the Canada Gazette, Part II.

The regulations' impacts on industry and consumers will be "relatively uneven" across the country because some provincial jurisdictions already have renewable fuel content requirements, the department said. Cost increases will be minimal in British Columbia, Saskatchewan, and Manitoba, where ethanol-blended gasoline is already available and highest in Alberta, Quebec, and the Atlantic provinces, which had not previously imposed renewable energy mandates.

The regulations contain exemptions from the 5 percent requirement for special-use fuels, including exports; aviation; scientific research; competition vehicles; kerosene used in heaters, lamps, or stoves; military combat equipment; feedstocks used to produce chemicals; and gasoline sold or delivered to Newfoundland and Labrador, the Northwest Territories, Yukon, and Nunavut. They also exempt producers and importers of less than 400 cubic meters of fuel per year.

The regulations had been the subject of extensive consultations since 2006 with industry, provincial and territorial governments, and environmental groups, as well as discussions with the U.S. Environmental Protection Agency to better understand the process through which it developed its renewable fuel standard (RFS), Environment Canada said. "The general approach adopted under the regulations is based on the U.S. RFS, with specific design requirements to take into consideration the Canadian context," the department said.

53. U.S. Seen Losing Renewable Energy Race To Asia

Several Asian countries in addition to China could soon challenge the United States in the race to build a renewable energy industry if Washington doesn't provide more incentives for its domestic business, venture capitalists and others told a Congressional hearing. The United States, once the world's leader in energy innovation, is now also "challenged and threatened" by India, South Korea, Malaysia and the Philippines, because it is not providing enough incentives to fund development of alternative energy and to increase demand, Ravi Viswanathan, a partner at New Enterprise Associates told a hearing chaired by U.S. Representative Ed Markey.

China already has more than half of the world's market for solar panels and its companies are looking to export wind turbines.

The Senate failed to pass a climate bill this year that would put a price on carbon emissions, so it must pass laws that would create demand for alternative energy or fall further behind, experts told the panel.

Senator Jeff Bingaman introduced a bill this week that would require utilities to generate minimum amounts of alternative energy through a federal Renewable Electricity Standard, or RES, but the legislation faces an uncertain future.

Mark Fulton, Deutsche Bank's global head of climate change investment research, said that many states in America have developed their own renewable power mandates, but "in most cases these do not have enforcement measures nor penalties to ensure that they are financed."

Not everyone agrees that a federal RES is a good idea. James Sensenbrenner, the ranking Republican on the House Select Committee on Energy Independence and Global Warming, said mandates for alternative power could ultimately harm the industry by picking winners that might not ever become cheap, reliable sources of energy. Fulton countered that the oil and gas industries receive far more subsidies than alternative energy and that alternative energies will fall in price as they develop.

Uncertainties in the United States, such as when it will pass a climate bill that would launch a carbon market and a political move in California to stop the state's ambitious program on emissions, discourage investors from deploying capital into alternative energy on a long term basis, Fulton said.

The United States could make progress if it passed a national RES, extend recovery act grant programs that will expire at the end of the year, and streamline the Department of Energy's loan guarantee programs for small businesses, said Tom Carbone, the chief executive at Nordic Windpower.

Germany, Japan, and China have dedicated funds to develop domestic alternative energy technologies, but the United States has only just begun this effort, the experts said.

54. Blast Rips Through Mexico Oil Refinery, May Disrupt Production

An explosion ripped through a major Mexican refinery, killing one worker and pushing gasoline and diesel prices higher on worries state oil monopoly Pemex will have to import more fuel. Pemex, the world's No. 7 crude producer and a large fuel importer, said a 32-year-old engineer was killed and two workers were severely burned when a compressor leak at the Cadereyta refinery's gas oil hydrotreater unit triggered an explosion and a fire.

Another eight workers suffered minor injuries. The fire was quickly put out but Pemex did not say how operations were affected at Cadereyta, Mexico's most sophisticated refinery and its third largest, with a capacity of 275,000 barrels per day. The unit, which supports gasoline and diesel production, was shut down while the rest of the refinery kept operating, Pemex said. The company is investigating the cause but did not say what effect the accident may have on production.

Hydrotreaters, which remove sulfur from fuels under high pressure in the presence of hydrogen gas, are a critical component of modern refineries. The unit was operating at the time of the accident.

The blast could force Mexico, which already relies on imports for more than 40 percent of domestic gasoline demand, to significantly boost fuel imports. Pemex, which imports fuel due to a lack of refining capacity, bought 432,000 bpd of fuel from the United States in June, making it the top importer of U.S. refined products, according to the U.S. government.

55. Environment Key To U.S. Security: Congress Briefing

Environmental degradation and waning natural resources threaten U.S. security in the 21st century, in a shift from "kinetic" security threats, defense experts told a Capitol Hill briefing. The loss of renewable natural resources, including forests, fresh water, fish and fertile soils, can drive political instability and conflict in the developing world, according to the briefing.

"We can't just send in the Army and the Marines and the Air Force and the Navy to resolve these problems, and they can't all be security problems," said retired General Anthony Zinni, former chief of U.S. Central Command. "Whether it is climate change, whether it is disruption of the environment in other ways ... we're going to see more failed and incapable states."

Zinni cited a report from the non-profit Center for a New American Security that linked depletion of fish stocks off Somalia, the drop in water and oil resources in Yemen, frequent droughts in Afghanistan and scarce and polluted water in Pakistan to instability and security.

Lieutenant Colonel Shannon Beebe, a senior Army Africa analyst, contrasted the traditional threats to U.S. and global security with those posed by environmental woes and natural resource problems. He noted that he offered his personal opinion, not that of the U.S. Defense Department. "An American security narrative is very much based on the kinetics ... planes, tanks, guns, armed forces," Beebe said, saying these kinetic threats would be replaced by "creeping vulnerabilities."

"You think we're going to continue to face state-based threats?" he asked rhetorically. "Might I remind you of the two greatest attacks on the United States at the beginning of the 21st century, and neither of those was from a state-based threat: 911 and Hurricane Katrina."

Both men cited their own experience in the Europe, Asia and Africa with defense leaders who recognized that integrating environmental problems into security policy was essential. Beebe said the United States has yet to understand that a coordinated narrative on this is key. "When you talk to Africans ... ministers and chiefs of defense, they will talk to you in terms of security as food, as environmental degradation, natural disasters, environmental shocks," Beebe said.

ASIA PACIFIC

56. Hong Kong Strives for Low-Emissions Zones, Bus Replacement and Retrofits

On October 13th, Hong Kong's chief executive said environmental priorities for 2011 include designating low-vehicle-emissions zones in heavily trafficked areas, replacing polluting buses with cleaner ones, and reducing carbon intensity. The measures will help to improve air quality, Donald Tsang said in his annual policy address to the Legislative Council of the Hong Kong

Special Administrative Region. He said air quality has been “improving gradually,” though roadside air pollution and concentrations of nitrogen dioxide are “still on the high side.”

The government will designate pilot low-emissions zones in busy areas in the Causeway Bay, Central, and Mong Kok neighborhoods to encourage use of clean buses starting in 2011, with a target of allowing only low-emissions buses in the zones by 2015, Tsang said.

Tsang said franchised buses—or those under contract to provide regional transportation services—are the “main cause of roadside air pollution” in heavily trafficked areas. As current contracts expire in the next few years, bus companies will be required to switch to zero-emissions vehicles or the most environmentally friendly buses available, Tsang said.

He said the government will pay for six hybrid buses for franchised bus companies to use in the pilot low-emissions zones to test how they operate under Hong Kong conditions. The government would consider testing and providing full financial support for fully electric buses if bus companies wanted to consider that option, he said.

Tsang said that since 60 percent of the franchised buses are currently at the Euro II and Euro III emissions levels, “there are too many to phase them out in the coming few years.” To get around this, the government will work with the companies to retrofit buses to reach Euro IV emissions standards for nitrogen oxides, he said.

In addition, a spokesman for the Hong Kong Environmental Protection Department said that the department is proposing that vehicle fuel be required to have a biofuel or biodiesel content of 10 percent, but that this would require amendments to the Air Pollution Control (Motor Vehicle Fuel) Regulation.

The government also will establish a HKD \$300 million (\$38.65 million) Pilot Green Transportation Fund for 2011 to encourage land and ocean transportation companies to test lower-emissions fuels and technologies, Tsang said.

Tsang also outlined the Hong Kong government's plan to reduce carbon intensity, or emissions per unit of gross domestic product, by 50 percent to 60 percent compared to 2005 levels by 2020. To achieve this, the government will emphasize the use of cleaner fuels and energy sources for power generation, will phase out coal-fired power plants, and will increase the use of non-fossil fuel sources.

These goals were included in a public consultation document on the region's climate change strategy and action plan released on September 10th by the Environmental Protection Department.

57. China Develops Incentive Plans To Hike Fuel Efficiency, Cut Vehicle Pollution

China is counting on a fuel-efficient vehicle subsidy plan, an electric and hybrid vehicle subsidy policy, and an “old-for-new” trade-in policy to encourage sales of newer, less polluting vehicles and to spur the growth of its domestic auto industry, analysts say. Early in September, the Ministry of Industry estimated that about 200 million vehicles would be on China's roads by 2020 and the Ministry of Environmental Protection warned that air quality in one-fifth of China's cities was worsening, largely due to the increasing number of vehicles on the road.

Because of the auto boom and associated pollution, the Ministry of Industry is drafting a 10-year plan (2011-2020) for energy-efficient, electric, and hybrid vehicles that will include new industry standards and regulations, according to a September 7th report in China Daily. The plan is expected to be released in November, according to the paper.

The Ministry of Science and Technology is drafting a separate plan for the development of subsidies, infrastructure, and guidance policies for electric, fuel-cell, and hybrid vehicles to be included in China's 12th Five-Year Plan (2011-2015), China Daily reported the previous day.

In late September, the National Development and Reform Commission released its third list of fuel-efficient passenger car models with engines of 1.6 liters or less that qualify for consumer rebates of 3,000 Yuan (\$450), bringing the total of eligible vehicle types to 206. Of the 74 models added to the list, 46—or 62 percent—are domestically produced, up from 36 percent on the first list and 38 percent on the second, according to the China News Agency. The first list, released on June 18, included 71 models; the second list, released on August 11, included 61 models.

Under the plan, auto dealers are to give consumers a 3,000 Yuan cash rebate upon the purchase of a listed vehicle, but according to numerous reports dealers were telling consumers that the “rebate” was included in the overall cost of the vehicle and were keeping the cash. This led the Ministry of Finance, one of three government bodies involved in the subsidy plan, including the NDRC and the Ministry of Industry and Information Technology, to release a statement on September 2nd clarifying the policy and ordering dealers to release cash subsidies upon purchase and to submit information about sales and subsidies within 10 days after the end of each month.

Meanwhile, on September 14th, the Ministry of Commerce announced on its website that its policy of rewarding consumers who trade old, less fuel-efficient vehicles in when they purchase newer, less polluting ones has “gained momentum” due to increased subsidies offered under the plan. The ministry said that in the first eight months of 2010, 210,000 new vehicles were sold and the same number traded in, with subsidies worth 2.95 billion Yuan (\$442 million) given out. Consumers can receive rebates of 5,000 Yuan to 18,000 Yuan (\$750 to \$2,700) for buying new vehicles when trading in old ones, with subsidies based on vehicle type. The current subsidy level for the trade-in program runs until December 31st and could be extended, according to a report in Xinhua.

A spokesman for Shenzhen-based battery and vehicle manufacturer BYD told reporters that under central and municipal government electric and hybrid vehicle subsidy programs released last spring, BYD had sold about 100 of its F3DM hybrid vehicles each month to consumers who benefited from the policy. Spokesman Paul Lin said the F3DM costs about 169,000 Yuan (\$25,320) in China, but with the central government subsidy of 50,000 Yuan (\$7,500) and the subsidy from the Shenzhen municipal government of 30,000 Yuan (\$4,500), the actual cost for consumers is cut nearly in half.

Lin said Shenzhen has 10 charging stations that take from one to seven hours to recharge a vehicle. But Lin said State Grid, the largest national grid company, is perfecting fast-charging stations that would take 20 to 30 minutes for a full charge.

As for whether battery-swapping stations would be a better alternative, Lin said there are too many types of batteries and that swap stations would have to store them, so it might not be the best solution for the Chinese market.

China as a whole has completed or is nearing completion of 98 electric and hybrid vehicle charging stations and 325 smaller charging points nationwide, an official from the Ministry of Science and Technology's development and planning department said at a press conference according to a report by Xinhua.

The most effective way to reduce pollution from auto emissions might be to switch taxi fleets to all-electric, Lin said. Currently the Shenzhen taxi fleet contains about 50 of BYD's E6 all-electric vehicles. "Taxis are running about 10 times more than regular passenger cars, so there is much more emissions from these, around one-third of auto emissions in some cities," Lin said. "If we could change over all taxis to pure electric that would be a great way to reduce emissions."

58. China Says Emissions of Sulfur Dioxide Rose Slightly in 2010

Emissions of sulfur dioxide increased slightly in China during the first half of the year, propelled by a large jump in emissions in several central and western provinces, according to a Ministry of Environmental Protection notice published on October 22nd by the Xinhua news agency. Overall, sulfur dioxide emissions increased 0.22 percent in the first half of 2010, compared with the same period last year, the ministry said. But emissions rose 13.68 percent in the southern Guangxi Zhuang autonomous region and 12.14 percent in Yunnan province, just west of the Guangxi Zhuang region. Emissions also rose 9.4 percent in western Qinghai province.

Most eastern coastal provinces showed declines in sulfur dioxide emissions levels, with the exception of the island province of Hainan, located south of the Guangxi Zhuang autonomous region. Hainan's emissions jumped 13.25 percent in the first half of the year, likely attributed to the recent construction boom on the island.

Emissions in western China likely were influenced by the countries push to develop the region. Under the "Western Development Plan," covering 11 western and central provinces and autonomous regions, infrastructure spending has increased and some industry from developed coastal regions has transferred to the area over the last decade, putting pressure on targeted sulfur emissions reductions, which were targeted for reduction in China's current 11th Five-Year Plan (2006–2010).

59. China Overtakes U.S. As Biggest Energy Consumer: IEA

China has become the world's largest energy user, having overtaken the United States, according to the head of the International Energy Agency. "China is now the largest energy consumer by our definition," the executive director of the Paris-based IEA, Nobuo Tanaka, told an industry conference. "Probably half of the oil demand increase comes from China. Nobody knows when it (will) slow down."

The IEA advises 28 developed countries. China is not a part of the IEA but the agency monitors the country as its oil demand can have a significant impact on prices.

Tanaka said Iraq, which has just revised up its estimates of proven oil reserves by 25 percent, could have a major influence on the oil market. "Iraq can be a game changer. We need Iraq oil," Tanaka said.

60. China Greenhouse Gas Growth "Daunting": U.S. Envoy

China's push to reduce growing greenhouse gas pollution is impressive but the "juggernaut" nonetheless faces a daunting rise in emissions, the top U.S. climate change envoy said after what he called helpful talks. The United States' chief climate change negotiator Todd Stern was in Beijing seeking to narrow rifts over the building blocks of a proposed new pact to fight global warming driven by greenhouse gases from fossil fuels and other human activity.

China is the world's biggest total emitter of such greenhouse gases, having surged past the United States, the world's second biggest emitter and long the world's largest. China's efforts to slow greenhouse gas emission growth by encouraging cleaner energy and more efficient production deserved praise, but its projected rise will be testing, said Stern.

"China's got a juggernaut of an economy, and it's no criticism that the emissions trajectory that China faces is a daunting one," he told a news conference after his talks with Chinese negotiators. "The trajectory is tough because of the power and success of the (Chinese) economy, so it's going to be an ongoing challenge."

The veteran U.S. negotiator's comments underscored how important China will be to the success or failure of climate change negotiations. China's greenhouse gas emissions rose about 9 percent last year, faster than any other major economy.

Likely rapid economic growth will push its emissions of the main greenhouse gas, carbon dioxide, to between 9.6 and 10.1 billion tons of CO₂ per year by 2020, compared with 5.2 billion tons in 2005, according to a study from the Chinese Academy of Sciences.

Governments hope to settle on the elements of a new global deal to fight climate change at U.N. negotiations in Cancun, Mexico, late this year. Cancun is intended to be a stepping stone to a binding global deal late next year.

Stern has led the U.S. push for China to accept firmer international emissions goals and monitoring, while Beijing has countered that Washington has failed to take serious steps against climate change and is instead scapegoating China. China rejects an internationally binding limit on its greenhouse gas emissions as unfair, because it contributed less to the problem historically, its emissions per-capita are still relatively low and it needs leeway to grow its economy.

Stern said he had "quite positive" talks with China's top climate negotiator, Xie Zhenhua, and other officials that had made some progress toward a possible deal in Cancun, but a successful outcome there was not assured.

61. China Electric Vehicles Expected To Hit 1 Million By 2020

China's output of electric vehicles is expected to reach 1 million units by 2020, the official Xinhua news agency said, citing a senior government official. Green vehicles are key for the development of China's auto industry as auto exhaust emissions already account for 70 percent of the country's air pollution in major Chinese cities, Wan Gang, Minister of Science and Technology, was quoted as saying.

Wan did not project the country's overall vehicle output by 2020. Vehicle sales in China, now the world's biggest auto market is expected to top 17 million units this year, Dong Yang, secretary general of the country's official industry association, has said.

Beijing launched a pilot program in June to hand out rebates to electric and hybrid car buyers as it stepped up its efforts to cut emissions. Maximum subsidies for electric car buyers are 60,000 Yuan (\$9,036). It is also subsidizing fleet operators in 25 cities to promote the use of clean energy models in the country's public transportation system.

Over the next 10 years, the Chinese government will spend more than 100 billion Yuan to subsidize its fledgling green vehicle industry, state media said, citing a draft plan, which will be released later this year or early 2011.

Wan added that an estimated 8.5 billion Yuan has been channeled into the green car industry from the capital market so far. The fund would help build up the country's battery output, which will be capable of supplying 150,000 electric vehicles by October 2011. "That would be a big step for the electric vehicle industry," Wan was quoted as saying.

62. 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 recently released 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. The report described the cleanliness of China's environment as woefully behind the West's. 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. The sheer pressure and pace of urban development make the task even harder in the case of China, said Jonathan Woetzel, a director at consultants McKinsey & Co in Shanghai. "Each and every year there is a need to accommodate a new set of migrants and to demonstrate rapid economic progress," he said.

McKinsey is a founder of the Urban China Institute along with Columbia University's Global Center for East Asia and Tsinghua University's School of Public Policy, which are both in Beijing.

Planners, especially in smaller cities, often simply do not have the skills and resources to ensure sustainable development, Woetzel told reporters.

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.

63. India Switches to Euro III Equivalent Fuels

As of September 22nd, all petrol and diesel fuel sold in India was required to meet the government's Bharat Stage III standards, which are equivalent to the European Union's Euro III fuel standards, according to Minister of State for Petroleum Jitin Prasada. With this, the entire country has switched to fuels with ultra-low contents of sulfur and benzene. In addition to sulfur oxides and benzene limits in fuels, the Bharat vehicle emissions standards set limits for nitrogen oxides, carbon monoxide, and particulate matter. Thirteen of India's largest cities already require fuel to meet the more stringent Bharat Stage IV standards, equivalent to Euro IV standards. The cities of Hyderabad, Agra, Ahmadabad, Bangalore, Chennai, Delhi, Kanpur, Kolkata, Lucknow, Mumbai, Pune, Sholapur, and Surat switched over to the Stage IV standards in April. The upgrades took place as part of India's National Auto Fuel Policy, which was first announced in October 2003. That policy called for a phased-in introduction of petrol and diesel fuel that meets Bharat Stage III and IV standards.

64. India Says Is Now Third Highest Carbon Emitter

India's environment minister has announced that the country could not have high economic growth and a rapid rise in carbon emissions now that the nation was the number three emitter after China and the United States.

Jairam Ramesh's comments came as negotiators from nearly 200 governments met in the northern Chinese port city of Tianjin. The U.N. talks aimed to reach agreement on what should follow the current phase of the Kyoto Protocol, the key treaty on climate change, which expires in 2012.

Indian per-capita emissions are still low but demand for energy is rising as the middle-class buys more cars, TVs and better housing. Much of that energy comes from coal oil and gas, the main sources for planet-warming carbon dioxide. But Ramesh said India's rush for wealth could not come at the expense of the environment.

Officials said his comments are the first time a government minister has said India has overtaken Russia as the third-largest source of greenhouse gas emissions.

"We will unilaterally, voluntarily, move on a low-carbon growth path. We can't have 8-9 percent GDP growth and high-carbon growth," Ramesh told reporters on the sidelines of a conference in the Nepalese capital. "It has to be low-carbon 8 percent, 9 percent growth and that is the objective that we have set for ourselves," he said.

Poorer nations are now the largest source of greenhouse gas emissions and many big developing countries have taken steps to curb the growth of their emissions but say they won't agree on absolute cuts, fearing this will hurt their economies.

India weathered the global financial crisis better than most, and is setting its sights on economic growth of almost 10 percent over the coming years. Its economy currently grows at around 8.5 per cent.

"We are the third largest emitter of the greenhouse gases in the world ... China is number one at 23 percent, the United States is second at about 22 percent and India is number three at about five percent."

In India, any talk of a low-carbon economy was once seen as politically very risky, given the economic costs involved. But Prime Minister Manmohan Singh in January asked a panel to begin charting a path to a greener economy. The report is expected by the year-end.

Although India has announced a new climate plan which identifies renewable energy, such as solar power, as a key element, coal remains the backbone of energy supply in a country where almost half the 1.1 billion population has no access to electricity.

"The gap between the second and the third (highest emitters) is very very high, but nevertheless we need to be conscious of our contribution," Ramesh said.

The fraught U.N. talks have been hobbled by lack of trust between rich and poor nations over climate funds, demand for more transparency over emissions cut pledges and anger over the size of cuts offered by rich nations.

The risk of the talks stalling is so great that the United Nations has stopped urging nations to commit to tougher pledges to curb carbon emissions, fearing further debate could derail already fraught talks on a more ambitious climate pact.

65. Incentives, Tax To Drive Japan Low-Carbon Push

Japan is preparing both incentives and taxes to encourage companies to cut greenhouse gases, a government official said recently, shrugging off criticism that he said focused on higher costs from proposed taxes. Tetsuro Fukuyama, deputy chief cabinet secretary, said however that a divided parliament makes it hard to set a legal framework as planned that could raise costs for companies and consumers.

The ruling Democratic Party of Japan lacks a majority in the upper house, meaning opposition parties can block legislation even if it is passed by the more powerful lower house.

Prime Minister Naoto Kan has said he wants to prioritize passing a climate change bill during the current parliament session ending on December 3rd, which will also focus on a supplementary budget to finance an economic stimulus to support the fragile economy.

"Incentives are included, for example, in the latest economic package. So we'd like company managers to look not just at cost burdens from policy steps in a climate change bill, but at the package of government measures as a whole," Fukuyama said in an interview with Reuters.

He also said Japanese firms are no longer wholly opposed to the steps as some have started spending on emission cuts while competing with global rivals. "I don't think all companies are opposing it while standing still and doing nothing."

Japan, the world's fifth-biggest greenhouse gas emitter, has pledged to cut greenhouse gas emissions by 25 percent from 1990 levels by 2020 if all major emitters adopt similar targets.

Passage of the bill would make the pledge legally binding. It also calls for three clean-energy policy steps -- an environment tax, an electricity bill scheme and an emissions trading system.

Fukuyama said passage of the bill during the current parliament session is desirable but it is too early to compromise on it with opposition parties.

Fukuyama, an upper house lawmaker, is one of two politicians holding the post of deputy chief cabinet secretary under Chief Cabinet Secretary Yoshito Sengoku, who is effectively the No.2 in Kan's government.

The third-largest party, New Komeito, favors a tougher stance. Fukuyama also said regardless the timing of passage of the bill, the government is preparing policy steps, including an environment tax to start in the fiscal year from next April.

Earlier this week, Kan told parliament he opposes simply extending the Kyoto Protocol, which would bind almost 40 rich nations to curb emissions beyond 2012, as that covers less than 30 percent of global emissions.

Asked what he expects at a U.N. climate meeting in Cancun, Mexico, from late November, Fukuyama said Japan would like to see more countries take part in the Copenhagen Accord, to which major emitters including China offered emission-cut pledges. "I hope Cancun will be the place where discussions provide a key process to create a legally binding pact at a later meeting," he said.

66. Analysis: Rare Earths Next Big Thing Or Will The Bubble Burst?

China's increasing reluctance to supply the rest of the world with rare earths is whipping up a gold rush-like frenzy to find new producers of the elements needed to manufacture everything from high-tech weapons to mobile phones. Producers and would-be producers are forging new supply pacts with consumers, and investors are scooping up shares in mining companies promising to replace the lost Chinese material.

But the ultra-quick global push to find alternative supplies also has investors asking if a classic commodities bubble is in the making.

The price hikes in rare earths has been meteoric: Cerium, widely used in glass-making is up nearly tenfold since 2009. Prices of neodymium and terbium, needed to make magnets, are up more than 40 percent.

This has propelled shares of Lynas Corp and Molycorp Inc., the biggest non-Chinese rare earth firms, to more than double since July, when China announced it was reducing exports by 72 percent in the second half. Stock in Arafura Resources Ltd, another promising producer, has more than tripled in just a few months.

Beijing says it simply needs to conserve its mine reserves of rare earths for future domestic consumption or it will run out. Others say it is using rare earths as a trade axe. China, which produces 97 percent of the world's rare earths, last month halted shipments to Japan after a long-simmering territorial dispute with Tokyo flared.

The European Union and the United States recently said they were pressing for solutions to concerns China may be exploiting its stranglehold on rare earth metals.

Regardless of China's motives, its future commitment to exporting rare earth products remains questionable, leaving the rest of the world looking for 40,000-50,000 tons of material a year at today's consumption rate.

There are at least two mines outside of China nearing the production stage and poised to address much of the shortfall: Molycorp's Mountain Pass in California and Lynas' Mt Weld in Australia, which together will have the capacity to meet at least two-thirds of non-China world demand within three years. Potentially another 115,000 tons coming from Canada to Australia to Greenland is in various stages of pre-development. And as more uranium mines are dug worldwide, consumers can expect additional supplies as by-products, particularly in Australia and Kazakhstan.

67. Worst Haze From Indonesia In 4 Years Hits Neighbors Hard

Illegal forest clearing fires in Indonesia's Sumatra Island are sending haze across the Malacca Strait to neighboring Malaysia and Singapore, causing the worst air pollution since 2006, officials have announced. Despite pledges among governments to deter fires, the haze prompted Malaysia to alert vessels in the Malacca Strait of poor visibility as short as 2 nautical miles and shut many schools.

Singapore, covered in thick smoke, saw its air pollution index hit the highest level since 2006. The port and international airport are still functioning as normal.

"The suspicion is that this is coming from forests that have been opened up for plantations. We think it may be for palm oil," Purwasto Saroprayogi, head of the land and forest fires department at Indonesia's Environment Ministry, told reporters. Saroprayogi said the haze was caused by fires lit to clear land illegally in the north of Sumatra island.

Indonesia has a long history of weak forestry law enforcement and illegal land clearing by palm oil developers is not uncommon. Fires clear land quickly and reduce the acidity of peat land soil, but release vast amounts of greenhouse gases into the air.

The haze returned to the region less than a week after environment ministers in Southeast Asia met in Brunei to address land and forest fires, which drew immediate flak from neighbors. "This is not the first time that we have informed the Indonesians that they should pay attention to hotspots in Sumatra and Borneo," Singapore's Environment Minister Yaacob Ibrahim told reporters. Yaacob said if the haze worsened, "we will register our concerns again, perhaps on even stronger terms, to our Indonesian colleagues," adding Singapore may seek to reconvene another meeting to find "additional measures" to mitigate the problem.

Malaysia's Deputy Prime Minister Muhyiddin Yassin said Kuala Lumpur was seeking "more cooperation" from Jakarta in tackling the haze problem, state news agency Bernama quoted him as saying. "According to the reports we've received, the haze originates from there (Indonesia). We are not simply making accusation but we want action before the haze spreads and becomes more detrimental to Malaysia," he said. Muhyiddin, also education minister, said schools in Muar town in southern Johor state had been closed and about 5,000 masks were distributed after air quality hit hazardous levels, the Star newspaper reported.

The worst haze hit the region in 1997-98, when drought caused by El Nino led to major Indonesian fires. The smoke spread to Malaysia, the Philippines, Singapore and Thailand and cost more than \$9 billion in damage to tourism, transport and farming.

68. Indian Research Program to Focus on Black Carbon

On September 19th, India's Ministry of Environment and Forests announced a nationwide research program on carbon aerosol, of which black carbon will be an integral element. Aerosols are suspended particulates. Black carbon is the soot released into the air from combustion of wood, dung, or fuels such as diesel and coal. Although scientists have been working on aerosols for a long time, there has been a re-emergence of interest among scientists, experts, and governments regarding the role of aerosols, especially black carbon, in climate change. The National Carbon Aerosol Program aims to enhance understanding of the sources and estimate the quantities of aerosols in the atmosphere. It will seek to answer questions such as the contribution of aerosols, especially black carbon, to regional warming and their role in atmospheric stability and the consequent effects on cloud formation and monsoons. It also will study the role of black carbon on snow melt as well as its role, if any, in Himalayan glacier retreat.

"While various institutes in the country have been working on aerosols, including black carbon for some time now, India needs to assume a major leadership role in aerosol science," Environment Minister Jairam Ramesh said. He pointed out that research on the impact of aerosols on three areas is critical: public health, rainfall patterns and glacial health.

"The long-term integrated program on aerosols will involve the 3M approach - Measure, Model and Monitor. Research on black carbon will be an integral part of this program," Ramesh said recently while announcing the move.

Experts have claimed to have identified black carbon as the second or third largest contributor to the current anthropogenic global warming by absorbing thermal infrared radiation from the ground and within clouds. The Intergovernmental Panel on Climate Change has also included it in its Fourth Assessment Report, 2007 and proposes to cover the same in its next (Fifth Assessment Report, 2014) report to understand its role on climate change.

"Thus, there is a need to undertake studies at the regional and national level and to devise a science program on aerosols, especially black carbon, involving our leading scientists and experts," said the Union Minister who has been stressing on in-house researches instead of those in Western countries.

The aerosols program to be covered under the Indian Network for Climate Change (INCAA) of the Environment Ministry will address issues such as its contribution to regional warming, its role on atmospheric stability and the consequent effect on cloud formation and monsoon. The role of black carbon as a result of its deposition on snow as well as warming on the Himalayan retreat, the response of tropical oceans to a large decrease in surface solar heating and the consequent effect on the hydrological cycle will also be studied, he said.

69. Record Hong Kong Air Pollution Sparks Protest

Roadside air pollution in Hong Kong hit record highs in the first six months of the year, hurting public health and economic competitiveness compared with Asian rivals, according to activists

and lawmakers. The city's air quality hit "unhealthy" levels about 10 percent of the time between January and June, the highest level in five years, said environmental group Friends of the Earth.

The government advises people with heart or respiratory problems to avoid lingering in traffic-heavy places when the air pollution index goes into "unhealthy" territory.

"Think of the health cost and also the disincentives to tourists and to people investing and setting up companies in Hong Kong," said legislator Audrey Eu who joined green activists in unfurling a big black banner over a roadside monitoring station at the heart of Hong Kong's Central financial district.

Health experts estimate poor air has cost the city HK\$1.18 billion (US\$151 million) in healthcare bills and lost productivity, along with 3.8 million visits to the doctor, this year.

"The bad air and pollution is actually giving Hong Kong a bad name and deterring people from coming," added Eu, who was among a coalition of lawmakers urging the government to do much more to resolve the problem including accelerating the phasing out of diesel buses and imposing stiffer fines.

Hong Kong's air pollution soared off the charts to unprecedented highs in March when sandstorms from northern China cloaked the city in dust.

A survey by Mercer Consulting ranking the quality of life of 221 cities, found air pollution weighed heavily on Hong Kong, a business gateway to China, knocking its ranking to 71, far below Singapore at 28.

"Hong Kong's always been rated lower than other neighboring cities ... it's due mainly to our air quality problems," said Edwin Lau, director of Friends of the Earth.

"The government seems to have done a lot of things, but I would say they've only been tinkering on the edges," said Lau, referring to a recent law to ban idling engines.

He noted, however, that imported pollution from China's vast industrial hinterland of the Pearl River Delta, across the border from Hong Kong, had shown mild improvement over the past year given a push to phase out older, more polluting industries there and other emission-reduction measures.

Hong Kong's Environmental Protection Department had earlier noted that while roadside pollution had peaked, overall atmospheric pollution levels actually fell in the first six months.

70. Nissan, Sumitomo In JV To Re-Use, Recycle Batteries

Japan's Nissan Motor Co and Sumitomo Corp have announced that they have formed a joint venture aimed at commercializing used lithium-ion batteries for electric cars. The company, called 4R Energy Corp and capitalized at 450 million yen (\$5.42 million), will be held 51 percent by Nissan and 49 percent by trading house Sumitomo, they said in a statement.

Nissan and its French partner Renault SA are aiming to lead the market for battery-run electric vehicles with a global launch on a mass scale in 2012. The alliance's first mass-volume all-electric car, the Nissan Leaf, is due to hit the Japanese and U.S. markets this December.

Nissan, which develops and produces the lithium-ion batteries in a joint venture with NEC Corp, wants to lower the high cost of electric vehicles by eventually giving their expensive batteries a second life through re-use, resale, refabrication and recycling.

The five-seater Leaf is priced at 3.76 million yen (\$45,300) in Japan and \$32,780 in the United States before government subsidies.

71. Exec Says Nissan Is Open To China Green Car Alliance

Nissan Motors is open to a green car alliance with Chinese automakers, a senior executive said, as it moves to tap the fledgling industry in the world's largest auto market. Nissan, 44 percent held by Renault SA, is joining General Motors and others in the race for green vehicles which industry observers say could be the next industry gold mine.

"It's impossible to develop electric vehicles alone. Joint effort is a more feasible solution," Yasuaki Hashimoto, president of Nissan China Investment Co, said in an interview on the sidelines of an industry event in the northern municipality of Tianjin. When asked whether Nissan was interested in being part of a green vehicle alliance, made up of 16 Chinese state auto groups, Hashimoto said: "We are open to all options."

"Mr Li had also said the alliance won't stop at the existing 16 member companies only. It can be expanded," Hashimoto said, referring to Li Rongrong, head of China's state asset watchdog who has recently retired.

Nissan, which runs an auto venture with Dongfeng Motor Group, had earlier signed a deal with the municipal government of Wuhan to jointly promote its electric vehicle Leaf in the central Chinese city. That would be one of the Japanese automaker's priorities in China next year, said Tsunehiko Nakagawa, vice president of Nissan China Investment.

Beijing launched a pilot scheme in five Chinese cities in the middle of this year to subsidize green car buyers, with handouts ranging from 3,000 Yuan (\$439.6) for fuel-saving models to 60,000 Yuan for electric cars as it moves to cut fuel emissions in the world's second largest economy.

The government may have more work to do to bolster demand for green models, such as standardizing industry specifications and building up a charging station network in the country, said Hashimoto.

Other foreign automakers are also on the move.

GM plans to launch its Chevy Volt next year in China, its biggest market, while Ford Motor and Volkswagen AG are also speeding up their effort of improve fuel-efficiency of their models.

72. China Ranked Tops for Renewable Energy Investment

China has surpassed the United States as the most attractive place for renewable energy investments, according to an index released on September 8th by Ernst & Young. The report gave China a two-point lead over the United States after the Senate failed to pass a renewable energy standard before its summer recess. Senate Majority Leader Harry Reid recently indicated that he may push for legislation that would require utilities in each state to get a set portion of their power from renewable sources, but his staff said that would not occur until after

the November midterm elections. In the previous index, released in May, China and the United States tied for overall attractiveness for renewable investments. The ranking takes into account investment opportunities in wind, solar, biomass, and geothermal energy. It considers multiple factors including available, untapped resources; tariffs and taxes; and policies that encourage renewable energy production.

73. China's MEP to Require Heavy Polluters to Disclose More Information

On September 15th, China's Ministry of Environmental Protection (MEP) released draft guidelines that would require companies in heavily polluting industries that are listed on the Shanghai or Shenzhen stock exchanges to disclose more information about their environmental management to investors and provide annual environmental performance reports.

The draft Environmental Information Disclosure Guidelines for Listed Companies would require the businesses to notify authorities and investors within 24 hours of an environmental accident, although the document did not specify what would constitute an accident sufficient to trigger the notification requirement. Companies would have to provide detailed reports to investors and environmental authorities, including what pollutants were released, how much damage occurred, if there were casualties, and the date and location of the accident.

Companies also would have to issue a report to investors if they have been found to be in violation of environmental regulations, according to the guidelines. The draft also would require companies to follow more specific guidelines on the timely reporting of pollutant emissions data and would require companies to provide a more detailed annual report on their environmental performance.

The draft sets out 16 categories of heavily polluting industries whose listed companies would be subject to the requirements: thermal power, steel, cement, electrolytic aluminum, coal, metallurgy, chemical, petrochemical, construction materials, paper, brewery, pharmaceutical, fermentation, textile, leather, and mining.

Annual reports would have to include information about any environmental accidents and any violations for which the company was punished that year, according to the draft. Reports also would have to include information about environmental impact assessments the company conducted, data for company emissions of key air and water pollutants, and how the company managed industrial and hazardous waste during the year.

The draft guidelines also would require that the annual performance reports, as well as any environmental emergency reports, be published on a company's websites, on the Ministry of Environmental Protection website, and on the website of China Environment News, a news agency under the direction of the ministry.

SOUTH AMERICA

74. Cane Ethanol Leader Brazil Considers Using Corn

Sugar cane ethanol pioneer Brazil, which touts the efficiency and environmental qualities of its biofuel, could soon begin making it from less-efficient corn to soak up excess grains in remote areas. The combined industry and governmental steering committee for corn, which met recently, said it had commissioned a study by state researcher Embrapa to look at the viability of making ethanol in corn-growing state Mato Grosso. "It's very embryonic, only an idea. It

would make use of corn, which is widely available in Mato Grosso, which is very distant from the south," said Cesar Borges de Sousa, chairman of the joint committee known as the "corn sector chamber".

Ethanol biofuel has supplanted gasoline as the main fuel in Brazil's cars since the advent of flex-fuel engines, which can run solely on ethanol or gasoline or both mixed. But the fuel struggles to compete with gasoline on price in areas far from the cane-growing states in the southeast.

The chamber's idea is to make cheaper ethanol locally to power cars and agricultural machinery and give producers an alternative outlet for their produce which, for export, must otherwise travel hundreds of miles (kilometers) to the ports. The corn would be processed at the handful of cane ethanol mills in the state to occupy them through some of the months-long shutdown period when they are without cane to crush, de Sousa said.

He said the amount of corn ethanol that could be produced would be tiny compared to the vast output of cane ethanol. Cane ethanol yields many times more energy than that used to grow it. Corn yields little, if any, extra energy. Brazil plugs this as an environmental argument in favor of cane biofuel in its bid to expand exports to countries blending ethanol into their gasoline.

A researcher at Embrapa, Jason de Oliveira Duarte, said occasional problems transporting or warehousing corn in Mato Grosso meant some corn spoiled. Producing ethanol from it could prevent waste, he said.

75. Brazil Ethanol Production Will Continue To Grow: IEA

Brazil's ethanol production will continue to grow and will be a source of an increase in oil supply outside the Organization of the Petroleum Exporting Countries, the International Energy Agency (IEA) said. "Brazilian ethanol outputs, and biofuels as a whole, continue to constitute strong sources of non-OPEC supply growth that warrant increased analytical scrutiny," the IEA said in its monthly oil market report.

"For 2010 and 2011, we see annual Brazilian ethanol production growing on average by 50,000 barrels per day, to 475,000 bpd and 520,000 bpd, respectively."

In the report, the Paris-based agency revised up its estimate for non-OPEC oil supply by 150,000 bpd to 53.1 million bpd for next year.

76. Chile's Environment Ministry to Tackle Air Pollution, Climate Change as Priorities

On October 1st, the Chilean government opened the doors of the country's new Environment Ministry and an autonomous Environmental Evaluation Service, the first of five new institutions that will create, implement, and enforce environment policy. At a tree-planting ceremony in Santiago on October 6th to mark the launch of the ministry, Environment Minister Maria Ignacia Benitez said the new environmental bodies represent a major advance in Chile's efforts to protect the environment and biodiversity and will put the country on par with the most advanced developed countries in this field.

The ministry will replace the National Environment Commission (CONAMA), the country's top environmental body since it was created by the Fundamental Environmental Law (Law No.

19,300, 1994), Chile's first significant piece of environmental legislation. The ministry will be responsible for designing environmental regulations and policies. Like CONAMA before it, its actions will be overseen by a council of ministers representing different industrial sectors of the economy, including energy, agriculture, and mining.

In its first year of existence, the new ministry will have a budget of just over 29 billion Chilean pesos (\$60 million).

"With great pride, we can say that we are today at the same level as the other OECD member countries," the minister said in reference to the Organization for Economic Cooperation and Development, which Chile joined in May.

The new Environmental Evaluation Service is expected to introduce more technical criteria and to reduce political influence when assessing whether new investment projects comply with environmental laws and policy.

The new institutions were created by legislation (Law No. 20,417) approved in late 2009, together with a new environmental inspection service responsible for enforcing environmental laws and regulations and with powers to impose fines of up to 10,000 annual tax units (equivalent to 4.4 billion Chilean pesos or \$9.21 million). However, under a last-minute deal struck with legislators concerned about the broad powers enjoyed by the new regulator, the launch of the Superintendencia del Medio Ambiente will remain on hold until legislation creating the country's first dedicated environmental courts has been approved. This bill has already been approved by senators and now must be considered for a second time by the lower house, or Chamber of Deputies, before it can be signed into law.

Benitez said the new ministry's top priority will be tackling air pollution, a major problem in many Chilean cities, "with a preventative approach, rather than a reactive one as has been the case up until now." She said the government will implement a new Clean Air program to tackle the issue in cities throughout central and southern Chile, where firewood continues to be widely used as a domestic fuel.

Later in October the government is expected to unveil long-awaited air quality standards for breathable particulate material (PM-2.5) and emission limits for thermoelectric power plants. In 2011, the government will begin work on similar standards for furnaces and smelters, she said.

Another priority will be to coordinate actions to mitigate the impact and adapt to the consequences of global climate change. At the ceremony attended by President Sebastian Pinera, the minister reiterated Chile's commitment to limit emission of greenhouse gases to 20 percent below the business-as-usual levels predicted for 2020, a position stated by the previous government during negotiations on climate change in Copenhagen in December 2009.

77. Peru Postpones Ethanol Blend Requirement in Spite of Protests

Peru's Ministry of Energy and Mines has postponed mandatory use of gasoline containing 7.8 percent ethanol in the capital city, Lima, and other regions around the country due to economic reasons, the deputy energy minister told reporters on October 6th. The ministry issued Supreme Decree 061-2010-EM on September 28th, postponing use of the blended gasoline until June 1, 2011, in Lima and nine other departments, or states, on the coast and in the central highlands.

Deputy Energy Minister Daniel Camac said Peru was not producing enough ethanol to cover demand if the blended fuel requirements had taken effect on October 1st in Lima and the other departments. "We evaluated how the market was progressing and the supply that would be needed, and realized that we would have to import 25 percent of the ethanol to cover demand," he said. Camac said imported ethanol would cost about \$708 a cubic meter, which is \$200 above the price of the equivalent amount in gasoline. He said the cost would have been passed on to consumers and was unacceptably high.

The decree is being fought by the Biofuel Committee of the National Society of Industries (SNI), as well as environmental groups. Ari Loebel, head of the committee, said at an October 1st press conference that the government was jeopardizing nearly \$1 billion in potential investment in biofuel production. "The government is changing the rules of the game. If the MEM [Ministry of Energy and Mines] is willing to postpone the ethanol blend today, they could do it again in June using the same arguments," he said.

Juan Luis Dammert, a representative of the Peruvian Environmental Law Society, said the decision "demonstrates that the government is uninterested in complying with environmental law. Environmental protection has constantly taken a back seat to economic concerns," he said.

Environment Minister Antonio Brack said he would have preferred to have the legislation implemented on the original date, but the decision was not up to his department. "I hope the ministry and SNI can reach an agreement to shorten the extension," he said.

The Peruvian government is promoting biofuel blends in gasoline and diesel fuel as a way to reduce air pollution. In addition to an ethanol blend, diesel is sold with a 2 percent biodiesel blend and since Jan. 1, 2010, the sulfur content in diesel sold in Lima has dropped to 50 parts per million (ppm). Those changes in sulfur content came about as a result of Supreme Decree 061-2009-EM, published September 5, 2009.

This is the second time the Ministry of Energy and Mines has moved back the start date for using the ethanol blend in Lima, which is home to one-third of the population and more than 50 percent of the country's cars. Legislation from 2007 decreed mandatory use of ethanol nationally as of Jan. 1, 2010, but that law was changed to incorporate use on a staggered basis.

Ethanol requirements were implemented starting April 1 in two northern coastal departments and since then in seven others progressively through September 1st. Under the new decree, nationwide use of ethanol will not happen until July 2011.

One large-scale ethanol project, Agricola del Chira, is currently operational, producing 350,000 liters (92,460 gallons) daily. Another five projects will come online in 2011 and 2012.

78. Buenos Aires Metro Tests High for Particulate Matter

A survey of air quality in the Buenos Aires subway system found high levels of particulate matter and double the legal limit for iron, lead, zinc, copper, and other metals, according to the lead researcher. "On average there were some 300 micrograms of those metals per cubic meter, whereas the law allows a maximum of 150 micrograms," Leonardo Murruni said. Murruni is affiliated with the National Technology University and the Geological Mining Service, two state-run institutions. Experts from the National Atomic Energy Commission also were involved in the survey, the first of its kind conducted on the Metro system. The 33-mile-long subway is used by 1.7 million people every day. Murruni said samples taken at six stations showed a heavy

prevalence of iron, which the team attributed to the friction of trains' wheels on the rails. No studies were conducted on the toxicity of the particulate matter, since this was not the goal of the investigation. "All we did was to collect and analyze the air samples," he said. The particles' diameter varied between 2.5 and 10 micrometers—small enough to penetrate the deeper parts of the lungs. Studies have linked particulate matter inhalation with asthma, lung cancer, cardiovascular problems, and premature death.

AFRICA

79. South Africa To Look At Maize For Biofuels

South Africa must review its biofuels policy to include maize to allow farmers to use their surplus crop for energy production, the agriculture minister said recently. The government unveiled blending ratios for biofuels three years ago but said maize, South Africa's staple food, could not be used in the production of biofuels in order to ensure food security and keep a lid on high prices. "Agriculture is not only about food production but also concerns energy. So with the surplus maize, we as government must look again at our biofuel policy," Agriculture, Forestry and Fisheries Minister Tina Joemat-Pettersson told a conference.

Experts say biofuels offer the biggest and most secure market for agriculture in southern Africa and could help ease the region's electricity woes in the future.

The minister urged farmers to come forward with ideas on how to best implement the biofuels policy. "The development of the biofuel industry needs a national plan that must not harm food security," Joemat-Pettersson said.

Joemat-Pettersson, however, said a policy change was a lengthy process and as such the use of maize for energy production was a long-term solution to the surplus grain. "The opportunities for us to address the surplus maize would be firstly to look at alternative market opportunities," she said.

Joemat-Pettersson said the government was still looking for additional export markets for farmers who expected their largest crop of the grain since the record 14.42 million tons reaped in the 1981/82 season. "We are busy traveling the world scouting for markets, we are working hard to find markets," she said, adding the government was still negotiating with Russia, China and countries in the Middle East to secure alternative markets for commercial farmers other than Europe.

The government's Crop Estimates Committee last month trimmed its final estimates for the May 2009-April 2010 maize crop to 13.034 million tons, citing lower-than-expected yields and deliveries to silos. But the estimate was still far above South Africa's annual consumption of between 8-9 million tons.

The department has also applied to the competition authority for an exemption to allow farmers to reserve the surplus grain for exports. The current legislation does not allow for the establishment of an export pool for the grain. "The (competition authorities) are more positive toward our request and the finalization of the decision to pool the maize is imminent," she said.

The government has said South Africa has already secured foreign markets to sell a surplus of about 4 million tons of maize in the 2009/10 season to maintain reasonably high prices for local farmers.

80. Tanzania Reduces Sulfur Content

The government through the Energy and Water Utilities Regulatory Authority (Ewura) will phase out from the local market high sulfur content diesel effective from January 1 next year. A statement issued by the authority's Director General, Mr Haruna Masebu noted that the move is aimed at protecting human health and environment.

"For quite some time, diesel that had been extensively sold in the local market consisted of higher than was internationally accepted sulfur content (5000ppm). This product has been phased out in many countries in the best interest of human health and safety, as well as to protect the environment," reads part of the statement.

The Petroleum Act of 2008 empowers the Energy and Water Utilities Regulatory Authority (EWURA) to regulate, among other things, the provision of quality petroleum products in the country. Mr Masebu noted that his authority in collaboration with other stakeholders had finalized a review of technical specifications for Automotive Gas-oil from 5000ppm to 500ppm sulfur content as a National and International Standard. EWURA, by the power granted by the Petroleum Act of 2008, in consultation with other stakeholders, including the Ministry of Energy and Minerals, and the Tanzania Bureau of Standards (TBS) are allowed to make such a review.

"As the result of such a review and in accordance with Section 4(d) of Petroleum Act, 2008; EWURA hereby gives an Order to all petroleum products importers, marketers and the public that effective 1 January, 2011, all diesel imported and sold in Tanzania shall be of sulfur content 500ppm.

The adaptation is in line with the prevailing standards in many parts of the world and in order to lower particulate emissions which affect respiration and to improve exhaust performance of catalytic converters which reduce harmful gas emissions," stated the Director General. According To Mr Masebu, the Order is in line with a Government Notice Number 225 dated 18 June, 2010 which bans 5000ppm for domestic consumption and selling diesel of 5000ppm sulfur will be an offence effective 1 January, 2011.

NORTH AFRICA - MIDDLE EAST

81. Egypt Gets \$270 Million From World Bank For Solar Plant

Egypt has secured \$270 million from the World Bank to fund a solar power plant, the state news agency MENA said on Tuesday. Egypt, which has about 25,000 megawatts of power capacity, has suffered repeated outages this year and plans to spend \$100-120 billion to triple capacity by 2027. The \$270 million includes a \$100 million investment by the Clean Technology Fund, which is affiliated with the World Bank, and a \$170 million loan from the bank, the statement said.

Egypt said in August it had secured a \$600 million loan from the World Bank to help finance the North Giza Power Plant on the outskirts of Cairo. The North Giza plant will supply 1,500 megawatts of electricity, MENA said in its statement.

82. Israeli Environment Ministry Forms Panel To Work on Pollution Abatement Plan

Israel's Ministry of Environmental Protection has established a committee of experts on air quality and its impact on public health to map the state of air pollution in Israel. The committee, announced on September 15th, is expected to submit its findings to the government by January 2011, when the Clean Air Law of 2008 comes into effect. The committee's work is the first stage toward establishing Israel's first national program on air pollution abatement. Based on its findings, the ministry will work with outside consultants to develop a multiyear plan to improve air quality levels through 2020. The final plan must be submitted for government approval no later than January 2012, according to the new law.

“For the first time, Israel's leading experts will consolidate an updated and reliable information base to enable the formulation of a national program on air pollution abatement in Israel,” Environmental Protection Minister Gilad Erdan said in a statement. “Alongside accelerated development processes in the economy, we must act to assure minimal harm to the environment and to public health.”

On August 30th, looking forward to the committee's report, the ministry issued an international tender for consulting services. Low response during the intervening Jewish holidays led to an extension of the deadline for bids to October 14th. The tender is open to Israeli companies with local government experience, provided they have contracted with an international consultancy firm experienced in national environmental planning.

The expert committee, to be chaired by professor Menachem Luria, will “analyze monitoring trends and research findings in order to map air quality in Israel, pinpoint hotspots of pollution, identify problematic pollutants and areas of peak population exposure, and define the major problems to be addressed in the national program,” according to a government release.

The Environmental Protection Ministry, in another first for Israel, will then coordinate among all relevant government offices to develop and integrate policy measures for the prevention of air pollution from transportation, industry, energy production, and other domestic sources. “This is based on the U.S. model of state implementation plans,” Shuli Nezer, director of the Air Quality and Climate Change Department in the Environmental Protection Ministry, told the press. “The program will be anchored in cost-benefit analyses and quantifiable outcomes, with ongoing reporting mechanisms. The goal is to get us as close as possible to the established target values for air pollution on the national and regional levels,” she said.

83. Iran Says It Is Self-Sufficient In Gasoline: State TV

Iran has raised its gasoline output to attain self-sufficiency in the strategic product and foil sanctions targeting its energy needs, the state television's website reported its oil minister as saying. Massoud Mirkazemi's comments appeared to contradict previous remarks by other energy officials who had said major refinery capacity increases were required before self-sufficiency could be achieved.

"We attained a production of 66.5 million liters a day in the country's refineries," Mirkazemi said, according to the IRIB website. He said that prior to the increase Iran had a domestic production of 44 million liters and imported 20 million liters more to meet its market needs.

Refinery officials and analysts doubted whether the country could have already achieved self-sufficiency in gasoline.

Iran is the world's fourth-largest oil exporter and sits on the second-largest gas reserves after Russia, but a lack of refining capacity and sanctions hindering access to foreign capital and know-how have forced the country to import up to 40 percent of its gasoline needs.

That vulnerability was targeted by new sanctions from the European Union and the United States imposed to pressure Iran to curb its nuclear program.

The threat of U.S. sanctions against suppliers to Iran has reduced the pool of companies prepared to sell gasoline to the OPEC member although Iranian officials have repeatedly said the country faces no problems in buying what it needs.

Volumes of gasoline being shipped to Iran in July fell far below the seasonal norm after U.S.-led sanctions against the Islamic Republic came into force, trade sources reportedly said. Neighboring Turkey's gasoline exports to Iran dropped by 74 percent in July from 138,673 tons in June, statistics showed.

Deputy Oil Minister Alireza Zeighami had said in August Iran would become self-sufficient by March 2012 after two new fuel production projects were completed. Mirkazemi said it was the impact of sanctions that had pushed Iran to rapidly expand its refining capacity.

84. Vulnerable Arab World Lags On Climate Change Action

The Arab world will be one of the regions worst hit by climate change but still lacks any coordinated response to its potentially devastating effects, experts said at a recent conference. With hotter, drier and less predictable climates, the amount of water running into the region's streams and rivers is set to fall 20 to 30 percent by 2050, worsening desertification and food insecurity, the United Nations Development Program says.

Arab states, many rich in petroleum and grappling with fast-growing populations, lack the political will to act, experts said at the UNDP regional meeting. "They are leaving entire generations who will wake up and find a disaster on their hands that they will be completely unequipped to handle," Mostafa Tolba, former executive director of the United Nations Environment Program, told reporters.

The region is home to six of the world's ten most water-scarce countries. Its citizens have access to an average of 1,000 cubic meters of water a year, a figure seven times below the world average and expected to shrink to 460 cubic meters by 2025.

Another looming concern for many countries in the region is rising sea waters that threaten small-island states like Bahrain as well as natural and man-made islands in the Arabian Gulf. In Egypt, where over 50 percent of the population lives within 100 kilometers of the coast line, 6 to 8 million people could be displaced, said Mohamed El Raey, Executive Director of the Regional Center for Disaster Risk Reduction. Egypt is already the world's biggest wheat importer and rising waters on its low-lying Nile Delta, where nearly half of the country's crops grow, could submerge or soak the land in salt water.

"Climate change will render many of our coastal zones redundant or obsolete," Shaden Abdel Gawad, president of Egypt's National Water Research Center, told the conference.

The prospective damage of rising sea waters could chip off 16 percent of Egypt's gross domestic product, the worst potential damage in the region, El Raey said, citing World Bank figures. Qatar and Tunisia follow closely behind.

Arab world greenhouse gas emissions are growing at one of the fastest rates in the world, with Kuwait, the United Arab Emirates, and Qatar the biggest emitters per capita, although the region only accounts for 5 percent of the world total.

Experts said climate change was on Arab government agendas but they called for measures to engage the private sector, saying the only way was to target the pockets of businesses. "The entrepreneur and the economist need to see some revenue prospects from addressing climate change. Without them, nothing will happen," Tolba said.

GENERAL

85. Warmer Arctic Probably Permanent, Scientists Say

The signs of climate change were all over the Arctic this year -- warmer air, less sea ice, melting glaciers -- which probably means this weather-making region will not return to its former, colder state, scientists have reported. In an international assessment of the Arctic, scientists from the United States, Canada, Russia, Denmark and other countries said, "Return to previous Arctic conditions is unlikely."

Conditions in the Arctic are important because of their powerful impact on weather in the heavily populated middle latitudes of the Northern Hemisphere. The heavy snows in the United States, northern Europe and western Asia last winter are linked to higher air temperatures over the Arctic, the scientists found. "Winter 2009-2010 showed a new connectivity between mid-latitude extreme cold and snowy weather events and changes in the wind patterns of the Arctic, the so-called Warm Arctic-Cold Continents pattern," said the report, issued by the U.S. National Oceanic and Atmospheric Administration (NOAA).

The scientists found evidence of widespread Arctic warming, with surface air temperatures rising above global averages twice as quickly as the rate for lower latitudes. Part of the reason for this is a process called polar amplification. Warming air melts the sun-reflecting white snow and ice of the Arctic, revealing darker, heat-absorbing water or land, spurring the effects of warming. This is further amplified by the action of the round-the-clock sunlight of Arctic summers.

Normally cold air is "bottled up" in the Arctic during winter months but in late 2009 and early 2010, powerful winds blew cold air from north to south instead of the more typical west to east pattern, said Jim Overland, an oceanographer at NOAA's Pacific Marine Environmental Laboratory in Seattle.

Overland saw this as a direct link between a warmer Arctic with less sea ice and weather in the middle latitudes, and he suggested it was likely to become more common as Arctic sea ice melts over the next 50 years.

This pattern has occurred only three times in the past 160 years, Overland said at the briefing.

Records tumbled in Greenland, where 2010 was the warmest year in 138 years in the island's capital city of Nuuk, and four big glaciers lost more than 10 square miles (25.90 sq km) each, said Jason Box of the Byrd Polar Research Center in Ohio.

86. Bangladesh, India Most At Risk From Climate Change

Bangladesh and India are the countries most vulnerable to climate change, according to an index that rates the Nordic region least at risk. British consultancy Maplecroft said its rankings showed that several "big economies of the future" in Asia were among those facing the biggest risks from global warming in the next 30 years as were large parts of Africa.

It said poverty and large low-lying coastal regions prone to floods and cyclones were among factors making Bangladesh the most exposed country. India, in second place, was vulnerable because of pressures from a rising population of 1.1 billion.

Madagascar was in third place, followed by Nepal, Mozambique, the Philippines, Haiti, Afghanistan, Zimbabwe and Myanmar. Vietnam, in 13th place and flood-hit Pakistan in 16th were also in the most exposed group.

"Understanding climate vulnerability will help companies make their investments more resilient to unexpected change," wrote Matthew Bunce, principal analyst at Maplecroft, who noted that many Asian countries were attracting large investments.

Norway was bottom of the list of 171 nations, least vulnerable ahead of Finland, Iceland, Ireland, Sweden and Denmark -- all rich north European nations which may initially gain from factors such as longer crop growing seasons.

The ranking combined exposure to extremes such as droughts, cyclones and mudslides, sensitivity to damage tied to poverty, population, internal conflicts and dependence on agriculture, and the capacity of a country to adapt.

The U.N. panel of climate scientists says it is at least 90 percent likely that a build-up of greenhouse gases, mainly from human use of fossil fuels, is responsible for most warming in the past 50 years.

Among major economies, the United States ranked at 129, China 49 and Japan 87. Most European Union nations were low on the list, among less vulnerable countries.

Mexico, which will host annual U.N. climate talks from November 29-December 10 trying to agree building blocks for a U.N. climate deal, was the most vulnerable of rich nations in the Organization for Economic Cooperation and Development at 45.

Some states were left off the list because of a lack of data, including North Korea, and small island states like the Maldives that are vulnerable to rising sea levels.

87. U.N. Climate Panel Agrees To Reforms

The U.N. panel of climate scientists agreed recently to change its practices in response to errors in a 2007 report, and its chairman, Rajendra Pachauri of India, dismissed suggestions he should step down. At an October 11-14 meeting in Busan, South Korea, the 130-nation panel agreed to tighten fact-checking in reports that help guide the world's climate and energy policies and to set

up a "task force" to decide on wider reforms by mid-2011. "Change and improvement are vital to the IPCC," Pachauri told a telephone news conference by the Intergovernmental Panel on Climate Change, which shared the 2007 Nobel Peace Prize with former U.S. Vice President Al Gore.

The IPCC has been under fire after errors in its last report in 2007, led by a projection that global warming could melt all Himalayan glaciers by 2035 -- centuries before the worst-case thaw.

The InterAcademy Council (IAC), grouping experts from national science academies, called on August 30th for "fundamental reform" of IPCC management and said panel leaders should serve only one six-year term, rather than the current maximum of two. Pachauri, re-elected in 2008 to a second term, said a one-term limit, if adopted, would apply only to future IPCC leaders when he steps down in 2014 after presenting the next report. "I have every intention of staying right till I have completed the mission that I have accepted," he said.

In a later interview, he said he would view it as a "dereliction of duty" to hand over mid-way. "I work 18 hours a day, I don't get a single holiday, I am traveling all the time. I could make my life easier by withdrawing," he said. He said there were benefits from continuity and experience.

And he said that the IPCC's basic 2007 finding -- that it is at least 90 percent certain that human activities led by use of fossil fuels are the main cause of recent global warming -- was unaffected by errors.

Pachauri also rebuffed suggestions that the IPCC could issue more frequent reports. "Knowledge is moving rapidly but not as rapidly as might warrant producing reports with greater frequency," he said.

The IPCC agreed new guidelines to tighten checks, as well as rules for fixing mistakes and for handling material that had not been peer reviewed by scientists.

Task forces would look into issues such as management of the Geneva-based IPCC Secretariat, which has a budget of about \$5 million a year. Among IAC recommendations were the appointment of an "Executive Secretary" and extra communications staff.

Pachauri told reporters that the next report would look harder at issues such as geo-engineering -- ways to affect the global climate such as by reflecting sunlight with mirrors or fertilizing seas to encourage growth of carbon-absorbing algae.

Experts are looking for new ways to slow global warming after the Copenhagen summit last year failed to agree a binding treaty to cut emissions of greenhouse gases. Among other areas, the panel would seek to work out more about sea level rise and how clouds would form in a warmer world when there will be more moisture in the air. White cloud tops can reflect sunlight and keep the planet cool.

88. Advanced Biofuel Technology Mature, Industry Says

The technology to produce so-called second-generation bioethanol has moved beyond the research phase and is ready to be used if policymakers back it with incentives, Danish industry leaders recently said. Second-generation bioethanol is made of plant waste, such as straw, corn

cobs, sugarcane bagasse, instead of from food crops like corn or sugarcane itself as with first-generation fuel.

Like first-generation biofuels, second-generation bioethanol can be blended with gasoline to run cars and help meet targets for green energy. But production is still in its infancy.

Steen Riisgaard, head of Danish industrial enzymes maker Novozymes -- a supplier to biofuel producers -- urged European policymakers to recognize that the technology has matured and create the right regulatory framework to support it. "My plea to Europe is that the technology is basically ready for deployment, and it will only be deployed if the frame conditions...are the right ones," he told a bioethanol conference in the Danish capital.

Riisgaard said a recent study showed that the European Union could replace 62 percent of its annual gasoline consumption with next-generation biofuels by 2020.

Anders Eldrup, chief executive of Danish state-owned DONG Energy, agreed that the technology is ready, pointing to a demonstration plant built in Denmark by DONG's Inbicon unit that converts straw into bioethanol as an example. That plant, which started up last year, is designed to produce 5.4 million liters of bioethanol annually, and the fuel will soon be available in a blend with gasoline at Statoil petrol stations in Denmark. To reach real industrial scale, however, such a plant would need to be 10 times bigger, Eldrup told reporters.

"It's definitely ready," Zia Hag, senior analyst at the U.S. Department of Energy, told the conference referring to the technology of the second-generation fuel industry overall.

Risgaard said a 25-million-gallon-per-year plant being developed in Iowa by U.S. ethanol producer POET -- a Novozymes customer -- was the most advanced in the industry.

Novozymes and rival Danish enzymes producer Danisco have a near duopoly in supplying enzymes to biofuel producers. Enzymes are used to convert biomass into sugars -- a critical step in producing cellulosic ethanol from non-food feedstocks.

Risgaard said lack of a market for such feedstocks, also called "residuals," was a problem for the industry but he said such a market could develop and noted that straw had been collected in Denmark for years for energy production.

DONG Energy, which burns straw with coal to generate electricity, aims to phase out coal-fired power production so it already sees oversupply of straw. Eldrup said in an interview that the company wants to continue putting that straw to work -- in biofuel instead of power generation if policymakers set the right tax framework. "We hope we can make a big full-scale plant in Denmark if framework conditions are right," he said. "The tax rules have to be adjusted because today they give the most advantage when we burn the biomass," he said.

In addition to producing second-generation biofuel, DONG's Inbicon has sold its technology for preheating biomass to Japan's Mitsui and to some U.S. producers, and Eldrup said such technology exports could become an important business.

89. Climate Talks Marred By Bickering, Some Progress On Finance

China hit back on Saturday at U.S. claims it was shirking in the fight against climate change, likening the criticisms to a mythic pig preening itself. Frustration between the world's two top

carbon polluters overshadowed week-long U.N. talks seeking progress on the shape of a new climate pact, with negotiators making some progress on financing but failing to dispel fears the process could end in deadlock.

Su Wei, a senior Chinese climate change negotiator, swiped at comments from top U.S. climate envoy Todd Stern as the climate change talks drew to a close in the north Chinese city of Tianjin. Stern, in remarks at a U.S. university, said Beijing could not insist rich nations take on fixed targets to cut greenhouse gas emissions while China and other big emerging nations adopt only voluntary domestic goals.

Su countered that Stern's claims were a diversion from the United States' failure to make big cuts in carbon dioxide and other greenhouse gases causing global warming. Su likened the U.S. criticism to Zhubajie, a pig in a classic Chinese novel, which in a traditional saying preens itself in a mirror. "It has no measures or actions to show for itself, and instead it criticizes China, which is actively taking measures and actions," Su said of the United States.

The talks in Tianjin reached firmer agreement on funding for poor countries hit by global warming, green technology transfers, and other steps intended to build momentum for more high-level treaty talks in Cancun, Mexico, from the end of next month.

Cancun is meant to be the stepping stone to a legally binding deal next year that would lock in governments into reducing greenhouse gas pollution holding heat in the atmosphere and threatening to tip over into dangerous global warming.

Officials and activists in Tianjin said they were frustrated that more was not agreed in sessions that often dwelt on procedures. Talks on protecting carbon-absorbing rainforests languished. "We're moving in the right direction, but we certainly need to put our foot on the accelerator," said Julie-Anne Richards of the Climate Action Network, which monitored the talks.

Progress this week should lead to some decisions in Cancun, said Wendel Trio, Greenpeace International climate policy director, but he pointed to the bickering that has dominated the Tianjin meeting. "At times it has been like watching children in a kindergarten," he said.

The jabs between Beijing and Washington exposed a rift likely to keep dogging talks: to what extent China should be regarded in treaties as an emerging economy free of fixed greenhouse gas reduction goals.

The first phase of the Kyoto Protocol, the U.N.'s main weapon against climate change, ends in 2012 and what follows from 2013 is under contention. The Protocol makes an either-or distinction between rich countries, which take on fixed targets to cut emissions, and developing countries, including China. The U.S. is not a party.

Nearly 200 governments failed to agree last year on a new legally binding deal. A meeting in Copenhagen last December ended in bitter exchanges between rich and developing countries and created a loose accord with many gaps.

Stern accused Beijing of sliding away from the Copenhagen Accord and said it established that China should be treated much like other big polluters. China has said it will not accept such a change. China also demands that advanced economies, responsible for most of the industrial pollution fuelling global warming, must commit to deep cuts in emissions, giving poorer societies more room to grow their economies and greenhouse gas output.

The top U.S. negotiator in Tianjin, Jonathan Pershing, demanded China and other big emerging nations expose their domestic emissions goals to tighter international scrutiny and put them in a new binding pact that succeeds Kyoto. "These elements are at the heart of the deal and the lack of progress on them gives us concern," Pershing told reporters. "The danger we face now is that the essential balance that allowed progress to be made is in jeopardy."

90. Electric Cars Put Lithium Miners On Fast Track

Lithium miners are reaping the benefits of a political and industry push to get more electric vehicles on the road, with shares in some Canadian-listed miners up more than 50 percent in the past two months. Four major producers have long dominated lithium output and demand is likely to double in the next 10 years as automakers roll out hybrid and electric cars using lithium-ion batteries. That has opened the door to numerous exploration companies and junior miners looking to capitalize on the trend.

But while lithium is fairly abundant, it is not easy to find a cost-effective deposit and process the highly reactive metal. That points to increased M&A activity for companies with promising reserves but only a distant chance of production. "Lithium is an extremely active area," Byron Capital Markets analyst Jon Hykawy said of deals in the sector, adding that most automakers and battery companies want to spread their lithium purchases over several miners. "No one major firm is going to stop with one small junior prospect," he said. "They can't put all their eggs in one basket that way."

Early this year, Magna International acquired a 13.3 percent stake in junior miner Lithium Americas in exchange for a guaranteed 25 percent share of production, even though the Toronto-based company doesn't plan on having a single ounce of lithium to sell before 2014. Shares of the Lithium Americas have risen 60 percent in the past two months on the Toronto Stock Exchange.

"You always protect your supply chain," said Ted Robertson, president of Magna's E-Car Systems. "To mine lithium, and have it in the form we need for these batteries, there are only certain people doing that today."

Magna, the world's third-largest auto parts manufacturer, recently created an E-Car division, which will build parts for hybrid and electric cars, as well as full electric cars. The company uses about 8.9 kilograms (19.6 pounds) of lithium for each battery pack, along with other elements such as cobalt, nickel and iron. "I would say that lithium, as the basic substance in batteries, will be the current technology being used over the next 10-20 years," Robertson said. After that: "My bet is we'll just refine the lithium compounds that are used in the batteries today."

Three diversified companies, SQM, Rockwood's Chemetall and FMC, account for 60 percent of global lithium carbonate production. The only pure-play producer is Australia's Talison Lithium, with about 24 percent. Talison recently bought Salinas Lithium and used the Vancouver-based company to list on the Toronto Stock Exchange.

Looking ahead, companies with promising properties like Rodinia Lithium, Lithium One and Western Lithium could become takeover targets, said Hykawy.

And with demand soaring, there is space for two or three of the junior miners to grow into major players, analysts say. Global lithium output doubled to 92,000 tons in 2008 from 45,000 tons in

1997, and one major producer says demand will be over 200,000 tons in 2020. "That's a major, major step forward in terms of demand forecast by a major lithium producer," Hykawy said. "It strongly suggests that there's more than enough room for the juniors to come to the market, to become major players."

The main force driving growth is the push by U.S. and European governments to reduce carbon emissions, including a U.S. plan to increase fuel economy by 42 percent by 2016. "We think the only way they can do that is by doing the electrification of vehicles - so more use of hybrids," said Tom Astle, head of research for Dundee Capital Markets.

The majority of the world's lithium supply is currently mined from giant salt lakes in Argentina and Chile that offer a low-cost, high-grade source of the reactive metal. But not all salt lakes contain lithium. "People think that simply because you stake ground in a salt lake it means that you have lithium mine," said Lithium Americas Chief Executive Waldo Perez. "Well it's not." He added that production from brines takes at least two years, making responding to rapid changes in demand difficult.

Lithium can also be mined from hard rock, called spodumene, in a quicker but costlier process. For Talison, a spodumene miner with projects in Australia, the decision to buy Salares for its Salares 7 brine project in Chile was easy. "The logic of combining a mineral producer and a brine producer is that it guarantees a secure supply," said Chief Executive Peter Oliver. "If you're looking at a car manufacturer that's putting \$100 of lithium into a \$50,000 car, the one thing they do want is to guarantee a high-quality, secure supply."

91. Standardization, Government Support Called Essential to Electric Vehicle Industry

International protocols for electric vehicle charging systems, batteries, and related technology are needed to spur rapid growth in the industry, which will play a crucial role in solving world environmental and energy problems, a U.S. Department of Energy official said on October 1st. David Sandalow, assistant secretary of energy for policy and international affairs, also said a strong government policy framework is essential for electric vehicles to become competitive and affordable. He made his comments during an international panel discussion closing out a two-day forum on advanced vehicles.

Held by the International Energy Agency at the Paris motor show, the forum brought together 75 experts and high-level representatives from 15 countries, including national governments, cities, automobile and battery manufacturers, and utility companies.

The forum also saw the launch of the Electric Vehicles Initiative (EVI), a consortium of the IEA and eight countries—China, France, Germany, Japan, South Africa, Spain, Sweden, and the United States—that aims to promote electric vehicle technology, infrastructure, and deployment.

IEA Executive Director Nobuo Tanaka told the panel that some 1 billion electric and plug-in hybrid vehicles will need to be in use by mid-century as part of a comprehensive clean energy effort to hold global warming to levels considered less likely to cause devastating climate change.

Tanaka said the electric vehicle industry faces two key issues: "diversity, because there need to be [many] different models, ideas, and technologies to allow competition across countries;

integrity, because, to reach our climate goals, we need cooperation on standardization and growth of infrastructure and harmonization on clean energy.”

Sandalow said EVI “offers a tremendous potential for countries to come together to develop protocols for charging, battery swapping, and other technical areas, rather than having dozens of protocols in these areas.” “We also hope it will improve data sharing among countries,” he said.

Pierre Lederer, executive vice president at Electricité de France, France's national power company, agreed that standardization will be key to bringing down costs, but he argued companies should not wait for standardization before setting to work on electrical vehicles. “In the computer industry, Microsoft did not wait for standardization to come along before it developed a very powerful operating system that is used on computers around the world,” he said. “I think this experience can apply to electric vehicles as well. A lot can be accomplished at the national level, before we achieve standardization.” For example, he said, Electricité de France can already help buyers of electric vehicles to set up charging facilities at home.

Carlos Ghosn, chief executive officer of the Renault-Nissan Alliance, said the automobile industry already has the technology to make affordable electric vehicles, which he said are simpler than fossil-fueled models from an engineering perspective. “But we need public sector help in the short run to help sustain companies' efforts to invest in this technology and to reposition the minds of consumers,” he said.

“Consumers don't want to pay 30 or 40 percent more just because a car is more environmentally friendly. But if you give a consumer a choice between two cars, one extremely environmentally friendly, at the same price or cost, they will go massively for it,” Ghosn predicted. He said the government also needs to help “eliminate wrong, preconceived ideas that public support is a handout to carmakers. It is a public-private collaboration, just for two years or so, to trigger a mass market” for these vehicles.

Sandalow agreed support is necessary. “The policy framework is absolutely essential,” he said. Faced with environmental and economic problems linked to fossil fuels, which run 96 percent of today's vehicles, the Obama administration has invested some \$3 billion in grants for research and design on electric vehicles and battery components and has offered loan guarantees to industry and “significant” tax incentives to buyers, he said.

At least 20 U.S. cities, using federal funds, are investing in electric vehicle infrastructure, he said. China and Europe are also investing “massively” in the technology, Sandalow said.

Jean-Louis Borloo, France's minister of ecology, energy, sustainable development, and the sea, noted that his government has invested heavily in electric vehicles. It recently announced plans to invest €750 million (\$1.03 billion) in “vehicles of the future,” batteries, and charging systems, in addition to €700 million (\$958.3 million) already invested. The country's so-called bonus-malus program, which pays up to €5,000 (\$6,844) to buyers of zero and low carbon vehicles, depending on emissions, and fines buyers of high emissions vehicles, has led to a massive shift in buying habits, Borloo said. He said the average carbon dioxide emissions per kilometer of new cars sold in France is falling by about 1 gram per month, compared with the European Union's average of one gram per year. “This is a movement that will not stop,” he said.

Sandalow said systems integration could allow electric car batteries to be used to support mass storage of renewable energies, which are often intermittent. “One of the challenges of mass

deployment of renewable energies such as solar and wind is that the sun doesn't always shine. The wind doesn't always blow. So you need energy storage at mass scale in order to scale up those technologies," he said. With new technologies that allow coordinating tens and hundreds of millions of electric vehicles plugged in at home, these batteries could provide mass energy storage. "You could literally have car owners selling energy back to the grid," he said.

Sandalow said a recent Washington, D.C.-area storm had knocked out power to half a million homes. "Electric vehicle owners could have used their batteries as backup power. We're looking at many interesting technology applications for these vehicles," he said.

Lederer agreed mass storage using car batteries is a possibility. "It will be more and more difficult to build new infrastructures. So we need to look at ways to develop grids," he said.

92. IEA Says 1 Bn Electric Vehicles, Hybrids Needed by 2050 to Limit Global Warming

Some 1 billion electric and plug-in hybrid vehicles will need to be on the road by 2050 as part of a comprehensive clean energy effort to hold global warming to levels considered less risky for the planet, the head of the International Energy Agency said on October 1st. "This will require a huge investment in the future," IEA Executive Director Nobuo Tanaka said. Tanaka made his comments in announcing the inaugural meeting of the Electric Vehicles Initiative (EVI), a consortium of eight countries—China, France, Germany, Japan, South Africa, Spain, Sweden, and the United States—and IEA that aspires to promote electric vehicle technology and infrastructure worldwide while boosting deployment of the vehicles.

Tanaka spoke at the close of IEA's two-day forum on advanced vehicles, which brought together 75 experts and high-level representatives from 15 countries, including national governments, cities, automobile and battery manufacturers, and utility companies.

EVI's participating countries vowed to launch a pilot cities program to hold electric vehicle demonstrations in urban areas and to share results. They agreed to share information about funding and other factors that affect research and development, as well as development targets and related indicators. They also agreed to swap best practices and policies.

Some programs are already under way. In a videotaped announcement, Wan Gan, China's science and technology minister, told the forum his government had chosen Shanghai and Shenzhen as international pilot cities, and he invited foreign and domestic companies to begin trials of their vehicles in China.

EVI will announce more detailed plans in November at the Electric Vehicle Symposium-25 conference in Shenzhen and will present initial results at the Shanghai motor show in 2011, IEA said. These will include a comparison of electric vehicle and plug-in hybrid electric vehicle demonstration projects and unveiling of an indicators database, IEA said.

Tanaka said 1 billion electric or hybrid vehicles must be sold by 2050 to keep on track to meet IEA's so-called Blue Map scenario target of halving global carbon dioxide emissions by that date, compared with 2005 levels. "Climate change scientists tell us that is what is necessary to hold global warming to under 2 degrees Celsius [3.6 degrees Fahrenheit]," he said, noting that this is considered the maximum level possible before risks of catastrophic climate change increase significantly.

He said that under the scenario, electric vehicles are one part of a clean energy package that must also include renewable energy and carbon capture and storage, among other things. "We have to have all of these energy technology revolutions. Otherwise we face very serious problems," Tanaka said.

93. Global Climate Deal For Aviation Sector Agreed

Governments participating in the 37th assembly of the International Civil Aviation Organization (ICAO) have agreed a global deal on climate change, described as a historic agreement. This is the first time such a deal is agreed for a specific economic sector. The meeting's participants agreed to cap greenhouse gas emissions from international aviation from 2020, and to improve fuel efficiency by 2% annually up to 2050. The ICAO will also aim to set a global CO2 standard for aircraft engines in 2013.

Governments will submit action plans spelling out what they intend to do to achieve goals on emissions and fuel efficiency. Small emitters accounting for less than 1% of international air traffic will not have to submit such plans to the ICAO.

Climate commissioner Connie Hedegaard said the deal was "not as ambitious as Europe thinks it should be" but the EU won an important battle over aviation's inclusion in its emissions trading scheme (ETS). It will not be required to get the mutual consent of other countries as some such as the US had wanted.

This will make it more difficult for the US to argue against their inclusion in the ETS in 2012. A group of US airlines challenged the move in a British court in December last year. The case has since been transferred to the European Court of Justice.

ICAO governments agreed 15 guiding principles to use when designing and implementing market-based instruments (MBI) for aviation. The European Commission said the ETS scheme was in line with these principles. The governments also agreed to conduct a feasibility study on the creation of a global MBI.

Industry association IATA said that "governments must come to the table with much needed infrastructure improvements such as NextGen in the US" to help achieve the ICAO's fuel efficiency goal. This goal is slightly more ambitious than the aviation industry's own commitment, an annual 1.5% improvement.

94. Air Pollution Appears To Foster Diabetes

A pair of new studies — one in the United States, another in Germany — reports strong evidence that diabetes rates climb with increasing air pollution in the form of tiny airborne particles. "Although previous studies had hinted at this possibility, the data were mostly from small studies or from animals exposed to high levels of particulate matter," notes Aruni Bhatnagar, a cardiovascular researcher at the University of Louisville in Kentucky who did not take part in either study. He says the new data provide important and more rigorous evidence that real-world pollution may be tampering with blood sugar control in a large and growing number of people.

Both new studies focused on tiny airborne motes spewed primarily by traffic, coal-fired power plants and industrial boilers.

The new findings are particularly disturbing when set against “an exploding pandemic, if you will, of type 2 diabetes, particularly in urbanized areas around the world,” adds cardiologist Sanjay Rajagopalan of the Ohio State University College of Medicine in Columbus, who is also unaffiliated with either new study. “The traditional explanation for this pandemic,” he says, “has been changes in lifestyle — diet and exercise — and increasing obesity.”

Particulate pollution is emerging as another potentially important candidate for causing obesity, he says, owing to its ability to trigger chronic, low-grade inflammation — initially in the lung but also in a host of other tissues, including fat.

Last year, Rajagopalan’s team published data from mice that for the first time demonstrated that fine particulate pollution can conspire with obesity to promote metabolic disease. The researchers exposed animals for half a year to PM-2.5. All the animals ate a high-fat diet and became obese.

Compared with fat mice breathing clean, filtered air, those that inhaled high but real-world concentrations of PM-2.5 developed chronic inflammation, insulin resistance, a propensity to deposit their fat around the belly and a host of other prediabetic changes. The study’s findings appeared in the February 3rd *Circulation* in 2009. The next step was to look for signs that PM-2.5 promotes diabetes in people, and the new studies tackle that question, Rajagopalan contends.

For the U.S. study, John Pearson of Children’s Hospital Boston and his coworkers compared Environmental Protection Agency measurements of fine particulates in counties across the nation against county-by-county diabetes prevalence numbers that had been collected by the federal Centers for Disease Control and Prevention. They found that for every 10 micrograms per cubic meter increase in average PM-2.5, diabetes prevalence climbed — in absolute terms — by about 1.15 percent. (For instance, the incidence in a county whose average particulate concentration was 15 $\mu\text{g}/\text{m}^3$ might be 7 percent of all adults, versus 5.85 percent in a county where the average PM-2.5 level was just 5 $\mu\text{g}/\text{m}^3$.) The probability that the observed associations are due solely to chance is less than one in 1,000, Pearson’s team reports in the October, *Diabetes Care*.

Even after accounting for a host of known diabetes risk factors including obesity, diet, exercise and a community’s population density, air pollution’s link to the disease held, Pearson says. To further test the link his team reran its analyses, taking out areas of the country with high average pollution readings or eliminating data for ethnic groups known to be at especially high diabetes risk. “And no matter how we analyzed it, the association remained strong,” he says.

In the second study, epidemiologist Wolfgang Rathmann of the German Diabetes Center in Düsseldorf and his colleagues tallied new cases of the metabolic disease between 1990 and 2006 among 1,775 middle-age women. All were taking part in a study probing air pollution’s links to lung disease, inflammation and aging. In all, 187 of the participants developed diabetes. Because PM-2.5 measurements were unavailable, the researchers used proximity to roads — where vehicles would be a major pollution source — as a proxy for exposure to fine particulates. Women who developed diabetes were more likely to have lived nearest to heavily trafficked roads, Rathmann reports.

Compared to the 25 percent of women living farthest from busy roads, the relative risk of developing diabetes was 15 percent higher for the 25 percent of women living closest to major roadways. The findings appear in the September *Environmental Health Perspectives*. That

diabetes risk associated with PM-2.5 in this study was similar to what Pearson's group measured in comparing the quarter of counties with the highest PM-2.5 values to the 25 percent of counties with the least fine-particulate pollution — about a 20 percent difference.

"There is a growing body of literature suggesting that people with diabetes may be more susceptible to the harmful effects of air pollution," notes Gregory Wellenius of Brown University in Providence, R.I. These new studies suggest this hypothesis is worth investigating further, he says. However, the epidemiologist cautions, while such studies are useful in generating hypotheses, they can't establish causation. He says additional studies with exposure values for individuals will be needed to confirm or refute these apparent links.

The big U.S. analysis is particularly interesting, Bhatnagar says, because it's the first to show "in such a large and comprehensive study that air pollution is associated with diabetes." But it does not address a perplexing trend, he notes: From 1994 to 2004, U.S. particulate pollution fell somewhat, while the prevalence of diabetes increased by between 4 and 6 percent.

95. Analysis: Aluminum Use In Autos Grows, But Steel To Stay Dominant

Steel will remain the dominant material in the manufacture of cars even as environmental pressures lead to greater use of lightweight aluminum. But aluminum is more expensive than steel and prices are considered more volatile. What's more, steel producers have not been sitting on their hands. They are developing lighter, stronger steels to cut car fuel consumption and harmful emissions. Also in their favor, car plants are geared up to use mainly steel parts and a switch to aluminum would not be made lightly.

"At least in the medium term there's a limit to what can be done with the existing technology," said John Kovacs, principal consultant in industry consultancy CRU Group's steel team. "Retooling factories to work with aluminum instead of steel would be a costly step which will limit substitutability." The fact that an auto cycle plan is for up to 10 years also means any potential big switch to using other materials could be decades down the line.

Also a disincentive is that aluminum costs more than steel. Aluminum has made inroads in some auto parts such as engines, bonnets, tailgates and doors in some models. But future gains such as greater use in car bodies may be limited.

"Cost is a consideration and the market for new applications for aluminum in cars is pretty saturated, I don't see any great increase in intensity of use," said independent consultant Angus MacMillan.

The European price for competitive material hot dipped galvanized steel coil, used in outer car body panels, which is not traded on the LME, is around \$800 a ton, according to Metal Bulletin. The London Metal Exchange (LME) three-month aluminum price was last indicated at around \$2,180 a ton.

The volatility of aluminum prices is often cited as another reason why it will not replace steel in a mass-produced model. Volatility has increased in commodities like aluminum, which are not just bought and sold by traditional users, but are also viewed as investment tools by the wider financial community. In the past 12 months London Metal Exchange (LME) three-month aluminum prices have ranged between around \$1,800 and \$2,500 a ton.

Aluminum tends to be used more extensively in luxury cars though, including the body, as cost is less of a consideration. "Mercedes-Benz uses a significant amount of aluminum per year in various types and forms. Usage has been growing over the past years with the introduction of new products, such as the focus on light-weight applications," said a spokesman for German carmaker Daimler. "Use of aluminum is expected to increase, for example in applications such as outer panels, doors and some structural applications," he added.

France's PSA Peugeot Citroen, Europe's second-biggest carmaker, said lower emissions implied weight reduction. But it said it was too early to say how this would affect the material composition of cars.

There is no denying aluminum use has grown considerably. In the average British-produced car it has risen by around one-third since 2000 to around 140 kg, according to the UK's Aluminum Federation (Alfed). Even so, it still only accounts for about 10 percent of the average car weight, compared with steel's 60 percent.

Some believe aluminum has further growth potential. British-based car firm Jaguar Land Rover has said demand for aluminum sheet in the European car market could double or triple in the next five to 10 years. But if aluminum makers undertook long-term supply agreements to combat price volatility, it could be greater. Indeed, a Norwegian aluminum maker said it would consider such deals with manufacturers intent on selling more cars with "greener" credentials.

But ArcelorMittal, the world's biggest steel producer, said the use of lighter, stronger steels in cars is growing fast and questioned aluminum's green credentials. The production of aluminum is more CO2 intensive than steel.

Steel may remain the main material of choice in the foreseeable future, but the amount per car will fall as they get lighter. "Light-weighting is definitely a factor that has the potential to reduce steel consumption over time," said CRU's Kovacs. "But the growth in the car industry, in particular in China, India, Brazil and Russia, will likely outweigh the savings from lighter weight steels."

96. GE Teams With Better Place On Charging Network

General Electric is partnering with Silicon Valley electric car infrastructure company Better Place on technology development and financing of car batteries, the U.S. conglomerate has announced. GE, which recently unveiled an electric vehicle charger called WattStation, is planning to make the product compatible with Better Place's service network.

Better Place is aiming to build a global network of charging stations, starting in Israel and Denmark, as major automakers are racing to launch a variety of electric and plug-in hybrid electric vehicles.

Under the new partnership, GE and Better Place will develop a battery financing program, beginning with a project to finance 10,000 batteries in Israel and Denmark. The two companies will also push for electrification of corporate fleets.

The partnership with GE will help Better Place scale up its global operations more quickly, company's Chief Executive Shai Agassi said. Better Place's other major partner is automaker Renault.

The startup firm's concept is for battery-swapping stations to complement a network of charge spots so that electric cars can extend their range without the need of an additional back-up engine that burns fossil fuel.

Better Place plans to have 50 electric cars on the road in Israel testing its charging infrastructure by the end of the year. Under the company's charging infrastructure model, the batteries would be leased to customers, who would buy monthly 'miles' or lease fees for battery and electricity to run the car. Charging and battery swapping would be included in the plans.

97. Ozone Layer Recovering But Will Take Longer Over Poles: U.N.

The ozone layer that shields life from the sun's harmful rays is projected to recover from harmful chemicals by mid-century, but it will take longer over the polar regions, according to a United Nations study. Ozone depletion -- blamed for higher ultraviolet radiation that causes skin cancers and cataracts and damages agriculture -- will continue for decades as several key damaging substances stay in the atmosphere for a long time after emissions end.

While many cooling agents or other compounds harmful to the ozone are no longer being produced or emitted, some of their industrial replacements are greenhouse gases that contribute much more to global warming, the report said.

"The ozone has bottomed out. It is no longer really decreasing. But there is also no real sign yet of an increase in ozone," Geir Braathen, senior scientific officer at the World Meteorological Organization (WMO), told a news briefing. "We still believe that the ozone layer, at least in mid-latitudes, will be repaired by around 2050," he said.

The ozone hole which forms over the Antarctic every springtime is only expected to return to the pre-1980 benchmark values in the late 21st century, the report said. High levels of ultraviolet rays are detected when it is large. However, the current Antarctic ozone hole is smaller than in the past two years, according to Braathen.

While chlorofluorocarbons (CFCs) once used in refrigerators, spray cans and other appliances have been phased out, demand for substitutes such as hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) has risen, according to the study by the WMO and the U.N. Environment Program (UNEP). Many are also potent greenhouse gases, blamed for causing climate change that unleashes extreme weather such as droughts, wildfires, heat waves, floods, mudslides and rising sea levels.

The report by 300 scientists credited the 1987 Montreal Protocol signed by some 200 countries with stopping additional ozone loss and helping to mitigate the greenhouse effect. Through tight controls, the pact avoided an equivalent of 10 gigatons per year of carbon dioxide being emitted, it said. This was five times more than the Kyoto Protocol's targets for reducing greenhouse gases from 2008-2012. Current annual emissions of CO₂ from burning fossil fuels and cement production amount to 30 gigatons, Braathen said.

HCFCs, ozone-depleting substances covered by the Montreal Protocol, are due to be capped in 2015 and phased out by 2040. As HFCs are not ozone-depleting, they are not covered, but developing countries are pushing for them to be brought under the Kyoto protocol.

"The replacements are in some cases greenhouse gases but there are replacements that have low greenhouse warming potential," said Len Barrie, WMO research director. "So there's room technologically to play here. And that's the point."

Up to 20 million cases of skin cancer and 130 million cases of cataracts have been averted due to the Montreal Protocol, according to the report being published in full in early 2011.

98. 2010 Tied For Warmest Year As Walruses Flee Ice Melt

So far, 2010 is tied for the warmest year on record, and Arctic sea ice reached its third-lowest level, prompting thousands of walruses to haul themselves out of ice-starved waters, according to U.S. scientists. The first eight months of the year match the record set for the same period in 1998 for the highest combined land and ocean surface temperatures worldwide, at 58.5 degrees F (14.7 C), 1.21 degrees F (0.67 degrees C) above the 20th century average, the U.S. National Climatic Data Center said in a statement. Temperatures for the northern hemisphere summer -- June through August -- were the second-warmest globally, after 1998, the center said.

Most parts of the globe were hotter than average, with the most prominent warmth in eastern Europe, eastern Canada and parts of eastern Asia. Australia, central Russia and southern South America were cooler than average. Britain had its coolest August since 1993, according to the U.K. Met Office, while China was 2 degrees F (1.1 degree C) above the 1971-2000 average, the warmest August since 1961, the Beijing Climate Center reported.

In the Arctic, sea ice cover appeared to hit its lowest point for the year on September 10, according to the U.S. National Snow and Ice Data Center. This year's Arctic ice cover is the third-lowest since satellites started measuring in 1979, the center said in a statement. This is less ice than at 2009's low point, but above the amount seen in 2008 and 2007. That's still less than the long-term average and well outside the range of natural variability, the center said.

At its lowest level, Arctic sea ice covered 1.84 million square miles (4.76 million square kilometers), about 240,000 square miles (630,000 square kilometers) above the record low of 2007. This is only the third time satellites have shown Arctic ice extent dropping below 1.93 million square miles (5 million square kilometers).

The loss of Arctic sea ice has caused thousands of Pacific walruses to come up onto land, the conservation group World Wildlife Fund said, citing U.S. Geological Survey observations. An estimated 10,000 to 20,000 walruses gathered onshore in Alaska in recent days, said Geoff York, an Arctic biologist with World Wildlife Fund. "When these animals get to shore, they're normally spread out across a pretty vast area of sea ice so they're not piled up in the 10s or 20 thousands of animals that we see happening now," York said by telephone.

Under normal conditions, walruses eat bottom-dwelling creatures in shallow water on the continental shelf, using sea ice as fishing platforms. Recently, sea ice has retreated past the shelf into areas of deep water, where walruses can't fish.

Risks include the long swim to land, sometimes as much as 400 miles; trampling in walrus stampedes -- they spook easily, like deer or cattle, York said -- and the threat of predation by polar bears.

However, having many walruses on shore may make it easier to get an accurate population estimate, said Chad Jay of the U.S. Geological Survey Alaska Science Center. The current

estimate, based on a 2006 aerial survey, is 130,000, but Jay said this is probably low because the survey skipped some areas.

99. Daimler intensifies Push For Electric Cars

Carmakers Daimler, Renault and Nissan are redoubling their electric cars effort in the race for market share in a world of tighter emission rules. Daimler's research chief, Thomas Weber, told Reuters in an interview its cooperation with Renault and Nissan "will be expanded to include all three partners as far as electric motors, batteries and powertrains are concerned."

The move comes as carmakers and car parts suppliers rush to gain a foothold in the market for zero-emission vehicles as deadlines for lower emission levels near.

Toyota Motor Corp recently said it would offer a plug-in version of its Prius model positioned to be the cheapest green car of its kind by 2012.

France's Renault, its Japanese partner Nissan and Daimler signed a cooperation deal in April initially focusing on small cars, light commercial vehicles and engines. The cooperation included so far the next-generation Smart fortwo and Renault Twingo models, including electric versions, as well as expanding the Smart and Twingo families.

Car CO₂ emission standards are becoming stricter to fight global warming. Brussels targets an overall level of around 95 grams of carbon dioxide per km by 2020 for new cars sold in Europe. "We won't be able to meet the target of 95 grams CO₂ in 2020 without electric vehicles with batteries and fuel cells," Weber said in an interview. But the new technology is still in its infancy and "it won't be easy to then also earn money with these cars," Weber added. That's why Daimler has decided to broaden its existing partnership with Renault and Nissan, hoping to cut costs by building scale.

Daimler benefits from economies of scale for small three- and four-cylinder engines, Weber said. "We would have reached quantities of about 500,000 engines at most on our own. Together with Renault we are talking about several million."

Weber added he expects Nissan to purchase a mid-five-digit number of diesel engines from Mercedes as part of the deal.

Daimler will have to bring down its fleet's emissions to below 140 grams of carbon dioxide by 2012 or else risk fines. Emissions of its fleet -- ranging from its Smart brand to the Mercedes S-Class and E-Class saloons -- equated to 160 grams of carbon dioxide on average last year. To help get there Daimler agreed in March with China's BYD to develop electric cars for China. Daimler said it aims to sell 150,000 to 200,000 zero-emission passenger cars in Europe by 2020. The carmaker sold just over a million cars overall last year.

Sales of premium carmakers like Daimler are driven by soaring demand from China as living standards rise in the world's most populous nation. As a result, Daimler plans to produce more cars in China and to broaden its cooperation with German peer BMW to include purchasing car parts in China, Weber said. BMW procurement chief Herbert Diess told the press about such plans in an interview this month and said he expects to save about 100 million Euros (\$128.7 million) per year from 2012/2013 thanks to the cooperation with Daimler.

100. World Bank Appoints Clean Energy "Czar"

The World Bank announced it has appointed a California professor to lead its efforts to foster growth of alternative energy programs in developing countries. Daniel Kammen, an energy professor at the University of California, Berkeley, will be chief technical specialist for renewable energy and energy efficiency, the bank said.

The position was created amid unprecedented demand from developing countries for support to address development and climate change as interlinked challenges, the bank said. Responsibilities of the job include responding to the hurdles in providing energy to the 1.5 billion people in the world who do not have access to clean, reliable and affordable energy services, the bank said.

"More than ever, our clients and countries are looking for solutions as they put in place economic growth and poverty reduction policies for their citizens today while taking into account the needs of the planet tomorrow," said Inger Andersen, World Bank vice president for sustainable development

Some have criticized the bank recently for providing loans for fossil-fuel powered plants such as a \$3.75 billion loan for a coal-fired plant being developed by South African state utility Eskom. The United States, the Netherlands and Britain, all major donors to the World Bank, said in April they abstained from supporting the loan due to environmental and other reasons.

The bank is beefing up its climate and alternative energy staff as it supports action to limit deforestation and offers financing to start projects designed to cut greenhouse gas emissions. In June, the bank hired the UK national Andrew Steer for the new job of special envoy on climate change. Steer oversees more than \$6 billion in projects in the bank's Climate Investment Funds to fight the worst effects of global warming.

101. Two Universities Chosen to Spearhead U.S.-China Clean Energy Research

Two consortiums led by the University of Michigan and by West Virginia University have been chosen to receive \$25 million total in U.S. government funding over the next five years to create research centers for the United States and China to jointly study and develop clean energy technology, the U.S. Department of Energy said in a notice on its website on September 2nd. The two universities leading the U.S. part of the joint program are expected to match the funding to bring total U.S. funding to \$50 million, while China will contribute \$50 million to the program for a combined total of \$100 million, the department said. The Chinese universities and partner companies have not yet been announced.

The University of Michigan will lead a group of universities, research centers, and businesses to focus on research and development of electric vehicle technology. The West Virginia University-led group will develop and test carbon capture and storage technologies.

A further \$12.5 million in U.S. funding will be awarded to another consortia this fall that will focus on building energy efficiency technologies, with an equal amount devoted on China's side for the same aims, DOE said.

The joint U.S.-China Clean Energy Research Center effort was announced during a visit by U.S. President Barack Obama to Beijing in November 2009.

U.S. Energy Secretary Steven Chu said in the DOE statement that the centers will “help accelerate the development and deployment of clean vehicle and clean coal technologies” in the United States and provide “new export opportunities for American companies, ensure the United States remains at the forefront of technology innovation, and help reduce global carbon pollution.”

Separately, Chinese entrepreneurs and businesses at a clean energy investor forum in Beijing on September 8th sought funding for 12 projects that have the potential to reduce greenhouse gas emissions by 1 million metric tons per year, according to a statement from the U.S. Embassy in Beijing. The projects are among 20 that have been supported over the past year and a half in China by the Climate Technology Initiative Private Financing Advisory Network, a multilateral public-private group managed by the U.S. Agency for International Development's Eco-Asia Clean Development and Climate Program.

According to the embassy, the projects included biomass, small hydropower, energy-efficient lighting, waste-to-energy, and other energy efficiency ventures.

Five of the 20 projects have been fully funded. Together, the five fully funded projects could mitigate an estimated 120,000 metric tons of greenhouse gases per year, according to the statement.

102. Aviation Industry Sees Biofuels Progress, But Commercialization Still Far Away

On September 16th, global aviation representatives said that important advances have been made in the development of biofuels for use in commercial jets, but they admitted significant barriers remain to their widespread production and sale. With the air transport sector under pressure to cut its greenhouse gas emissions, representatives from aircraft and engine manufacturers and major airlines said at an industry conference in Geneva that the alternative fuels movement should receive a boost with the expected full certification of aviation biofuel for commercial use in early 2011.

“There are lots of important things happening on biofuels in pockets all over the world,” said Robert Nuttall, vice president for marketing with engine maker Rolls-Royce. “We can expect biofuels to be produced from a broad range of sources.”

Jim Woodger, a biorenewable fuel technology specialist with Honeywell-UOP, said biofuels derived from jatropha and halophytes, which are plants that can grow in saltwater, are believed to be two to four years away from commercialization, while biofuels derived from algae are five to eight years away. The one biofuel currently available is derived from the camelina plant.

Several U.S. airlines have carried out test flights using a synthetic biofuel/conventional fuel mix in the engines. KLM carried out the first commercial flight carrying passengers in November 2009, flying a 747-400 partially powered by camelina-derived fuel from Amsterdam's Schiphol airport.

EADS, the parent company of European aircraft manufacturer Airbus, carried out what it said was the first flight using 100 percent algae biofuels in July.

“Aviation biofuels are here and available, but not in huge quantities,” Woodger said.

Members of the International Air Transport Association (IATA) pledged in 2009 to increase aviation fuel efficiency by 1.5 percent per year over the next decade, to stabilize greenhouse gas emissions by 2020, and to achieve a 50 percent absolute cut in emissions by 2050 when compared with 2005 levels.

The aviation sector currently emits an estimated 728 million metric tons of carbon dioxide per year, according to data from IATA, which represents more than 230 airlines. That figure is slightly lower than in previous years as a result of the global economic downturn, but it is expected to increase as recovery takes root.

Christina Figueres, executive secretary of the United Nations Framework Convention on Climate Change, told the conference that governments are discussing how to incorporate the aviation and maritime sectors into a new international climate change agreement when they meet in Cancun, Mexico, in late November. Proposals include setting emissions reduction targets for the two sectors, working through the International Civil Aviation Organization to achieve this, and defining the possible use of revenues from market-based measures such as emissions trading.

“The next few months are of prime importance to the future of comprehensive climate change actions within the aviation sector and the world as a whole,” Figueres said.

Technological advances are seen as a key to driving down aviation emissions. IATA said more fuel-efficient planes, improved fuel burn, and better air traffic management have already avoided 3.3 billion metric tons of carbon dioxide-equivalent emissions since 1990.

One key to reducing carbon emissions over the short term is to replace old, fuel-guzzling aircraft in existing airline fleets. Paul Steele, executive director of the Air Transport Action Group, an industry body that addresses environmental challenges to the sector, noted that almost half of the sector's emissions reduction potential through 2020 could be achieved by replacing old aircraft. However, Steele noted that airlines are expected to buy about 12,000 new aircraft over the next 10 years at a cost of \$1.3 trillion to replace old fleets and meet forecasted growth.

Alternative fuels represent an additional 13 percent emissions reduction potential over the next decade, but that figure is expected to rise sharply over the long term. Steele said biofuels could allow the industry to eventually reduce its carbon footprint by 80 percent, but the scaling up and commercialization of production “will be a huge, massive challenge.”

Dirk Kronemeijer, vice president for business innovation with Air France-KLM, said more production volume is key in reducing marginal costs for biofuels, but to increase volume, demand is needed. Kronemeijer said governments could help boost demand, noting the U.S. military has an active program to promote biofuels use.

Several industry representatives noted that biofuels are much more expensive to transport than petroleum-based fuels, as larger volume is needed to compensate for their lower density, meaning that production and supply will need to be locally based. In addition, growing demand for biodiesel in the overall transport sector threatens to squeeze supply for the aviation sector.

Biofuels also face a challenge in overcoming the popularity of kerosene, which is cheaper and less energy-intensive to produce. “Kerosene is such a good fuel,” said Nuttall, noting that a jet flying a thousand miles on kerosene could travel only 250 miles on the same volume of biofuels because of the latter's lower density. Steve Csonka, director of environmental strategy for GE

Aviation, admitted jet engine makers are somewhat reluctant to replace kerosene, which they “love” because of its predictability and safety.

Airbus and British Airways announced at the conference that they will work with a British university to study the feasibility of producing an algae-based aviation fuel for commercial use.

103. IEA Charts Rise in Fuel-Related Carbon Emissions

Global carbon dioxide emissions related to fuel nearly doubled from 1973 to 2008, according to a handbook released on September 1st by the International Energy Agency. According to IEA's 2010 Key World Energy Statistics, global fuel-related carbon dioxide emissions rose from 15.6 billion metric tons in 1973 to 29.4 billion metric tons in 2008. In 1973, oil accounted for 50.6 percent of those emissions, gas 14.4 percent, and coal/peat 34.9 percent. By 2008, oil's share of emissions had dropped to 36.8 percent, while that of gas was up to 19.9 percent, and coal/peat, 42.9 percent. IEA statistics show that world energy consumption grew from 4.7 billion metric tons of oil equivalent in 1973 to 8.4 billion in 2008. The 82-page handbook looked at supply, transformation, and consumption of all major energy sources on a global and regional basis and for the nations belonging to the Organization for Economic Cooperation and Development. OECD members—numbering 30 in 2008 but 32 in 2010—include most of the world's richest economies and thus its biggest energy users and carbon dioxide emitters.

104. IMO MEPC Will Meet Soon To Consider Ship Carbon Emissions

The IMO's Marine Environment Protection Committee (MEPC) meets in London soon with greenhouse gas (GHG) emissions in shipping on the agenda.

There are two streams to the work of the IMO on measures to reduce GHG emissions, the implementation of energy efficiency standards in ships via the Energy Efficiency Design Index (EEDI) and associated programs, and the ongoing consideration of more direct market-based measures (MBMs) to tackle emissions.

The MEPC 61 meeting will again consider mandatory application of the EEDI on new ships after commissioning a working group to conduct further development work on the scheme at the last meeting in March. At that meeting, the MEPC agreed in principle to mandatory application of EEDI but said more technical detail was required before it could be implemented. EEDI would impose new standards on ship design to lift fuel efficiency and reduce the emissions footprint of the industry. The complementary Ship Energy Efficiency Management Plan (SEEMP) and how EEDI standards might be applied to existing ships is also under consideration.

However, as significant growth in commercial shipping is expected in coming years as world trade expands, MBMs to secure absolute reductions in the sector's emissions are also being investigated. The range of MBMs proposed to MEPC by IMO members involves various versions of emissions-trading and efficiency-credit trading schemes as well as levies on bunker fuels.

The report of an expert group studying the feasibility and impacts of a range of MBM or carbon price measures will also be submitted to MEPC 61 for consideration. Substantial progress on such measures is not expected this time around. According to media outlets claiming to have seen the report, the expert group has concluded that it needs more information on all the possible measures before making a definitive assessment.

MEPC 61 will also be updated on negotiations at the UN climate convention (UNFCCC) for a global climate change agreement, which include consideration of a global emissions cap on the maritime sector. There is a push from some countries at the UNFCCC talks for a levy on the shipping sector to fund climate change adaptation and emissions reductions in developing countries.