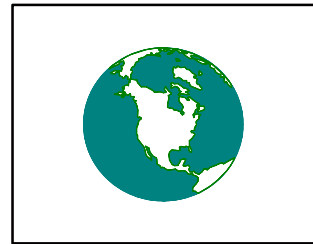


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*BEST WISHES TO ALL
FOR A SAFE AND HEALTHY
2012*

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EUROPE

1. MEPs Back Stricter Euro Standards for Motorbikes

The European Parliament's internal market and consumer protection committee voted 28–0 to broadly back European Commission proposals that would see the Euro 3, 4, 5, and 6 standards successively introduced for a range of vehicles in the 'L-category', such as mopeds, motorcycles and quadricycles. Regarding mopeds, the committee agreed Euro 3 standards should be introduced in 2014, followed by even stricter Euro 4 and 5 standards in 2017 and 2020 respectively. This is in line with the European Commission's original proposals.

Vehicles with engines between 50cc and 125cc would not have to meet Euro 3 standards. Euro 4 and 5 standards would apply from 2016 and 2020. No Euro 4 norms would be required for bigger motorbikes, but Euro 5 and Euro 6 will apply from 2016 and 2020.

The committee also backed requirements on the durability of pollution control devices for various types of L-category vehicles, specified in annex VII of the draft regulation. The MEPs are also conducting an impact assessment on how emissions will be tested, which is due to be published in early 2012 before a plenary vote.

Limits would apply to emissions of carbon monoxide, hydrocarbons, nitrogen oxides, and fine particles.

According to the committee vote, the Euro 4 and 5 standards would apply to different categories of motorbikes starting in 2016, while Euro 3 would apply to mopeds. Starting in 2020, heavier motorbikes would have to conform to Euro 6 limits. The limits also would apply to some other light vehicles, including tricycles and quad bikes, and would update other aspects of type approval of motorcycles.

The draft law would also require the European Commission to carry out by 2016 a comprehensive study of the impacts of motorcycles and similar vehicles on air quality.

The full European Parliament is scheduled to vote on the draft legislation in March, after which it will be finalized in negotiation with EU member states represented by the EU Council.

2. CARS 21 Group Calls For Action to Keep Auto Industry Competitive

In the coming decade, important changes are expected in the global automotive industry in several areas that are likely to profoundly reshape the industry and its markets worldwide. While the European market has a low-growth perspective, third markets are growing fast, changing the trade flows and the automotive value chain. The intense competitive pressure is growing further and EU companies are increasingly being challenged on their home market. To meet long-term greenhouse gas targets as well as air quality objectives, the internal combustion engine will be further improved and the development of breakthrough technologies, such as electrified propulsion, will happen. Sizeable efforts will also need to be made with the further development and distribution of alternative fuels to traditional diesel and gasoline fuels.

In order to analyze these challenges and develop a joint strategy for decision makers from the private and public sectors, the Commission decided at the end of 2010 to re-launch the CARS 21 High Level Group, which was originally set-up in 2005. It was one of the actions listed in the Commission Communication for a "European strategy on clean and energy-efficient vehicles", adopted on 28th April 2010. The objective of

the group is to make policy recommendations to support the competitiveness and sustainable growth of the European automotive industry. A network of strong, well-diversified and competitive enterprises along the entire value chain must be at the heart of this strategy.

The Interim Report covers the group's consensus on a number of selected topics discussed so far. Some may be further elaborated and further topics will be added in the rest of the CARS 21 process, leading to the adoption of the Final Report. Some of the key conclusions and recommendations include the following.

In the coming years, a number of legislative initiatives are planned concerning vehicle regulations, aimed, in particular, at improving the environmental performance of vehicles and strengthening the internal market. Their underlying objective is an ambitious regulatory framework on environmental, safety and consumer protection standards. They should be elaborated in a balanced way to underpin the competitiveness of the European automotive industry, worldwide.

In recent years, it has become clear that the current procedures used for measuring pollutant, CO₂ emissions and fuel consumption of light-duty vehicles (cars & vans) are not sufficiently representative of real-world driving. A revision of the driving cycles and the test procedure is therefore envisaged and currently being prepared on a global level, based on data collected about real-world driving behavior. Improvement and clarification of the test-cycle is important in order to deliver the expected reductions from regulatory measures and provide better information to consumers.

The discrepancy between the type-approval test results and real-world emissions of certain pollutants is substantially bigger, particularly for diesel vehicles. The reduced limits from the successive euro stages are considered not to have delivered the full extent of the emission reductions that were expected. Many Member States are still struggling to meet air quality objectives, particularly in urban areas.

While CO₂ emission performance standards have been adopted in recent years for cars and vans, it is now necessary to address CO₂ emissions for heavy-duty vehicles (HDVs), taking into account the specificity and diversity of the sector. It is estimated that HDVs account for about 26% of CO₂ emissions from road transport in the EU, which is about 5% of total CO₂ emissions. In the present type-approval legislation, CO₂ emissions and fuel consumption will be measured starting from Euro VI only for the engine, but not from the entire vehicle.

Key messages:

1. A **new driving test-cycle and test procedure** should be developed that is more representative of real-world driving. The modalities for its inclusion into the EU legal framework, including the adaptation of the CO₂ targets established on the basis of the old cycle and procedure, and the timetable for introducing them need to be properly addressed, minimizing the burden for all stakeholders.
2. This should be complemented with **measures controlling vehicle emissions in use**, based on a thorough analysis, with the aim of delivering a timely reduction of real-world pollutant emissions, hence, contributing to improved air quality.
3. To reach the long-term CO₂ reduction objectives, **a comprehensive approach should be developed** for the reduction of CO₂ emissions from HDVs, covering a wide range of measures. As a first step **an appropriate methodology for evaluating the CO₂ emissions of the entire vehicle** should be put in place. In considering different measures, it should be acknowledged that different types of vehicles have different levels of societal utility.

Further, the legislation on noise emissions from vehicles should be reviewed based on an impact assessment. A new test procedure has been developed and tested in recent years. This procedure is more representative of real-world driving and can now be implemented. This, together with more stringent limit values, can contribute to a reduction in road traffic noise levels.

An important objective of vehicle regulation is also to strengthen the EU internal market for motor vehicles. This requires, for example, coordination of the demand measures put in place by Member States, such as the financial incentives for clean and energy efficient vehicles. A revision of the procedures for the surveillance of the automotive products placed on the EU market is also needed, in order to make sure that citizens can fully trust the regulatory framework put in place.

Key messages:

4. As part of an integrated policy approach to ambient noise reduction, **vehicle noise emission regulation should be amended**. The new test procedure should be implemented to better reflect real-world emissions. A further reduction of vehicle noise levels is feasible and will be proposed. Appropriate 'lead-time' should be provided to industry, consistent with the extent of the required technical adaptations.
5. **Financial incentives** for clean vehicles put in place by Member States **should be coordinated more strongly** in order to maximize their effectiveness and limit the fragmentation of the market. They should **avoid being technology-specific**, instead **relying on objective and commonly available performance data**, such as the CO₂ emissions from the vehicle.
6. In order to ensure vehicles and their components are safe and compliant with relevant legal requirements, **the type-approval framework should be enhanced to include provisions for market surveillance** in areas where a need has been identified. This will contribute to establishing a level playing field among all actors and to increased trust of consumers in effective product regulation, while limiting administrative burdens.

Europe needs to diversify the energy sources used for transport, in order to meet climate goals and to reduce its dependency on oil. Although there will be oil for several decades to come, future oil supply will not be able to provide for additional global demand, particularly in developing countries and regions, and will become more expensive. This requires alternative fuels to come into the market, including electricity, hydrogen, biofuels, methane (natural gas and biomethane), LPG and others. For the overall policy framework, the merits of each fuel and powertrain combination should be assessed on a well-to-wheel basis, and including life cycle aspects.

Market penetration of alternative fuels requires the build-up of the appropriate infrastructure. The roll-out of alternative fuel infrastructure should be in step with technology development and market penetration rates of vehicles powered by alternative fuels. Different forms of public support for infrastructure are possible: pilot projects, standardization, investment support and legislation. Public policy can support market introduction but afterwards markets must decide on the best solutions, within the given policy framework.

Innovation will be a key factor for maintaining the competitiveness of the automotive sector and sustainability of the road transport. Public funding should foster innovation in the automotive industry. This has been recognized in past European research programs, where funding has mainly been used for pre-competitive research. Also other technological development programs, major support programs of the EIB for industry investment and support for market introduction

by Regional and Structural Funds are available. For the coming years, EU policy should support the whole product development and innovation chain from research to market introduction in a more integrated approach. Also efforts are underway to simplify administrative procedures, which is essential for industrial and other players.

Key messages:

7. **A portfolio of alternative fuels**, covering electricity, hydrogen, biofuels, methane, LPG and others, **is necessary to meet the policy objectives**. Given the novelty of many fuels, their performance should be kept under continuous review. The roll-out of alternative infrastructure should be in step with the technological development to enable the market penetration of vehicles powered by these alternative fuels.
8. In view of the National Renewable Energy Action Plans, **the freedom of movement and the integrity of the Internal Market should be ensured to avoid different biofuel blending rates to be used** in different Member States. This should be kept under review. Compatibility with vehicles and clear information for consumers should be ensured.
9. **Charging of electric vehicles** is expected to be performed mainly at home/work, but there will be also **a need for publicly accessible recharging infrastructure**. In order to ensure interoperability across the EU, **standardization on the European level is needed**. Based on the current EU electricity mix, **substantial CO2 savings** can already be obtained. In the longer term, the **progressive decarbonisation of electricity** generation, complementary to the roll-out of electric vehicles offers the perspective of a growing number of zero-emission vehicles.
10. In view of the importance of the industry for the EU economy, there should be **significant RDI support** for a broad range of automotive issues and critical future technologies in the new EU policy framework for research and innovation (Horizon 2020 with the proposed budget of € 80 billion). In addition, a specific and **major initiative on breakthrough technologies** (including, among others, electrification of combustion engines, hybrid and electric vehicles, fuel cells, electrical and electronic systems) should be envisaged, in parallel with the continuous EIB support to the automotive sector as well as to infrastructure and services.

Next steps

The CARS 21 process will continue and address additional topics. These will include international regulatory cooperation, eCall and ITS, electro-mobility, biofuels, CO2 from cars and vans, CO2 labeling for cars and Integrated Approach, road safety, vertical agreements in the sector, etc. The group intends to deliver its final report in spring 2012.

Industry stakeholders are also discussing compliance with a limit of 95 grams of CO2 per kilometer to be met by car manufacturers by 2020. The commission will propose more precise details for meeting this target, including how it will be shared among carmakers, in a forthcoming review of the European legislation. A report conducted for the commission, published in November, found it was feasible and cost efficient to meet the 95g/km limit. This could be done without employing new technology, it found. Green group T&E, which says 80g/km is possible, warned industry might secure loopholes that would effectively weaken the target.

3. On Road Emissions of Diesels Again Found To Exceed Standards

The nitrogen dioxides (NO_x) and carbon dioxide (CO₂) emissions of some light-duty petrol and diesel vehicles are higher during on-road driving than during standard laboratory tests, according to a new study.¹ This means that in normal on-road driving, light-duty vehicles, which include passenger cars and light commercial vehicles, may exceed European emissions limits and could be having a greater impact on urban air quality than previously thought.

Light-duty vehicles are a major source of air pollution in urban areas: in 2008, they contributed 8% to the NO_x emissions and 27% to the carbon monoxide emissions of the EU. The compliance of light-duty vehicles with applicable emissions limits is currently verified by emissions tests in the laboratory under standardized conditions.

To establish whether light-duty vehicles produce more air pollution during on-road driving than in the laboratory, the researchers used portable emissions measurement systems (PEMS) to monitor 12 vehicles driven over a variety of urban and rural roads, including uphill and downhill sections and motorways. The vehicles included petrol and diesel vehicles and one vehicle with a petrol-hybrid engine. The researchers recorded carbon monoxide, NO_x, total hydrocarbons and CO₂ emissions for each vehicle.

They found that the total hydrocarbon and carbon monoxide emissions of the tested vehicles generally stayed below the European emissions limits if vehicles are driven on the road.

NO_x emissions were within EU limits for petrol vehicles, but not for diesel vehicles. In fact, **the on-road NO_x emissions from diesel vehicle have not declined significantly over the past ten years and currently exceed the respective emissions limit by several factors.** Looking more closely at the data, the researchers found that NO_x emissions were highest when the engine was working hardest, such as on uphill sections and motorways. The researchers also found that CO₂ emissions on the road are around 20% higher than during standard laboratory emissions testing. Nitrogen oxides emissions of diesel vehicles (0.93 ± 0.39 grams per kilometer [g/km]), including modern Euro 5 diesel vehicles (0.62 ± 0.19 g/km), exceed emission limits by $320 \pm 90\%$. On-road carbon dioxide emissions surpass laboratory emission levels by $21 \pm 9\%$, suggesting that the current laboratory emissions testing fails to accurately capture the on-road emissions of light-duty vehicles. The findings provide the empirical foundation for the European Commission to establish a complementary emissions test procedure for light-duty vehicles. This procedure could be implemented together with more stringent Euro 6 emission limits in 2014. The envisaged measures should improve urban air quality and provide incentive for innovation in the automotive industry.

However, the researchers note that their study has limitations, particularly that the number of vehicles tested was relatively small. Also, although test routes covered a variety of road types, they may not necessarily be representative of the average driving patterns in Europe.

4. EU Environmental Taxes Equal to 2.4 Percent of GDP

Environmental tax revenues in the European Union's 27 countries amounted to €287 billion (\$374 billion) in 2009, equivalent to 2.43 percent of gross domestic product, or 6.32 percent of

¹ *Environ. Sci. Technol.*, 2011, 45 (19), pp. 8575–8581, DOI: 10.1021/es2008424, Martin Weiss†, Pierre Bonnelt†, Rudolf Hummel†, Alessio Provenza†, and Urbano Manfredi† European Commission – DG Joint Research Centre, Institute for Energy and Transport, Sustainable Transport Unit, Via Enrico Fermi 2749 - TP 230, 21010 Ispra, Italy

the total tax and social security take, the European Union's statistical body Eurostat said on December 14th. Most environmental taxes were raised from energy usage, including levies on emissions of carbon dioxide from energy production. Only a small proportion related to pollution, resource use, or the environmental impact of transport, Eurostat said. In 2009, 74% of EU-27 total environmental tax revenue was raised by taxes on energy products. Transport taxes mainly include taxes related to the ownership and use of motor vehicles. In 2009, 22% of EU-27 total environmental tax revenue came from transport taxes. Resource and pollution taxes cover different types of taxes: taxes on extraction of raw materials; on measured or estimated emissions to air (e.g. NOx and SO2) and water; on noise and on the management of waste. Only 4% of EU-27 total environmental tax revenue was raised by pollution and resource taxes in 2009.

A vast majority of European countries showed levels of environmental tax revenue in a band ranging from 2 to 3% of GDP in 2009. In only five countries did environmental tax revenue exceed 3% of GDP: Denmark, the Netherlands, Slovenia, Malta and Bulgaria. At 4.8%, Denmark registered the highest level of environmental tax revenue. In part this is due to the high revenue from pollution and resource taxes which largely come from a tax on profits from the extraction of hydrocarbons. Greece, Slovakia, Romania and Spain were the only countries to raise less than 2% of GDP in environmental taxes. Pollution and resource taxes accounted for more than 15 % of total revenue from environmental taxes in Denmark and the Netherlands.

In 2008 most of the revenue governments raised from environmental taxes came from the transport sector and households. In a few cases a significant part of the environmental taxes were paid by services other than transport (mainly education, public administration and defense). Environmental taxes can help in implementing the 'polluter pays' principle said Eurostat by providing an incentive to reduce environmental damage. Although the trend in EU countries between 1999 and 2008 was to reduce environmental taxes, the 2009 figure marked an increase over the "historical low" of 2.38 percent in 2008, Eurostat said.

5. Most Automakers on Pace to Meet 2012 Carbon Goals, Luxury Brands Lag

Most automakers that sell cars in the European Union are on course to meet carbon dioxide limits that go into effect in 2012, but others risk a collective fine of up to €10 billion (\$13 billion), the European Commission and European Environment Agency (EEA) said on December 20th. As of 2010, 32 manufacturers representing almost 80 percent of new registrations achieved the 2012 objective, the Copenhagen-based agency said in a report. Those in front are Japan's Toyota, followed by the French companies Renault and Peugeot-Citroen, which also are between just one and five grams short of their 2015 targets. Laggards are Daimler, Skoda, General Motors-Daewoo, Nissan, Mazda and Dacia.

The average carbon dioxide output of the 13 million new cars sold in the European Union in 2010 was 140 grams per kilometer (g/km) (7.9 ounces per mile). Under EU legislation, 65 percent of the new car fleet must achieve an average of 130 g/km (7.4 ounces per mile) in 2012. In 2015, the average limit will apply to 100 percent of the new car fleet.

The Commission confirmed data published in June by EEA showing that emissions from new private cars in the European Union in 2010 were on average 3.7 percent lower than in 2009. EU Climate Action Commissioner Connie Hedegaard said a 3.7 percent emissions drop in 2010

² Statistics In Focus

compared to 2009 showed that “setting targets delivers results and stimulates the car industry to put greener cars on the market.”

Under the legislation, carmakers would be fined €20 (\$26) per car per g/km above the limit in 2012, rising to €95 (\$124) in 2015. 'If car manufacturers make no further improvements in carbon efficiency of new cars between 2010 and 2012, non-compliant manufacturers could face fines which in total would add up to 10 billion euros,' the EAA said.

Manufacturers facing particularly tough challenges to reduce emissions include luxury brands Bentley, Lamborghini, and Rolls-Royce, according to the Commission figures.

The directive offers flexibility to manufacturers who introduce cars with very low - less than 50 grams of CO₂ per kilometer - emissions, who make vehicles that run on E85 biofuels or who use experimental CO₂-reducing technology.

Road transport accounts for 17.5 percent of Europe's overall greenhouse gas emissions which increased by 23 percent between 1990 and 2009, the EAA said.

6. Swiss Government Adopts Rules Limiting CO₂ Emissions from New Vehicles

The Swiss government has adopted implementing legislation setting out new carbon dioxide emission limits for passenger vehicles and imposing an “incentive” tax on vehicles that do not comply. On December 16th, the Swiss Federal Council, the government's executive arm, adopted an ordinance bringing the new limits into force. The standards were adopted as part of revisions to the country's carbon dioxide law approved by the government in March.

The new norms establish a target limit of 130 grams of emissions per kilometer (7.4 ounces per mile) starting in 2015, identical to the limit fixed by the European Union. As with the European Union, Switzerland will phase in the new standards. Large-scale importers of cars must ensure that 65 percent of those vehicles sold in Switzerland comply with the limit in 2012, 75 percent in 2013, 80 percent in 2014, and 100 percent by 2015. Switzerland does not have a car manufacturing industry. Most cars are imported from neighboring EU member states.

Cars registered outside Switzerland and then imported will be exempt from the new norms if the car was registered at least six months prior to being brought into the country.

To encourage compliance, Switzerland will impose an “incentive tax” starting July 1, 2012, if average emissions from a vehicle exceed the target limit fixed by the government. The tax will be 140 Swiss francs (\$150) per vehicle for each gram of emissions in excess of the calculated limit, with lower rates for the first three grams in excess of the limit. Receipts from the tax will be redistributed to the population in general through a reduction in health insurance premiums, the Swiss government said.

7. Top EU Court Upholds Carbon Airline Law

Europe's highest court gave unreserved backing to an EU law to charge airlines for carbon emissions on flights to and from Europe, a decision likely to escalate tension with trading partners, especially the United States. The court ruled against a group of U.S. airlines who had challenged a law requiring that all airlines flying to and from European Union airports will have to buy permits under the EU's emissions trading scheme from January 1st. "Application of the

emissions trading scheme to aviation infringes neither the principles of customary international law at issue, nor the open-skies agreement," the European Court of Justice (ECJ) said.

Wednesday's ruling was expected after a senior adviser to the court issued a preliminary opinion in October that found the EU legislation did not infringe other states' sovereignty and was compatible with international accords.

The U.S. government, which has warned it could take "appropriate action" if the EU didn't reconsider this aspect of the Emissions Trading Scheme (ETS), said it was dismayed by the ruling, and reiterated that it wanted the issue addressed by the International Civil Aviation Organization (ICAO). Draft law in the U.S. Congress, if passed, would make it illegal to comply with the EU legislation. In a letter sent to EU officials last week, U.S. Secretary of State Hillary Clinton and U.S. Secretary of Transportation Raymond LaHood urged the EU "to reconsider this current course" and re-engage with the rest of the world. "Absent such willingness on the part of the EU, we will be compelled to take appropriate action," they said in the letter.

A case against the EU was initially brought to the London High Court of Justice by the Air Transport Association of America, American Airlines and United Continental, but the London court referred it to the ECJ in Luxembourg.

The ruling by the ECJ, Europe's highest court, is final, although there is some flexibility in how the regulation may be applied. The EU law allows for "equivalent measures", meaning that incoming flights to Europe would be exempt if the nation from whence they came had measures in place to offset the international emissions.

Airlines initially would be required to pay for only 15 percent of the carbon they emit and would be allocated free allowances to cover the other 85 percent. Figures from the Anglo-Welsh environment agency suggest the three airlines involved in the case – American, United and Continental – will each have to spend around €5m on ETS allowances for 2012 at today's prices, assuming their emissions are the same as in 2010. But they will be able to pass some of this cost on to customers. The latest estimate from market analyst Point Carbon, revised to reflect recent falls in the EU carbon price, puts the cost of participation in the ETS at around €500m for the whole industry in 2012, rising to €9bn by the end of the decade.

Depending on airlines' decisions on how much to pass on, the European Commission has calculated costs per passenger could rise by 2 to 12 euros, much less than the 100 euro per allowance penalty it would impose on airlines that do not comply. Airlines, which have given much higher assessments of the cost, have called for a global, rather than a piecemeal approach. The EU has said it fully agrees with that but has run out of patience with efforts to find a worldwide solution.

The ruling was welcomed by the European Commission, MEPs on the European Parliament's environment committee, and green NGOs. They called for the US and other countries opposing the scheme to respect the court's decision and move on. "When we drafted the legislation, we took extensive legal advice, also concerning the compatibility with international law," said German MEP Peter Liese, the aviation directive's parliamentary rapporteur. "According to our calculations, the price increase for a flight from Europe to the US East Coast should be less than €1."

The airlines' argument was that the EU was breaching various aspects of 'customary' law, the Chicago Convention, Kyoto Protocol and EU-US Open Skies Agreement by trying to regulate

activity in other jurisdictions and over the high seas, apply taxes and charges to aviation, and act unilaterally on aviation emissions. Only some of these arguments have been addressed by the ECJ, which decided that challenges based on the Chicago Convention and Kyoto Protocol were inadmissible. The judges were not convinced that the customary law on open seas invoked by the airlines really applies to aircraft and point out that the ETS will only cover flights operating outside EU airspace when they also include parts of the EU. Finally, the 2008 aviation directive cannot be considered a tax or charge as there is no direct link between the quantity of fuel used and the burden imposed on the airline. Some may even profit from their inclusion in the ETS, the court notes.

The ruling is a preliminary one and will now be sent to a high court in England and Wales, which referred the case to the European court in the first place.

Environmentalists based in the United States are separately suing EPA to force Clean Air Act rules to curb aircraft GHG emissions. Activists say the European ruling will likely increase pressure on EPA to regulate aircraft GHGs, due to EU law that requires “equivalent” GHG controls for U.S. airlines wanting to operate in the EU if those airlines seek an exemption from the trading program. The rules could include new efficiency standards -- an approach that major manufacturers say they are already implementing in new engines and streamlined design -- and eventually new fuel requirements, though there is currently inadequate supply of less-carbon intensive fuels. But absent such measures, airlines face the prospect of purchasing credits from the EU trading system.

In addition, EPA continues to oppose regulation, arguing that multilateral negotiations under the auspices of the United Nations' International Civil Aviation Organization (ICAO) are the correct venue to address airline emissions. U.S. environmentalists, however, doubt that ICAO can achieve meaningful results.

On a December 20th conference call, the Environmental Defense Fund and Center for Biological Diversity (CBD) reiterated their call for the United States to change course and for EPA to adopt domestic regulation. CBD has filed a lawsuit to try and force EPA to issue a finding that GHGs from aircraft endanger human health and welfare. Under the Clean Air Act, issuance of an endangerment finding would compel EPA to issue rules to reduce those risks. Although EPA says it cannot make the risk finding until 2014, activists in the suit believe the agency has all the information it needs to make such a finding now.

Some US lawmakers, however, are pushing bills to forbid U.S.-based airlines from participating in the EU trading program, despite the fact that these airlines will have no choice if they wish to continue to operate in Europe. H.R. 2594, introduced by House Transportation & Infrastructure Committee Chairman John Mica (R-FL), passed the House on October 24th. Sen. John Thune (R-SD) has introduced a companion measure in the Senate, S. 1956.

Meanwhile, briefing continues in the aircraft GHG risk finding lawsuit pending in the U.S. District Court for the District of Columbia Circuit. The court in a preliminary ruling on July 5th already found that EPA must conduct analysis and decide whether to issue an endangerment finding, though the timing of such a finding is still at issue. In an amicus brief filed on December 14th, the Air Transport Association of America and allied industry groups intervened on EPA's behalf to defend the agency's stance that up to three years may be required to develop and then issue the endangerment finding and a related “cause or contribute” finding.

Cross-motions for summary judgment are due in the case in February, at which time the court may decide the timing issue.

8. Deal on New Gothenburg Protocol Likely In May

Parties to the UNECE Convention on Long Range Transboundary Air Pollution (LRTAP), including the EU's 27 member states and eastern European nations, are likely to adopt new national air emission ceilings in May, according to the convention's secretariat. The LRTAP's executive body, which represents the parties, met in Geneva recently to discuss revisions to the 1999 Gothenburg Protocol on air pollution. On the agenda were new national emission caps and limit values for pollutants from stationary sources.

Although no agreement was reached on any of these issues, the secretariat indicated that the executive body had made good progress. It believes a deal could be struck at an extraordinary meeting in May 2012 which will solely focus on revision of the protocol.

New stricter limit values for pollutants, including NO_x and SO₂, will be set in annexes to the protocol and based on the latest best available techniques. Countries are still engaged in lengthy discussions on implementation. Russia and Ukraine, which have not yet signed it, wants a sufficient degree of flexibility in this area.

No precise figures have yet been discussed regarding the national ceilings, says the secretariat. Countries are negotiating caps for 2020 and beyond. Aspirational 2050 ceilings are off the agenda since no country has shown particular interest in them.

The European Commission has made tentative proposals for new emission ceilings. Earlier this month, an official told reporters that the EU was "trying to be as ambitious as possible – but it is a difficult process". He refused to comment on numbers.

The EU is planning to revise its own legislation in 2013. A new National Emission Ceilings Directive (NECD) will set national caps for 2020 in line with those agreed by member states under the revised Gothenburg Protocol. Compliance with 2010 ceilings for NO_x remains a problem in the EU, where ten states are predicted to miss them.

9. Commission Opens Proceedings against Two Manufacturers of Refrigerants

The European Commission has opened antitrust proceedings concerning agreements between Honeywell and DuPont for the development of a new refrigerant for air conditioning systems in cars. It is also investigating whether Honeywell may hold and abuse a dominant position over the refrigerant that has been announced as a suitable replacement for the existing global refrigerant, which no longer meets environmental-protection standards. The opening of proceedings means that the Commission will examine the case as a matter of priority. It does not prejudge the outcome of the investigation.

A new refrigerant known as 1234yf, which is intended for use in future car air conditioning systems, was announced as a suitable global replacement for the previous refrigerant R134a, which does not meet new EU rules as regards its global warming potential. The selection of 1234yf is the result of a process conducted under the auspices of the Society of Automotive Engineers, which represents the interests of all groups involved in the automotive sector.

The Commission is investigating complaints alleging that Honeywell International Inc. and E.I. du Pont de Nemours and Company have entered into anti-competitive arrangements as regards the development of the new generation of refrigerants. Specifically, the Commission will investigate whether joint development, licensing and production arrangements entered into between the two companies in relation to these refrigerants restrict competition on the markets. Such behavior may infringe Article 101 of the Treaty on the Functioning of the EU and Article 53 of the EEA Agreement.

The Commission is also examining whether Honeywell engaged in deceptive conduct during the evaluation of 1234yf between 2007 and 2009. It is claimed that Honeywell did not disclose its patents and patent applications while the refrigerant was being assessed and then failed to grant licenses on fair and reasonable (so called "FRAND") terms. Such behavior may also infringe European competition rules (Article 102 of the Treaty on the Functioning of the EU and Article 54 of the EEA Agreement).

This investigation highlights the importance of ensuring that arrangements involving IP contribute to innovation rather than holding it back.

Article 101 of the TFEU prohibits agreements and concerted practices which may affect trade and prevent or restrict competition. Article 102 of the TFEU prohibits the abuse of a dominant market position. The implementation of these provisions is defined in the Antitrust Regulation (Council Regulation No 1/2003) which can be applied by the Commission and by the national competition authorities of EU Member States.

The legal basis for this procedural step is Article 11(6) of the Antitrust Regulation. Article 11(6) of the Antitrust Regulation provides that the initiation of proceedings relieves the competition authorities of the Member States of their authority to apply the competition rules laid down in Articles 101 and 102 of the TFEU. Moreover, Article 16(1) of the same Regulation provides that national courts must avoid giving decisions which would conflict with a decision contemplated by the Commission in proceedings that it has initiated.

The Commission has informed the companies and the Member States' competition authorities that it has formally opened proceedings in this case.

10. UK Ministers Admit Pollution Violations; Court Passes the Ball

The government has admitted violating European Union pollution legislation, during a High Court battle with an environmental campaign group. Lawyers for Environment Secretary Caroline Spelman made the admission following action by ClientEarth. But Judge Mr Justice Mitting said any enforcement action was a matter for the European Commission. He refused to make any declaration, or to order Mrs. Spelman to outline plans for cutting pollution levels.

ClientEarth had complained that Mrs. Spelman had failed to consult on proposals which demonstrated how the UK aimed to comply with EU limits on levels of nitrogen dioxide. It asked the judge to declare that plans set out by the Department for Environment, Food and Rural Affairs (DEFRA) did not comply with EU law, and order Mrs. Spelman to publish revised proposals.

Government lawyers challenged the claim and said no High Court order was needed.

Mr Justice Mitting said a lawyer had conceded that "the government is in breach of obligations" but said he would not make any "mandatory order". He said the government could admit the breach and "leave it to the (European) Commission to take whatever action is right in enforcement". "Such a mandatory order... would raise serious political and economic questions which are simply not for a judge," he added. "Courts have traditionally been wary of entering this area of political debate - for good reason."

Mr Justice Mitting pronounced the action a "draw" and said costs should be shared.

Stephen Hockman QC, for ClientEarth, told the court the charity had achieved something and said: "The government is in breach of its obligations under European law in relation to air quality. "Although we have lost, it was a reasonable case to advance."

A spokesman said the legal challenge had been brought because air quality plans for 17 regions and cities would not comply with legal limits for air quality until after 2015, when the deadline for achieving the limits was 1 January 2010. He said he had wanted the court to order Mrs. Spelman to draw up plans that would achieve legal compliance throughout the UK by 2015, and also to make a declaration that she was in breach of her legal obligations.

11. EU Executive Unveils Energy Roadmap To 2050

Ambitious scenarios involving more energy efficiency and renewables will cost about the same as if Europe continues to rely heavily on fossil fuels and nuclear, Günther Oettinger said as he unveiled the EU's energy roadmap to 2050. The roadmap explores five decarbonizing scenarios. Meeting the EU's climate goal for 2050 means CO₂ emissions from the power sector will have to drop by more than 90%.

The aim of the roadmap is to achieve the low-carbon 2050 objectives while improving Europe's competitiveness and security of supply. Member States are already planning national energy policies for the future, but it is necessary to join forces in coordinating their efforts within a broader framework. The Roadmap will be followed by further policy initiatives on specific energy policy areas in the coming years, starting with proposals on the internal market, renewable energy and nuclear safety next year.

The EC published in March 2011 the overall decarbonisation roadmap covering the whole economy. All sectors – power generation, transport, residential, industry and agriculture –were analyzed. The Commission has also been preparing sectorial roadmaps, among which the Energy Roadmap 2050 is the last one, focusing on the whole energy sector.

Coal- and gas-fired power installations will only have a future in Europe if equipped with carbon capture and storage (CCS) technologies, the energy commissioner told a press conference in Brussels. By 2035, our CO₂ reduction objectives will be so strict that even the use of gas will not be possible without CCS, he pointed out. Oettinger stated: "Only a new energy model will make our system secure, competitive and sustainable in the long-run. We now have a European framework for the necessary policy measures to be taken in order to secure the right investments."

The analysis is based on illustrative scenarios, created by combining in different ways the four main decarbonisation routes (energy efficiency, renewables, nuclear and CCS). None is likely to materialize but all scenarios clearly show a set of "no regrets" options for the coming years.

The Energy Roadmap 2050 identifies a number of elements which have positive impacts in all circumstances, and thus define some key outcomes such as:

- **Decarbonisation of the energy system is technically and economically feasible.** All decarbonisation scenarios allow achieving the emission reduction target and can be less costly than current policies in the long-run.
- **Energy Efficiency and renewable energy are critical.** Irrespective of the particular energy mix chosen, higher energy efficiency and important rising shares of renewables are necessary to meet the CO2 targets in 2050. The scenarios also show that electricity will play a greater role than now. Gas, oil, coal and nuclear also figure in all scenarios in different proportions, allowing Member States to keep flexible options in their energy mix provided a well-connected internal market is achieved quickly.
- **Early Investments cost less.** Investment decisions for the necessary infrastructure up to 2030 must be taken now, as infrastructure built 30-40 years ago needs to be replaced. Acting immediately can avoid more costly changes in twenty years. The EU's energy evolution requires anyway modernization and much more flexible infrastructure such as cross border interconnections, "intelligent" electricity grids and modern low-carbon technologies to produce, transmit and store energy.
- **Contain the increase of prices.** The investments made now will pave the way for the best prices in the future. Electricity prices are bound to rise until 2030, but can fall thereafter thanks to lower cost of supply, saving policies and improved technologies. The costs will be outweighed by the high level of sustainable investment brought into the European economy, the related local jobs, and the decreased import dependency. All scenarios get to decarbonisation with no major differences in terms of overall costs or security of supply implications.
- **Economies of scale are needed.** A European approach will result in lower costs and secure supply compared to national parallel schemes. This includes a common energy market which should be completed by 2014.

12. EU Finds No Link Between Emissions Rules, Increased Vehicle Prices

There is no evidence that EU environmental legislation to limit vehicle emissions has increased manufacturers' costs or car prices; in fact, the opposite may be the case, according to a study published by the European Commission. The report dated November 23rd and published on the website of the Commission's directorate for climate policy, found that carbon dioxide emissions from cars sold in the European Union declined by 15 percent between 2002-2010, while prices dropped by 13 percent over the same period.

According to the report, "there is growing evidence that the traditional approach to modeling market reactions to policy proposals (i.e., to assume price increases for road vehicles and then model reactions on that basis) might be seriously flawed."

Instead, manufacturers had reacted to more stringent legislation by improving production processes through the introduction of new technologies that had actually reduced costs, the report said.

The only spike in car prices that could be connected to EU environmental legislation occurred in 2000, when the Euro 3 emissions standard was introduced, although prices had come down since then, the report found. The limits apply to emissions of particulate matter, nitrogen oxides, and hydrocarbons from car engines. The current standard is Euro 5, to be succeeded by Euro 6 in 2014.

The report was prepared for the Commission by AEA Technology and was published alongside a separate technical report assessing options for the introduction in 2020 of an average carbon dioxide emissions limit for private cars of 95 grams per kilometer (g/km). The 95 g/km limit is the goal for following up to a limit of 130 g/km, which will be phased in from 2012 through 2015.

13. Milan Considers Three Strategies to Address Traffic and Air Quality

A special committee appointed to come up with solutions to Milan's growing traffic pollution problem has suggested three strategies: rules limiting traffic in the city center, a fee for vehicles operating in the center, or the elimination of most parking spots in the problem areas combined with free or reduced-price public transportation there.

The committee was formed after the city banned all automobile traffic for 10 hours on October 7th, an automatic move triggered when the city experienced health-threatening air quality problems for 12 consecutive days. But the committee said on December 15th that policy was inadequate because it required nearly two weeks of problem conditions before action was required.

Area businesses fear that any traffic reductions will lead to fewer customers and greater commuting costs for workers. The Oct. 7 shutdown, for example, was estimated to have cost Milan companies at least €10 million (\$13 million) in lost productivity.

The committee said a limit on traffic in the city center would be the easiest option to implement, by simply allowing access for vehicles with odd or even license plate numbers on alternate days. But it also would be the least effective, the panel said. Charging drivers for access to the city center could be more effective, depending on the size of the congestion fee, whether funds raised would be used to reduce public transportation costs, and the effectiveness of enforcement. The committee's main recommendation was to eliminate most parking spots, create a network of pedestrian walkways, and invest in free or reduced-price public transportation from low-cost parking areas outside the city center. But that plan also would be by far the most expensive, costing at least €10 billion over 30 months to put into place.

The Milan City Council is expected to study the recommendations and decide on a new anti-pollution strategy in 2012.

14. Volvo's Plug-In Diesel Hybrid Limited to Sweden for Now

In a year that has seen a myriad of electric and hybrid vehicle firsts and innovations Volvo is capping 2011 with the introduction of the world's first plug-in diesel hybrid, the V60. But, you're going to have to live in Sweden (or a few other European countries) to get one. Sales will begin in early 2012, the company said, with delivery expected before the end of the year.

The Swedish automaker is calling the new V60, which is based on the popular S60 model, its most technology advanced car ever, and at \$75,218 — about \$27,000 more expensive than the conventional S60 wagon — it's priced like it. Drivers will get a five cylinder, 2.4 liter turbo diesel engine that is capable of generating 215 horsepower. The diesel will power only the front wheels. In back, Volvo has an electric motor pushed by an 11.2-kilowatt lithium-ion battery. That motor can generate up to 70 horsepower. Slip the car into "Power" mode, run through the six-speed auto transmission and Volvo says you go from zero to 60 mph in 6.2 seconds.

Drivers can select the “Pure” mode, which uses only the electric motor and offers a range of about 31 miles. The “Hybrid” mode is standard, uses both motors and has a range of up to 621 miles. A standard charge of the V60 takes about 4.5 hours using a standard, European (230 V) power outlet.

Volvo plans on making only 1,000 of the V60’s initial, 2013 batch. After that, the company promises to start cranking out up to 6,000 per year.

15. GM, BMW Reportedly To Cooperate On Fuel Cells

BMW and General Motors plan to join forces on the development of fuel cell technology, German weekly business magazine *Wirtschaftswoche* reported, citing industry sources. Talks between the two companies are highly advanced, the magazine said, adding that the carmakers were close to signing a cooperation agreement.

The plan would give BMW future access to GM's fuel cell technology and in exchange, BMW would contribute to the research costs, the magazine said in an article released in advance of publication. The magazine said GM declined to comment.

"We are speaking to GM about various future technologies but we are not saying anything more beyond that," a BMW spokesman said.

16. Air Pollution Increases DNA Damage Associated With Disease

A study in the Czech Republic has found a link between exposure to certain air pollutants and an increase in DNA damage for people exposed to high levels of the pollution.³ They found that breathing small quantities of benzo[a]pyrene (B[a]P), caused an increase in the number of certain 'biomarkers' in DNA associated with a higher risk of diseases, including cancer.

Air pollution is a major problem around the world, particularly in urban areas. In attempt to control regional air pollution levels, the EU has introduced legal limits for exposure to a variety of different airborne pollutants. For B[a]P, the EU air quality standard is 1 nanogram per metre³ (ng/m³) as an annual average that has to be attained where possible throughout the EU.

To measure the risk of DNA damage and risk to health caused by exposure to chemicals, such as PAHs, researchers sometimes use 'biomarkers' – these are biological features that can provide an indicative picture of risk and disease. Previous studies have suggested that 'DNA adducts' can be used as biomarkers to measure exposure to PAHs. These are, in effect, small molecules, such as PAHs, bound to the DNA. Similarly, 'chromosomal aberrations' - structural changes to a stretch of DNA - can be used as biomarkers to demonstrate the effect of some pollutants on DNA.

To test whether there was a possible link between exposure to PAHs and the frequency of DNA adducts and chromosomal aberrations, the researchers, supported by the EU EnviRisk and INTARESE projects, examined DNA from 950 police officers and bus drivers in Prague. The participants, drawn from three separate studies conducted over a five-year period, all worked outdoors for more than eight hours a day. Each carried a device to measure their personal

³ Source: Sram, R. J., Binkova, B., Beskid, O., et al. (2011). Biomarkers of exposure and effect – interpretation in human risk assessment. *Air Quality and Atmospheric Health*. 4: 161-168. This study is free to view at: www.springerlink.com/content/8mj322hk77762332/

exposure to PAHs and DNA was extracted from the participants' white blood cells. The researchers also tested a new technique for identifying chromosomal aberrations called 'fluorescence in-situ hybridization', or FISH, which is much more sensitive than previous techniques.

The results revealed, for the first time, a significant relationship between exposure to PAHs, the number of DNA adducts and the number of chromosomal aberrations detected using FISH. In particular, PAH levels and the occurrence of the two biomarkers were higher in winter than in summer. In one of the studies, average personal exposure to B[a]P and PAHs in January was measured as 1.58 ng/m³ and 9.07 ng/m³, respectively. In June, this dropped to 0.18 ng/m³ and 1.92 ng/m³. The number of B[a]P-like DNA adducts and chromosomal aberrations were correspondingly much higher in January than in June. In fact, the number of DNA adducts strongly mirrored exposure to PAHs in the past 30 days.

These findings are of concern because exposure to more than 1 ng/m³ of B[a]P has been found to put people at higher risk of developing cancer later in life. Previous studies have shown that DNA adducts can be an indicator for cancer several years after exposure and the findings of this study indicate that DNA adduct biomarkers and chromosomal aberrations measured using FISH could help health authorities identify individuals at higher risk of disease.

17. Air Quality Issues Coming To a Head before 2013 'Year of Air'

The European Commission has begun a comprehensive review of existing laws that could lead within a year to changes in the 2008 air quality directive. The directive is credited, along with a host of other pollution-related laws, in steady improvements in air quality since the EU started setting standards in the 1990s. Still, major challenges lie ahead. Levels of some noxious pollutants are on the rise after a decade of declines, and a new report by the European Environment Agency (EEA) shows that more than 95% of city residents in the European Union regularly breathe ozone levels that exceed the World Health Organization's (WHO) recommended levels.

The EEA's 2011 report on air quality, released on November 9th, shows broad historical improvements, with concentrations of sulfur dioxide falling by more than half in the decade ending in 2009 and the percentage of EU citizens exposed to sulfur exceeding health regulations falling to near zero. Carbon monoxide, a gas formed from burning fossil fuels, has fallen by as much as half. Yet the report also shows that beginning in 2008, levels of nitrogen oxide (NO₂), ozone and particulate matter have risen, fuelling concerns about overall air quality especially in urban "hot spots". In addition, most EU countries have spotty records at enforcing the European Commission's 2008 air quality directive. Pressure to create economic growth in the face of the Eurozone debt crisis and receding economies creates pressure to overlook policies that might crimp growth.

Poor air quality leads to complications ranging from itchy noses to serious respiratory and cardiac complications, health experts say. Some studies say bad air causes nearly 500,000 deaths per year in the EU – 0.1% of the bloc's population – while the EEA's upper estimates show that anti-pollution measures and factors such as the rising use of electric vehicles will cut deaths to 230,000 in 2020. And rising nitrogen and ozone levels affect more than human health, damaging vegetation, soil, water and even buildings, experts say.

Health advocates, for their part, say human concerns should be paramount. "I think a lot of the time we talk about the cost to say industry, or how much it would cost to actually adopt

measures to reduce air pollution, but we do not talk enough the benefits we would get for people's health," said Anne Stauffer, deputy director of the Health and Environmental Alliance in Brussels. Stauffer says policy-makers face mounting pressures over anticipated changes to air quality rules even though some EU air quality standards are more relaxed than those set by the WHO. "We have a huge challenge here with the review process now because we see that member states are really struggling to keep with the air quality limits, and at the same time we get all this new science in about the health impacts," Stauffer said. "I think that there is a real danger that the EU law on air quality gets weakened instead of strengthened."

The Environment commissioner now oversees 21 directives related to air quality, pollution and industrial emissions, while other emissions are regulated under transport legislation, while still other policies are aimed at boosting electric vehicles and biofuels. But with some 20 member states facing legal action for failing to live by current commitments, revising existing standards will not be easy.

Environment Commissioner Janez Potočnik wants 2013 to be the "Year of Air" and is pushing for stronger air quality laws across the European Union. Potočnik has vowed to make air quality a priority and officials say there is support in the European Commission for a comprehensive air quality policy akin to the US Clean Air Act, a landmark 1970 law that has guided environmental policy and enforcement.

According to a recent EEA report, more than 95 percent of the EU urban population is exposed to ground-level ozone levels exceeding WHO guidelines, and 80-90 percent of the same group are overexposed to particulate matter, both of which are linked to cardiovascular and lung disease.⁴ "Europe's air quality is generally getting better, but concentrations of some pollutants are still endangering people's health," said EEA executive director Jacqueline McGlade in a statement.

In 2020, EU estimates indicate that air pollutants will cost 537 billion euros (\$741 billion) in human health terms as well as ecosystem and agriculture damage, such as acidification, eutrophication and ozone impact on vegetation.

Key findings of the report

- Particulate matter: Twenty per cent of the EU urban population lives in areas where the EU air quality 24-hour limit value for PM10 concentration was exceeded in 2009. For the 32 member countries of the EEA, the estimate is 39 %. However, 80-90 % of the EU urban population is exposed to levels of PM10 which exceeded the more stringent World Health Organization (WHO) air quality guidelines. This situation does not seem to be improving.
- Ozone: Ozone is not directly emitted but instead is the product of chemical reactions between other gases. Although man-made emissions of many of these 'precursors' has declined, ozone levels did not fall significantly between 1999 and 2009.
- Approximately 17 % of European citizens live in areas where the EU target for ozone concentration was exceeded in 2009. If ozone levels are compared to the more stringent WHO guidelines, more than 95% of the EU urban population was exposed to ozone

⁴ The European Annual Air Quality Report 2011 provides an overview and analysis of air quality in Europe. The evaluation of the status and trends of air quality is based on ambient air measurements (1999-2009), in conjunction with anthropogenic emissions and their trends (1990-2009).

exceeding this level. About one third of the total arable land in the 32 EEA member countries was also exposed to levels of ozone above the EU target level.

- Sulfur dioxide (SO₂): From 1999 to 2009, Europe cut SO₂ levels by roughly 50 %, leading to declines in acid rain and reduced acidification. Very few EU urban citizens are exposed to levels of SO₂ above the EU limit value, although 68-85 % of the EU urban population is potentially exposed to levels above the WHO guidelines.
- Nitrogen dioxide (NO₂): Concentrations of NO₂ have declined slightly in recent years. Exceedances occurred usually at hot-spots, such as main roads. Twelve per cent of the European urban population lives in areas with urban background (non-traffic) concentrations of NO₂ exceeding EU and WHO levels.
- Heavy metals: Atmospheric levels of arsenic, cadmium, lead and nickel are generally low in Europe. However, heavy metal levels can build up in soils, sediments and organisms. Despite considerable cuts in emissions of heavy metals since 1990 in the EU, a significant proportion of European ecosystems are still at risk of heavy metal contamination.

18. European Transport Sector Must Be Ambitious To Meet Targets

"Emissions levels of almost all pollutants from transport fell in 2009, as there was a drop in demand," Professor Jacqueline McGlade, EEA Executive Director, said. "But this fall was due to the economic recession. So now we need to see a more fundamental shift in Europe's transport system, so that emissions do not increase even in times of strong economic growth."

The EEA report on transport and the environment shows that some efficiency gains have been made. For example, new cars in 2010 were approximately a fifth more efficient than in 2000. However, these relatively modest gains are often outpaced by growing demand, even if the recession slowed activity in some areas. Between 1990 and 2009, demand for transport grew by approximately one third, leading to a 27 % increase in greenhouse gases (GHGs) from transport in the same period.

New targets proposed in the Commission's Roadmap will frame policy making at the European, national and municipal level in order to tackle environmental issues connected to transport. The report shows there are significant opportunities for policy makers to address these problems coherently, for example by addressing air quality and climate change together.

For the first time, the EEA has developed a baseline to assess progress towards the transport sector's environmental targets. These include targets for greenhouse gas emissions, energy consumption and noise. A core set of 12 indicators has been developed, spanning a wide range of policy areas.

Key findings

- Transport was responsible for 24 % of all EU GHG emissions in 2009. The Roadmap states that EU Member States are required to reduce GHGs from transport by 60 % by 2050, compared to 1990 levels. Since emissions actually increased by 27 % between 1990 and 2009, the EU must make an overall 68 % reduction between 2009 and 2050.
- Annual energy consumption from transport grew continuously between 1990 and 2007 in the EEA member countries. While total energy demand from transport fell 4 % from 2007-2009, the upward trend is likely to resume with economic growth.

- Air quality objectives were exceeded in many areas. For nitrogen dioxide (NO₂), which can cause asthma and other respiratory problems, the annual limit values were exceeded at 41 % of traffic monitoring stations in 2009.
- Particulate matter (PM₁₀) from transport also causes serious health problems. In 2009 the daily limit value for PM₁₀ was exceeded at 30 % of the traffic sites across the EU-27.
- Almost 100 million people were exposed to damaging long-term average levels of noise from road vehicles on major roads.
- The average real price of road transport fuels (calculated as unleaded petrol equivalent, inclusive of duties and taxes) was EUR 1.14 per liter in June 2011, in real terms 15 % higher than in 1980. This means that the price of petrol has increased by less than 0.5 percentage points per year in real terms on average, meaning that fuel prices are not sending strong signals to encourage more efficient transport choices.
- The share of alternative fuelled cars on the road has grown steadily, comprising more than 5 % of the fleet in 2009. Most of these were using liquefied petroleum gas (LPG), while electric vehicles made up 0.02 % of the total fleet.
- Roads, railways and motorways are cutting up Europe's landscape into ever smaller parcels, with serious consequences for biodiversity. Nearly 30 % of land in the EU is moderately, highly or very highly fragmented, restricting movement and breeding of many different species.

'Laying the foundations for greener transport' is the latest in an annual series of reports published by the European Environment Agency under the Transport and Environment Reporting Mechanism (TERM).

Transport GHG emissions were defined in the Kyoto Protocol agreement as the emissions from the combustion and evaporation of fuel for all transport activity, regardless of the sector, but excluding international aviation and maritime transport (international bunker fuels). The GHG emissions target for transport in the Commission's Roadmap is defined as the emissions counted under the Kyoto Protocol, plus international aviation (but excluding international maritime transport). Figures are in CO₂ equivalent.

As it seeks to wean itself off fossil fuels, the EU has set itself binding targets beyond the Kyoto Protocol of cutting its carbon emissions by 20 percent by 2020 and increasing the share of renewables in its energy mix by 20 percent. It also has a series of road maps to create a framework for investment and future legislation on deeper emissions cuts beyond 2020. For transport, road map goals include a 60 percent cut in greenhouse gas emissions from transport by 2050.

19. Danish Government Plans Higher Tax on NO_x, Energy Technology Subsidies

A draft 2012 budget plan released by Denmark's new center-left government calls for a higher tax on emissions of nitrogen oxides, new subsidies for climate-friendly energy technologies, and 1 billion Danish kroner (\$185.7 million) for grants to improve the energy efficiency of housing. The proposed new rate is DKK 25 (\$4.65) per kilogram excluding the value added tax, compared to the current DKK 5.2 (97 cents). The government estimates the new tax would raise about DKK 600 million (\$111.4 million) annually.

The draft plan, published on November 3rd, replaces a proposal released on August 24th by the then-government, which became the parliamentary opposition after a September 15th general election. Parliament is expected to approve a final budget by the end of December.

More environmental measures will be featured in a new energy bill that is likely to be approved by the end of 2011 and a new climate plan due to be presented in early 2012.

A November 3rd government statement pointed out that neighboring Sweden already taxed nitrogen oxides at 50 Swedish kronor (\$7.65) per kilogram and had seen significant emission reduction benefits as a result. The higher tax is expected to reduce Danish emissions by just over 30 percent, the government said.

The budget plan confirmed that a new road pricing plan for Copenhagen will also go ahead. It proposed that DKK 800 million (\$148.6 million) be invested in infrastructure for a toll ring road around the Danish capital in 2012 and 2013. In addition, DKK 231 million (\$42.9 million) would be set aside for the creation of new protected forests and wetlands.

DKK 11 million (\$2 million) would be allocated over two years to combat floods and erosion resulting from climate change. DKK 50 million (\$9.3 million) in new grants would be offered to companies for the development of green energy technologies, and a fund worth DKK 500 million (\$92.9 million) annually would be established to provide grants to improve the energy efficiency of housing in 2013 and 2014.

The plan also confirmed that environmental adjustments to vehicle taxes would be introduced, though no concrete figures were provided.

20. Italy's New Environment Minister Says Plans Focus on Safety, Economic Growth

On November 21st, Italy's new environment minister, Corrado Clini, said that environmental safety—including nuclear power—will be the ministry's top priority during his time in office. Clini, a former director general in the ministry and a veteran climate change and multilateral environmental cooperation negotiator, said Italy's environmental policies over the coming months will focus on internal issues, such as limiting the country's vulnerability to heavy rains or other extreme weather.

Large parts of northern Italy have suffered from three weeks of flooding that has stopped traffic, halted industrial production in many areas, destroyed farmland, and led to 19 deaths. Clini said poor environmental management had worsened the effects of flooding and erosion. "What we saw in northern Italy showed that prevention must become a higher priority to protect both lives and industrial and agricultural capacity," he said in a briefing. The recent flooding is estimated to have caused at least €3 billion (\$4.1 billion) in damage and lost economic production.

Clini also said that the return of nuclear power to Italy was "inevitable" but that it would occur only under certain conditions that stressed safety over speed or cost. All of Italy's nuclear power plants were closed in 1987 in the wake of the Chernobyl nuclear meltdown in the then-Soviet Union. Berlusconi attempted to reintroduce nuclear power as a source of cheaper energy, but his plan was defeated in a national referendum in June after support for it plummeted after the Fukushima Daiichi meltdown in Japan.

Clini said that while Italy will honor its international commitments, they will be of a "secondary importance" as the government focuses on sparking economic growth and paying down debt. He said the Ministry of Environment's role in that equation is making sure that companies do not harm the environment while jump-starting growth and helping to ensure that environmental issues do not hurt industrial production or endanger lives.

21. EU Panel Seeks Specific Proposals to Cut Carbon Emissions from Transportation

The European Commission should act to improve the environmental performance of transportation in the European Union by publishing more specific proposals on a series of goals to be achieved by 2020, lawmakers on the European Parliament's transportation committee said on November 22nd. In particular, the Commission should publish legislative proposals to reduce carbon dioxide emissions from road transportation by 20 percent and from aviation and shipping by 30 percent compared to a 2010 baseline, according to a resolution adopted by lawmakers on a 35-5 vote.

The draft resolution was the committee's response to a strategy paper published by the Commission in March that said greenhouse gas emissions from vehicles should be cut by 60 percent by 2050 compared to 1990 levels as a contribution to long-term EU climate goals. The Commission paper added that greenhouse gas emissions from transportation should be cut by 20 percent by 2030 compared to 2008 levels.

The transportation committee also asked the Commission to publish by 2014 a proposal to ensure that transportation users pay the full costs of environmental damage and noise associated with their choice of conveyance.

Belgian center-right Member of the European Parliament Mathieu Grosch, who is responsible for preparing the Parliament's response to the Commission paper, said long-term transportation plans should "learn from the mistakes of the past." "There is a need to set clear targets and deadlines, to ensure that progress in the member states is constantly measured using the adequate tools, and that the targets are finally met," he said.

The full European Parliament is likely to vote on the resolution in December.

22. EU Study on Land Use Changes Links Biofuel Development to Biodiversity Loss

On November 21st, the European Commission said that biofuels can make a "positive contribution" toward EU climate and energy objectives despite mounting scientific evidence, including a new study that predicts biodiversity loss, that mandatory targets for using crops to make fuel could pose risks to the environment. However, the EU executive body acknowledged that it could seek to amend EU law requiring a set portion of renewable energy use, including biofuels, for the transportation sector after an impact assessment study is published in the coming months.

The European Commission Joint Research Center said in its report "considering that 42 percent of new cropland will come from pasture, 39 percent from managed forest, 3 percent from primary forest and 16 percent from savanna and scrub lands," this will result in an 85.3 percent decrease in the current "mean species abundance." "This result ... shows that extensive use of bioenergy crops will increase the rate in loss of biodiversity and often the greenhouse gas reduction from biofuels production are insufficient to compensate for the losses due to land use change," the report added. However, the study also said its analysis was "a rough estimation" of the potential biodiversity impacts of land use changes driven by increased biofuels demand.

In response, Commission spokeswoman Marlene Holzer said that land-use changes due to production of first-generation biofuels—such as vegetable oil—are hard to quantify. "We believe that biofuels can make a positive contribution toward the EU's climate and energy objectives if

all issues, including indirect land use change impacts, are properly addressed,” Holzer said. Holzer noted the “rough estimation” statement and said the findings from the report are in line with analysis by the Commission's energy directorate, as they “attribute a higher risk of indirect land use change emissions to conventional biodiesel crops such as vegetable oils than to bioethanol crops such as cereals and sugar crops.”

She said the Commission is finalizing an impact assessment on the issue. “This would be released on the adoption, if appropriate, of a legislative proposal for amending the EU Renewable Energy Directive and the Fuel Quality Directive,” she said. Based on both pieces of legislation, renewable energy must make up 10 percent of the European Union's transportation fuel by 2020 and greenhouse gas emissions from the sector must be 6 percent lower than a baseline emissions intensity standard by the same year. The Commission has said biofuels are not the only way to reach the 10 percent target.

23. EU Launches Formal Investigation into Subsidies for U.S. Bioethanol Imports

On November 25th, the European Commission launched an investigation into bioethanol imports from the United States following complaints from European producers that their U.S. competitors benefit from illegal subsidies, including tax breaks. Commission spokesman John Clancy said an anti-subsidy and anti-dumping inquiry would determine if the U.S. imports of bioethanol are having an illegal adverse impact on EU-based producers. He added that provisional conclusions are due by August 2012.

The announcement of the probe in the Official Journal of the European Union said that a preliminary investigation by the Commission found that there was “prima facie” evidence to support complaints filed earlier in the month by EU bioethanol producers.

The EU already has anti-subsidy and anti-dumping duties on imports of U.S.-produced biodiesel.

The European ethanol trade group ePURE claims that a U.S. excise tax credit and the federal income tax credit for ethanol has led to a dramatic increase in imports from the United States into the European Union. The organization said that from 2008 to 2010, U.S. imports of fuel ethanol in Europe have surged by more than 500 percent and imports in 2011 will have likely doubled from the previous year.

U.S. ethanol producers have rejected the complaints by their European counterparts as misguided and without merit. The U.S.-based Renewable Fuels Association said there is no merit to the ePure claims, adding that the tax incentives the EU complaint is based on will expire at the end of 2011. It also said the domestic producers in the United States are not eligible for the tax incentive cited by ePure.

Both European domestic ethanol producers and those from other countries are expected to benefit significantly from an EU law that requires 10 percent of all fuels used for transport to be produced from renewable energy sources by 2020. The fact that biofuels are eligible to benefit from the renewable target is a subject of significant controversy, as environmental groups and others say production of the fuel from plants does not help reduce greenhouse gases.

24. Industrial Air Pollution Cost Europe Up To €169 Billion in 2009, says EEA

Air pollution from the 10,000 largest polluting facilities in Europe cost citizens between € 102 and 169 billion in 2009. This was one of the findings of a new report from the European

Environment Agency (EEA) which analyzed the costs of harm to health and the environment caused by air pollution. Half of the total damage cost (between € 51 and 85 billion) was caused by just 191 facilities.

The report, 'Revealing the costs of air pollution from industrial facilities in Europe', provides a list of the individual facilities that contribute the most harm.

“Our analysis reveals the high cost caused by pollution from power stations and other large industrial plants,” Professor Jacqueline McGlade, EEA Executive Director, said. “The estimated costs are calculated using the emissions reported by the facilities themselves. By using existing tools employed by policy-makers to estimate harm to health and the environment, we revealed some of the hidden costs of pollution. We cannot afford to ignore these issues”, added Professor McGlade.

The industrial facilities covered by the analysis include large power plants, refineries, manufacturing combustion and industrial processes, waste and certain agricultural activities. Emissions from power plants contributed the largest share of the damage costs (estimated at €66–112 billion). Other significant contributions to the overall damage costs came from production processes (€23–28 billion) and manufacturing combustion (€8–21 billion). Sectors excluded from the EEA analysis include transport, households and most agricultural activities – if these were included the cost of pollution would be even higher

Key findings

- Air pollution by the facilities covered by EEA’s analysis cost every European citizen approximately € 200-330 on average in 2009.
- Countries such as Germany, Poland, the United Kingdom, France and Italy, where a high number of large facilities are located, contribute the most to the total damage costs. However, when damage costs are weighted in an attempt to reflect the productivity of national economies, the ordering of countries changes significantly. The emissions from countries such as Bulgaria, Romania, Estonia, Poland and the Czech Republic are then relatively more important with regard to the damage costs.
- A small number of individual facilities cause the majority of damage costs. Three quarters of the total damage costs were caused by the emissions from just 622 industrial facilities – 6 % of the total number. The facilities with emissions associated with a high damage cost are in most cases some of the largest facilities in Europe which release the greatest amount of pollutants.
- Carbon dioxide (CO₂) emissions contribute the most to the overall damage costs, approximately €63 billion in 2009. Air pollutants, which contribute to acid rain and can cause respiratory problems - sulfur dioxide (SO₂), ammonia (NH₃), particulate matter (PM₁₀) and nitrogen oxides (NO_x) - were found to cause €38-105 billion of damage a year.

NORTH AMERICA

25. California 'Clean Car' Plan Sets Stage For Battle Over EPA's Vehicle Rules

On December 7th, California’s Air Resources Board proposed sweeping new rules to reduce greenhouse gas emissions from vehicles, including putting 1.4 million electric, plug-in and hydrogen cars on the state's roads by 2025. In addition to curbing climate warming gases, the program will also save drivers \$22 billion in fuel costs, the state's Air Resources Board said. The

proposals are part of the State's plan to reduce climate warming emissions by 80 percent by 2050 and come three weeks after the Obama administration proposed doubling auto fuel efficiency to 54.5 miles per gallon nationwide by 2025. The ARB will consider adoption of the rules at a meeting on January 26th.

The proposed "Advanced Clean Car" regulatory package includes GHG emission standards for 2017-2025 model-year vehicles that harmonize with the federal GHG and corporate average fuel economy standards announced on November 16th by EPA and the Department of Transportation (DOT). It also includes more aggressive ZEV requirements than current state rules; tighter low-emission vehicle (LEV) standards that cover several pollutants; and a "clean fuels outlet" regulation, which primarily will require fuel providers to install hydrogen fueling pumps at stations under a certain time frame.

The state also said that though new, highly efficient technologies will increase the cost of a new vehicle by about \$1,900, those costs will be more than offset by \$6,000 in fuel cost savings over the life of the car.

The LEV III standards are designed to reduce the emissions of NO_x+NMOG by 75% by 2025. The average NMOG+NO_x emissions from light-duty vehicles will be reduced to SULEV levels (0.030 g/mi), equivalent to the EPA Tier 2 Bin 2. The LEV III standards would also phase-in a new 150,000 miles durability requirement, compared to the current 120,000 miles.

Most of the provisions in this formal LEV III proposal are consistent with the LEV III discussion paper released in February 2010. One exception, however, is that the ARB dropped the solid particle number (SPN) emission limit, recommended earlier as an option.

The LEV III proposal also includes new PM mass limits. For passenger cars, a PM emission limit of 0.003 g/mi is phased-in over 2017-2024, and a 0.001 g/mi limit over 2025-2028.

About 40 percent of California's greenhouse gases come from vehicles, and the state's new rules also aim to stimulate production of so-called zero-emission vehicles, or ZEVs, which include cars that run on electric batteries and fuel cells. The state wants ZEVs such as Nissan Motor Company's all-electric Leaf or plug-in hybrids like General Motors' Chevrolet Volt to make up more than 15 percent of new vehicle sales by 2025. But, the state said, plug-in hybrids would be transitional vehicles, adding that 87 percent of the cars on the road will have to be pure ZEVs by 2050 for the state to achieve its goals. The target is an aggressive one considering that such vehicles make up well below 1 percent of the market, and California has been forced to scale back its ZEV goals in the past because vehicle technology lagged the state's hopes for putting clean cars on its roads and highways.

In 2008, the ARB reduced the number of pure ZEVs to 7,500 for the three years from 2012 to 2014 from a previous requirement of 25,000. Since then, however, automakers have stepped up their investment in more fuel-efficient vehicles, including battery electric cars. Still, the new rules include a controversial provision to allow automakers that over comply with their fuel efficiency requirements across their fleet to offset their ZEV requirement. While the ZEV regulation is a California-only standard, at least a dozen other states have adopted the same regulation over the past two decades, as allowed under the Clean Air Act, making the new ZEV rules very significant nationwide.

Another component of CARB's rules expected to be scrutinized by automakers and environmentalists are first-time requirements to reduce PM emissions from vehicles, under

California's LEV III standards that are part of the CARB package. EPA is expected early next year to release its "Tier III" vehicle-emission standards that will mirror CARB's rules. Environmentalists reportedly will be asking CARB to tighten the proposed PM standards by phasing in a 1-milligram-per-mile (mg/mile) limit by 2022, rather than by 2025.

26. Judge Blocks a California Fuel Regulation

A federal judge on Thursday blocked enforcement of a California regulation favoring producers of gasoline, diesel fuel and biofuels whose methods generate fewer greenhouse gas emissions.

The ruling by the judge, Lawrence J. O'Neill of United States District Court in Fresno, said the rule unconstitutionally discriminates against out-of-state producers and tries to regulate activities that take place entirely outside state boundaries, from producers' choice of farming methods to refiners' use of coal-fired electricity.

By granting a preliminary injunction, which had been sought by ethanol producers, the judge dealt a blow to the state's much-trumpeted effort to reduce its greenhouse gas emissions to 1990 levels by 2020. The low-carbon fuel rule had been expected to account for 10 percent of the overall reduction in emissions, or about 16 million metric tons.

California's fuel standard "impermissibly treads into the province and powers of our federal government, reaches beyond its boundaries to regulate activity wholly outside of its borders," the judge said.

The federal Constitution grants Congress the power to regulate interstate commerce, and court rulings over the decades have interpreted that language to restrain states from interfering with interstate commerce. Judge O'Neill said that California's fuel standard rule "offends" that doctrine, referred to as "the dormant commerce clause."

A spokesman for the California Air Resources Board, which issued the rule in 2009, said it would appeal the decision.

The California rule is one of the first in the country to use a "life cycle" analysis to determine the total amount of greenhouse gases emitted in the course of producing and transporting a fuel, or its "carbon intensity." By setting a carbon intensity standard, producers and distributors who emit less are rewarded with marketable credits; those who exceed the standard must buy credits, driving up the costs of their fuel.

Separate lawsuits against the California regulation were brought by the ethanol producers and by refiners and truckers. The Air Resources Board had asked Judge O'Neill to dismiss the claims, saying that provisions of the Clean Air Act give California special authority to control air pollution. These provisions shield the state from any claim of interference with interstate commerce, the regulators argued.

In three separate rulings issued Thursday, Judge O'Neill rejected the regulators' defense, accepting the refiners' claim that the state acted unconstitutionally and granting the injunction.

The fuel refining industry welcomed the judge's action. "Today's decision is a victory for the millions of Californians," said Charles T. Drevna, the president of the National Petrochemical

and Refiners Association. "California's low-carbon fuel standards would have raised gasoline and diesel fuel costs for all Californians, who already pay the highest fuel prices in the nation."

27. Northeast States' LCFS Push Faces Critical Issues as Next Stage Emerges

A far-reaching effort by 11 Northeast states to determine whether they should adopt a regional Low Carbon Fuel Standard (LCFS) in the absence of any action by Congress to adopt a national standard will likely move to the next stage of expert consultations in the coming year, but the prospective rules face critical issues, including the complexity of finding cohesion among 11 states.

The LCFS exploration was launched in 2009 by officials from six Northeast and five Mid-Atlantic States interested in investigating a standard to tackle greenhouse gases (GHG) from the transportation sector, one of the largest emission sources in the Northeast and in the U.S. as a whole. The LCFS under discussion would require reducing the carbon intensity of fuels 10 percent over 10 years.

An LCFS is a rule that would cut transportation fuels' carbon intensity -- or grams of carbon dioxide released per megajoule of energy produced -- compared with gasoline and petroleum carbon emissions using ethanol, electricity, and other alternative fuels.

A recently completed analysis by the Northeast States Coordinated Air Use Management (NESCAUM) concludes that the 10 percent standard would cut gasoline and diesel use by 12 to 29 percent (4.0 to 8.7 billion gallons annually) once the program was fully implemented. The NESCAUM analysis looked at the amount of alternative fuels and clean vehicles that would be needed to meet the LCFS goal. But a Texas-based group that promotes domestic energy production, the Consumer Energy Alliance (CEA), slammed the analysis in letters sent to the governors of the 11 impacted states arguing that NESCAUM had used a series of flawed assumptions in reaching its conclusions.

Although "loosely based on California's LCFS," the program the Northeast states are exploring would have to be tailored to suit the region, which differs significantly from California in that it encompasses 11 states and nearly 100 percent of its transportation fuel is imported from the Middle East, Venezuela, Canada and other places, with each type of fuel having different carbon intensity; California has significant in-state petroleum resources.

28. Canada Assessing California LCFS for U.S. Compliance with WTO, NAFTA

Canadian officials are assessing whether new amendments to California's low carbon fuel standard (LCFS) comply with U.S. international trade obligations -- including those laid out by the North American Free Trade Agreement (NAFTA) and the World Trade Organization (WTO) - - out of concern that the rules may unfairly penalize the country's tar sands-derived crude oil in terms of their lifecycle greenhouse gas (GHG) emission estimates. The forthcoming Canadian analyses could spur a lawsuit against California if Canadian officials are not satisfied the LCFS regulation gives their crude oil the same fair and equal treatment fuel products from other countries and U.S. states receive.

The California LCFS, which requires fuel providers to reduce the carbon intensity of gasoline and diesel 10 percent by the end of 2020, is considered a model for other states and regions, some of which are considering adopting their own standards. It is also a cornerstone of California's strategy to reduce GHG emissions to 1990 levels by the end of 2020.

Elevated scrutiny of California's LCFS by Canadian officials emerged recently when the California Air Resources Board (CARB) approved amendments to the regulation that, in part, aim to improve accounting for the carbon intensity of varying crude oils through a California "averaging" approach.

Canadian officials are primarily concerned with how CARB will calculate lifecycle GHG emissions for a variety of crude oils that refiners use to make gasoline and diesel sold in California, including crude oil derived from Canadian oil or tar sands reserves.

During CARB's December 16th meeting on the LCFS amendments, Cassie Doyle, Canada's consulate general in California, urged CARB officials to "apply equal scrutiny on all crude" oils, "based on accurate accounting for lifecycle GHG emissions" in a way that "encourages transparency on all crude oil producers." In a letter submitted earlier this year to CARB, Doyle said that Canada is concerned that the LCFS "could impose an administratively burdensome chain of custody system to track crude oil and could potentially drive higher carbon-intensive crude oils to other markets, resulting in no net decrease in global GHG emissions."

Oil sands crude, she added in the letter, has lifecycle GHG emissions "similar to other crude oils in California, including California's own heavy crude oil, as well as crude oil from Venezuela, Angola, Nigeria, and some heavy Middle Eastern crude oils." The LCFS "should seek to assign individual GHG values to all crude oils used in California and allow each crude oil to stand on its own merits, based on sound science."

While Canada supplies "detailed, verifiable, data regarding GHG emissions from the production of crude oil," Doyle adds in the letter, "several other California suppliers have relatively lax or opaque regulatory oversight and lack data concerning their oil sector's GHG emissions."

Canadian environment and energy officials are also asking CARB to answer a number of specific, technical questions about how the LCFS will be implemented, in terms of assessing lifecycle GHG emissions of crude oils, according to a December 9th letter to CARB. Questions include how CARB will collect and verify carbon intensity data and whether jurisdictions that fail to provide "transparent, viable information" will be assessed a higher carbon intensity value. The letter was signed by Mark Corey, assistant deputy minister of Natural Resources Canada's energy sector, and Jennifer Steber, assistant deputy minister of Alberta Energy's resource development policy division.

29. Green Groups Unhappy With Accelerated Pipeline Plan

Environmental opponents of the Keystone XL tar sands pipeline deluged the White House and Congress with phone calls recently, slamming a Republican plan to speed approval of the project in exchange for extending a payroll tax cut. House Republicans warned they planned to include approval of the Keystone pipeline to a payroll tax cut bill, a challenge to President Barack Obama, who has said he would veto such a bill if the pipeline deal is part of it. But more recently, a White House spokesman left open the possibility that Obama might consider approving the legislation to get the extended tax cut.

In November, the president delayed approval of the controversial Canada to Texas pipeline until after the 2012 U.S. election by opting to explore a new route that would avoid the environmentally sensitive Sand Hills of Nebraska. The State Department, which has authority in this cross-border project, suggested then that looking at new routes for the pipeline would take

until early 2013 at the earliest. The department had previously said it hoped to make a final decision this year.

As opponents of the deal marshaled their forces, a policy analyst said that even if the president does approve this deal to force a decision on the pipeline in two months, the State Department would be unable to conduct an analysis of the proposed new route by then. "There's almost no way the State Department can meet the requirements of the law in that brief time," Daniel Weiss of the Center for American Progress reportedly said. "The president will have little choice than to not approve the permit. If he were to approve the permit anyway it would not survive a court challenge."

Sierra Club's executive director, Michael Brune, said his group was disappointed Keystone was in play in this debate, and said he was encouraged by Obama's comments earlier this week that the pipeline and the payroll tax should not be part of the same bill.

"Republicans are pursuing a misguided strategy," said Susan Casey-Lefkowitz of the Natural Resources Defense Council. "We know the president has made his stance clear, but Keystone fast-tracking should not happen at all. It's going to mean rejection of the pipeline."

30. EPA Finalizes 2012 Renewable Fuel Standards

Under the Clean Air Act Section 211, as amended by the Energy Independence and Security Act of 2007, the Environmental Protection Agency (EPA) is required to set the annual standards under the Renewable Fuel Standard program (RFS) based on gasoline and diesel projections from the Energy Information Administration (EIA). EPA is also required to set the cellulosic biofuel standard each year based on the volume projected to be available during the following year, using EIA projections and assessments of production capability from industry. This regulatory action establishes these annual standards for cellulosic, biomass-based diesel, advanced biofuel, and total renewable fuels that apply to all gasoline and diesel produced or imported in year 2012.

EPA also finalized a number of changes to the RFS regulations. These changes are intended to:

- Clarify certain provisions because it have learned that there is some confusion among some regulated parties
- Clarify the application of certain provisions to unique circumstances
- Provide greater specificity in the definition of certain terms
- Correct regulatory language that inadvertently misrepresented EPA's intent

The rule also makes a minor amendment to the gasoline benzene regulations regarding inclusion of transferred blendstocks in a refinery's early benzene credit generation calculations.

Finally, EPA is required to determine the applicable volume of biomass-based diesel (BBD) that will be required in 2013 and beyond based on consideration of a variety of factors, and promulgate regulations establishing the volumes. The statute specifies that the minimum volume of biomass-based diesel for years 2013 and beyond must be at least 1 billion gallons. In the NPRM EPA proposed an applicable volume of 1.28 billion gallons for BBD for 2013. EPA is continuing to evaluate the many comments on the NPRM from stakeholders, and is not finalizing an applicable volume for 2013 BBD at this time in this rulemaking. It recognizes that the statute calls for EPA to promulgate the applicable volume of BBD for 2013 no later than 14

months before that year. EPA intends to issue a final rule setting the applicable biomass-based diesel volume for calendar year 2013 as expeditiously as possible.

EPA is required to determine and publish the applicable annual renewable fuel percentage standards for each compliance year. Determining the applicable standards under RFS requires EPA to conduct an in-depth evaluation of the volume of qualifying cellulosic biofuel that can be made available the following year. If the projected available volume of cellulosic biofuel is less than the required volume specified in the statute, EPA must lower the required volume used to set the annual cellulosic biofuel percentage standard to the projected available volume. EPA must also determine whether the advanced biofuel and/or total renewable fuel volumes should be reduced by the same or a lesser amount. The final rule provides EPA's determination of the projected production of cellulosic biofuel for 2012, and the final percentage standards for compliance year 2012.

To calculate the percentage standard for cellulosic biofuel for 2012, EPA used a volume of 10.45 million ethanol-equivalent gallons. EPA is also using the applicable volumes that are specified in the statute to set the percentage standards for biomass-based diesel, advanced biofuel, and total renewable fuel for 2012. These volumes are shown in Table 1.

	Final Volumes for 2012	Actual Volume Ethanol Equivalent Volume ⁵
Cellulosic biofuel	8.65 mill gal	10.45 mill gal
Biomass-based diesel	1.0 bill gal	1.5 bill gal
Advanced biofuel	2.0 bill gal	2.0 bill gal
Renewable fuel	15.2 bill gal	15.2 bill gal

The volumes in Table 1 are the minimum that would need to be consumed in the U.S. Insofar as excess volumes of cellulosic biofuel or biomass-based diesel were to be consumed, they would count towards the advanced biofuel and total renewable fuel volume requirements. Four separate standards are required under the RFS program, corresponding to the four separate volume requirements shown in Table 1. The percentage standards represent the ratio of renewable fuel volume to non-renewable gasoline and diesel volume. Thus, in 2012 about 9% of all fuel used will be from renewable sources. The standards for 2012 are shown in Table 2.

Cellulosic biofuel	0.006%
Biomass-based diesel	0.91%
Advanced biofuel	1.21%
Renewable fuel	9.23%

31. EPA Analysis Finds Palm Oil Fails GHG Reduction Threshold

The U.S. Environmental Protection Agency (EPA) issued a Notice of Data Availability (NODA) to release its lifecycle greenhouse gas (GHG) analysis of palm oil used as a feedstock to produce biodiesel and renewable diesel under the Renewable Fuel Standard (RFS) program. The release of the NODA provides the public an opportunity to comment on EPA's analysis.

⁵ Biodiesel and cellulosic diesel have equivalence values of 1.5 and 1.7 ethanol equivalent gallons respectively. As a result, ethanol-equivalent volumes are larger than actual volumes for cellulosic biofuel and biomass based diesel.

EPA's analysis shows that biodiesel and renewable diesel produced from palm oil do not meet the minimum 20% lifecycle GHG reduction threshold needed to qualify as renewable fuel under the RFS program.

In the final RFS2 rule, published in March 2010, EPA assessed the lifecycle GHG emissions of multiple renewable fuel pathways (defined as feedstock, fuel type, and fuel production process). Assessment of lifecycle GHG emissions is necessary to determine which fuel pathways meet the GHG reduction thresholds for the four renewable fuel categories specified in Clean Air Act (CAA), as amended by the Energy Independence and Security Act of 2007 (EISA). The CAA requires a 20% reduction in lifecycle GHG emissions for renewable fuel produced at new facilities (those constructed after EISA enactment), a 50% reduction for biomass-based diesel or advanced biofuel, and a 60% reduction for cellulosic biofuel.

Assessing whether a fuel pathway meets these thresholds requires a comprehensive evaluation of the lifecycle GHG emissions of the renewable fuel as compared to the lifecycle GHG emissions of the gasoline or diesel fuel that it replaces. The CAA defines life-cycle GHG emissions as the aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions such as significant emissions from land use changes), as determined by the Administrator, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and use of the finished fuel to the ultimate consumer, where the mass values for all green-house gases are adjusted to account for their relative global warming potential.

In the final rule, EPA focused its lifecycle analysis on fuels that were anticipated to contribute relatively large volumes of renewable fuel by 2022, and thus did not cover all fuels that either are contributing or could potentially contribute to the program. In the preamble to the final rule, EPA indicated that it would continue to examine several additional pathways not analyzed for the final rule, including those from palm oil, and would complete this process through a supplemental rulemaking process. This NODA presents EPA's analysis of potential pathways for biodiesel and renewable diesel produced from a palm oil feedstock.

In order to calculate lifecycle GHG emissions for the NODA regarding palm oil biofuel pathways, EPA utilized models developed for the final (RFS2) rule. These models take into account energy and emissions inputs for fuel and feedstock production, distribution, and use, as well as economic models that predict changes in agricultural markets.

EPA used the same general approach to estimate global land use change GHG emissions from using palm oil as a feedstock as it has used to analyze other biofuel pathways. Its analysis of palm oil biofuels, however, also considers new data for Indonesia and Malaysia, where close to 90% of world palm oil is currently produced. These data include higher resolution satellite imagery and maps of relevant geographic features, such as oil palm plantations, palm oil mills and protected conservation areas. EPA undertook a more detailed assessment of Malaysia and Indonesia based on a number of factors, including the scale of the palm oil industry in this region and the availability of new data on palm oil land use. The analysis considered past trends to determine likely areas of future palm expansion and classified these areas according to both their land cover and their soil type.

EPA's analysis found that biodiesel and renewable diesel produced from palm oil have estimated lifecycle GHG emissions reductions of 17% and 11%, respectively, compared to the baseline petroleum diesel fuel they replace. These biofuels therefore fail to meet the minimum

20% GHG emissions reduction threshold required by EISA for renewable fuel made in facilities that commenced construction after December 19, 2007.

EPA's analysis highlights a number of key factors which contribute to the lifecycle emissions estimate for biofuels based on palm oil. For example, palm oil production produces wastewater effluent that eventually decomposes, creating methane, a GHG with a high global warming potential. Another key factor is the expected expansion of palm plantations onto land with carbon-rich peat soils which would lead to significant releases of GHGs to the atmosphere.

With this NODA, EPA is soliciting comments on our analysis of the pathways for biodiesel and renewable diesel produced from palm oil. It will consider all relevant comments received and will inform the public of any resulting revisions in its analyses.

32. Benefits of New EPA Rules Found To Greatly Outweigh Costs

A report by researchers at Columbia University's Mailman School of Public Health provides an expanded review of six new air quality regulations proposed or recently adopted by the U.S. Environmental Protection Agency's (EPA). Though the cost of implementing the new regulations is estimated to be about \$195 billion over the next 20 years or so, the economic, environmental and health benefits amount to well over \$1 trillion, considerably outweighing the control costs, according to the report, which was issued by the Joint Center for Political and Economic Studies, a non-profit think tank based in Washington, D.C.

The authors also examined the role that environmental justice issues play in the development of EPA regulations and further analyzed the findings in light of a recent poll conducted by the Joint Center on climate change, health and conservation behaviors.

Building on the data from EPA, the report finds that six new air quality regulations would offer benefits and savings in doctors' visits, hospitalizations, and a reduction in cases of bronchitis, respiratory illness, and aggravated asthma particularly for African American populations and residents in vulnerable communities. The rules analyzed include the Heavy-duty Vehicles Greenhouse Gas (GHG) Emissions Standards, the 2017-2025 Model Year Light-Duty Vehicle GHG Emissions and Café Standards, the Utility Air Toxics Rule, the Cross-State Air Pollution Rule, the Boiler MACT, and the standards of Performance for Petroleum Refineries

The paper highlights the importance of the two motor vehicle rules, since urban air pollution tends to be dominated by motor vehicle emissions. The most beneficial of these rules is the light-duty vehicle rule, which will cost an estimated \$140 billion but bring about \$561 billion in benefits that include billions of barrels of oil saved, reduced emissions, and the health benefits related to non-greenhouse gas pollutants over the lifetime of vehicles sold between 2017 and 2025. According to the analysis, these will yield net societal benefits of \$421 billion.

The findings also show that Cross-State Air Pollution Rule will provide significant health and environmental benefits to low income, minority, and tribal individuals in both rural areas and inner cities in the regions affected by the rule.

The poll, which surveyed 1500 African American adults in Atlanta, Cleveland and Philadelphia, asked respondents about issues related to air quality, climate change and the need for new regulations. Among the poll's key findings:

- A solid majority (59%) of African Americans polled in the three cities believe that global warming is causing serious problems
- 84% of respondents want the federal government to take strong action to deal with global warming
- 80% support EPA's Toxics Rule
- 40% described the air quality where they lived as excellent or good, while 59% said the air quality where they lived was fair or poor
- 83% believe that environmental factors such as air pollution play a major role in causing asthma in children

The authors believe that the close correspondence between public opinion and analytical findings pointing to the health and economic benefits of further air quality improvements should provide a strong mandate for action by the federal government.

33. Environment Canada Tightens Emissions Limits on Off-Road Diesel Engines

Canadian manufacturers and importers of off-road diesel engines face more stringent standards for emissions of air pollutants under regulatory amendments finalized December 7th. The amendments to the Off-Road Compression-Ignition Engine Emission Regulations align Canada's emission standards with those adopted by the U.S. Environmental Protection Agency in 2004. They apply to off-road diesel engines used in machinery such as tractors, excavators, log skidders, and bulldozers.

Between 2012 and 2030, the new standards are expected to eliminate emissions of 2,700 metric tons of volatile organic compounds, 63,300 metric tons of nitrogen oxides, 9,500 metric tons of sulfur dioxide, and 8,400 metric tons of particulate matter smaller than 2.5 microns in diameter, compared with the status quo.

The amendments minimize the regulatory burden on manufacturers and importers by recognizing EPA certificates as evidence of compliance, Environment Canada said. The amendments also permit companies to use transitional engine provisions based on EPA's program to provide flexibility for equipment manufacturers. Changes to the transitional measures ensure that engines available for sale in and imported into the United States will also be available in the Canadian market, it said.

34. Canada Proposes Limiting Sulfur Content in Marine Diesel

Proposed amendments to Canada's Sulfur in Diesel Fuel Regulations would significantly reduce sulfur emissions from vessels operating in Canada's territorial waters, while harmonizing Canadian standards with those of the United States, Environment Canada said on December 2nd. The proposed amendments to the regulations under the Canadian Environmental Protection Act also would reduce the sulfur limit for fuel sold for use in locomotives, smaller ships, and stationary diesel engines, the department said in an impact statement.

The fuel sulfur content standards for large vessels would meet Canada's commitment under Annex VI of the International Convention for the Prevention of Pollution from Ships (MARPOL), it said. The MARPOL provisions, adopted in March 2010 based on a proposal by the United States, Canada, and France, designate waters within 200 nautical miles of the Canadian and U.S. East and West coasts as an Emission Control Area (ECA) as of Aug. 1, 2012.

The proposed amendments would require large ships of more than 400 gross metric tons to burn diesel fuel with a maximum sulfur content of 1,000 PPM. Compliance may be achieved through use of low-sulfur marine fuel or approaches that produce equivalent results, including emissions control technologies or alternative fuels. Similar standards apply in the United States.

The amendments also would reduce the allowable sulfur limit in fuels for use in diesel locomotives and smaller ships to 15 PPM, effective June 1, 2014. They would limit sulfur content in diesel fuel for small and large stationary engines to 15 PPM and 1,000 PPM, respectively, effective June 1, 2012, and June 1, 2014, respectively. Those changes would harmonize Canadian standards with U.S. standards.

35. New Mexico City Buses Cut Pollution, Generate Cash

Mexico City's new public bus system is attracting significant international funding in carbon credit sales, part of the capital's ongoing effort to reduce pollution. The government recently announced that the first phase of its Metrobus BRT system generated almost 846,000 euros (\$1.1 million) in carbon credits by cutting greenhouse gas emissions. Metrobus, which carries an average of 390,000 passengers a day, hopes to generate roughly \$4 million more in offsets over the next 15 years, assuming a stable carbon market.

Funds already received have helped offset the \$65.2 million investment the city made six years ago to build the system's first line, including 36 stops and dedicated traffic lanes. Metrobus now has three lines with 112 stops, but planners would like to see that increased tenfold one day.

Operating alongside a more chaotic traditional bus system, a bustling underground subway and a new bike rental program, the accordion-style buses hold many more passengers than normal buses. The cost per kilometer is much less than expanding the subway.

The project was pushed by successive Mexico City mayors, including incumbent Marcelo Ebrard, known for environmentally friendly policies.

Metrobus is one of 10 transport projects registered with the U.N.'s Clean Development Mechanism (CDM), the original carbon market created by the Kyoto Protocol which allows developed nations to purchase carbon offsets by investing in pollution-reducing projects in poorer countries.

Authorities are cautiously optimistic about the chance of attracting funding for future projects after analysts said climate change talks that ended recently in Durban, South Africa, raised question marks about planned changes in the European Union carbon market, the world's biggest. From 2013, the EU had said it would fund new carbon-cutting projects in only the least-developed countries, mostly in sub-Saharan Africa. But the tentative deal reached in Durban made it uncertain the EU change will go ahead. The potential EU change "would be an impediment for new projects here in Mexico," said Lucrecia Martin, deputy director of climate change projects at Mexico's environment ministry.

Negotiators at Durban agreed to develop a new market-based mechanism to meet emissions-reducing targets, with details to be discussed in 2012, and experts said it was not clear what the agreement meant for offsets from emerging economies.

36. VW Chattanooga Plant Gets Green Award

Volkswagen AG's new assembly plant in Chattanooga, Tennessee, is the first auto plant to receive the top environmental award from the U.S. Green Building Council, the company announced recently. Frank Fischer, chief executive and chairman of Volkswagen Chattanooga, said that being green saves VW money on energy and water costs. The plant's paint shop alone will save 50 million gallons of water over 10 years, VW said.

The plant makes the Passat sedan. VW reported November U.S. sales of about 6,000 of the cars, up from only about 300 a year earlier. The new Passat took the place of a sedan imported from Germany.

Volkswagen's November U.S. sales rose 41 percent to about 28,400 vehicles. VW was ninth among automakers in U.S. sales through October, up from 10th in 2010.

The Chattanooga plant uses power from a local hydroelectric dam, and insulation of its walls will save 720,000 kilowatts per year on power, VW said.

The U.S. Green Building Council awarded the plant its highest rating, a LEED (Leadership in Energy and Environmental Design) green building certification.

The German automaker's only U.S. auto plant opened a half year ago on reclaimed land that was once a U.S. Army munitions depot and factory. Much of the land on which the plant is located was maintained in its natural state, including creeks that run through it.

37. Metro Vancouver to Crack Down On Non-Road Diesel Machines

Metro Vancouver is slated to begin a crackdown on certain diesel-running machines, according to reports. Owners of older backhoes, forklifts and other diesel-powered non-road machines will have to register each item starting January 1st under stricter Metro Vancouver air pollution regulations. Registration information includes company details, maximum engine horsepower, engine manufacture year, engine serial number and machine type, manufacturer, model, and vehicle identification number. The new bylaw, approved earlier this year, is aimed at reducing the spread of diesel emissions from machinery that is not used or intended for transportation on public roads. This includes construction, industrial and commercial equipment like excavators, forklifts and power generators.

Emissions of diesel soot are said to be responsible for two-thirds of the lifetime cancer risk from air pollution in the region, according to Metro Vancouver. The particles are so fine they penetrate deep into the lungs, causing cancer, asthma, respiratory illness and premature death, and can impair visibility and affect climate change.

About eight per cent of diesel emissions in Metro Vancouver are caused by motor vehicles, eight per cent by rail locomotives, 43 per cent by marine engines and 41 per cent by non-road engines.

Under the new bylaw, owners of older diesel machines must pay an initial fee of \$4 per horsepower, but in future years, 80 percent of the fees paid over the previous three years may be refunded if an engine is retired or upgraded.

The bylaw does not apply to engines less than 25 horsepower, machines used in agricultural operations, emergency generators and personal recreational machines such as all-terrain vehicles and snowmobiles.

38. British Columbia Delays Carbon-Intensity Requirement

British Columbia has delayed until June 30, 2013, a requirement for fuel suppliers to reduce the carbon intensity of their fuels. Until then, suppliers in the Canadian province will be required only to continue reporting their carbon intensity, or emissions per unit of use, the Ministry of Energy and Mines said on December 14th. The reduction requirement was originally to go into effect on January 1, 2012. The province aims to reduce the carbon intensity of fuels by 10 percent by 2020. The delay was instituted through a regulatory amendment (Order-in-Council 621) to the Renewable and Low Carbon Fuels Requirement Regulation (B.C. Reg 394/2008). That regulation implements the province's Greenhouse Gas Reduction (Renewable and Low Carbon Fuel Requirements) Act. Two other new amendments cap renewable fuel content in diesel at 4 percent and exempt small suppliers of gasoline and diesel from certain requirements. The government said the changes responded "to industry concerns about the price and availability of high-quality renewable diesel for use in very cold weather."

39. Fine Particle Pollution a Threat to the Cardiovascular Health of Californians

Three new studies released recently by the California Air Resources Board reveal that exposure to airborne fine-particulate matter significantly elevates the risk for premature deaths from heart disease in older adults and elevates incidence of strokes among post-menopausal women. Heart disease is the number one killer in California and is responsible for approximately 35% of annual deaths.

The California Air Resources Board commissioned the studies to further investigate the connection between fine particulate pollution and public health impacts in California. The two population studies were co-sponsored by the South Coast Air Quality Management District. Particulate matter is a complex blend of substances ranging from dry solid fragments, solid-core fragments with liquid coatings, and small droplets of liquid. These particles vary in shape, size and chemical composition, and can contain metals, soot, nitrates, sulfates and very fine dust. One source of particulate matter, including PM_{2.5} or fine-particulate matter, is exhaust from vehicles, especially from diesel engines. PM_{2.5} is particulate matter smaller than 2.5 microns in diameter - a human hair is about 60 microns in diameter.

Michael Jerrett, Ph.D., of the University of California, Berkeley, found that exposure to fine particulate matter significantly elevated the risks for premature death from heart disease. The most frequent cause of death associated with PM_{2.5} in this study was ischemic heart disease, which can lead to heart attacks and heart failure. The findings of this study are based on the California participants in a large study sponsored by the American Cancer Society, which tracked 76,000 adults from 1982 to 2000.

In another study, Michael Lipsett, M.D., of the California Department of Public Health, led a team that examined the effects of chronic air pollution exposure on heart disease in women. The project tracked over 100,000 current and former female public school teachers and administrators in California. Like the University of California, Berkeley study, Dr. Lipsett found that exposure to PM_{2.5} elevated the risks for premature mortality from ischemic heart disease. In addition, this study found an increased risk of stroke among women who had never had one before, particularly among those who were post-menopausal.

These two studies demonstrate a relationship between long-term PM_{2.5} exposure and cardiovascular effects, such as heart attacks and strokes.

The third study, by Fern Tablin, V.M.D., Ph.D., and Dennis Wilson, D.V.M., Ph.D., of the University of California, Davis, investigated how inhaled PM2.5 could contribute to heart attacks and strokes. A common cause of heart attacks and strokes is development of clots in the blood stream. One suggested explanation is that PM2.5 exposure activates platelets, the key cells involved in blood clotting, so that they form clots and then trigger heart attacks and strokes. Drs. Tablin and Wilson examined the platelets of mice exposed to PM2.5 from the San Joaquin Valley Air Basin, and found that mice exposed to fine particulate matter showed platelet activation in both winter and summer, which could promote clotting and lead to stroke and heart attacks.

These new studies add to the existing scientific literature indicating that microscopic airborne particles pose a threat to public health. California Air Resources Board calculations of combined cardiovascular and respiratory (i.e., cardiopulmonary) deaths associated with PM2.5 exposure are based on the results of the national American Cancer Society study. Annually, 7,300 to 11,000 premature cardiopulmonary deaths in California are estimated to be associated with exposures to fine particulate matter.

40. U.S. Rolls Out Strong Rules on Coal Plant Pollution

The Obama administration has unveiled the first-ever standards to slash mercury emissions from coal-fired plants. The Environmental Protection Agency said the benefits of the Mercury and Air Toxics Standards, or MATS, will greatly outweigh the costs. EPA Administrator Lisa Jackson revealed the rules, which have been about 20 years in the making, at a Washington, D.C. children's hospital. Mercury can harm the nervous systems of developing fetuses and infants and can enter the food stream through contaminated fish. "By cutting emissions that are linked to developmental disorders and respiratory illnesses like asthma, these standards represent a major victory for clean air and public health," said Jackson, whose agency hopes to start enforcing the rules over the next several years.

While the rule mostly adhered to the tough proposal on mercury, arsenic, chromium and other pollutants made earlier in the year, there were some differences. The rules will cost utilities about \$9.6 billion annually, down more than \$1 billion from the EPA's earlier estimate due to "flexibilities" that were added to the final regulation, the agency said. The EPA also said it will push permitting authorities in the states and cities to make "broadly available" a fourth year for polluters to invest in technology needed to cut the emissions.

One of a raft of clean air standards the agency is launching, the mercury standards has divided the power industry. Companies including Exelon and NextEra that generate most of their power with "clean" fuel sources such as nuclear, natural gas and renewables have supported the mercury standards, while those that get most of their power from coal, including American Electric Power and Southern have vigorously fought them.

The standards pleased environmentalists and public health advocates, an important part of President Barack Obama's voter base, who slammed his decision in September to delay a landmark rule on smog emissions. The EPA estimated that MATS will save \$90 billion in healthcare costs by 2016 as technology to cut mercury emissions also reduces emissions of fine particulates, which can damage hearts and lungs. When combined with other EPA rules, thousands of lives will also be saved, it said.

Jackson, who spoke during her announcement about her two sons' struggles with asthma, said she was not surprised that lawmakers were threatening to derail the regulations, but ultimately these rules were long overdue. "These standards are 22 years in making. They are what the American people deserve after waiting so long," Jackson said. "My belief is that if we started hiring engineers instead of lobbyists and...scientists instead of lawyers, we would be able to do our job for the American people."

41. House E&C Committee Republicans to Review Clean Air Act

House Energy and Commerce (E&C) Committee Republicans plan to do a public dissection of the Clean Air Act as part of their busy agenda for 2012. Energy and Power Subcommittee Chairman Ed Whitfield (R-Ky.) told reporters that his subcommittee will hold six or seven forums, probably starting in February, where "we're going to go into considerable detail revisiting the Clean Air Act because no one's really looked at it since 1990." A forum, he said, could provide more back-and-forth discussion than a hearing that has time limits for opening statements, questions and testimony.

The plan is to bring in "experts on the Clean Air Act pros and cons. We're going to talk about some of the problem areas." One area of focus, Whitfield said, "is what's becoming the custom of lawsuits being filed, consent decrees being entered and that's a way things are being decided."

The plan, he said, is to look "title by title" through the air act, and he expects legislation of some sort will follow. When pressed for details, Whitfield said he didn't want to prejudge what the legislation might look like.

Whitfield said to also expect "more in-depth analysis on what all is going on at the Department of Energy, particularly relating to some of the grant programs." The analysis coincides with the investigation by the committee and other House Republicans on Solyndra and other companies that have failed despite receiving Energy Department help.

Whitfield said his subcommittee will also address electricity reliability, which industry groups say could be jeopardized by proposed EPA limits on air toxics and mercury from power plants.

42. U.S. Proposes To Double Auto Fuel Economy By 2025

The Obama administration has proposed doubling auto fuel efficiency to 54.5 miles per gallon by 2025, a White House energy priority that has come under scrutiny in Congress. The plan grew out of an agreement between the administration, automakers and environmental groups to reduce U.S. dependence on oil imports and cut tailpipe greenhouse emissions.

Regulators hope to finalize the proposal by summer following a 60-day public comment period. The administration wants to give industry five years to develop fuel-saving technologies further and plan products before the rule would start taking effect in 2017.

Current standards require automakers to raise efficiency from 27 mpg today to 35.4 mpg by 2016. Targets beginning in 2017 would require a 5 percent annual efficiency gain for cars and 3.5 to 5 percent for light trucks, which include SUVs, pickups and vans.

Thirteen major automakers, including General Motors Co, Ford Motor Co, Fiat SpA affiliate Chrysler Group LLC, Toyota Motor Corp and Honda Motor Co Ltd, have signed on to the fuel

deal. Automakers - especially truck-heavy U.S. vehicle producers - consider the 54.5 mpg target ambitious and the proposal estimates it could cost them \$157 billion to meet it.

"The proposed regulations present aggressive targets, and the administration must consider that technology breakthroughs will be required and consumers will need to buy our most energy-efficient technologies in very large numbers to meet the goals," Mitch Bainwol, chief executive of the Alliance of Automobile Manufacturers trade group, said in a statement.

President Barack Obama has made fuel efficiency a signature environmental and energy priority since cars and trucks account for 20 percent of carbon emissions and more than 40 percent of U.S. oil consumption. But the role of federal environmental regulators and the state of California - a leader in efforts to reduce emissions - in developing auto standards has disturbed the Republican-led House of Representatives. Republican members of the Oversight Committee, who are scrutinizing Obama's "green economy" agenda, have challenged administration assumptions on who can regulate gas mileage and emissions under federal law.

For example, the House Oversight and Government Reform Committee Chairman Darrell Issa (R-Calif.) recently sent a letter to the CEOs of 15 auto companies looking for information on the deal between the White House, California Air Resources Board, EPA, the Transportation Department, unions and environmentalists over new fuel economy standards. Issa has repeatedly charged that the deal sprang from unsavory negotiations among those groups. And automakers, he says, received suspiciously timed bailouts and federal funding for electric vehicles. Issa asks the CEOs for detailed lists of who participated in negotiations from automakers, trade associations and CARB, where and when meetings were held, and what kind of role each of the parties held in negotiations, particularly the nongovernmental players.

The California Republican wants the CEOs to speak to the role that CARB played in the negotiations both pushing the national regulations and the role of the state in the negotiations. The letter also presses for information on a 2009 quote from CARB chief Mary Nichols, saying that participants deliberately avoided putting anything in writing during discussions. The letter also asks for detailed information on markets for automobiles and expectations between the auto companies and EPA for how the standards will be implemented. Issa has previously sent letters to CARB, EPA and DOT.

The proposal envisions reducing oil imports by 2.2 million barrels per day by 2025, offsetting almost a quarter of current American use of foreign petroleum.

Automakers would rely on numerous conventional engine, transmission and component technologies and lighter vehicle designs to meet the new standard even though Obama is pushing further electric and hybrid car improvements and the plan includes strong incentives for their development.

GM's Chevy Cruze, Ford's Focus and Hyundai Motor's Elantra are new, small car entrants powered by conventional engines that are popular with consumers as gasoline prices now average about \$3.43 per gallon in a rough economy. Efficiency improvements would save consumers an average of up to \$6,600 in fuel costs over the lifetime of a model-year 2025 vehicle, much more than offsetting the additional \$2,200 on average they would pay for more fuel efficient vehicles, according to the proposal.

Although environmental groups pushed for a tougher standard, they lined up behind the proposal. They said, however, that actual fuel economy would come in lower than 54.5 mpg due

to real-world driving factors. They also said regulators still need to tighten provisions favoring production of less efficient, bigger pickups and SUVs, a complaint of European automakers that did not sign on to the agreement.

43. Spare Tires Being Eliminated on New Cars As Automakers Seek Efficiency

More passenger cars are rolling off assembly lines with no jack, wrench or fifth wheel in the trunk as the more aggressive fuel economy targets come into effect and consumers demand savings at the pump. The spare-less effort, for now, is playing out predominantly at GM where most of its nearly two dozen cars and crossover models in the United States do not offer spare tires as standard equipment. But the trend can also be spotted industry wide, mainly on cars designed for increased efficiency.

Virtually all cars had spares just a few years ago. That has changed as 20 percent of the 1.2 million sedans, compacts and other passenger cars sold in the United States this year through October came without spares as standard equipment, according to data from research group Edmunds.com.

Full-size spares remain standard in big-selling large pickups and SUVs that make up more than half of industry sales because they are commonly used as work trucks on unfriendly road surfaces or for towing. These include Ford F-Series pickup, the best-selling vehicle in America, and the Dodge Ram pickup.

The top-selling passenger car in the United States, the Toyota Camry, also comes with a spare, as do popular Ford compacts and sedans.

GM and other automakers, however, are producing spare-free vehicles, part of a strategy to answer an Obama administration plan to double average fuel efficiency requirements to 54.5 miles per gallon by 2025. Losing the "donut" wheel, the compact spare offered in many cars for decades, and its related equipment, can save more than 25 pounds (11 kilograms), industry experts said. That yields an average savings of less than 1 mpg, but it is part of an efficiency strategy that capitalizes on incremental gains. For instance, a spare-less trunk was one of 42 changes made by GM on manual Chevy Cruze Eco models to reach an estimated 42 miles per gallon on the highway.

AAA data shows that tire problems steadily represented about 12 percent of more than 3.5 million calls annually to the motorist group for roadside assistance from 2000-2010. Despite the figure, automakers believe safety advancements have made the spare tire less crucial. They point to tire pressure monitoring systems and roadside assistance programs, like GM's OnStar offering, that make it less likely motorists will get flats or be stranded by them.

Vehicles without a spare usually feature a trunk-mounted inflator kit that includes a mini compressor and a sealant to close small holes and re-inflate damaged tires. Automakers and consumer groups stress inflators are designed to seal minor punctures, not repair a large cut or a damaged sidewall.

Toyota's Prius hybrid has a spare but the plug-in version carries an inflator, standard, as does the all-electric Nissan Leaf. The Fiat 500, a subcompact that Chrysler is hoping will revive its U.S. car lineup and boost fleet fuel efficiency, also features an inflator. Hyundai, BMW, and Mercedes also offer inflators in certain vehicles.

44. Improved Internal Combustion Engines Make EV Option a Harder Sell

The plug-in Volt has become General Motors Co.'s high-mileage halo car. But the hybrid has also been outsold by its simpler sibling by 200 to 1. Globally, GM has sold about 5,000 Volts versus 1 million Cruzes. New cars with traditional engines are showing striking fuel efficiency gains thanks to technologies such as turbochargers, direct injection, and engines equipped with start stop technology.

The average fuel economy for new vehicles is now 2.5 more miles per gallon than four years ago. And emissions of greenhouse gases per new car are down 14 percent since late 2007, according to the University of Michigan Transportation Research Institute. And the number of gas-powered models in U.S. dealer showrooms boasting 40 miles per gallon or better in highway driving has tripled in the last five years. That has made winners of cars like the Cruze, Ford's Focus and Hyundai's Elantra.

Every automaker is focused on improving fuel efficiency, including BMW, which just reintroduced a four-cylinder engine in the U.S. market for the first time in a dozen years, and Honda Motor Co Ltd, which offers a 41-mpg automatic version of its 2012 Civic.

Having watched rival Toyota Motor Corp seize the mantle as the world's greenest automaker with its Prius hybrid, GM says it plans to push its advantage with the rechargeable Volt and hopes consumer preferences catch up.

Estimates vary on how fast consumers will accept electric vehicles. At the bullish extreme, Nissan Motor Co Ltd, which sells the all-electric Leaf car, is forecasting that EVs will make up 10 percent of global sales by 2020, compared with virtually nothing now. But GM and other automakers are also looking to boost the performance of the gas engine.

One major incentive driving fuel-economy gains is the new federal requirement that an automaker's fleet average 54.5 miles per gallon by 2025. (See above.)

Ford offers its Ecoboost technology -- a combination of fuel injection and turbocharging aimed at giving smaller gas engines more power and greater efficiency. The No. 2 U.S. automaker also is rolling out a Focus EV. "Until electric does have the ubiquity of plugging, it's not going to have an appeal to 100 percent of the customers," Ford Chairman Bill Ford said last month. "While that's happening, we want to make our other technologies as fuel-efficient as we possibly can." Improvements will come from dozens of small tweaks, like reduced friction and heat loss, and electrification of parts like the oil, water and power steering pumps. Enhanced transmissions, lighter materials -- like stronger steel and alloys -- and more aerodynamic designs also will be very important.

Surveys support the view that most consumers do not want to pay extra for electric vehicles. The better fuel economy gets, the less interested in EVs they are. Deloitte found in a survey that global expectations for driving range and charging time for electric vehicles far outpace reality. More than half of respondents were unwilling to pay any price premium for an EV.

45. Study Says Californians Must Shift to Electric Power to Meet Long-Term Goals

California must be fully electrified 40 years from now with residents driving only electric cars and plugging them into a grid powered by carbon-free power plants if the state is to meet its most far-reaching climate goals, according to a new study. Not only will electricity be carbon-free,

California will need a whole lot more of it to make up for the loss of gasoline, natural gas and coal. The equivalent of 1 1/2 to 2 nuclear power plants would have to be built each year between now and 2050 to meet the growing electricity demand, said one of the study's co-authors, Margaret S. Torn, a biogeochemist at the Lawrence Berkeley National Laboratory.

The study, published in the journal *Science*, is the first peer-reviewed analysis of how a large economy can meet ambitious greenhouse gas reduction targets using detailed models of power grids, available resources and infrastructure, Torn said. Its findings were similar to other reports on how California might meet long-term targets but that did not receive the same level of review or looked at smaller pieces of the energy puzzle.

California's landmark 2006 greenhouse gas law calls for reducing emissions to 1990 levels by 2020 and also sets a goal of cutting emissions an additional 80 percent by 2050. The new study found that meeting that long-term goal is possible and does not require major technological or behavioral breakthroughs like the development of nuclear fusion or a mass conversion to bicycle commuting. But it will require a lot of innovation and investment, preferably starting now, Torn said.

The report found that if the price of oil rises as expected, meeting the goals could come at a cost of about 1.3 percent of the economy by 2050. But that does not take into account the economic benefits that would accrue, like new green jobs and reduced health care costs due to cleaner air, according to Jim Williams, the study's lead author and chief scientist at Energy and Environmental Economics in San Francisco. If the price of oil rises to the high end of current federal government projections, it will be cheaper to make the changes than to do nothing even without considering the green jobs and reduced health costs, according to Williams.

The study found that in order to meet the long-term goals, Californians will have to use energy much more efficiently and shift to more climate-friendly power sources - renewable energy, nuclear or fossil fuel plants that don't pollute. Californians will also have to make a big shift to electric power. Cars will have to run on electricity, and homes and businesses will have to be heated with electricity or solar power.

Natural gas and coal power plants that supply the state will have to be replaced with renewable energy sources like solar and wind power, or nuclear power. The study estimated that California could meet three-fourths of its electricity needs through renewable energy.

46. Democrats Defeat Bill to Block EPA Clean Air Rule

Senate Democrats recently defeated a bill that would have blocked federal environmental regulators from reducing power plant air pollution that blows downwind to other states. The bill, sponsored by Rand Paul, a Kentucky Republican and Tea Party favorite, needed only a simple majority of 50 to pass. The measure got only 41, while 56 voted against it. Only one Democrat, Joe Manchin from coal-rich West Virginia, voted for it.

The measure would have blocked the Cross State Air Pollution Rule the Environmental Protection Agency finalized in July. The rule aims to slash air pollution from coal-fired power plants east of the Rocky Mountains. It would reduce sulfur dioxide emissions by 73 percent by 2014, from 2005 levels, when combined with state environmental laws. It would cut nitrogen oxide emissions by 54 percent by 2014.

Republicans in the House of Representatives have passed a raft of bills that would delay or kill EPA clean air rules, but this vote was an indication of the hurdle they face in the Senate. Six Republican senators voted against Paul's bill. The White House had indicated that President Barack Obama would have vetoed the bill had it passed in Congress.

47. U.S. Grants \$112 Million for Energy-Efficient Transit

The U.S. Transportation Department is sending \$112 million to projects across the country to help build energy-efficient transit vehicles and facilities, Secretary Ray LaHood has announced. The money, intended to create environment-friendly transportation options as well as construction jobs, will be shared among 46 projects. The department received 266 funding requests for a total \$1 billion, it said.

Pennsylvania projects will receive the most funding, \$18 million for purchasing hybrid buses and spreading the use of vehicles fueled by natural gas. California agencies will receive \$14 million, primarily for changing to electric, hydrogen fuel cell, hybrid and diesel hybrid buses. Florida projects will receive \$11 million, Illinois projects \$8.2 million, Ohio \$6.3 million, Texas \$8.4 million, and Washington \$6.8 million.

48. Health Cost of Six U.S. Climate Disasters Estimated At \$14 Billion

Deaths and health problems from floods, drought and other U.S. disasters related to climate change cost an estimated \$14 billion over the last decade, according to researchers. The study in the journal Health Affairs looked at the cost of human suffering and loss of life due to six disasters from 2000-2009.

Scientists and economists from NRDC, the University of California-Berkeley and the University of California-San Francisco estimated the health costs for the following events from 2000 to 2009:

- U.S. ozone air pollution, 2000-2002, \$6.5 billion;
- West Nile virus outbreak in Louisiana, 2002, \$207 million;
- Southern California wildfires, 2003, \$578 million;
- Florida hurricane season, 2004, \$1.4 billion;
- California heat wave, 2006, \$5.3 billion;
- Red River flooding in North Dakota, 2009, \$20 million.

The study's authors stressed they chose events in the middle of the severity spectrum and left out some notably costly disasters, such as the 2005 hurricane season that included the devastating Hurricane Katrina. In the case of Katrina, the healthcare costs were hard to pinpoint.

The six case studies are examples of events related to climate change that are projected to worsen as the planet warms, the authors said. These six events resulted in an estimated 1,689 premature deaths, 8,992 hospitalizations, 21,113 emergency room visits and 734,398 outpatient visits, according to the study.

In dollars, the largest cost by far was for premature deaths at \$13.3 billion. This number was based on the Environmental Protection Agency's value of a statistical life, \$7.6 million, co-author Wendy Max said. This was not meant to put a value on any one life but to calculate how much people in aggregate would be willing to spend to lessen the risk of death from certain causes, including the events cited in the study.

49. Advocates Challenge EPA Decision Not to Set More Stringent CO Standards

Environmental groups are challenging the Environmental Protection Agency's decision not to set more protective air quality standards for carbon monoxide. On October 31st, Communities for a Better Environment and WildEarth Guardians filed a petition for review of EPA's final rule in the U.S. Court of Appeals for the District of Columbia Circuit. EPA published a final rule Aug. 31 retaining the existing primary, health-based national ambient air quality standards for carbon monoxide, saying the standards are sufficient to protect public health. It also requires states to monitor areas near roads in heavily populated areas.

EPA has said carbon monoxide levels have dropped by 80 percent since 1980 because of emission controls on vehicles. No areas of the country are in violation of the carbon monoxide standards. The primary air quality standards are 9 parts per million measured over 8 hours and 35 ppm measured hourly. The standards were first set in 1971. In a final policy assessment issued in October 2010, EPA recommended either retaining the existing standards or potentially strengthening the eight-hour standard in a range between 3 ppm and 9 ppm and the hourly standard in a range between 5 ppm and 15 ppm.

While the rule retains the primary standards, it does not set a secondary standard. The agency has said carbon monoxide does not directly affect the environment, but petitioners argue that EPA did not consider the impacts it has on the climate.

50. Panel Approves Transportation Bill with New National Electric Vehicle Plan

On November 9th, the Senate Environment & Public Works (EPW) Committee passed a two-year surface transportation bill that includes an amendment establishing a national electric vehicle (EV) infrastructure plan and a target for creating so-called EV "corridors." The bill -- "Moving Ahead for Progress in the 21-st Century," or MAP21 -- was passed unanimously. But it faces a "tough" road ahead as Senate Finance Committee Chairman Max Baucus (D-MT) looks for ways to close a \$12 billion spending shortfall, EPW Chairman Barbara Boxer (D-CA) said following the markup.

Boxer said she is confident Baucus will find an offset to cover the bill's costs. "Our proposal is not in jeopardy," she told reporters, calling the committee action a "momentous vote" that demonstrates the ability of Republicans and Democrats to find bipartisan agreement on what is essentially an important jobs and economic recovery bill.

EPW ranking member James Inhofe (R-OK) said he is "confident we are going to get this bill to the president's desk." He said in a statement there is a "window of opportunity to pass our bill" before the end of the year, as the House leadership "signaled" recently it will be working to pass companion legislation before the close of 2011. Passage of MAP21 followed intense overnight negotiating sessions, according to Boxer.

Among the 18 amendments included in the bill was a provision establishing a “process to develop a plan and map of potential national network of electric vehicle corridors and recharging infrastructure.” The amendment was offered by Sen. Bernard Sanders (I-VT). The EV plan would project “near- and long-term need for and location of electric vehicle refueling infrastructure at strategic locations across all major national highways, roads and corridors.”

The EV plan would also identify infrastructure and standardization needs for electricity providers, infrastructure providers, vehicle manufacturers, and electricity purchasers, according to the amendment. The plan would “establish an aspirational goal of achieving strategic deployment of electric vehicle infrastructure by 2020.” The amendment instructs the secretary of Transportation to involve, on a voluntary basis, utilities, clean technology firms, vehicle manufacturers and many other industry segments in developing the plan.

Several amendments were scrapped during the MAP21 negotiations, including one by Sen. Tom Carper (D-DE) establishing a national oil reduction goal as a matter of national security and energy security, Carper said during the markup. Carper said he will attempt to add the amendment when MAP21 is considered on the Senate floor.

ASIA PACIFIC

51. China's Transport Authorities Step Up Efforts to Reduce Emissions

In response to the government's call to build a greener economy, China's transport authorities have taken a slew of measures to promote energy saving and emission reductions in the sector. Under the sector's funding policy unveiled earlier this year, 122 emission-cutting projects in the industry have received financial support totaling 250 million Yuan (39.3 million U.S. dollars). Encouraged by the special funds, another 8.06 billion Yuan in investment went to the projects, according to He Jianzhong, spokesman for the Ministry of Transport (MOT).

The projects were estimated to be able to save 315,000 metric tons of coal equivalent, replace 224,000 metric tons of fuel oil and reduce carbon dioxide emissions by 1.14 million metric tons, He said.

Meanwhile, the MOT has launched nationwide programs to promote low-carbon traffic. It has carried out 80 pilot projects on emission control and designated 10 cities as pilot areas to study and promote green transport system, including Tianjin, Shenzhen, Xiamen, Guiyang, Baoding and Wuhan.

He said the ministry will continue to intensify efforts to regulate emissions in the sector to meet the industry's control target during the 12th Five-Year Plan period (2011-2015). In efforts to build a more environmental-friendly society, the government pledged that it will reduce the intensity of carbon dioxide emissions per unit of economic output in 2020 by 40 to 45 percent compared with the level of 2005.

52. China Scales Up Solar Power Capacity Plan By 50 Percent

China has further revised its solar power development target for 2015 up by 50 percent from its previous plan, state media has reported. The government has set a target for installed solar power generating capacity to reach 15 gigawatts by 2015 and wind power capacity to hit 100 GW, China National Radio reported, citing an announcement from the National Energy Administration.

The ambitious move may have been encouraged by a rapid increase in solar power installations in recent months after the government unified grid feed-in tariffs for solar projects for the first time in July, and offered a higher price for projects that would be put into operation before the year end.

China had doubled its 2015 solar power goal to 10 GW after the Japanese nuclear power crisis. Installed solar power capacity at the end of 2010 was less than 1 GW in China, the world's largest exporter of photovoltaic products and home to some of the industry's top players, such as Trina Solar, JA Solar, Suntech Power and LDK Solar.

Annual solar power output will reach 20 billion kilowatt hours by 2015 and wind power output 190 billion kWh, China National Radio said in a text report posted on its website. Of the planned 100 GW wind power capacity in 2015, 5 GW will be built in the ocean, it said.

The overall wind power capacity goal was the same as that in the previous plan.

Non-fossil energy production including wind, solar, biomass, geothermal and nuclear power will amount to 480 million tons of standard coal in 2015, the report added.

53. China's Green Revolution to Keep Growing: IEA

China will install wind and solar power capacity equivalent to 180 nuclear power reactors in the next 10 years to meet its growing energy needs, the International Energy Agency said recently, citing its latest estimate.

Fatih Birol, chief economist at the IEA, also told reporters that one in two of all hybrid cars or cars powered with natural gas or electricity will be sold in China in the next 20 years, even without a binding climate agreement.

China will install 180 gigawatts (GW) of wind and solar power capacity by 2020, equal to the capacity built by the rest of the world over the past 40 years.

China, which will account for one third of global energy demand growth between 2009 and 2035, currently has a wind power capacity of 42 GW and a solar power capacity of 1 GW.

The Paris-based IEA, which advises industrialized nations on energy issues, expects China's electricity demand to grow by a yearly average of 4 percent to reach 9,000 terawatt hours by 2035. This is 18 times the consumption of a country like France and a tripling of China's 2009 consumption levels.

The IEA however expects China's renewable energy capacity in its energy mix to remain below Latin America's, the European Union's, India's and the United States' by 2035, it said in its 2011 World Energy Outlook (WEO).

From consuming half as much energy as the United States in 2000, China is now the world's biggest energy consumer, and is projected to use nearly 70% more than the United States in 2035, the IEA said in its WEO.

China with its population of 1.3 billion is the world's biggest energy consumer and on track to become the world's biggest oil importer by 2035, Birol said. This is a major shift as the United

States, which has dealt with oil security in the international arena for decades, will see its oil imports halve to 6 million barrels per day (mbpd) by 2035 as it boosts its oil output and increases car efficiency, Birol said.

"Up to now the United States was the country which kept an eye on the international oil security at home and beyond its borders," Birol said. "Oil security was never a major issue for Europe but it is coming."

Europe and China were next in line to play a key role in defending oil supply security and will be more vulnerable to oil prices and supply disruptions. European oil imports, which amount to 9 mbpd, will overtake the U.S. by 2015 before being overtaken by China in 2020, whose oil imports are expected to reach 13 mbpd by 2035.

54. China Vows to Curb Heavy Metal Pollution

China has promised to contain heavy metal pollution but admitted it faces a challenge with inadequate environment protection resources in a rapidly growing economy. China wants to cut its heavy metal pollution by 15 percent of 2007 levels by 2015, while keeping non-heavy metal pollution under 2007 levels, the country's cabinet said in a statement on the government's website. The targets are in line with goals outlined by Beijing earlier this year under a five-year economic blue-print.

Heavy metal pollution has been a flash point in China in the past after cases of mass poisoning, especially in children, roused widespread public anger. Exposure to lead and other heavy metals can damage nerves, reproductive systems and kidneys, among other health complications, especially among children. "Laws for protecting the environment remain inadequate, investment insufficient, legal enforcement weak, and regulation abilities are lagging," the cabinet said in its statement.

To help China protect its environment, the Chinese Environment Minister signed deals with 31 provincial governments and eight state firms to cut emissions, state media Xinhua said. Xinhua did not list the targets. But the cabinet's statement said China wants to cut its chemical oxygen demand emission by 8 percent of 2010 levels by 2015. Sulfur dioxide and nitrogen dioxide emissions are to fall 8 percent and 10 percent respectively.

China also aims to build at least 1,184 new sewage treatment plants that can treat 45.7 million tons of sewage each day, and refurbish thermal power plants with a combined capacity of 400 million kilowatts with the capability to remove sulfur, Xinhua said.

Despite Beijing's frequent pledges to reduce pollution, its vows are frequently undercut by a paucity of resources; also local officials often put economic growth, revenue and job creation ahead of environmental standards.

55. Air Pollution in Ulan Bator Severely Threatens Health: WHO

The World Health Organization recently concluded that air pollution in Ulan Bator annually kills some 1,600 people, according to local media reports. A WHO research report said the dust particles concentration in the air is 35 times the standard recommended by the health organization, and that lung and heart disease caused by air pollution affects 8,500 people every year.

The WHO also said the air pollution situation is especially severe in the city's ger districts where the residents burn coal, firewood, and many kinds of garbage to get through Mongolia's long, harsh winters.

The WHO added that power plants had also significantly contributed to the air pollution in the city and accounted for some 30 to 40 percent of the total amount.

Specialists have recommended that the government build the city's centralized electric-heating systems and apartment blocks to replace the ger districts to improve energy efficiency and reduce emissions.

56. China Tightens Air Quality Standards

The Ministry of Environmental Protection started gauging public opinion on revised air quality standards following widespread calls for the government to provide more information on pollution. The new standards will, for the first time, include readings of PM2.5 (particulate matter smaller than 2.5 micrometers), a major cause of haze harmful to health, the ministry said in a website statement.

Along with the new standards, the country's existing Air Pollution Index will also be upgraded into the Air Quality Index. This will follow international practices to include ozone and carbon monoxide pollution levels as well as PM2.5. Tighter rules will also be set for some pollutants already monitored, such as nitrogen oxides and PM10 (particulate matter smaller than 10 micrometers).

The average yearly ceiling for PM2.5 concentrations is set at 35 micrograms per cubic meter while the limit for any one day is set at 75, according to the ministry.

The World Health Organization's (WHO) air quality guidelines indicate that a yearly average reading of PM2.5 less than 10 micrograms is deemed safe, while the daily average should not be higher than 25 micrograms. But the WHO also published recommendations for developing countries to gradually improve their air quality regulations, and China's new standards are in line with those of the first-step targets, according to the ministry.

Environmental Minister Zhou Shengxian has vowed to gradually make the air quality appraisal system conform to internationally recognized standards. "Including PM2.5 readings is a prerequisite to solve the country's worsening haze problems, and can help reduce the gap between public concern and official ratings for air quality," the ministry said on its website. Major cities, such as Beijing, Shanghai and Guangzhou, have experienced chronic haze as a result of the surge in vehicle ownership and coal use in recent years.

The ministry plans to adopt the new standards nationally by 2016, but key regions, not named, will be subject to the new standards earlier although no timetable was given. It is expected that the three key regions – Beijing-Tianjin-Hebei, Yangtze River Delta and the Pearl River Delta – will adopt the standards during the 12th Five Year Plan ending in 2015. The Chinese Academy for Environmental Planning has already drafted a plan to reduce PM2.5 concentrations by 10 percent in 12 key city clusters - including the Beijing-Tianjin-Hebei area, the Yangtze River Delta and Pearl River Delta - by 2015.

And some local authorities said that they are already prepared for the new standards. Fu Qingyan, deputy chief engineer with the Shanghai Environmental Monitoring Center, said

Shanghai is likely to become the first to publish PM2.5 readings as early as next year. "Currently there is no technical barrier to include PM2.5 in air quality monitoring in Shanghai," he said, adding more than 20 monitoring stations are piloting measurements of pollutants, but only for internal testing.

Du Shaozhong, deputy head of the Beijing Municipal Environmental Protection Bureau, said the bureau has long been making preparations to monitor and release PM2.5 readings. But a timetable was not released. Beijing has 27 monitoring stations capable of reading PM2.5 levels.

"China is among the worst polluted places, by particulate matter, in the world and the concentrations of PM2.5 in most Chinese cities is several times higher than the safe levels indicated by the WHO," said Hao Jiming, a professor from the School of Environment at Tsinghua University.

During the past month, public pressure has been mounting for the government to strengthen monitoring and publish more accurate air quality evaluations.

Achim Steiner, executive director of the United Nations Environment Program, told China Daily that he welcomed the new standards. "Because, at the end of the day, it is individuals who have to suffer from the bad consequences and the country's health system has to pay," Steiner said.

Some environmentalists said the new standards reflect the growing influence of public opinion regarding pollution. "The government's move (to publish PM2.5 levels) finally answers the public's outcry over air quality," said Ma Jun, director of the Beijing-based environmental group, the Institute of Public and Environmental Affairs.

Steiner from the United Nations said he was impressed by active public involvement in pushing for better air quality and supervising the government. Only with public involvement can China really reduce pollution, he said. "I'm glad to see the country is shifting from having a problem to having an opportunity," Steiner said.

57. Japanese Automakers Poised to Dominate China's EV Market, If One Develops

China is pushing ahead with efforts to encourage the development of electric vehicles in the world's largest auto market. It has declared the electric vehicle industry a top priority, earmarking \$1.5 billion a year for the next 10 years to transform the country into one of the leading producers of clean vehicles. Last year, the Chinese government introduced generous sales subsidies to automakers that build and sell electric cars and plug-ins in China. Further, regulators in Beijing, including the Ministry of Science and Technology, Ministry of Finance, Ministry of Industry and Information Technology and National Development and Reform Commission, issued a joint statement recently, calling for its 25 pilot cities including Beijing, Shanghai, Shenzhen and Hangzhou, to draw up plans to push EV sales which also include installing charging facilities and charging spots at individual users' neighborhoods, among others. It will also ease license-plate and traffic restrictions on electric vehicles and plug-ins in some major cities

But whether China's green initiatives, including allowing potential buyers in Beijing and Shanghai to get electric cars without going through license plate auctions or lotteries, will boost sales of electric cars, especially domestically produced, remains a big question. So far, customers remain unimpressed by the high cost and limited journey range of the vehicles and a lack of charging infrastructure. In Shanghai, a huge metropolis with more than 20 million people,

there are only 10 registered electric cars, while the number in Hangzhou is only slightly higher at 25, according to China Business News.

Beijing intended that its policy would help domestic automakers -- which are laggards in conventional gasoline engine technology -- to leapfrog their foreign rivals. Instead, it is Japanese automakers that are poised to use those subsidies to dominate China's EV market. For example,

- Recently, Honda Motor Co.'s joint venture with Guangzhou Automobile Group Co. began testing an electric Honda Fit, with plans for production in the south China city of Guangzhou. The Fit EV, which has a range of 150 km and a top speed of 144 km per hour, will become the first electric vehicle assembled by a global automaker in China.
- Meanwhile, Toyota Motor Corp. unveiled a \$690 million (4.4 billion Yuan) technology center last month in the east China city of Changshu. Toyota says its two Chinese joint ventures will build plug-ins and electric vehicles by 2013, reports the Shanghai Daily, citing a company executive. Hiroyoshi Yoshiki, a managing officer of the Japanese automaker, said the introduction of EVs and plug-ins "would provide more options for consumers." Yoshiki did not indicate which models Toyota would introduce. However, he noted that Toyota has been conducting road tests in China of plug-ins and EVs.
- Nissan Motor Co. also plans to introduce an EV in 2015 via its partnership with Dongfeng Motor Group.

When these automakers start producing these vehicles, they will qualify for government subsidies ranging up to 60,000 Yuan for EVs and 50,000 Yuan for plug-ins. Fuel-efficient gasoline-powered vehicles and conventional hybrids are eligible for a subsidy of 3,000 Yuan.

Other foreign automakers also have announced plans to build EVs in China. But many of them did so solely to obtain government permission to expand production of gasoline models in China. For example, Daimler AG has confirmed plans to produce a prototype EV with partner BYD Co. next year. But the automaker has not yet disclosed its production plans. With the possible exception of Daimler, it's not clear yet whether European, Korean or North American automakers are as serious about EV production in China as Toyota, Honda and Nissan. Thus, the Japanese automakers will enjoy the "first mover" advantage in China's EV market.

BYD Co. is the only Chinese automaker that has started selling an electric car, the e6 compact sedan. But given its prohibitively high price of 249,800 Yuan after subsidies, it has been nearly impossible for BYD to attract many buyers in China.

By contrast, Japanese brands have strong EV technology. Toyota has sold more than 1 million Prius hybrids worldwide, while Nissan and Mitsubishi both have rolled out well-designed EVs. And when they start producing these vehicles in China, Honda, Nissan and Toyota will significantly lower their production costs.

Japanese automakers in China lack necessary infrastructure such as battery charging stations and this means their EV sales to Chinese consumers will be limited over the next few years. But that's a hurdle that all automakers in China will have to confront. The Chinese government has urged domestic cities to accelerate the construction of charging stations. And when that infrastructure takes shape, Japanese automakers will likely emerge as the EV leaders.

While EV sales to date are minimal, China will be the top market in Asia for electric vehicles by 2015, predicts Pike Research, a consulting firm based in Boulder, Colo. From 2010 through 2015, sales of EVs in China will grow 40 percent a year, the company's study asserts. Much of that growth will come from sales of pure EVs, the report adds.

By contrast, Japan's more developed EV market will grow about 10 percent annually over that period, according to the Pike survey.

Approximately 55 companies in China are developing EVs, according to Pike. But questions remain regarding how many of these companies are serious. To determine this, the Chinese government will regularly inspect sales of electric cars, plug-ins and other fuel-efficient vehicles built by automakers in China to make sure they really intend to develop 'green' vehicles. Green vehicles will be removed from the list of models eligible for government subsidies if no sales of the vehicle are realized one year after it enters the list, according to a government notice. Moreover, an automaker will no longer qualify for government sales subsidies if more than half of their green models are removed from the subsidy list.

Beijing also urged the cities in its pilot program to accelerate construction of vehicle charging stations and offer additional EV sales incentives. If these cities fail to do so, they will be expelled from the pilot subsidy program, according to the government.

58. China Holds Firm in Ministry Statement, White Paper Released Before U.N. Summit

On November 22nd, China largely reiterated its past positions on international climate change negotiations and what it is doing to address global warming in a statement and a white paper released ahead of the 17th Conference of the Parties (COP-17) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Durban, South Africa, Nov. 28-Dec. 9. In a statement appearing on a government-affiliated news portal, Li Yanduan, the Ministry of Foreign Affairs' special representative on climate change, restated the government's support for "common but differentiated responsibilities" for developed and developing countries as agreed to under the so-called Bali Roadmap of 2007. Li also said China hopes countries will agree to a second commitment period under the Kyoto Protocol and that countries like the United States will join that agreement.

In his statement, Li said, "Developed countries ... should demonstrate the political will to accept the second commitment period, to continue to lead in reducing emissions, to take actions to address climate change and follow their historical, moral, and legal responsibilities."

Meanwhile, Xie Zhenhua, China's chief climate change negotiator and vice minister of the National Development and Reform Commission, officiated at the release of a white paper on China's position on global warming, its actions to address greenhouse gas emissions, and its mitigation efforts.⁶ At a news conference after the release, Xie repeated the Ministry of Foreign Affairs' position favoring a "two-track process" for developed and developing countries. China still considers itself a developing country based on per-capita gross domestic product comparisons but not on its overall clout as the second-largest global economy.

⁶ The official English version of the white paper, China's Policies and Actions for Addressing Climate Change 2011, is available at http://www.gov.cn/english/official/2011-11/22/content_2000272.htm.

“Those developed countries that did not participate in the Kyoto Protocol should make commitments comparable to other developed countries with emission reduction commitments,” Xie said, according to a transcript posted on the website of the State Council’s Information Office.

Both Li and Xie acknowledged that financial turmoil in the European Union and the United States was impacting climate change negotiations. Li said economic worries were “major political obstacles to progress.”

Xie said China will continue to follow policies outlined in development documents for its 12th Five-Year Plan (2011-2015) to rein in greenhouse gas emissions as part of “an international trend of low-carbon development” and “to occupy the high ground” in developing cleaner technologies.

59. Indian Ministry to Focus on Compliance, ‘Polluter Pays,’ Environmental Justice

India’s Ministry of Environment and Forests has released a five-year strategic plan that focuses on improving compliance with and enforcement of laws and regulations.⁷ The plan uses economic instruments to deter polluters while applying the “polluter pays” principle, ensuring effective and speedy environmental justice, and devolving power and responsibilities to states. The plan is designed to align the ministry’s goals and strategy with those of India’s Twelfth Five-Year Plan, which covers fiscal years 2012-13 through 2016-17.

“The scale of the environmental challenge is set to increase in magnitude as well as complexity due to various threats such as the imperative of maintaining high economic growth; increasing globalization, population growth and industrialization; unmet basic needs; lifestyle changes; and huge biotic pressure,” the ministry said in the document posted on its website on November 16th. Nevertheless, it said, the ministry intends to pursue its goals by taking advantage of enhanced public awareness and civil society pressure in favor of environmentally sustainable growth, India’s improved economic status that makes more funds available for environmental needs, and the need to align India’s environmental governance with global standards and practices.

As highlighted in the mission statement, the ministry’s goals include increasing forest cover to 33 percent of the country’s geographical spread; conserving natural resources; and controlling air, water, and noise pollution from industrial activity. The strategy aims to ensure environmental sustainability without compromising economic growth, and to spur growth by promoting green technologies.

60. Guangdong, Hong Kong Discuss Regional Controls on Air Pollution from Shipping

South China’s Guangdong province and neighboring Hong Kong are discussing regional environmental initiatives that include controlling marine air pollution, though a full-scale emission control area recognized by the International Maritime Organization is probably five to 10 years from being realized, experts said at a Regional Air Quality Conference in Guangzhou on November 12th. Guangdong and the Hong Kong Special Administrative Region are accepting comments until December 1 on a set of public consultation documents on “Building a Quality

⁷ Full text of the Indian Ministry of Environment and Forests’ strategic document is available at http://moef.nic.in/downloads/public-information/Strategic_Plan_MoEF.pdf.

Living Area” in the Pearl River Delta region.⁸ Many of the initiatives involve environmental protection goals and better controls on air pollutants.

Simon Ng, a marine air pollution expert at the Hong Kong University of Science and Technology, has been leading a team to create an inventory of Hong Kong's marine emissions, with the full report to be made publicly available in early 2012. Ng's preliminary data show that about 80 percent of the sulfur dioxide and particulate matter in marine air pollution emissions in Hong Kong comes from larger oceangoing vessels, though emissions of nitrogen oxides were about evenly split between the larger ships and smaller boats such as ferries, tugboats, and barges that serve the Pearl River Delta area.

Currently 17 shipping lines operating in Hong Kong have signed the Fair Winds Charter to voluntarily use bunker fuel with sulfur content of 0.5 percent or less when in the special administrative region's waters, though the agreement will expire on December 31, 2012. The average sulfur content for bunker fuel used in Hong Kong is about 2.8 percent, below both the IMO cap of 4.5 percent and a new cap of 3.5 percent to go into effect next January 1st, said Tony Lee of Hong Kong's Environmental Protection Department.

Lee of the Environmental Protection Department said Hong Kong's short-term goal is to come to an agreement with Guangdong on using fuels with lower sulfur content, possibly by the end of 2012, and to craft an emission control area (ECA) over the long term. “The geographical coverage of Hong Kong is small, so it doesn't make much sense to set this up in Hong Kong alone,” Lee said. “We must eventually have an ECA covering all PRD [Pearl River Delta] waters.” Lee said getting all shippers to agree to a 0.5 percent sulfur content fuel would be the first step, possibly reducing that to 0.1 percent when an ECA would take effect.

MIDDLE EAST

61. Israel Considers Air Pollution Reduction Plan; Transportation Focus

Israel's first proposed program to reduce air pollution released on December 11th would save the country some half-billion shekels (\$131.6 million) per year and achieve a double-digit reduction in ozone, micro-particles, and nitrogen oxides in the air, according to the Ministry of Environmental Protection. Without the program, Israel would not meet the objectives legislated in its Clean Air Act, and pollution-induced illness—including hundreds of deaths and thousands of hospitalizations—would cost the Israeli economy about 8 billion shekels (\$2.1 billion) within a decade, the ministry projected.

The Cabinet will vote soon on the multiyear plan, which took two years and a team of international consultants to design.

“Israel, which is about to become the most densely populated Western country, must urgently implement the program we prepared to avoid the severe levels of air pollution existing in countries such as China,” Environmental Protection Minister Gilad Erdan said in the statement, noting that most Western countries adopted such plans years ago.

The new program largely focuses on transportation, including a switch to cleaner buses, with a pilot program to introduce buses powered by liquefied petroleum gas (LPG); limits on car

⁸ The public consultation documents on the Regional Cooperation Plan on Building a Quality Living Area are available at <http://bit.ly/u49zGp>.

leasing; scrapping of old vehicles for cash; and changes in public sector car allowances. The program also proposes to lower rates on toll roads for multi-passenger vehicles and public transportation, require public transportation companies to purchase less polluting vehicles, and implement graded tax rates on fuels based on a pollution index.

The program calls on the government to provide 60 million shekels (\$15.8 million) in grants for companies to encourage employees to carpool or take public transportation to work, and a 33 percent tax break on the purchase of hybrid cars.

Much of the national program also deals with changes in electricity pricing and infrastructure, providing reduced rates for household consumption at night and a differential scale for high consumption, as well as incentives to install more sophisticated energy monitoring systems at home and work.

In a related move, on December 14th, the National Infrastructures Ministry announced a plan to reduce household electricity consumption by 20 percent, including a ban on sales of incandescent light bulbs starting on January 1st. The plan also includes the free distribution of energy-saving light bulbs and cash subsidies to help low-income earners trade in their old refrigerators and air conditioners for less polluting, more energy-efficient models.

For the industrial sector, the Environmental Protection Ministry's plan includes stricter standards for sulfur dioxide emissions from factories and for the release of respirable particles from quarries. The program also would allocate "tens of millions of shekels" a year to expand a national air quality monitoring network and would require future power stations to run only on natural gas and not coal.

The plan is estimated to cost 690 million shekels (\$181.5 million) in the next five years. But the ministry said it would save the economy 500 million shekels (\$131.5 million) every year through a reduction in mortality and morbidity rates.

SOUTH AMERICA

62. Fees on Polluters to Fund São Paulo State's Monitoring Efforts

São Paulo state will begin using money from federal fees imposed on polluters to help pay for pollution monitoring efforts, under a law signed on November 29th by Governor Geraldo Alckmin. The law and accompanying enabling decree give the state the right to 60 percent of fees that the federal Environment Ministry's enforcement arm (IBAMA) collects from state companies whose activities could potentially pollute or that use natural resources, the director of environmental control and licensing for the enforcement arm (CETESB) of the São Paulo State Environment Secretariat told reporters. CETESB plans to use those fees, which it will begin to receive in 2012, to better monitor the polluting activities of industries in the state, which accounts for over 30 percent of Brazil's gross domestic product. A 2000 federal law (No. 10,165) gave states the right to a portion of those IBAMA-collected fees if they sign cooperation agreements with IBAMA. Under the São Paulo state accord, CETESB will give IBAMA its registry of state companies whose activities could potentially pollute one far more complete than that of IBAMA, along with a more complete registry of state companies that use natural resources. IBAMA will continue to collect from these companies a quarterly fee whose maximum cost is 1,350 reais (\$748).

63. UNEP, Brazil Set Environmental Goals to Limit Impacts of World Cup, Olympics

The United Nations Environment Program (UNEP) and Brazil's Environment and Sports ministries have signed an agreement establishing environmental sustainability goals for the 2014 World Cup and 2016 Olympic Games. On October 28th, Volney Zanardi, the Environment Ministry's strategic management director, told reporters that under the agreement:

- All construction material purchases should, whenever possible, be environmentally sustainable, a practice known as "green procurement." For example, wood used in infrastructure projects, from building and renovating stadiums and athletic housing to expanding airports, ports, and mass transportation systems, should be certified as legally cut or should be demolition wood. Other construction materials should come from recycled goods whenever possible. The World Cup, to be held in 12 cities, alone will require the upgrading of five stadiums, the rebuilding of one stadium, and the construction of five new stadiums. The Olympics will be based in Rio.
- Teams of environmental specialists should be formed to provide technical support to guarantee that infrastructure construction crews comply with the conditions of their environmental licenses.
- The infrastructure of national and state parks should be improved and expanded to handle increased tourism.
- Brazil's government should promote a Green Passport Campaign, an initiative of the UNEP-backed International Task Force on Sustainable Tourism Development. Travelers will be encouraged to minimize their environmental footprint by choosing the least polluting form of transportation, finding low-impact accommodation options, improving their energy efficiency at destinations, and offsetting the inevitable carbon emissions of their trip.

Zanardi said UNEP and the ministries now must establish specific directives to reach the goals set in the agreement. No date has been set to do so. Games-related investment in infrastructure and other construction projects is expected to \$200 billion between 2011 and 2016.

In August, the United States and Brazil launched a joint initiative to stimulate investment in urban sustainability in connection with the two sets of games.

GENERAL

64. Gothenburg Protocol to Add Black Carbon to List of Controlled Pollutants

The Executive Body of the Convention on Long-range Transboundary Air Pollution, which met in Geneva on December 12–16, has agreed to add particulate matter, including black carbon, to the convention's Gothenburg protocol, which seeks to end acidification, eutrophication, and ground-level ozone in its signatory countries. The panel also debated stricter limits on pollutants already included in the protocol: sulfur dioxide, nitrogen oxides, volatile organic compounds, and ammonia. Specific limits were not agreed on, however. And no specific limit was set for particulate matter. Another meeting will be held on April 30–May 4 to finalize negotiations and adopt the amendments to the Gothenburg Protocol. The meeting will aim to conclude agreements on Annex II of the protocol, which covers national emission limits for the covered pollutants plus the particulates.

The European Community, Russia, and the United States are among the 26 parties to the protocol.

The Eastern Europe, Caucasus, and Central Asian (EECCA) countries are moving toward accession to the protocol with an action plan for the period 2012–2014. However, they are seeking “flexibility” mechanisms, including delayed deadlines for meeting the emissions ceiling, as a requisite to adopting the protocol. Flexibility is an important issue in getting countries to ratify the Convention's protocols, so the addition of such elements has broad support in principle among parties. The issue of flexibility will be a part of the negotiations at the April meeting.

65. ExxonMobil Publishes Energy Outlook Through 2040

ExxonMobil released "The Outlook for Energy: A View to 2040", extending its annual long-term energy forecast to 2040 for the first time. The Outlook projects that global energy demand in 2040 will be about 30% higher than it was in 2010, led by growth in developing regions such as China, India, Africa and other emerging economies. While oil will remain the most widely used fuel, overall energy demand will be reshaped by a continued shift toward natural gas and less carbon intensive energy sources, as well as improvements in energy efficiency in transportation, where the expanded use of hybrid vehicles will help push average new car fuel economy to nearly 50 mpg by 2040.

Rising demand for electricity is identified as the single largest influence on energy trends. Transportation is the second-fastest growing demand sector, behind electricity generation. ExxonMobil projects that global electricity demand will rise by 80% through 2040 as economies and living standards improve, and consumers switch to electricity from other sources. By 2040, four out of every 10 units of energy produced in the world will be going toward the production of electricity. The mix of fuels used to produce electricity will change, however, as nations shift away from coal in favor of natural gas. By 2040, 30% of the world's electricity will be produced using natural gas, while demand for coal will peak and experience its first long-term decline in modern history.

In transportation, ExxonMobil sees advanced hybrid vehicles accounting for 50% of the cars on the road in 2040, compared to about 1% today. This, plus improved fuel economy in conventional vehicles, will cause demand for energy for personal vehicles to remain essentially flat through 2040 even as the number of personal vehicles in the world doubles. However, demand for energy for commercial transportation-- trucks, airplanes, ships and trains--will rise by more than 70%, driven by economic growth, particularly in non-OECD nations.

- A. As personal vehicles grow more fuel-efficient, growth in global transportation demand will be led by trucks, ships and planes

Over the next 30 years, ExxonMobil expects **hybrid vehicles to move from the margins to the mainstream**. As a result, energy trends in the transportation sector will diverge in an unprecedented way, with demand for personal transportation fuels changing very little even as commercial transportation energy needs continue to rise sharply.

Personal, or light duty, vehicles are the cars, SUVs and light pickup trucks that people drive in their everyday lives. From now through 2040, **the number of personal vehicles in the world – what we call “the global fleet” – will nearly double, to 1.6 billion vehicles**. Not surprisingly, the vast majority of this growth will come from the Non OECD, where prosperity is growing rapidly and vehicle ownership levels today are relatively low.

And yet global demand for fuel for personal vehicles will soon peak and then begin to decline. The reason is an expected steep increase in average vehicle fuel economy. Largely because of tightening government standards, ExxonMobil expects that by 2040, hybrids and other advanced vehicles will account for nearly 50 percent of all light duty vehicles on the road, compared to only about 1 percent today.

On the other hand, demand for commercial transportation – mostly trucks, but also airplanes, ships and trains – is expected to rise in all regions of the world, even with significant gains in efficiency. Overall, global energy demand for transportation will rise by nearly 45 percent from 2010 to 2040.

B. Global economic activity, led by the Non OECD, outpaces gains in commercial-vehicle efficiency

Global economic growth will drive a steep increase in demand for energy for commercial transportation, as business activity and rising incomes enable increased movement of goods – both within and between nations. From 2010 to 2040, **demand for energy for commercial transportation will rise by more than 70 percent.** Most of this growth will come from heavy duty vehicles, which include freight trucks of all sizes, as well as buses, emergency vehicles and work trucks.

ExxonMobil expects that heavy duty vehicles will grow significantly more fuel-efficient over the next 30 years. However, these improvements will be partially offset by operating factors such as increased road congestion and evolving delivery trends. As a result, **by 2030, the world will use more fuel for trucks and other heavy duty vehicles than for all personal vehicles combined. By 2040, heavy duty fuel demand will be up about 60 percent versus 2010.**

This shift will be reflected in the market for transportation fuels. Demand for diesel – the most popular fuel for heavy duty vehicles – will rise by 85 percent through 2040, while gasoline demand will fall by about 10 percent. Growth in commercial transportation is not limited to vehicles on the road. Together, demand for aviation and marine fuels will almost double over the next 30 years.

While demand for energy for commercial transportation will rise in all parts of the world through 2040, growth will be steepest in Non OECD countries, whose economies are expanding at a faster rate than the more mature economies of the OECD. About 80 percent of the growth in commercial transport demand will come from developing nations.

C. Personal vehicles will become far more fuel-efficient by 2040. Growing use of hybrid vehicles will help countries meet fuel-economy goals

The cars on the world's roads in 2040 will be a very different mix than what we have today. To a large extent, these changes will be driven by government policies that will mandate the fuel economy of personal vehicles.

Conventional gasoline- and diesel-powered vehicles will become much more efficient over the coming decades. However, these gains will not be enough on their own to meet government targets. As a result, **conventional vehicles, which today are about 98 percent of the global fleet, will drop to about 50 percent of the fleet and only 35 percent of new-car sales by 2040.**

On the other hand, ExxonMobil expects that by 2040, **hybrids and other advanced vehicles will account for nearly 50 percent of light duty vehicles on the road, compared to only about 1 percent today.** The vast majority will be hybrids that use mainly gasoline plus a small amount of battery power; these will make up more than 40 percent of the global fleet by 2040. Globally, ExxonMobil expects to see growth in plug-in hybrids and electric vehicles, along with compressed natural gas (CNG) and liquefied petroleum gas (LPG) powered vehicles. However, these will account for only about 5 percent of the global fleet in 2040, their growth limited by cost and functionality considerations.

Additionally, to achieve proposed fuel-economy targets, personal vehicles will need to be smaller and lighter than they are today. Vehicle downsizing could account for more than one-third of total projected fuel economy improvements through 2040. Globally, ExxonMobil expects the average new car to get 48 miles per gallon (MPG) in 2040, compared to 27 MPG in 2010.

When consumers set out to buy a new vehicle, cost and functionality are top concerns. Buyers consider not only purchase cost, but also the cost of fuel for the vehicle over its lifetime. So while making cars and other light duty vehicles more efficient – and reducing vehicle emissions – is a shared global goal, consumers generally will choose vehicles that meet that goal at the lowest cost to them. Through 2040, ExxonMobil sees most consumers gravitating to three options.

- **Technologies that make conventional vehicles more efficient.** Because it is relatively inexpensive to improve the efficiency of today's vehicles, this is the only option in which consumers' fuel savings over the first five years of ownership equal or exceeds their added costs. Technologies such as turbocharging, higher-speed automatic transmissions, improved aerodynamics and reduced weight can improve fuel economy and reduce CO₂ emissions by more than 30 percent. We expect automakers will make increased use of these technologies as they seek to meet government fuel-efficiency mandates.
- **Hybrid vehicles.** Of all advanced-vehicle technologies, hybrids will offer by far the best value for consumers. By 2030, ExxonMobil expects that, on average, hybrid vehicles (like the Toyota Prius) will cost about \$1,500 more than a similar-sized conventional vehicle, whereas a compressed-natural-gas (CNG) vehicle will be nearly \$4,000 more, and an electric vehicle (like Nissan's Leaf) will be \$12,000 more. In the case of the electric vehicle, consumers would not recoup that higher purchase cost within five years unless gasoline prices were more than \$10 a gallon; with gasoline at \$4 a gallon, it would take more than 15 years to recoup those upfront purchase costs. Additionally, the CO₂ emissions of plug-in hybrids and electric vehicles vary significantly based on the fuel source used to generate their electricity.
- **Smaller vehicles.** Whether they drive conventional or advanced vehicles, consumers can improve fuel economy – up to 35 percent – by switching to smaller, lighter vehicles. These economics of consumer decisions will change as the prices of various fuels – gasoline, diesel, natural gas, electricity – rise and fall. Consumers also must consider other factors, such as driving range. Because gasoline and diesel are “energy dense,” they contain more energy per fill-up than ethanol, CNG or electric vehicle batteries; this enhances consumer convenience by reducing the need for refueling stops. Ultimately, the choices made by consumers will determine how the global vehicle fleet and related energy demand evolve in the coming decades.

Demand for oil and other liquid fuels will rise by nearly 30%, and most of that increase will be linked to transportation. A growing share of the supplies used to meet liquid-fuel demand will come from deep-water, oil sands, tight oil, natural gas liquids and biofuels.

Some of the other findings and predictions are:

- Energy demand in the United States and other fully developed economies will remain relatively constant. Global growth in energy demand will be led by China and other non-OECD countries. Non-OECD energy demand is projected to rise by nearly 60% from 2010 to 2040.
- While global energy demand is expected to rise by about 30% from 2010 to 2040, demand growth would be approximately four times that amount without projected gains in efficiency. Efficiency is the key reason why energy demand will rise by only about 1% a year on average even as global GDP rises by nearly 3% a year. It also is the reason why OECD energy demand will remain relatively unchanged through 2040 even as its economic output nearly doubles.
- Natural gas will continue to be the fastest-growing major fuel, and demand will increase by about 60% from 2010 to 2040. Growth is particularly strong in the non-OECD countries in the Asia Pacific region, where demand for natural gas is expected to triple over the next 30 years.
- The growth of natural gas is in part driven by new technologies that are expanding global energy supplies, such as horizontal drilling and hydraulic fracturing (fracking) techniques. ExxonMobil estimates that natural gas from shale and similar sources will account for 30% of global gas production by 2040.
- While growth in nuclear capacity is expected to slow in the near-term, demand for nuclear power is projected to nearly double by 2040 as nations seek to lower emissions and diversify energy sources.
- Renewable fuels will see strong growth. By 2040, more than 15% of the world's electricity will be generated by renewable fuels--solar, wind, biofuels, biomass, geothermal and hydroelectric power. The fastest-growing of these will be wind, which will increase by about 8% per year from 2010 to 2040.

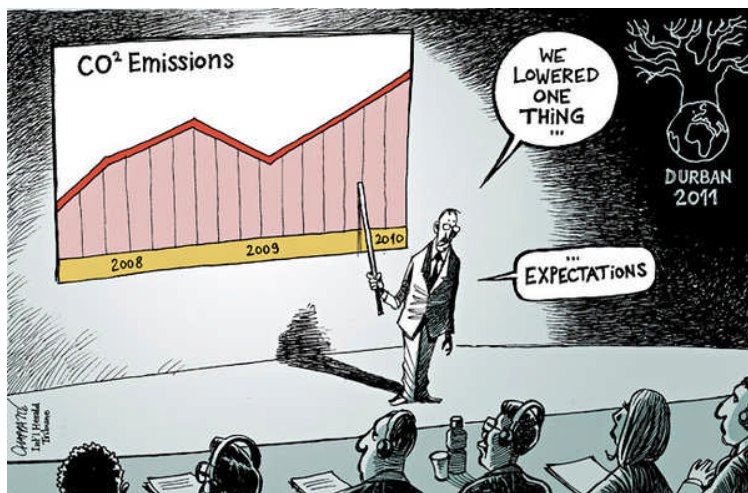
66. Countries Set Goal for New Climate Deal in Effect Around 2020

While negotiators at the U.N. climate summit agreed to a pact that will obligate the world's largest greenhouse gas emitters to take steps to reduce their emissions starting as soon as 2020, the deferral of many important decisions to 2012 or beyond makes it difficult to gauge the value of the Durban accord.

The agreement was reached on December 11th after talks were extended 30 hours beyond the scheduled close of the meeting. Almost every hour of the extra period was spent in negotiations before a deal was brokered by an unlikely partnership that included the European Union; most members of the Alliance of Small Island States and the group of Least Developed Countries;

and two large developing countries, Brazil and conference host South Africa. Outcomes included:

- Negotiators agreed to establish a second commitment period for the Kyoto Protocol, minus several important emitting countries. The second commitment period would last either five or eight years after it goes into effect, probably in 2013. A decision on how long the second Kyoto commitment period will last was delayed to 2012's COP-18 in Doha, Qatar.
- Initial details were hammered out for the Green Climate Fund, which aims to provide developing countries with at least \$100 billion a year for adaptation efforts starting in 2020.
- Almost all of the terms of the Cancun Agreements, the package of measures agreed to at the 2010 U.N. climate summit in Mexico, also were implemented. These include a "technology transfer center" to be established in a yet-to-be determined location. It will deal with issues surrounding the sharing of new, environmentally friendly technologies with developing countries, including intellectual property protection, training, and sustainability.



Other issues for the 2012 COP meeting will include whether the legal format of the Durban agreement—officially called “an agreed outcome with legally binding consequences”—means that decisions made in South Africa and in future COPs will be considered legally binding in and of themselves.

The talks in Doha also will debate how various countries' voluntary goals agreed to one year ago in Cancun, Mexico, measure up to greenhouse gas emissions

reduction targets. Most supporters of the Durban outcome agreed that the voluntary goals needed to be strengthened but it was not immediately clear how that would happen.

With so much left to be decided before or at the Doha summit—scheduled for November 26–December 7, 2012—EU Climate Action Commissioner Connie Hedegaard admitted there could be a small gap between the expiration of Kyoto's first commitment period at the end of 2012 and the actual start date of a second period.

Agreement on the 2020 mitigation regime was the biggest obstacle in the talks, and it is the area with the most work left to do. The roles of China, the United States, and India—the world's three largest emitters—are still not nailed down. Crucially, the agreement in Durban set a 2015 target date for completion of a new text outlining the legally binding regime. But when the treaty would take effect is unclear. The European Union's preferred wording for an effective date of “2020 at the latest” was removed in the final hours of the negotiations.

Another important issue for a future agreement is ensuring compliance. Rules under the Kyoto Protocol require countries that miss their targets in the first commitment period to make up for the shortfall with a 30 percent penalty in a subsequent period. But with big emitters like Canada, Japan, and Russia sitting out a second commitment period, and the Kyoto targets for remaining countries in the period starting in 2013 voluntary, countries that miss their targets in the first commitment period will likely face few consequences. How to ensure that “binding” post-2020 commitments carry real consequences for countries that do not meet targets will be debated between now and 2015.

Developing countries more or less got what they wanted concerning the Green Climate Fund. The fund was “operationalized” in Durban, meaning delegates can act in the next year to select a board, construct an administrative framework, and identify sources of funding. Conference plenary meetings discussed a potential international financial transaction tax or a fee on international maritime and air transportation to raise money for the fund, but those issues were tabled.

Also left unresolved in Durban was whether assigned amount units (AAUs) earned before 2012 could be carried forward. Country targets under the Kyoto Protocol are expressed as “assigned amounts” of emissions, and are divided into AAUs. Each unit represents the right to emit one metric ton of carbon dioxide-equivalent. AAUs may be earned for emissions reduction activities, allowing countries to emit more greenhouse gases in the future. The issue of carrying over AAUs from the current Kyoto commitment period was tabled. Expert observers said that probably will mean no credits or only a small percentage of credits would be allowed to be carried forward. That is even more likely because Poland, the strongest advocate of carrying AAUs forward, will no longer hold the European Union’s rotating presidency as of January 1. The presidency will shift to Denmark, which is a strong critic of carrying significant AAUs forward after 2012.

EU officials claimed victory at the end of the talks, saying Europe got what it came for: a roadmap to a legally binding global agreement. Major emitters agreed to draft a wider deal by 2015, which was a key condition set by Europe before Durban. In return, the EU has agreed to commit to new binding emissions reduction targets under the Kyoto Protocol. Several other countries, including Norway, Iceland and Switzerland, will also be part of this second commitment period. The targets and length of this new scheme will be discussed and finalized next year.

The new Kyoto targets must be submitted to the UN for review by May. This may revive the debate over whether the EU should adopt a 30% – rather than a 20% – emissions reduction target for 2020 in the early months of next year.

Another key EU demand to strengthen the Kyoto Protocol’s environmental integrity was met at the meeting with the adoption of new accounting rules on emissions reductions from land use, land-use change and forestry (LULUCF).

In the final hours of the conference, it was the future global policy framework that was at stake. The EU, in a new coalition with the Alliance of Small Island States (AOSIS) and Least Developed Countries (LDC), pushed for either a protocol or a legal instrument. However, China sided with India in speaking out against this apparent blurring of the distinction between developed and developing countries. “We are taking actions. We want to see your actions,” China’s lead negotiator Xie Zhenhua told the plenary in the early hours of Sunday.

The US, which was criticized as the main obstacle to progress throughout the meeting, was quiet in the final plenary, letting China and India argue for a weaker legal framework, calling for a "legal outcome". In the end, the plenary agreed that an alternative to a protocol or a legal instrument should be to have an "agreed outcome with legal force".

67. Global Biofuels Output Slows on Less Brazilian Ethanol, IEA Says

World production of biofuels will increase at a slower pace than previously forecast in the next five years as Brazil's ethanol output declines and the U.S. market becomes saturated, the International Energy Agency said. Global growth is estimated at 400,000 barrels a day from 2010 until 2016, compared with the earlier forecast of 500,000 barrels a day, the Paris-based agency said today in its monthly Oil Market Report.

Brazilian ethanol production in 2011 is set to drop by 75,000 barrels a day to 375,000 barrels a day on a "poor sugar cane harvest and high sugar prices" and will reach 530,000 barrels a day in 2016, according to the IEA.

In the U.S., the expiry of a 45 cent-per-gallon blenders' tax credit at year-end is expected to sap distillery investment as the market gets more saturated, the agency said.

68. UNEP Report Says 2-Degree Limit Realistic With Renewables, Energy Efficiency

Increased adoption of renewable energy, specific emissions cuts in certain industries, and energy efficiency improvements implemented by 2020 could keep a global temperature increase under 2 degrees Celsius, according to a new report from the United Nations Environment Program. Switching to more fuel-efficient vehicles, pursuing carbon capture and storage projects, increased use of public transport, and other measures could help close the gap between what greenhouse gas emissions countries have pledged to cut and what is needed to stay below a 2 degree Celsius average global temperature increase, according to Bridging the Emissions Gap. The report was released on November 23rd.

Parties at the United Nations Climate Change Conference in Cancun, Mexico, in 2010 pledged to limit the global rise in temperatures to 2 degrees Celsius, or 3.6 degrees Fahrenheit, compared to preindustrial levels, and to review a stricter goal of 1.5 degrees Celsius.

The gap between country commitments and what is needed to meet the temperature goal is expected to reach six gigatons of carbon dioxide-equivalent by 2020, according to the report. The gap could amount to 11 or 12 gigatons if countries do not abide by their commitments to reduce emissions, it said. The report updates UNEP research published last year, which put the emissions gap at 5 gigatons to 9 gigatons.

Countries could achieve the 2 degree target by increasing the use of energy from non-fossil sources to 28 percent in 2020—up from 18.5 percent in 2005; by bumping up biomass use to 17 percent from 10.5 percent; and by increasing use of renewables to 9 percent, according to the report.

The report identified specific measures for reducing emissions by sector, including electricity production, transportation, aviation and shipping, buildings, forest, agriculture, and waste. For example, improving efficiency of heating, cooling, and lighting in the building sector, as well as introducing renewable energy sources in the electricity sector would help reduce greenhouse gas emissions.

Implementing the report's recommendations is estimated to cost between \$25 and \$54 per metric ton of carbon dioxide-equivalent removed from the environment. The median cost for implementing the recommendations is \$38 per metric ton of carbon dioxide-equivalent.

69. The World Is Locking Itself into an Unsustainable Energy Future IEA Warns

Without a bold change of policy direction, the world will lock itself into an insecure, inefficient and high-carbon energy system, the International Energy Agency warned as it launched the 2011 edition of the World Energy Outlook (WEO). The agency's flagship publication said there is still time to act, but the window of opportunity is closing. "Growth, prosperity and rising population will inevitably push up energy needs over the coming decades. But we cannot continue to rely on insecure and environmentally unsustainable uses of energy," said IEA Executive Director Maria van der Hoeven. "Governments need to introduce stronger measures to drive investment in efficient and low-carbon technologies. The Fukushima nuclear accident, the turmoil in parts of the Middle East and North Africa and a sharp rebound in energy demand in 2010 which pushed CO2 emissions to a record high, highlight the urgency and the scale of the challenge."

In the WEO's central New Policies Scenario, which assumes that recent government commitments are implemented in a cautious manner, primary energy demand increases by one-third between 2010 and 2035, with 90% of the growth in non-OECD economies. China consolidates its position as the world's largest energy consumer: it consumes nearly 70% more energy than the United States by 2035, even though, by then, per capita demand in China is still less than half the level in the United States. The share of fossil fuels in global primary energy consumption falls from around 81% today to 75% in 2035. Renewables increase from 13% of the mix today to 18% in 2035; the growth in renewables is underpinned by subsidies that rise from \$64 billion in 2010 to \$250 billion in 2035, support that in some cases cannot be taken for granted in this age of fiscal austerity. By contrast, subsidies for fossil fuels amounted to \$409 billion in 2010.

The IEA also forecast that the share of renewables from non-hydro sources in power generation will increase to 15 percent in 2035 from 3 percent in 2009, mainly supported by subsidies which should rise nearly five times to \$180 billion. This compares to fossil fuel subsidies which could rise to \$660 billion in 2020 without further reform. "By simply redirecting all the fossil fuel subsidies to renewable energy programs the 2 billion poor people would have access to energy not only by 2030, but within this decade," says Sven Teske, senior energy expert Greenpeace International.

Short-term pressures on oil markets are easing with the economic slowdown and the expected return of Libyan supply. But the average oil price remains high, approaching \$120/barrel (in year-2010 dollars) in 2035. Reliance grows on a small number of producers: the increase in output from Middle East and North Africa (MENA) is over 90% of the required growth in world oil output to 2035. If, between 2011 and 2015, investment in the MENA region runs one-third lower than the \$100 billion per year required, consumers could face a near-term rise in the oil price to \$150/barrel.

Oil demand rises from 87 million barrels per day (mb/d) in 2010 to 99 mb/d in 2035, with **all the net growth coming from the transport sector in emerging economies**. The passenger vehicle fleet doubles to almost 1.7 billion in 2035. Alternative technologies, such as hybrid and

electric vehicles that use oil more efficiently or not at all, continue to advance but they take time to penetrate markets.

The use of **coal** – which met almost half of the increase in global energy demand over the last decade – rises 65% by 2035. Prospects for coal are especially sensitive to energy policies – notably in China, which today accounts for almost half of global demand. More efficient power plants and carbon capture and storage (CCS) technology could boost prospects for coal, but the latter still faces significant regulatory, policy and technical barriers that make its deployment uncertain.

Fukushima Daiichi has raised questions about the future role of **nuclear power**. In the New Policies Scenario, nuclear output rises by over 70% by 2035, only slightly less than projected last year, as most countries with nuclear programs have reaffirmed their commitment to them. But given the increased uncertainty, that could change. A special Low Nuclear Case examines what would happen if the anticipated contribution of nuclear to future energy supply were to be halved. While providing a boost to renewables, such a slowdown would increase import bills, heighten energy security concerns and make it harder and more expensive to combat climate change.

The future for **natural gas** is more certain: its share in the energy mix rises and gas use almost catches up with coal consumption, underscoring key findings from a recent WEO Special Report which examined whether the world is entering a "Golden Age of Gas". One country set to benefit from increased demand for gas is Russia, which is the subject of a special in-depth study in WEO-2011. Key challenges for Russia are to finance a new generation of higher-cost oil and gas fields and to improve its energy efficiency. While Russia remains an important supplier to its traditional markets in Europe, a shift in its fossil fuel exports towards China and the Asia-Pacific gathers momentum. If Russia improved its energy efficiency to the levels of comparable OECD countries, it could reduce its primary energy use by almost one-third, an amount similar to the consumption of the United Kingdom. Potential savings of natural gas alone, at 180 bcm, are close to Russia's net exports in 2010.

In the New Policies Scenario, cumulative CO₂ emissions over the next 25 years amount to three-quarters of the total from the past 110 years, leading to a long-term average temperature rise of 3.5°C. China's per-capita emissions match the OECD average in 2035. Were the new policies not implemented, we are on an even more dangerous track, to an increase of 6°C.

"As each year passes without clear signals to drive investment in clean energy, the "lock-in" of high-carbon infrastructure is making it harder and more expensive to meet our energy security and climate goals," said Fatih Birol, IEA Chief Economist. The WEO presents a 450 PPM Scenario, which traces an energy path consistent with meeting the globally agreed goal of limiting the temperature rise to 2°C. **With emissions already at 390 ppm of CO₂, time is running out for action.** Four-fifths of the total energy-related CO₂ emissions permitted to 2035 in the 450 PPM Scenario are already locked-in by existing capital stock, including power stations, buildings and factories. Without further action by 2017, the energy-related infrastructure then in place would generate all the CO₂ emissions allowed in the 450 Scenario up to 2035. Delaying action is a false economy: for every \$1 of investment in cleaner technology that is avoided in the power sector before 2020, an additional \$4.30 would need to be spent after 2020 to compensate for the increased emissions.

Additional low-carbon technology and energy efficiency investment to 2035 would need to total \$15.2 trillion to limit warming to two degrees -- out of a total energy supply investment of \$36.5

trillion, the report said. "Delaying action is a false economy: for every \$1 of investment avoided in the power sector before 2020 an additional \$4.3 would need to be spent after 2020 to compensate for the increased emissions," the report added.

In 2010, global CO2 emissions rose 5.3 percent from a year earlier to 30.4 gigatons. If new climate policies are implemented cautiously, CO2 emissions will rise by 20 percent to 36.4 gigatons in 2035, it added.

The U.N.'s aim of giving everyone in the world access to modern energy by 2030 would require \$48 billion of investment -- or 3 percent of total energy investment to 2030 -- compared to \$9 billion in 2009, the IEA said.

70. Air Pollution Tied To Lung Cancer in Non-Smokers

People who have never smoked, but who live in areas with higher air pollution levels, are roughly 20 percent more likely to die from lung cancer than people who live with cleaner air, researchers conclude in a new study. "It's another argument for why the regulatory levels (for air pollutants) be as low as possible," said Francine Laden, a professor at the Harvard School of Public Health, who was not involved in the research.

Though smoking is the number one cause of lung cancer, about one in 10 people who develop lung cancer have never smoked. "Lung cancer in 'never smokers' is an important cancer. It's the sixth leading cause of cancer in United States," said Michelle Turner, the lead author of the study and a graduate student at the University of Ottawa.

Previous estimates of how many non-smokers get lung cancer range from 14 to 21 out of every 100,000 women and five to 14 out of every 100,000 men.

The fine particles in air pollution, which can irritate the lungs and cause inflammation, are thought to be a risk factor for lung cancer, but researchers had not clearly teased apart their impact from that of smoking. In this study, Turner and her colleagues followed more than 180,000 non-smokers for 26 years. Throughout the study period, 1,100 people died from lung cancer. The participants lived in all 50 states and in Puerto Rico, and based on their zip codes, the researchers estimated how much air pollution they were exposed to -- measured in units of micrograms of particles per cubic meter of air.

Pollution levels in different locations ranged from a low of about six units to a high of 38. The levels dropped over time, however, from an average of 21 units in 1979 - 1983, to 14 units in 1999 - 2000, producing an overall average pollution level of 17 units across the study period.

After the team took into account other cancer risk factors, such as second-hand smoke and radon exposure, they found that for every 10 extra units of air pollution exposure, a person's risk of lung cancer rose by 15 to 27 percent.

The increased risk for lung cancer associated with pollution is small in comparison to the 20-fold increased risk from smoking.

Fine particles in air pollution can injure the lungs through inflammation and damage to DNA, Turner's team writes in its report, published in the American Journal of Respiratory and Critical Care Medicine.

Previous research has suggested similar conclusions. A study of people in China, for example, found an increased risk of lung cancer attributed to indoor air pollution from burning coal and wood to heat homes. And several European studies have linked levels of soot and vehicle exhaust to lung cancer in non-smokers.

Laden noted that the pollution levels associated with the increased risk of cancer in the current study are not uncommon in the U.S. "These levels are within the (regulatory) standards," Laden told reporters. "We're not talking about people who live in a really polluted place with no pollution control."

71. 'No Delays' Forecast for ECA Rules

There is little chance of any delay to the introduction of a 0.10% sulfur cap in Emission Control Areas (ECAs), according to participants at a conference on innovation and regulation. "There has been pressure for delay but so far no administration has asked International Maritime Organization (IMO) for a postponement," said Niels Born Mortensen, Director of Regulatory Affairs at Maersk Maritime Technology. He warned that if European countries were to lobby for a delay the United States, which is backing plans for a North American ECA, would oppose it and that its opposition could even extend to withdrawing from the IMO's MARPOL Annex VI.

Tom Strang, Vice President, Policy and Regulation for Carnival Corp, said the 'smoke signals' from the European Commission did not suggest any appetite among officials for delay, "quite the reverse", he claimed.

Their remarks came during a discussion chaired by John Aitken, Secretary-General of SEAaT (Shipping Emissions Abatement and Trading). He told the conference that the issue for the shipping industry was not delaying the ECA timetable but working out how to comply with the ECA regulations "most effectively".

Nick Holness, co-founder of Oceanox, a company designing and installing sea water scrubbers for ships, agreed saying it was hard for some members of the shipping community for argue for delay while at the same time others were calling for "regulatory certainty".

Some European politicians, particularly in the Baltic region, have joined calls for a delay in introducing the 0.10% fuel sulfur limit for bunker fuels used in ECAs. The tighter limit is due to come into force in 2015 and a number of shipping industry players have argued that bunker prices will be pushed up to the point where short-sea shipping will become uneconomic. Ships will only be able to use higher sulfur fuels if they have installed emission abatement systems.

72. IMO Says Efficiency Measures to Cut Carbon Emissions by Quarter by 2030

The world's shipping industry could reduce its greenhouse gas emissions by almost a quarter by 2030 compared to 2010 levels as a result of energy efficiency measures introduced this year for large ships, according to an International Maritime Organization study released on November 14th.⁹ The U.N. body adopted two mandatory energy efficiency measures for ships weighing 400 metric tons or more in July. The regulations are expected to come into force Jan. 1, 2013.

⁹ "Assessment of IMO Mandated Energy Efficiency Measures for International Shipping" is available at <http://tinyurl.com/7ob3jez>

International shipping accounted for 870 million metric tons of carbon dioxide—about 2.7 percent of total carbon dioxide emissions—in 2007, according to the latest available IMO figures.

The study estimated that the two approved energy efficiency schemes will reduce annual carbon dioxide emissions by an average 151.5 million metric tons by 2020 and an average 300 million metric tons by 2030, a reduction from 2010 levels of 13 percent and 23 percent, respectively. The estimated reductions will help the world fleet save about \$50 billion in annual fuel costs in 2020 and about \$200 billion by 2030, based on fuel price increase scenarios that take into account a switch to low-sulfur fuel in 2020, the study said.

The new rules affect bulk carriers, gas carriers, tankers, container ships, general cargo ships, refrigerated cargo ships, and combination carriers. Passenger ships and roll-on/roll-off ships are excluded.

Of the two schemes, the study said the Ship Energy Efficiency Management Plan (SEEMP) will have the most immediate impact as it incorporates best practices for fuel-efficient operations—rather than acquiring new technologies—that both new and existing ships will be required to follow. These include improved voyage planning, optimization of speed and power, and improved fleet management and cargo handling.

The Energy Efficiency Design Index (EEDI) requirements will apply only to new ships. EEDI technologies include more efficient hulls and propellers, improved waste-heat recovery systems in engines, use of alternative sources of energy such as solar panels or kites, new lightweight ship construction material, and use of advanced hull coatings. The costs of EEDI compliance will initially be marginal, as up to 10 percent of energy savings can be achieved by low-cost hull design and main engine optimizations, IMO said. Further savings will depend on investment in new ship designs that allow the use of lower-power engines, the study said. However, ships will be able to offset these investments through savings in fuel costs.

Despite the significant cuts in carbon dioxide emissions that both EEDI and SEEMP can provide, the study highlighted that the shipping sector will need to rely on additional market-based measures to offset the projected increase in greenhouse gas emissions expected from the growth in world trade. Historically, the shipping industry has failed to agree on market-based measures such as a levy on bunker fuel and an emission trading system. The main problem has been the long-running dispute spilling over from climate change negotiations about whether wealthier nations should do more than developing countries to reduce shipping emissions.

In the study, IMO said market-based mechanisms could provide an economic incentive for the industry to invest in more fuel-efficient ships and technologies and as a mechanism to offset growing emissions in other sectors. The measures could also generate funds for projects to mitigate climate change in developing countries, according to the study.

73. Toyota, BMW Considering Tie-Up in Developing Environmental Vehicles

Toyota Motor Corp. is discussing a partnership for developing environmental vehicles with BMW AG, including procuring diesel engines from the German carmaker. Under the proposed arrangement, BMW will provide diesel engines for Toyota's passenger vehicles, while Toyota will share its technology for hybrid vehicles with BMW.

On the back of growth in demand for diesel vehicles in developed countries, the automakers hope to slash development expenses for core technologies by complementing each other with their respective strengths.

It would be Toyota's second tie-up on hybrid vehicle technology with a major foreign automaker following its agreement with Ford Motor Co. in August.

In Europe, cars powered by diesel engines are seen as an effective way to cut carbon dioxide emissions and get good mileage. Toyota hopes producing vehicles with diesel engines will help it boost sales in Europe, where it lags behind rivals in market share. It posted operating losses in the half year that ended in September for the region.

Meanwhile, the deal will help the German automaker enhance its competitiveness in environmental vehicles by adding hybrid car models.

Toyota reportedly decided to tie up with the German carmaker as its engine is energy-efficient compared with those of other European carmakers. Toyota has already started verifying whether BMW's diesel engine can be mounted on Toyota passenger cars.