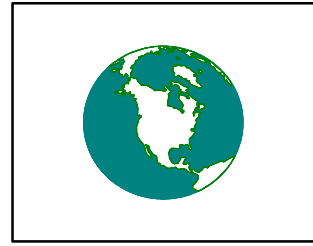


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CAR LINES

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EUROPE

1. European Commission To Consider Delay in Euro VI

European Commission Vice President Verheugen has instructed his services in DG Enterprise to prepare a new formal proposal by the Commission to amend the new Regulation on Euro VI, changing the date of entry into force. The announcement seems to have been made only 1 day after the COREPER meeting (this is the meeting of EU Ambassadors of the EU Member States) that formally approved Euro VI as it was agreed through Co-decision (with the set implementation dates 31.12.2012 & 31.12.2013).

The motivation is the economic crisis and its effect on sales in the heavy-duty sector.

The Commission's staff has the task to draft a proposal and this should reach the EC College after the summer break. If approved by the full Commission, it will then be submitted to the Council of Ministers and the Parliament for their approval as is required by the co-decision procedure.

The recommended delays will also apply to non road mobile machinery.

Initial indications are that at least some member states oppose the idea and even some manufacturers say privately that it is too late to affect product planning. However, there must be others pushing for the delay for things to have advanced this far.

2. ICCT Recommends PM # Standard; NGO's Recommend Even Tighter Standard

In a related matter, the International Council on Clean Transportation (ICCT) has weighed in on the possible number based standard for Euro VI heavy duty vehicles and engines. Based on the validation exercise data gathered under the UN-ECE Particle Measurement Program (PMP), ICCT recommends that the Euro VI number-based standard be set ***no higher than $5 \times 10^{11}/kWh$ on the weighted world harmonized transient cycle (WHTC)***. This recommendation reflects the following considerations:

1. The need to maintain a sufficient margin of safety below the performance of current partial flow technologies (PFTs) given the history of Euro heavy-duty standards failing to require wall-flow diesel particulate filters (DPFs) despite initial expectations otherwise;
2. The likelihood that PFTs will further improve on a mass reduction basis after Euro VI takes effect in Europe and before those standards are enforced in developing countries;
3. Variance in the test results for DPF-SCR combinations only, which are expected to be the dominant emission control technology package in 2013;
4. The need to regenerate DPFs, given that elevated particle number counts may occur when regeneration falls within a standard testing cycle; and,
5. The understanding that, by necessity, the PMP validation exercise has been conducted using existing or even slightly outdated technologies, rather than technologies that will be used to comply with the Euro VI standard.

Shortly thereafter, European NGO's weighed in with a carefully reasoned assessment of the UN-ECE data set. "From these values **a standard of 3×10^{11} (WHTC comb) seems to be achievable**. A number of factors are relevant for setting a standard at this level. The starting

point for the standard setting should be the particle number data for SCR+DPF. It is reasonable to only consider this data as the NOx-limits in the EURO regulation VI will require the use of SCR. The upper limit of the data summarized under “all DPF” is defined by a sintered metal DPF, which is more porous than standard DPFs. It is therefore not representative of the technology of today – let alone of the technology of tomorrow. This data should therefore not be considered when developing a limit value proposal.”

The NGO’s including Transport & Environment, the European Environmental Bureau and the Health and Environment Alliance further note, “It is crucial that the particulate number standard be set with sufficient stringency to ensure that best available technology is being used and to reflect the environmental and public health ambition of the EURO VI regulation.”

“The question is whether the Commission takes its obligations to protect the health of European citizens seriously and sets standards that significantly lower the particulate number and hence the population exposure in Europe. This requires setting as standard that not merely reflects what is achievable by EURO III + IV engines or porous diesel filters but by what is achievable in the future.”

3. Climate Change Accord to Be Top Priority During Sweden's Turn in EU Presidency

Achieving a consensus on a successor to the Kyoto Protocol at the U.N. climate summit in Copenhagen in December will be Sweden's “principal task” during its upcoming turn in the EU presidency, according to the government. A spokesman for the Swedish Environment Ministry told reporters on June 17th that eco-efficiency—meeting environmental and economic challenges together—and marine pollution also will be high priorities during the six-month rotating presidency, which begins July 1, when Sweden takes over from the Czech Republic.

Sweden will chair a workshop of climate change negotiators from EU member states on July 13–15, in Stockholm. The workshop is an informal meeting held every six months and hosted by the country holding the EU Presidency. Sweden also will chair back-to-back informal meetings of EU environment and energy ministers, to be held July 24–25, in the town of Are in central Sweden.

Although Sweden's current center-right government is seen as less liberal than its Social Democratic predecessor, it is still viewed as one of Europe's more radical on environmental issues. In a June 11 speech in Brussels, Swedish Prime Minister Fredrik Reinfeldt confirmed that he favored national carbon taxes to help meet EU-wide commitments to reduce greenhouse gas emissions. He described the European Union's energy and climate package approved in December 2008 as “the most ambitious mitigation policy the world has ever seen” but added that more work is needed to utilize economic instruments in climate policy.

Sweden also will support new measures to implement the Baltic Sea Action Plan, a pollution-reduction strategy approved by signatory nations to the Helsinki Convention on Baltic Sea protection (HELCOM). It also will work to foster debate on how Europe can develop a competitive, eco-efficient economy.

Other EU environmental meetings Sweden will host include a major conference on biodiversity Sept. 7–9 in Stromstad, and a conference on “European Cities and the Global Climate Challenge” Sept. 14–15 in Stockholm.

4. Elections See Parliament Shift Further To the Right

The centre-right European People's Party (EPP) has claimed a major victory following the announcement of the results of European elections held across the 27-nation bloc. With 263 elected MEPs, the share of EPP members in the new 736-seat assembly remains roughly the same as the last parliament at just over 36%. But this does not take into account dozens of centre-right former EPP members including 25 UK Conservative MEPs who are expected to create a new anti-federalist group.

The parliament's second largest group – the Party of European Socialists (PES) – won 163 seats, seeing their share fall to just over 21% compared with 27% last term. "European citizens have placed their trust in the European People's Party and its member parties", read a statement by EPP chairman Joseph Daul.

The result boosts José Manuel Barroso's prospects of securing a second five-year term as president of the European Commission, after Mr. Daul named him as the EPP's preferred candidate following the vote. Under the former centre-right prime minister of Portugal's leadership, the commission has drawn up plans to create a new climate and energy department.

It remains to be seen how the result will affect the next parliament's stance on environmental issues. Economic and employment issues dominated election campaigning, despite pledges on climate and the environment in the pre-election manifestos of all the main groups.

The Green/EFA group increased its share of seats in the assembly by a fifth to just under 7%, driven by strong national support in France and Germany.

The Liberal ALDE group fell back slightly to claim 11% of the total share of seats and remain the parliament's third largest group. Outgoing ALDE leader Graham Watson said that with no overall majority for any political group, "this will confirm our role as kingmakers in the new parliament".

The new parliament will meet for its first plenary session on 14 July, when MEPs will elect a new president and chairs of parliamentary committees. The final composition of the various committees will be decided at a second plenary session starting on 20 July.

5. EU GHG Emissions Fell in 2007, Keeping Bloc on Track to Meet Kyoto Goals

The European Union's overall greenhouse gas emissions fell 1.2 percent in 2007 compared with 2006, keeping the 27-country bloc on track to meet its Kyoto Protocol commitments, the European Commission said on May 29th. Total emissions in 2007 were 5.05 billion metric tons of carbon dioxide equivalent, representing a 9.3 percent reduction from 5.76 billion metric tons in 1990, the Kyoto base year for most countries.

Emissions reductions for the 15 countries that were members of the European Union prior to 2004 was a less impressive 4.3 percent between 1990 and 2007, with a number of countries likely to miss their individual Kyoto targets, although the overall EU target is expected to be achieved.

EU Environment Commissioner Stavros Dimas said noncompliant countries would be penalized both under the Kyoto Protocol and by having legal proceedings initiated against them by the

Commission. However, countries missing their targets could compensate by buying offsets from developing countries, Dimas said.

The report comes just two weeks after the Commission released a separate report showing that emissions from industrial plants covered by the European Union's Emission Trading Scheme (ETS) fell 3.06 percent in 2008 compared to 2007.

The previous report, released May 15, involved only those emissions from facilities subject to the ETS. The May 29 report involves total emissions throughout the European Union.

6. EU Greenhouse Gas Emissions Fell By 1.2% In 2007

EU greenhouse gas emissions declined for the third consecutive year in 2007, according to new figures published by the European Environment Agency (EEA). The fall was mainly driven by lower use of fossil fuels in households and services, the agency said. The 1.2% decrease of 59 million tons of CO₂ equivalent brought the EU-27's emissions to 9.3% below 1990 levels. The EU has committed to cut emissions to at least 20% below 1990 levels by 2020.

The EU-15 now stands at 5% below 1990 levels. "We will comfortably reach our Kyoto target of 8% below 1990 levels [by 2008-12]," EU environment commissioner Stavros Dimas told journalists.

The overall good progress hides big differences between member states, with Austria, Spain and Luxembourg furthest away from meeting their individual targets. Portugal's emissions are likely to be 3-3.5% above the country's Kyoto target, the government has said.

The 2007 drop follows decreases in 2006 and 2005. It was driven primarily by warmer weather and higher fuel prices, according to the EEA. Mr. Dimas said the three-year trend also indicated climate policies were starting to pay off and greater reductions were expected in the future.

Transport emissions continued to rise alarmingly in 2007, however. Mr. Dimas suggested the next European Commission, which is due to take office in autumn, could propose a major climate and transport policy package. Plans to cut emissions from vans could still be tabled by the current commission, he added.

7. European Commission Sets Transport Vision To 2020

Environmental protection remains the main aspect of EU transport policy where further improvements are necessary, according to a vision for the future of transport policy adopted recently by the European Commission. "In the EU, compared to 1990 levels, in no other sector has the growth rate of greenhouse gas emissions been as high as in transport," the commission's communication reads, echoing concerns in other reports on the sector. Transport is still 97% dependent on fossil fuels.

The commission's communication follows a white paper setting the agenda for transport policy to 2010 adopted in 2001 and updated in 2006. The new communication reviews what has happened in the last decade and sets out a vision to 2020. It will be followed by a new white paper next year.

Most of the goals set in the 2006 review have been met, but progress on sustainability has been "more limited", the commission says. Decoupling transport from GDP growth, an objective in

2001, has taken place for passengers but not freight. Energy efficiency has increased but not enough to bring emissions down. And there has been limited progress in shifting freight from road to greener modes of transports such as rail.

Environmental protection is one of six key themes identified as critical to shaping the future of EU transport policy in the coming decades following a stakeholder consultation; the others are: ageing, migration and internal mobility, energy resource availability, urbanization and globalization.

To meet these emerging challenges, four policy priorities identified by transport commissioner Antonio Tajani are: better integrating different transport modes, putting the EU at the forefront of transport services and technologies, strengthening the price signals for a shift to low-carbon transport, and projecting EU transport policy more abroad.

8. France Showcases Demonstration Models Of 11 'De-carbonized' Vehicle Projects

On June 18th, France presented 11 "de-carbonized" vehicle research projects financed by a four-year, €400 million (\$558 million) fund for development of experimental energy technologies. Presented at the Ministry of Ecology, Energy, Sustainable Development, and Territorial Planning, the projects ranged from an electric three-wheel scooter to an electric bus that will rapidly recharge at each bus stop just enough to make it to the next stop.

Also included was a joint project announced in April between Toyota and French energy company Electricite de France (EDF), which will build and test a fleet of plug-in hybrid cars and an innovative infrastructure that will allow identifying vehicles for energy billing, among other things.

Ecology Minister Jean-Louis Borloo said the projects show France is ready to lead the way in developing electric, carbon-free transportation, although several of the projects are hybrids that will use conventional fuels.

The demonstration fund is a joint effort between the Ministries of Ecology; Higher Education and Research; and Economy, Industry, and Employment. It is managed by the Environment and Energy Management Agency (ADEME).

In addition to vehicles, it finances technology development for second-generation biofuels, carbon dioxide storage and capture, low-emission buildings, intelligent energy networks, and energy storage and converters. The program targets manufacturers or public-private partnerships in need of financing for high-cost demonstration projects with experimental goals, for which market prospects are long-term, the government said.

9. Green But Costly, Hybrid Buses Far From Mass Production

Fuel-efficient and environmentally-friendly, hybrid buses starred at a recent public transportation congress in Vienna, but they still face a long road before becoming cost-effective on a mass scale. With fuel consumption cut by 20 to 30 percent and CO2 emissions down by about as much -- thanks to power generated during braking -- the hybrid diesel-electric bus is the way of the future, manufacturers say.

"Eventually, there won't be any reason to drive with a traditional diesel anymore," Per-Martin Johansson, spokesman for Swedish carmaker Volvo, the world number-two after selling 10,000

buses last year, told reporters. "Besides the immediate environmental benefit, the 40-percent premium is redeemed within five to seven years," said Johansson, who spoke at the International Association of Public Transport (UITP) world congress.

First launched by Poland's Solaris and Belgium's Vanhool, hybrid buses are now gaining momentum: both Volvo and Germany's Daimler, the world leader with 42,000 buses sold in 2008, have said they will begin mass production within a year, while Man, another German company, is looking at 2011.

But for now, orders are still low in Europe, where only Vanhool has started mass-producing, following a commission by the Belgian public transportation company VVM for 79 hybrid buses.

Solaris hopes to follow suit with "contracts for 20 to 30 units," said spokesman Mateusz Figaszewski. The Polish company began selling its prototype in 2006 and has just sold seven more in Paris and Strasbourg, France.

Meanwhile, the bigger companies, who came late into the game, have been left with the scraps: Volvo has just sold six hybrid red double-decker buses to London, while Sweden's Scania has sold six more to Stockholm.

At a time of economic crisis, public transportation companies are reluctant to invest massively in a technology with such a high starting price, experts say.

"Hybrid buses will only really take off with governmental help," said Man spokesman Thorsten Wagner. "With that, this technology can take over 50 percent of the market within five or 10 years. Without, it probably won't surpass 20 percent and will only catch on in places that want to appear environmentally-friendly," he said.

The exception is in North America where hybrid buses have been present for the past decade. Daimler Buses, for example, has already sold 1,700 units through its Orion branch and has another 1,100 on order.

Even more costly is the hydrogen hybrid bus, already developed by some manufacturers, but this vehicle may never get past the prototype stage. A third-generation of this model -- with fuel cell -- was presented by Daimler at the UITP congress and is still more expensive than a diesel bus, making it difficult to recoup the cost. Daimler, which has already sold about 30 hydrogen prototypes since 2003, now hopes to sell 30 more, while Vanhool has reported 16 orders from the United States.

10. France Mulls Carbon Tax for Non-ETS Sector

The French environment ministry has launched a consultation on a carbon tax on fossil fuel use to reduce greenhouse gas emissions in sectors not covered by the EU's emissions trading scheme (ETS) such as transport and housing. This tax is separate from an EU carbon tax adjustment for energy-intensive imported goods proposed by the government two years ago to prevent carbon leakage in the ETS's third phase, the ministry says. It is a national tax on energy-guzzling products to cut domestic emissions.

The idea was proposed by President Nicolas Sarkozy in 2007. A draft law on France's future environmental policy, being debated in parliament, requires the government to consider the introduction of a tax that would factor the impact of carbon emissions into energy prices. An

expert panel will gather in Paris on 2-3 July to discuss how much the levy would be and what products would be covered - this following a consultation running until 24 June. Environment minister Jean-Louis Borloo said the carbon tax would not be introduced before 2011.

11. Air Pollution Exceeds Limits in Thessaloniki

The excessive use of cars and ongoing works to build a metro system for Thessaloniki have pushed the concentration of fine pollution particles, PM 2.5, to the limits, posing a real risk for the health of Thessaloniki residents. According to data taken from a pollution monitoring station in the city center, the concentration of the fine particles in the air exceeded the European Union's recommended maximum level on 285 days last year, way above the EU's proposed limit of 35 days per year.

"If measures are not taken immediately, this toxic smog will become the city's major pollution problem," a spokesperson for Thessaloniki's municipal authority remarked to the press. Experts say city-dwellers must be weaned off emission-spewing cars and embrace public transport.

12. European Airport Group Pledges to Cut CO2 to Zero

Airport operations account for up to 5 percent of the emissions from aviation, which in turn represents about 2 percent of global greenhouse gases, said ACI Europe, which represents 440 European airports but they will reduce emissions to zero in the future. But ACI Europe's scheme did not set a deadline for airports to become carbon neutral -- largely by cutting emissions from ground transport, boosting renewable energy and reducing the energy consumption of buildings.

The Airport Carbon Accreditation scheme covers about 26 percent of passenger traffic in Europe and includes some of Europe's biggest airports, including Frankfurt, Athens, Dublin, Amsterdam's Schiphol, Italy's Milan Malpensa and Orly in Paris. But London's Heathrow -- whose owner BAA is struggling with a partial break-up -- did not sign up.

ACI Europe's director General Olivier Jankovec told reporters the group's vast and diverse membership had made it impractical to set a deadline for airports to achieve carbon neutrality.

While green energy projects can ultimately pay for themselves, the scheme will require upfront investment during an unprecedented downturn in aviation. ACI Europe predicted an 8 percent decline in passenger traffic in 2009, a 16 percent drop in freight, and financial losses among some of its members.

13. Britain Must Push Harder for Global Plan to Tackle Shipping Emissions

Deploring "ongoing delays in reaching a global agreement to tackle greenhouse gas emissions from shipping," a parliamentary committee has urged the United Kingdom's government to consider reaching a deal outside the International Maritime Organization (IMO). In a report published on June 2nd, the House of Commons Environmental Audit Committee (EAC) blamed both industrialized nations and developing economies for a "lack of urgency." It urged the U.K. government to consider unilateral and regional actions such as a European Union-wide agreement on a shipping emissions scheme.

"Pressure might be applied if an agreement can be reached outside the IMO process and then imported into it," the EAC said in its report, Reducing CO2 and other emissions from shipping.

The report came just six weeks before the IMO's Marine Environment Protection Committee (MEPC) meets in London to try to reach an international agreement on how to limit ships' greenhouse gas emissions. The July 13–17 meeting is the IMO's final opportunity to reach some consensus on shipping emissions before the U.N. climate change summit in Copenhagen in December.

Although the MEPC managed at its last meeting in October 2008 to set limits for ship emissions of sulfur and nitrogen oxide, no progress was made on greenhouse gas emissions.

The EAC, which is composed of select members of Parliament who consider the impact of government policies on environmental protection and sustainable development, said hopes for an IMO proposal in July are fading. Given the lack of international consensus, the U.K. government should take the lead in determining what reductions in shipping emissions need to be made to limit the rise in global temperatures to 2 degrees Celsius (3.6 degrees Fahrenheit) by 2050, the EAC said.

It recommended that the government start by consulting on how to improve the methodology it uses to calculate the United Kingdom's share of international shipping emissions. The EAC said the government's current methodology underestimates actual emissions. The report also said the government should start taking international shipping into account immediately in its carbon budgets. Even though the United Kingdom's Climate Change Act added aviation and shipping emissions reduction requirements, the government currently has until Dec. 31, 2012, to explain how it will include shipping emissions in its carbon budgets.

The report also called for the United Kingdom to push the European Union to include shipping in its 2020 climate change targets.

Responding to the EAC's report, the United Kingdom's Chamber of Shipping said on June 1st that it was "very surprised" that the committee "feels that little or no action has been taken" by the U.K. government on reducing shipping emissions. Defending the government's efforts to estimate accurately its international shipping emissions, the Chamber said this is "extremely difficult, with almost all of the options failing to provide an accurate representation." The shipping lobby argued that it might be easier to assess "all emissions outside the context of individual countries and address them on a global basis through IMO." The Chamber also highlighted its own contributions to the emissions debate, pointing to its proposal in December 2008 for an international emissions trading system for the shipping industry.

14. Agreement Reached On Automobile Scrapping Regulation in Netherlands

As proposed by Minister Cramer of Spatial Planning and the Environment, the Cabinet has approved a provisional scrapping regulation for passenger cars and delivery vans. Although the regulation is expected to come into force soon, the exact date depends on when the subsidy scheme is announced in the Government Gazette.

The regulation is one of a range of measures being introduced by the Dutch government to mitigate the impact of the economic crisis. It was drafted in collaboration with interest group RAI Vereniging, the association of motor car, garage and allied trades BOVAG and Auto Recycling Nederland (ARN). The national government has earmarked €65 million for the regulation, and the automotive industry will contribute €20 million in the initial phase.

Owners of old passenger cars will receive between €750 and €1000 for trading in their old car for scrapping when purchasing a newer, more eco-friendly car. There is a subsidy of between €1000 and €1750 for old diesel delivery vans. The regulation will end once the budget has been exhausted.

As a result of the scrapping regulation, around 80,000 old, polluting cars and delivery vans are expected to be traded in for newer and less polluting vehicles. The focus is primarily on reducing emissions of fine particles and nitrogen oxides.

15. UK Car Scrappage Incentive Scheme Begins

A UK scheme to give motorists 2,000 pounds to trade in their old clunker for a new car has come into force. The 300 million pound initiative, announced in April's budget, aims to boost the ailing car industry and give a boost to manufacturers. Customers will get the discount when they scrap a vehicle that is at least 10 years old, with 38 manufacturers taking part covering all the major brands.

Under the scheme, the government will contribute 1,000 pounds to a new purchase, with the remainder funded by car companies.

The plan, which follows the introduction of similar schemes across Europe, received a mixed reception when it was announced as car manufacturers had hoped the government would finance the entire subsidy. Environmental groups also criticized the scheme saying it should be limited to the purchase of less polluting vehicles.

The car industry supports around 800,000 jobs in Britain, with 27 car and commercial vehicle manufacturers producing around 1.75 million vehicles a year and generating turnover of about 51 billion pounds, according to the Society of Motor Manufacturers and Traders.

16. London Reportedly Has Worst Air Quality in UK

A new report has found that London has the worst air quality in the UK and is among the worst places in Europe for harmful airborne particles. The findings were contained in Every Breath You Take – an investigation into air quality in London, published by the London Assembly Environment Committee.

The report says the Government believes air pollution in London, which falls way short of EU targets, may cause up to 3,000 premature deaths a year. The officially accepted toll is currently around 1,000 early deaths annually.

The danger comes from tiny particles and gases emitted by vehicles, especially diesel engines, as well as those released from power stations and incinerators. The particles are small enough to be breathed into the lungs and can cause heart and lung disease. Children and the elderly are most at risk.

The EU has set targets for reduction of these particles – known as PM2.5s – by up to 20 per cent between 2010 and 2020.

The report looks at existing air quality policies in London, such as the Low Emission Zone (LEZ) and fitting filters on buses. It also examines what more could be done – such as promoting electric vehicles, using biofuel and encouraging more walking and cycling.

Assembly member and Lewisham Green party councilor Darren Johnson is chairman of City Hall's Environment Committee. He said: "London's air pollution is a serious problem now and will be for future generations. "Reducing air pollution is not just about improving the environment in some abstract way. "Our report shows that it's about saving lives."

A spokeswoman for Boris Johnson said the Mayor took the issue "very seriously" and he welcomed the Assembly's report and would ensure its recommendations fed into his new Air Quality Strategy. The Mayor is considering hybrid buses, a new cycle hire scheme, and a £20million in electric car infrastructure, his office said.

17. Vehicle Emissions Top Air Pollution Concern in Malta

Heavy vehicle emissions top the list of concerns where air pollution is concerned, according to a public consultation exercise conducted by the Malta Environment and Planning Authority. Emission by buses and heavy vehicles was highlighted as the major air pollutant concern, though few complained about dust pollution caused by the construction industry.

The authority is currently preparing an air quality plan outlining how the island will comply with EU limits for potentially hazardous particulate matter in the air, PM10. These include airborne road dust and soil and vehicle pollution. Although the island was originally meant to comply with EU regulations for PM10 emissions by 2005, the established levels were not reached.

A Mepa spokesman said: "Malta has had difficulty in complying with the PM10 limit values and is in the process of preparing an air quality plan which has to demonstrate how conformity will be achieved by May 2011." "Efforts should be made by all pollution sources. However, the biggest effort should be focused on the transport sector since monitoring data clearly shows that this sector is the main contributor to air pollution," the spokesman said.

Malta will also be adopting a new EU directive by June of next year introducing new limit values for finer dust particles, PM2.5. The directive requires all member states to reduce exposure in urban areas by an average of 20 per cent by 2020. Because of its very fine composition, PM2.5 - which is the result of burning fuel due to power generation, heavy duty vehicles and diesel-powered cars - is dangerous and can cause lung cancer.

EU countries are already required to monitor air pollution, report to the European Commission, maintain the status of good air quality and improve it in areas where it exceeds limit values. Data for 2005 had shown that EU air quality limits were being exceeded around Malta during a good portion of the year.

The Mepa spokesman said the legislation aimed to safeguard human health and ecosystems by establishing limit values for a number of pollutants and providing specific deadlines.

18. UK Car Emissions Exceed Forecasts

New roads built in the UK since 2002 have led to double the increase in carbon emissions originally forecast by the government. The data, which have not been publicized, could raise questions about official assumptions on road traffic emissions resulting from Heathrow's expansion. The figures come from the Highways Agency, part of the transport department, and apply to 27 big road schemes. They show that these produced an extra 21,870 tons of carbon – almost twice the 11,240 predicted by the government.

Norman Baker – transport spokesman for the Liberal Democrats, who obtained the data – said the figures showed government concern for climate change was “little more than greenwash”. “This government continues to push ahead with massive road-building schemes that cost millions more than predicted, as well as increase traffic and carbon emissions. These huge schemes are responsible for thousands of tons of extra carbon emissions every year.”

Richard George of the Campaign for Better Transport said the figures showed that the government was not only underestimating carbon emissions but had “no workable method” of making such forecasts. “The estimates were nowhere near what actually happened, it seems they don’t know how to work out what carbon emissions will be,” he said.

The Highways Agency said the figures should be put in perspective – they only showed net changes rather than total emissions produced.

However, the data might raise concerns about the prospect of enlarging Heathrow without breaching European guidelines. There were already fears about the high level of pollutants, such as nitrogen oxide, in the air around the airport – much of which comes from cars rather than aircraft. Lord Smith, chairman of the Environment Agency, has told the Financial Times that nitrogen oxide in places near Heathrow already broke limits which were about to become statutory.

A report by BAA, which owns the airport, has estimated that a third runway would generate more than 10m extra car and taxi journeys each year.

Geoff Hoon, transport secretary, has pledged to prevent Heathrow’s expansion if air quality conditions are not met.

19. Neste Oil Expanding Renewable Diesel

Neste Oil has begun building a €670m renewable diesel plant in the Port of Rotterdam, which, once completed, will be the largest facility of its kind in Europe. It will have an annual production capacity of 800,000 metric tons of diesel. The Rotterdam facility will be completed in 2011.

The plant will make use of the company's proprietary process that converts vegetable oils and animal fats into its so-called NExBTL renewable diesel.

The properties of the NExBTL diesel are similar to the best existing diesels, such as GTL or Swedish Environmental Class 1 fuels; NExBTL is sulfur-, oxygen-, nitrogen- and aromatic-free and has a very high cetane number.

The company's first NExBTL diesel plant was completed in Porvoo in summer 2007 and the second one will be completed this year. Both have a capacity of 170,000 t/a of NExBTL renewable diesel and require some 200,000 tons of raw material each, including 20,000 tons of local animal fat.

In addition, Neste Oil is building an 800,000 t/a plant in Singapore, which is due to be completed by the end of 2010.

20. ACEA Raises Concerns over Impact of Carbon Dioxide Requirements

European carmakers' association ACEA has described newly agreed EU limits on carbon dioxide emissions from new cars as "particularly unwelcome" in the present economic climate, arguing they threaten much needed investment in clean vehicle technologies.

In its annual report on Europe's car manufacturing industry, ACEA says the sector is "fully committed" to meeting the new law's target to reduce CO₂ emissions from new vehicles to 120 grams per kilometer by 2015 but "disproportionate" fines for manufacturers that miss their individual emission targets "remain a concern", the association adds.

ACEA also questions the wisdom of planned legislative proposals to limit CO₂ emissions from vans and other light commercial vehicles. A provisional limit of 175g/km by 2012 suggested by the European Commission is "unrealistic" and its impact has not been sufficiently assessed, ACEA argues.

Earlier this year EU industry ministers rejected calls for a pause in new environmental legislation for road vehicles. But the commission which alone decides when to table new proposals offered the industry some hope by saying the plans on light commercial vehicles and a separate revision of EU car labeling rules were "not yet on the agenda for obvious reasons".

21. New Study Sees Benefits in Introducing Mega Lorries; Others Disagree

Allowing so-called "gigaliner" lorries of up to 60 tons to operate between European countries would help decrease freight transport emissions by taking thousands of smaller trucks off the road, according to a new EU study. The study was conducted by the European Commission's Joint Research Centre (JRC). It contradicts the findings of a study published by Germany's Fraunhofer Institute earlier this month, showing mega lorries would "most likely" lead to a net increase in emissions because of a greater shift from rail to roads.

The commission is considering revising EU rules limiting inter-state lorries to a maximum weight of 40 tons to allow the 60-tonne trucks to operate. But transport commissioner Antonio Tajani is reluctant to table concrete proposals because of opposition from large member states. Reportedly the commission is still considering the idea and had not yet made a decision. The EU executive will conduct more studies to further explore the idea, the official said. It is unlikely to take a decision until after 2010, he added.

Green MEPs condemned the JRC's findings. The study "reads like a fairytale from the hand of the powerful road lobby", said MEP Eva Lichtenberger. An increase in the lorry weight limit would lead to more than half of EU rail freight shifting to roads, she added.

The commission will hold a workshop in Brussels on 24 June to discuss the JRC's findings and identify the needs for further analysis of the economic and environmental impacts of the plans.

22. EU Targets Transport, Power for Next Climate Action

Eradicating greenhouse gases from power stations and cars, trucks and aviation must be Europe's next policy move to tackle climate change, European Commission President Jose Manuel Barroso has announced. The statement gives the first glimpse of what the 27-country bloc might do next as it moves towards a greener economy.

The European Union last year agreed to cut emissions of the main global warming gas, carbon dioxide, to a fifth below 1990 levels by 2020 -- the world's most ambitious climate policy. It now aims to go further.

"We need to come up with concrete policies to decarbonize our electricity supply and transport fuels and to transform the grid," Barroso told reporters. "That's the concrete task of the next Commission, but it is not too early to be thinking about this," he said.

A new Commission is expected to take office later this year.

Barroso was speaking after talks with British climate economist Nicholas Stern and Rajendra Pachauri, the chairman of the United Nations climate panel, on the chances for a global climate deal at Copenhagen in December.

Fast growing emissions from transport is one of Europe's biggest challenges in the fight against climate change, Jos Delbeke, number two in the European Commission's environment directorate, told a recent climate conference. "The low hanging fruit has been done," he added. "We have to have a major meeting in Europe on transport."

Environmentalists view EU measures to curb emissions from new cars by 18 percent in the next six years as a major policy failure, because automakers successfully lobbied to have their most polluting models left until last.

And aviation, which currently generates just 3 percent of all European carbon dioxide emissions, is causing major concerns as it is growing so fast.

23. Fuel-Cell Car Rally Opens Norway's Hydrogen Highway

Norway has opened a 560 kilometer (350 mile) "hydrogen highway" with more than a dozen hydrogen-powered cars rallying along a scenic route between its capital city Oslo and North Sea oil hub Stavanger.

Norwegian oil and gas producer StatoilHydro has built several hydrogen filling stations between the two places to cater to cars with fuel-cells that generate electricity from a chemical reaction between hydrogen and oxygen or burn hydrogen in a combustion engine similar to those in petrol cars. These zero-emission vehicles have short ranges but promising results, and in the longer-term, Statoil may link the road to a hydrogen autobahn in northern Germany. Japan and California already have hydrogen highways.

Touted as future alternatives to carbon-dioxide emitting petrol engines, the still-experimental hydrogen fuel cell engines emit only clean water, though it takes energy to produce hydrogen.

Unlike electric motors which take hours to recharge, the nearly silent hydrogen cars can be refueled in a matter of minutes, much like conventional cars.

Some cars in the race can accelerate from zero to 100 km per hour in four seconds, drivers boast, though the three-day rally is not about speed but reliability and efficiency, they said.

A specially modified Toyota Prius hydrogen hybrid, raced by team Statoil, can travel some 170-200 km before refueling and fills up with about 2 kilograms of hydrogen gas. Its top speed is a little over 100 km per hour.

StatoilHydro sells hydrogen in Norway at around 40 Norwegian crowns (\$6.28) per kilo, which it says is roughly equal in energy terms to the price of petrol. The company seeks to keep its hydrogen clean by using energy from Norway's vast hydropower-plants to split water into oxygen and hydrogen gas.

Hydrogen can also be produced as an industrial by-product, or even from waste gases such as methane. But all these processes are energy-intensive which limits the attractiveness of hydrogen-powered cars from an environmental perspective.

Participants in the rally say such driving tests will help improve their vehicles and gradually reduce costs, although state subsidies remain critical for any larger-scale projects.

24. Denmark to Extend Tax Breaks For Electric Cars

The Danish government has agreed to extend a reduced vehicle registration tax for electric cars until 2015, according to media reports. The government had previously agreed to apply the tax break until 2012. Following protests from green groups and industry - notably Dong Energy - energy minister Connie Hedegaard said until 2015 electric cars "will be met with a significantly lower registration tax to the extent that is necessary to ensure the distribution of electric cars".

Dong Energy CEO Anders Eldrup described the about-face as "a very good signal". The energy company has called for an extension until at least 2020. The decision to reduce the registration tax for electric cars until 2012 was agreed last year as part of a cross-party deal on energy policy.

25. EU Says Global GHG Emissions Increased 15 Percent From 2000–2005

Data published on May 25th by the European Commission showed that global annual man-made greenhouse gas emissions increased 15 percent between 2000 and 2005, an increase over the 6 percent rise recorded between 1995 and 2000. In total, 41 billion metric tons of carbon dioxide equivalents were generated from man-made sources in 2005, up from 33 billion metric tons in 1990, and 24 billion metric tons in 1970, according to the Commission. The data were prepared by the Commission's Joint Research Center and the Netherlands Environmental Assessment Agency, as part of the Emission Database for Global Atmospheric Research, or EDGAR, project.

The Commission said the EDGAR data set is a "unique, detailed overview of 35 years (1970–2005) of greenhouse gas emissions by country and emission sector," and will be of "great importance" to international negotiations to craft a successor to the Kyoto Protocol, whose emissions commitment provisions expire in 2012.

The EDGAR data appear to show a faster rate of growth in man-made greenhouse gas emissions than findings from the United Nations Intergovernmental Panel on Climate Change, whose 2007 Fourth Assessment Report showed an increase in annual emissions of around 10 percent between 2000 and 2004.

According to EDGAR data, emissions from industrializing countries have increased most dramatically, from 7 billion metric tons in 1970 to 21 billion metric tons in 2005, while over the same period, emissions from developed nations have risen from 16 billion to 19 billion metric tons.

26. Some MEPs Alarmed By Plans for New DG Energy and Climate

A new European Commission department for energy and climate "would not be best placed" to deliver sustainable climate policies, a cross-party group of MEPs who led last year's parliament debate on climate legislation said in a recent letter to the commission. Headed by centre-right Irish MEP Avril Doyle, who led the debate on the new emissions trading directive, the group says it is "astonished" and "alarmed" by plans to create a new directorate-general (DG) for energy and climate.

"Climate policies require... looking at industrial emissions, transport, energy, buildings, agriculture, development, and foreign policy", say the MEPs. "A DG responsible for energy and climate would not be best placed to deliver such a horizontal approach." Short-term economic interests could "interfere and conflict" with the aim of designing sustainable climate policies, they warn.

An internal commission task force presented proposals for the new DG at the end of April. Ms Doyle's office said the MEP knew about the recommendations but had not seen them.

Climate change must either have its own DG or be part of the environment department with equal access to all other DGs, Ms Doyle said. Several commission officials dealing with climate and energy issues share concerns raised by MEPs, she added.

In their letter, MEPs also warn that "internal speculation over administrative structures could be highly damaging to EU preparedness and performance in the [UN climate] negotiation[s]. We urge you to fend off any risk that institutional politics could interfere with our collective determination to lead Europe in the battle to protect our global climate," they told commission president José Manuel Barroso.

27. France, Germany Urge More Flexible Climate Pact

France and Germany have suggested that rich nations should collectively guarantee deep cuts in greenhouse gases by 2020 while giving flexibility to laggards such as the United States to catch up later. France said the idea, floated at talks among 17 top greenhouse gas emitters including China, United States, Russia and India, could help toward a new U.N. climate treaty due to be agreed at a meeting in Copenhagen in December.

"There can be more flexibility among us," French Environment Minister Jean-Louis Borloo told a news conference on the first day of the two-day talks among ministers, called by U.S. President Barack Obama to help work out a new climate treaty. He said France and Germany reckoned that developed nations could collectively sign up to cut their overall emissions by 25 to 40 percent below 1990 levels by 2020 -- the level outlined by a panel of U.N. scientists to avoid the worst of global warming.

"There may be some who act faster and others who do more later," he said. A collective goal would undercut criticisms by developing nations, led by China and India, that the rich are not serious in fighting climate change.

Countries which have said they cannot reach such deep 2020 goals, led by the United States, could contribute to a new pact in other ways, for instance via a bigger share of financing or green technologies for developing nations, Borloo said.

Obama has promised to cut U.S. emissions back to 1990 levels by 2020, a cut of 14 percent from 2007 levels. A bill approved by a key congressional panel last week would cut U.S. emissions by 17 percent from 2005 levels by 2020. By contrast, the European Union has promised deeper cuts, of 20 percent below 1990 levels by 2020, and by 30 percent if other rich nations follow suit

U.N. Secretary-General Ban Ki-moon said on Sunday that he wanted Washington to do more, saying it was lagging the European Union in promises to fight global warming. Obama's plan is for far tougher curbs than by his predecessor, George W. Bush.

"I don't think it's correct to say that Europe is proposing a lot and the United States little," Todd Stern, U.S. Special Envoy for Climate Change, told the French daily Le Monde. "If you look at things from the point of view of the progress that each nation will have to make to reach its objectives, the U.S. level of effort is probably equal, or superior, to that of Europe," Stern said.

NORTH AMERICA

28. President Obama Announces National GHG, Fuel Efficiency Policy

President Obama has set in motion a new national policy aimed at both increasing fuel economy and reducing greenhouse gas pollution for all new cars and trucks sold in the United States. The new standards, covering model years 2012-2016, and ultimately requiring an average fuel economy standard of 35.5 mpg in 2016, are projected to save 1.8 billion barrels of oil over the life of the program with a fuel economy gain averaging more than 5 percent per year and a reduction of approximately 900 million metric tons in greenhouse gas emissions. This would surpass the CAFE law passed by Congress in 2007 which required an average fuel economy of 35 mpg in 2020.

This policy delivers on the President's commitment to enact more stringent fuel economy standards and represents an unprecedented collaboration between the Department of Transportation (DOT), the Environmental Protection Agency (EPA), the world's largest auto manufacturers, the United Auto Workers, leaders in the environmental community, the State of California, and other state governments.

Major provisions of the policy are as follows:

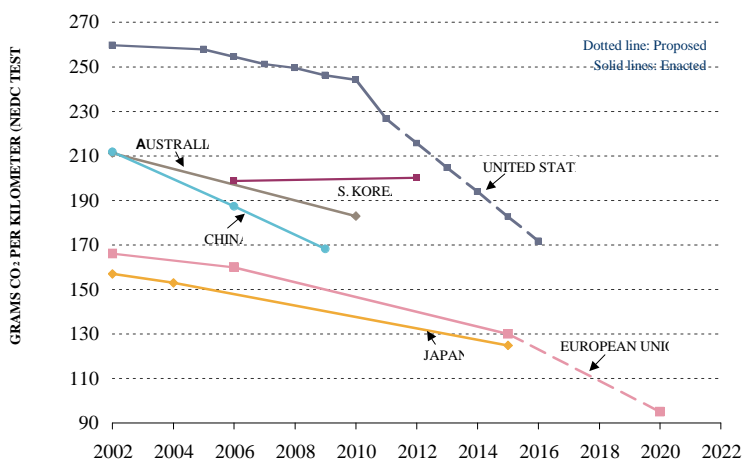
- Overall stringency will be similar to the California greenhouse gas standards or 250 gCO₂/mile by 2016. This is equivalent to about 35.5 miles per gallon (MPG) for all vehicles, including cars and light trucks.
- Similar to California's standards, credits will be available for improved air conditioning systems. This reduces the equivalent MPG required to comply by approximately 3 percent.
- Vehicle footprint will be proposed as the attribute for the GHG and CAFE standards, with footprint defined as a vehicle's wheelbase multiplied by its track width.
- EPA will allow additional opportunities for generating and using credits, including credit carry-back, credit carry-forward, credit transfers, and credit trading. EPA is also considering credits for over compliance in the 2009 through 2011 model years and "super credits" to encourage the commercialization of advanced GHG/fuel economy control technology, such as electric vehicles and plug-in hybrid electric vehicles.

- Flexible Fuel Vehicle (FFV) credits in line with EISA limits will be allowed only during the period from MYs 2012 to 2015. EPA will consider allowing FFV credits beyond MY 2015 if manufacturers are able to demonstrate that the alternative fuel is actually being used in the vehicles.

ICCT Analysis and Implications:

Achieving 250 gCO₂/mile or 155 gCO₂/km by 2016 will require annual fuel economy improvements of 5.4% per year over the existing 2011 CAFE standards. Even with air conditioning credits, the annual improvements will be a very aggressive 5% per year. An updated chart of Actual and Projected GHG Emissions for New Passenger Vehicles by Region for 2002-2020 prepared by ICCT appears below. (The chart converts all countries to the European test cycle, which is about 11% more stringent than the U.S. cycles on average, so the U.S. agreement for 155 gCO₂/km in 2016 is equivalent to about 170 gCO₂/km on the European cycle.) The chart illustrates the dramatic reduction in GHG emissions from this action. Considering that other countries tend to have much smaller and lower performance vehicles, this action will quickly make the U.S. one of the technology leaders.

Actual and Projected GHG Emissions for New Passenger Vehicles by Country/Region, 2002-2020



Source: Passenger Vehicle Greenhouse Gas and Fuel Economy Standards: A Global Update, ICCT, May 2009 update.

As part of this agreement, California has agreed to drop their GHG standards through 2016 and the vehicle manufacturers have agreed to drop their lawsuits over Federal preemption of state GHG standards. California is free to set separate GHG standards after 2016.

EPA and DoT have decided to retain footprint-based standards used for CAFE purposes. Footprint-based standards have several significant advantages over weight-based standards, as they: 1) are technology neutral (do not provide a benefit for heavier diesels, for example); 2) leave weight reduction on the table, an important fuel economy strategy; and 3) are less open to gaming, as customers buy vehicles based on size and do not know – or care – about the weight. Size-based standards will drive technology improvements, including lightweight materials, without impacting consumer choices. Consumers should not see much outward difference in the size of vehicles as a result of these standards, but may observe a smaller increase in vehicle performance. The primary impact will be to mandate higher levels of technology on every vehicle. This will increase the initial purchase price of the vehicle, but the future fuel savings will more than pay for the cost of the technology.

Although EPA and NHTSA will coordinate implementation of greenhouse gas and CAFE rules, respectively, the announcement implies that EPA will be taking the lead on setting standards.

29. House Approves Landmark Bill to Address Threat of Global Warming

On Friday, June 26, 2009, the Waxman-Markey American Clean Energy and Security Act was passed by the US House of Representatives. The 219-212 vote marked the first time that either house of Congress has approved a bill aimed at curbing the heat-trapping gases scientists have linked to climate change, and it could lead to sweeping changes in many sectors of the American economy, including electric power generation, agriculture, manufacturing and construction.

Several last minute compromises were necessary to obtain sufficient votes for passage but it is hoped that some of these can be rectified in the Senate which will take up the issue next. For example, in one of the big concessions necessary to gather farm state support for the bill, Chairman Henry Waxman agreed to block EPA from calculating "indirect" greenhouse gas emissions from land-use changes when implementing the federal biofuels mandate. The bill will impose a five-year moratorium to allow further study of the issue, with consultation from Congress, EPA, the Energy Department and USDA instrumental in restarting the measurements in the biofuels rules.

It appears that language to expand EPA's authority to regulate in use diesel vehicles was not included in the final bill. Without this, EPA has very limited authority to mandate retrofits.

30. SCR Vs EGR War Plays Out In US Courts

A legal battle is unfolding in the US Circuit Court of Appeals for the District of Columbia, as Navistar challenges the EPA's acceptance of selective catalytic reduction (SCR) as a feasible solution for meeting EPA2010 emissions standards. In a recent 'Statement of Issues' court filing, Navistar pointed out that when the 2010 emissions rules were first developed in 2001, the "EPA decided that urea SCR technology would not be available to meet the 0.2 g NOx standard for the applicable model year."

"The EPA made an express 'infeasibility' determination for SCR technology," Navistar said in its filing. It went on to say the EPA ruled out SCR because of: a lack of infrastructure to deliver urea at the pump; a lack of standardized method of delivery of urea; a lack of adequate safeguards in place to ensure urea is used throughout the life of the vehicles; a lack of safeguards to ensure drivers replenish urea; concerns for public safety; and other concerns.

So when the EPA warmed up to SCR and formally accepted it as a viable EPA2010 solution, Navistar charged that the "dramatic change" imposes "entirely new regulatory requirements."

Naturally, all other heavy-duty engine manufacturers which have chosen to use SCR to meet 2010 emissions requirements are backing the EPA. Cummins, Detroit Diesel, Volvo and Mack responded to the original suit against EPA by collectively filing an Amici Curiae (AC) motion (literally translated to "friends of the court"). The purpose was to "offer an important perspective on the issues raised in Navistar's petitions ... that would assist the court in understanding the industry as well as significant consequences" to SCR manufacturers" if Navistar wins its case. Also, the SCR companies want to ensure that the '10 EPA rule is not delayed by Navistar's proceedings.

This move was protested by Navistar, prompting Volvo to issue a statement to the media after sections of its Web site were reportedly used by Navistar to support its case. "Navistar's most recent filing demonstrates that the other engine manufacturers must have the ability to participate in this case as friends of the court. This is necessary to refute misinformation Navistar has presented to the court," said Jim McNamara, spokesman for Volvo Trucks North

America. "This includes Navistar's desperate attempt to mislead the court by taking information from Volvo Trucks North America's Web site out of context to reach a wildly inaccurate and misguided conclusion.

The whole point of using exhaust aftertreatment is to meet the 0.2 g NOx requirement, while delivering to the customer excellent fuel economy, performance and reliability. And better fuel economy means a reduced CO2 footprint, courtesy of SCR. Massive EGR can't deliver these benefits.

Navistar has developed an in-cylinder solution for EPA2010 which does not require exhaust aftertreatment. It plans to roll out engines in January, 2010 that will initially exceed the 0.2 g NOx limit by cashing in emissions credits the company has earned by reducing emissions beyond requirements in previous years. Navistar will then continue to tweak its solution to get it down to the 0.2 g limit by the time its credits run out, expected to happen sometime in 2012.

Navistar doesn't want its competitors butting into its court challenge. In yet another petition filed with the federal Court of Appeals, Navistar is attempting to block pro-SCR truck makers from getting a say in the lawsuit against the Environmental Protection Agency. Not holding back any punches, the company also used the opportunity to further attack the EPA and SCR as a viable technology.

Navistar, not surprisingly, is asking the court to reject the AC. It predicts that its competitors will "not offer a unique and important perspective" and will only echo the briefings EPA already filed with the court. The company also brushed off SCR manufacturers' position that they have "expended significant resources" to develop the technology, since most of the truck makers had been using similar SCR solutions in Europe.

31. New Heavy-Duty Diesel Engines Have Drastically Lower Emissions, Study Says

Manufacturers of heavy-duty diesel engines have slashed emissions from new engines by more than 90 percent for most pollutants, according to a new study. New pollution control technologies that were developed in response to U.S. EPA regulations have led to the steep declines in pollution, according to the study. For several major pollutants, emissions were reduced even more steeply than federal law required.

The report is the first phase of a five-year study directed by the Health Effects Institute and conducted by the Coordinating Research Council. The study was sponsored by a range of groups, including the Energy Department, EPA, the Engine Manufacturers Association and the American Petroleum Institute.

EPA's 2001 highway diesel rule required manufacturers to steeply cut engine emissions of soot- and smog-forming pollutants for engines sold after January 2007. The rules apply to heavy-duty highway engines, such as those used in trucks and buses.

Researchers found that emissions of fine particulate matter, or soot, were about 99 percent lower than soot emissions allowed from engines manufactured in 2004. Soot emissions were also 90 percent lower than the new 2007 standard requires. Pollution from carbon monoxide, hydrocarbons and a number of air toxics had also declined by more than 90 percent since 2004 levels and was significantly lower than required levels, the report says.

NOx emissions were about 70 percent lower than past levels and 10 percent below the EPA requirement. Manufacturers will be required to slash NOx output by another 80 percent for engines sold after Jan. 1, 2010.

The quest to clean up diesels has been mounted for several decades, yet its progress has long lagged behind the success stories of car exhaust. For many pollutants, the latest model truck and bus engines are emitting the same levels as gasoline-powered automobiles, the researchers said.

Particulates have long been considered one of the most dangerous pollutants spewed by diesel engines. The fine particles from diesel can trigger asthma attacks, heart attacks, bronchitis and other serious ailments, and the EPA says they cause several thousand deaths each year. Daniel Greenbaum, president of the Health Effects Institute, a nonprofit research group that directed the study with another research group, said "likely a lot of lives will be saved once we get the older fleet replaced."

Diesel engine manufacturers say the new data reinforces that "clean diesel" is a reality. They are nearly as low in emissions as engines powered by alternative fuels such as natural gas.

For the study, part of a five-year project, heavy-duty diesel engines from the four major manufacturers--Cummins, Detroit Diesel, Caterpillar and Volvo-- were tested for more than 300 air pollutants at a laboratory in San Antonio, Texas. The researchers only tested new engines, so the trucks and buses might put out more emissions as they age, Greenbaum said. But under the EPA rules, their warranties for emissions equipment must last 450,000 miles, four times longer than cars.

Greenbaum said one surprise was the extent of reductions in cancer-causing and other toxic compounds. Diesel exhaust is considered a potent human carcinogen because of a variety of substances. Polycyclic aromatic hydrocarbons declined 79 percent from 2004 models, while elemental carbon and metals were down 98 to 99 percent.

32. California Air Board Clashes with South Coast on Truck Policies

California South Coast air district officials are set to meet with the state's air board members in an attempt to resolve a dispute over how air quality bond funding is distributed at the ports of Los Angeles and Long Beach to pay for cleaner trucks. The district's concerns follow recent changes by the air board to bond funding guidelines, which the district and environmentalists argue will inappropriately promote diesel trucks over natural gas trucks at the ports.

But air board officials have said that changes to the guidelines are needed to encourage truckers to apply for cleaner diesel trucks at the ports. The board argues that a "clean trucks" program at the ports, including costly fees on diesel trucks, has resulted in very few applications from truckers to obtain bond funding for truck replacement.

The dispute over the California Air Resources Board's (CARB) bond funding guidelines and their impact on port trucks is of significant interest to environmentalists, the ports, and South Coast because the bond funding and the ports' clean trucks program are considered critical to address pollution at the ports. The distribution of bond funding for cleaner trucks is also seen as key to South Coast efforts to meet federal air quality mandates.

On June 5th, the South Coast air district governing board adopted a district staff recommendation that governing board members meet with CARB and the ports to discuss the policy implications of recently revised CARB Proposition 1B grant guidelines adopted May 28.

Proposition 1B is the \$1-billion bond measure aimed at cutting air pollution from trucks and other goods movement activities. Local agencies, such as the districts and ports, sign grant agreements with CARB and then administer the funding to various projects.

At its May board meeting, CARB adopted changes to Proposition 1B grant guidelines at the ports. CARB staff sought the changes based on concerns that although it has awarded a \$98-million grant jointly to the ports of Los Angeles and Long Beach to replace 2,000 old trucks, there has been a lack of applications for this funding because of the structure of the ports' gate fees set under a Clean Trucks program.

The ports' Clean Trucks program aims to ban all trucks that do not meet 2007 emissions standards by 2012. Newer models also would have to be retrofitted with emission controls. Part of the program includes gate fees, where newer diesel trucks are required to pay fees of up to \$100,000 over the first five years, according to CARB. This money is used to subsidize the purchase of new natural gas trucks, which the Clean Trucks program promotes. Natural gas and alternative-fuel trucks are much more expensive than diesel trucks.

CARB staff at the May 28th meeting explained that the gate fees are problematic because new diesel truck owners must pay the fees and truckers cannot get business because cargo owners at the ports will not hire drivers that are subject to the fee. Truck owners who do not or cannot choose natural gas trucks are left without access to Proposition 1B funds administered by the ports, CARB staff said.

CARB's revised guidelines attempt to get around the gate fee issues by requiring bond funding unused by the ports to go to South Coast, which would administer the funds to port truckers under CARB's guidelines and exempt them from gate fees regardless of what type of truck would be purchased with the money.

CARB staff at the May meeting argued that its guidelines would call for "open, fair access to state funding, with trucks competing based on air quality benefits . . . regardless of if the new truck is diesel, natural gas, or a hybrid."

Staffers added that they are in discussions with ports on next steps, and stated that whether the funds are administered by the ports or by South Coast, "we expect the recipients of Proposition 1B funds to administer the open, competitive program required by the guidelines."

Meanwhile, South Coast staff at its June 5th governing board meeting said it is important for district board members to meet with CARB officials and the ports to discuss the district's concerns with the CARB Proposition 1B guidelines.

District staff raised concerns that CARB's newly adopted guidelines do not give preference to the cleanest engines, mainly natural gas, and that the Proposition 1B funds would be awarded to trucks only on their cost-effectiveness. "They don't give preference to lower greenhouse gases or criteria pollutants . . . we have concern over that because it is very easy for truck operators to do what they've always done -- rely on diesel," one South Coast staffer said.

The district's fear is that despite its efforts and port efforts in setting gate fees, "we will still see lower applications for natural gas trucks because [buying diesel trucks] is the easiest thing to do," the district staffer said.

South Coast Executive Officer Barry Wallerstein said at the meeting that the district needs to respond to CARB that it is willing to administer the bond funds in the way that CARB sees fit. "We are concerned that if we don't, the money will go to the San Joaquin Valley air district or somewhere else," he said.

But the district believes that its governing board members need to discuss the natural gas truck concerns with CARB members to resolve the issue of whether a significant portion of the funding can be allocated for natural gas trucks, Wallerstein said.

Prior to CARB's adoption of the Proposition 1B guidelines last month, environmentalists opposed the board's plan, arguing that the board should actively promote natural gas trucks over diesel at the ports. Environmentalists argued that groups fought hard to get the ports to adopt pro-alternative-fuel-truck incentives, such as the gate fees, and that ARB is essentially pulling back Proposition 1B funding from ports because they have taken a stand in support of natural gas trucks.

CARB Chairwoman Mary Nichols responded at the May 28th meeting that Proposition 1B is not a greenhouse gas or alternative-fuels measure, but rather an air quality bond that should include all types of clean truck technologies to fight smog at the ports. "We feel obligated to use the money as quickly as possible to alleviate the health problem at the ports from trucks," Nichols argued.

33. Senate Passes 'Cash-For-Guzzlers' Bill President Expected To Sign Measure

The U.S. Senate passed a scaled-back \$1 billion cash-for-guzzlers bill and sent it to President Barack Obama for his signature. The 91-5 vote took place after the Senate beat back a Republican attempt to strip the auto proposal from a \$106 billion spending package aimed primarily at aiding U.S. troops in Iraq and Afghanistan.

The \$1 billion initiative that passed the House earlier this week seeks to boost auto sales and increase the fuel economy of U.S. cars and light trucks. It would offer \$3,500 to \$4,500 cash vouchers for about 3½ months to consumers who trade in their cars for new, more fuel-efficient vehicles.

"This program will provide a much-needed boost to the struggling auto industry, including manufacturers, dealers, suppliers and other related industries," Sen. Carl Levin, D-Mich., said on the Senate floor today. It also will "encourage consumers to purchase more fuel-efficient vehicles," he said.

Congressional Budget Office data suggest the bill would result in the sale of 150,000 new cars, said Nichole Francis Reynolds, chief of staff to Rep. Betty Sutton, D-Ohio. Sutton sponsored the original bill.

Similar programs in Germany, China and France have resulted in substantial sales increases since the end of 2008.

34. Obama Administration Orders \$210M Worth of Fuel Efficient Vehicles

Making good on U.S. President Barack Obama's promise to accelerate the greening of the federal fleet, the U.S. General Services Administration has ordered 14,105 fuel efficient vehicles this month and will use \$210 million in Recovery Act money to pay for them. The GSA said that it ordered the vehicles from General Motors, Chrysler and Ford, bringing the total of greener cars ordered since April to 17,205 and the total spending to \$287 million.

"GSA is committed to spending Recovery dollars quickly and wisely," Commissioner James A. Williams of GSA's Federal Acquisition Service said in a statement. "Simultaneously, we are focused on acquiring vehicles that will provide long-term environmental benefits and savings by increasing the fuel efficiency of the federal fleet."

On March 30th, Obama directed his administration to purchase about 17,600 commercially available, fuel efficient vehicles from American auto companies by June 1st, to use funds from the American Recovery and Reinvestment Act -- and to get the job done swiftly to boost the nation's auto industry and replace aging vehicles with greener ones. Just days later the White House said, "The GSA moved faster than any time in its history to launch this aggressive fleet purchase strategy."

On the eve of tax day, the GSA ordered 3,100 fuel efficient hybrid vehicles, worth \$77 million. With the \$210 million in orders made on June 1, the tally of hybrid and other fuel efficient cars and costs now stands at:

- 2,933 Chrysler vehicles for \$53 million
- 7,924 Ford vehicles for \$129 million
- 6,348 General Motors vehicles for \$105 million

The total cost of \$287 million is \$2 million more than the GSA had projected it would spend, and the yield -- 17,205 vehicles -- is 395 shy of the projected amount of vehicles the agency had planned to order. However, the GSA's order of 3,100 hybrid electric vehicles in April was 600 more units than the 2,500 that the agency had planned for its car shopping list.

The GSA did not specify the types, models or mpg ratings for the fuel efficient vehicles that made up the order in June. In detailing the president's directive earlier this year, the White House said each vehicle should have a higher mpg rating than the one it replaces, and the overall goal for the purchase is at least a 10 percent increase in fuel efficiency for the entire procurement.

The federal fleet will get another bump by September 30, which is the agency's deadline for ordering \$15 million worth of advanced technology buses and electric vehicles.

Word of progress by the feds on the green car front came as the "cash for clunkers bill," H.R. 2751, passed on a strong bipartisan vote. The legislation would allow consumers to trade in their old, gas-guzzling vehicles and receive vouchers worth as much as \$4,500 to help pay for new, more fuel efficient cars and trucks. Pelosi spoke in favor of the bill on the House floor.

While the drive to transform the federal fleet moves ahead, the U.S. Government Accountability Office cautions its federal colleagues to proceed with care when considering next-generation vehicles. In a 53-page report released this month on federal energy and fleet management, the

GAO concluded that "plug-in vehicles offer potential benefits, but high costs and limited information could hinder integration into the federal fleet."

"As federal agencies work to cost-effectively comply with requirements and goals for conserving energy in their facilities and vehicle fleets, a number of uncertainties hinder their efforts," the GAO report said. "Although, by making statutory requirements, Congress signified the importance of acquiring alternative fuel vehicles, using alternative fuel, decreasing petroleum use, decreasing greenhouse gas emissions, and improving energy efficiency in facilities, the requirements can be costly and are sometimes in conflict. As a result, agencies are uncertain about setting priorities and struggle to meet the overall intent of these requirements and goals."

The GAO said the Department of Energy should "in consultation with other agencies -- propose legislative changes to resolve conflicts among energy and vehicle acquisition requirements. GAO also recommends DOE and the General Services Administration provide guidance to help agencies make decisions about acquiring plug-ins." The GSA concurred; the DOE did not comment, the GAO said.

In terms of evaluating vehicles for environmental impacts, new research has indicated a difference in opinion about how to assess emissions.

For example, on a per passenger basis, diesel buses running during off-peak periods are more carbon-intensive than airplanes, according to a report by researchers from the University of California at Berkeley that was published recently in *Environmental Research Letters*. The report, whose title also sums its conclusion: "Environmental Assessment of Passenger Transportation Should Include Infrastructure and Supply Chains," says decision-makers must consider lifecycle energy use and emissions to "appropriately mitigate environmental impacts from transportation."

Traditional methods for assessing emissions -- and the standards that are derived from those measurements -- often focus on tailpipe emissions rather than the broader assessment recommended by the UC Berkeley researchers.

35. Air Pollution from Freeway Extends Further Than Previously Thought

Environmental health researchers from UCLA, the University of Southern California and the California Air Resources Board have found that during the hours before sunrise, freeway air pollution extends much further than previously thought.

Air pollutants from Interstate 10 in Santa Monica extend as far as 2,500 meters — more than 1.5 miles — downwind, based on recent measurements from a research team headed by Dr. Arthur Winer, a professor of environmental health sciences at the UCLA School of Public Health. This distance is 10 times greater than previously measured daytime pollutant impacts from roadways and has significant exposure implications, since most people are in their homes during the hours before sunrise and outdoor pollutants penetrate into indoor environments.

The study was published last month in the journal *Atmospheric Environment*, with Dr. Shishan Hu, a postdoctoral scholar at the UCLA School of Public Health, as lead author.

"To measure the pollution levels, we equipped an electric vehicle with no emissions of its own with fast-response instruments for gaseous and particulate air pollutants, a GPS and video monitor, and instruments to measure temperature and winds," Winer said. "In both winter and

summer of 2008, we drove toward and away from Interstate 10 on a route perpendicular to the freeway in Santa Monica between the hours of 4 a.m. and 7 a.m."

A second striking finding of the study was that although traffic volumes are lower in the pre-sunrise hours, the air pollution concentrations measured by the team were higher than even those during daytime traffic congestion peaks. Concentrations are higher before sunrise even though emissions are lower because of the unique weather conditions. In the pre-sunrise hours, wind speeds are generally very low, and while the wind direction is somewhat variable, the predominant direction is from the northeast in the winter months and the northwest in the summer months.

This means that areas south of Interstate 10 are generally downwind in the pre-sunrise hours and areas north of the freeway are generally upwind; this is consistent with the observation that vehicle-related pollutants are found much further from the freeway on the south side in the pre-sunrise hours, compared with the north side.

"Our research shows that under the low wind speeds and shallow temperature inversions during the early morning, before sunrise, air pollution from freeways is trapped near the surface, limiting dilution and creating a zone of influence many times greater than during the day," said Dr. Suzanne Paulson, a professor in the UCLA Department of Atmospheric and Oceanic Sciences and a co-principal investigator of the study. "These meteorological conditions are very common in the hours before sunrise."

In comparing the winter and summer early mornings, researchers found much higher levels of air pollution in the winter. "This is because the sun rises later in the winter, so the early morning period captures more of the early morning rush hour," Paulsen said.

"Our findings confirm previous work showing peak levels of ultrafine particles (UFP) immediately adjacent to the freeway, but we found high concentrations persisted for up to 1.5 miles downwind of the freeway during the pre-sunrise hours," said Dr. Scott Fruin of the USC Keck School of Medicine. "Elevated UFP concentrations also extended up to 600 meters upwind of the freeway, another strong difference from daytime observations, which typically show little or no vehicle-related pollution directly upwind from freeways."

In the present study, other pollutants, including nitric oxide and particle-bound polycyclic aromatic hydrocarbons, also extended far from the freeway during the pre-sunrise hours.

Numerous epidemiologic studies have already shown that traffic-related pollution is linked to increased risk of asthma, respiratory illness, cardiovascular disease and premature mortality.

The researchers recommend that residents living near freeways should consider keeping their windows closed at night and minimize outdoor exercise near major roadways in the hours before sunrise.

36. Oil Industry Fears Low Carbon Fuel Amendment Revival on House Floor

Oil industry lobbyists are taking preemptive measures to squelch a low carbon fuel standard (LCFS) proposal that was previously set aside but that the industry fears will resurface as an amendment to House energy and climate legislation when it hits the floor. The amendment, industry argues, would impede the use of fuels derived from such non-conventional petroleum sources as Canadian oil sands.

The LCFS was originally offered by House Energy and Commerce Committee Chairman Henry Waxman (D-CA) and Energy and Environment Subcommittee Chairman Ed Markey (D-MA) in their “discussion draft” of energy and climate legislation, with Rep. Jay Inslee (D-WA) as an especially strong supporter of the provision.

But when the American Clean Energy and Security Act of 2009 reached committee, the LCFS measure was dropped. One oil industry lobbyist says Waxman dropped it to win support for the bill from oil patch Democrat Gene Green (TX) during committee markup. But the source says industry suspects that Inslee will offer the measure as an amendment to the legislation when it arrives on the floor. Furthermore, both Waxman and Markey are likely to support the amendment, the source says.

The LCFS industry is concerned about would come into effect in 2023, the year after the renewable fuels standard (RFS) expires. The RFS, enacted in 2007, mandates that refiners blend 36 billion gallons of biofuels into the fuel supply by the year 2022.

The LCFS would require that in 2023 the EPA must ensure that the average carbon footprint of the nation’s fuel supply is 5 percent below the carbon footprint of the fuel supply in 2005, and require a 10 percent reduction beginning in 2030. Also, in what the environmentalist calls “anti-backsliding” language, the bill would require that during the years 2014 through 2022, the carbon footprint of the fuel supply (excluding the RFS mandated biofuels) does not exceed the 2005 level.

California is in the initial stages of implementing a state-level LCFS, and the policy will pose a barrier to fuels derived from Canadian oil sands because of their heavier carbon footprint, as calculated by California regulators. The point of regulation will be at the refinery level, and the refiners will likely have to offset any purchases of the oil sands crude with purchases of lower carbon fuels to meet the California mandate.

37. Report Shows Climate Change Happening Now and Impacting Entire U.S.

A new study prepared by the U.S. Global Change Research Program, *Global Climate Change Impacts in the United States*, is the third study issued since the enactment of a 1990 federal law requiring the research program to report on natural and human-caused effects on the environment every 10 years. Dr. Thomas Karl, Director of the National Climatic Data Center, discussed these major points:

- Global temperature has increased one and a half degrees over the past 50 years, and is projected to rise another 2 to 11.5°F, primarily due to human-induced emissions of heat-trapping gases.
- Climate-related changes have been observed globally and in the United States. There is an observed increase in heavy downpours, alterations in river flows, and rise in sea level. "Some of the changes have been faster than previous assessments had suggested."
- Reducing emissions of carbon dioxide would lessen warming over this century and beyond.

The study lays out the effects of global warming on specific U.S. regions and sectors. It shows impacts on infrastructure, agricultural production and food resources specific to each region, impacts to human health nationwide, coastal areas like the Gulf, and water resources in the regions of the U.S. like the Southwest. It notes that although the impacts are different from region to region, climate change is impacting all of us not just the glacier fields of the arctic.

The report also notes that climate change will interact with other anthropologic and environmental stressors, increasing these impacts. "Climate change will combine with pollution, population growth, overuse of resources, urbanization, and other social, economic, and environmental stresses to create larger impacts than from any of these factors alone"

National Oceanic and Atmospheric Administration chief Jane Lubchenco's closing statement was a clear call for action. "I think much of the foot-dragging in addressing climate change is reflective of the perception that climate change is way down the road in the future, and it only affects remote parts of the planet," she said. "This report demonstrates that climate change is happening now, in our own backyards, and it affects the things that people care about."

The need to act now was reiterated by many of the experts and authors. "What we've shown in this assessment is that we do need to act sooner rather than later," said University of Illinois scientist Donald Wuebbles. "We want to avoid the worst of the kind of changes that we looked at."

In the agriculture sector, for example, the results of climate change would be largely negative. Increased heat waves and droughts would affect crop and livestock production while more frequent heavy downpours of rain would reduce crop yields.

In the energy industry, rising temperatures would constrain energy production while making infrastructure increasingly vulnerable in coastal areas, including New Orleans, which was devastated by a hurricane some four years ago. "Increases in hurricane intensity are likely to cause further disruptions to oil and gas operations in the Gulf, like those experienced in 2005 with Hurricane Katrina and in 2008 with Hurricane Ike," the report said. The Gulf of Mexico is home to nearly 30 percent of the nation's crude oil production and some 20 percent of its natural gas output.

Climate change would also result in greater demand for cooling energy, the report said, which would lead to "significant increases in electricity use and higher peak demand in most regions."

Despite the bleak forecast, Lubchenco and others stated that "It's not too late to act." The report states that "the amount and rate of future climate change depend primarily on current and future human-caused emissions of heat-trapping gases and airborne particles. Responses involve reducing emissions to limit future warming, and adapting to the changes that are unavoidable."

The report calls for quick policy action as the U.S. House of Representatives prepares to vote soon on a bill to reduce U.S. greenhouse gas emissions. The House climate bill aims to reduce carbon emissions 17 percent by 2020 and 83 percent by 2050. Its success is considered crucial to U.S. legitimacy at international talks on climate change in December, but chances of passage in the U.S. Senate are unclear. The United States is the biggest per capita emitter of the climate-warming gas carbon dioxide.

38. Chrysler Drops Plans to Build Diesel-Powered Pickups

Chrysler, the last company that had plans to offer a diesel-powered light pickup truck, filed papers to cancel its contract with Cummins Inc. that called for the Indiana company to produce engines for its Dodge Ram 1500 line starting next year. The contract was one of a large group of supplier deals that Chrysler filed to cancel in bankruptcy court.

Popular in heavy-duty pickups, diesel engines provide as much as a 30 percent boost to fuel economy while offering the towing and hauling power that pickup owners seek. On the down side, they're more expensive than gasoline engines, adding as much as \$8,000 to a vehicle's sticker price.

Chrysler's plans follow recent announcements by Ford Motor Co. and General Motors, both companies that had also planned light-duty diesels. Toyota Motor Co. and Nissan Motor Co. have also reportedly backed away from plans to make heavy-duty trucks featuring diesel engines.

While they are abandoning light diesels for now, automakers are working on other fuel-saving technologies for trucks. GM is pushing hybrid systems for trucks, and Ford next year will offer a Brook Park-made EcoBoost engine in its F-150. The EcoBoost is a 3.5-liter V-6 engine that uses turbocharging and direct fuel injection to increase power. Ford expects the V-6 to offer the power of its V-8 truck engines while using less fuel.

When pickup truck sales were booming, Chrysler and diesel engine supplier Cummins had hammered out a contract for light-duty diesels to begin hitting the U.S. market by 2010, which was later pushed back to 2011. Even though a light-duty diesel won't make its way into a half-ton Ram truck any time soon, Cummins will continue developing their light-duty diesel engine.

39. Hybrid Mack Truck Put On Display

The Hybrid Truck Users Forum (HTUF) of CALSTART recently hosted a "Hybrid on the Hill" day where they showcased new truck technologies. Mack Trucks, Inc. participated in the event and gave federal legislators and policymakers a first-hand look at its parallel diesel-electric hybrid technology, known as the MACK® TerraPro™ Cabover, for heavy-duty trucks. Mack is initially introducing this technology in refuse trucks where hybrid technology seems to have the greatest impact due to the stop-and-go nature of the trash pick-up system.

The largest benefit of the technology is that it has a 30 percent fuel economy improvement in stop-and-go applications and meets the EPA'10 emission regulations. The truck is currently being tested in New York and consists of the following:

- rear loading refuse packer body
- equipped with a 325 hp MACK MP7 engine and Selective Catalytic Reduction (SCR) exhaust aftertreatment technology
- powertrain features an integrated starter, alternator and electric motor
- the system captures energy from braking, converts the energy to electricity, stores the electricity in lithium ion batteries, and uses it to power the electric motor, which assists the MP7 diesel engine with propulsion of the truck

According to Dennis Slagle, Mack president and CEO, "Our hybrid technology will be commercially viable, yet it will take time to establish a robust hybrid market for heavy vehicles

that will enable us to invest in large scale production. Incentives will accelerate the adoption of Class 8 hybrids and bring forward the positive environmental changes.”

Slagle also noted that the technology will be very expensive when it first comes to market and will become more affordable as production increases. In terms of payback, the purchaser will see a return on investment in several years when accounting for the fuel savings and reduced maintenance costs.

The fuel savings would ultimately be a huge bonus for consumers because the high cost of transportation is a major factor in product and food prices and most waste management services have increased monthly rates to offset the high price of diesel. In addition to Mack’s technology, there are more diesel-electric hybrid technologies in the works.

Mack also noted that it will take federal incentives to bring the technology to market. While there are currently several short-term federal tax credit programs designated for heavy-duty hybrids, longer-term incentives are needed. The Company is lobbying for Congress to extend the Alternative Motor Vehicle Credit which is part of the Energy Policy Act of 2005 and expires at the end of this year.

40. Influential DOE Budget Review Will Oppose Vehicle Fuel Cell Cuts

An influential, congressionally endorsed review of the administration’s DOE budget proposal by the American Society of Mechanical Engineers (ASME) is likely to criticize proposed cuts in funding for DOE’s hydrogen vehicle program and add to the already strong calls by the auto and hydrogen industries -- as well as members of Congress -- for restoring the funding, according to sources connected with the engineering group’s budget review process.

Both House and Senate appropriators solicit ASME’s annual review of DOE’s budget proposal (and of some other technical agencies). The review is scheduled to be sent as “testimony” to both chambers and the administration on June 15th.

The ASME budget review will come as a coalition of diverse groups -- including the National Hydrogen Association (NHA), the Alliance of Automobile Manufacturers, the American Lung Association and the Union of Concerned Scientists -- in a June 8 letter to the House Appropriations energy and water subcommittee called for reinstating the FY 2009 budget level of more than \$200 million for the DOE fuel cell vehicle programs, instead of the FY10 proposal, which zeros out many of the programs. Hydrogen supporters are also lobbying key senators on the issue.

According to the letter, “Attaining our national goal of sustainable transportation will require a diverse portfolio of advanced vehicles. Fuel cell vehicles should be part of our portfolio.”

Prominent lawmakers, such as Senate Appropriations energy and water subcommittee Chairman Byron Dorgan (D-ND), have vowed to see the funding restored and will seek to maintain DOE’s focus on advanced hydrogen vehicle development. At a May 19th budget hearing, Dorgan questioned Energy Secretary Steven Chu on the funding cut, calling the decision a “significant mistake” after Chu told him the hydrogen vehicle program was considered too long-term to warrant support this year.

Several major automakers continue to invest in developing fuel cell vehicles, with some expecting to have floor models available in less than two years. NHA is lobbying to get this point

across, advising policymakers that significant progress has been made since the Bush administration announced the hydrogen initiative over a half decade ago.

ASME, together with the Institute of Electrical and Electronics Engineers (IEEE), came out in support of hydrogen research earlier this year as part of an effort to make the engineering community's voice heard on energy matters. The groups released a series of recommendations in the form of an energy "proclamation" that included maintaining the government's focus on making long-term breakthroughs, which includes funding hydrogen fuel cell research and demonstrations.

41. Toyota Sees 25,000 U.S. Sales of New Lexus Hybrid

Toyota Motor Corp expects to sell about 25,000 of its all-new dedicated hybrid car for the Lexus premium brand in the United States in the first 12 months of its sale, according to an executive. The Lexus HS250 hybrid, which is slated to go on sale in the U.S. later this summer, is the automaker's first hybrid-only model for the luxury division and adds to its green car lineup led by the market-leading Prius hybrid of the mass-market Toyota brand.

"More than 60 percent of entry luxury sedan buyers said they would consider hybrids, and this is a segment nobody's in right now," Mark Templin, group vice president of the Lexus Division for Toyota North America, said at an event north of Detroit.

Toyota, which launched the Prius in the U.S. market in 2000, has sold more than 1 million Toyota and Lexus hybrid vehicles in the country to date, representing more than half of its global hybrid sales. The company has commanded nearly 75 percent of all hybrid vehicle sales in the U.S. market over the past decade.

Toyota also launched its third-generation Prius hybrid this spring, targeting U.S. sales of 180,000 units in the first 12 months.

It did not detail pricing on the Lexus HS250 hybrid, which it said was roomier, wider and longer than the Prius hybrid.

Demand for fuel-efficient cars has dwindled in recent months after gasoline prices fell sharply from their peak last July and as a faltering economy curbed consumers' purchasing power. Hybrids typically command a price premium of about \$3,000 to \$5,000 over regular gasoline-powered vehicles.

U.S. auto sales are down 36.5 percent through the first five months of 2009, but May sales supported by high incentives were the strongest so far in 2009, giving the beleaguered industry some hope that the selling environment is at least not getting worse.

42. 'Sock on a Stack' Technology Captures 95 Percent of Major Ship Pollutants

The Long Beach Board of Harbor Commissioners gave preliminary approval to test a "sock on stack" air quality improvement system for docked ships that in previous tests has captured about 95 percent of the major pollutants in a ship's emissions.

Developed by Advanced Cleanup Technologies, the system uses a crane to place a large bonnet-like device over a ship's smokestack. The exhaust from the ship's diesel engines is then captured and scrubbed of harmful air pollutants.

The port voted to allocate as much as \$2.39 million to assess costs, durability and other operational issues associated with the system. A final vote is expected later this month.

The testing, which could take up to a year, would be conducted at the port's bulk cargo terminal. Metro Ports, the operator of the bulk terminal, is a proponent of the technology and would share a portion of the costs of testing the system, but most of the expense would be shouldered by the port.

43. EPA Proposes Renewable Fuel Standard

The US Environmental Protection Agency released its expected Notice of Proposed Rulemaking (NPRM) detailing the implementation of changes to the existing Renewable Fuel Standard (RFS1) as required by the Energy Independence and Security Act of 2007 (EISA). The proposed rulemaking for RFS2 establishes new specific volume standards for cellulosic biofuel, biomass-based diesel, advanced biofuel, and total renewable fuel that must be used in transportation fuel each year.

The revised statutory requirements for RFS2 also include new definitions and criteria for both renewable fuels and the feedstocks used to produce them, including new greenhouse gas emission (GHG) thresholds for renewable fuels and the incorporation of indirect land use change effects.

EPA will include the use of satellite data to project future the type of land use changes; the land conversion GHG emissions factors estimates used for different types of land use; estimates of GHG emissions from foreign crop production; methods to account for the variable timing of GHG emissions; and how the several models EPA relied upon are used together to provide overall lifecycle GHG estimates.

EISA made three primary changes to the volume requirements of the older RFS program:

- It substantially increases the required volumes and extends the timeframe over which the volumes ramp up through at least 2022.
- It divides the total renewable fuel requirement into four separate categories, each with its own volume requirement.
- It requires that each of these mandated volumes of renewable fuels achieve certain minimum thresholds of GHG emission performance, including the effects of indirect land use change.

The four categories are:

- Cellulosic biofuel. Cellulosic biofuel is renewable fuel, not necessarily ethanol, derived from any cellulose, hemicellulose, or lignin each of which must originate from renewable biomass. It must also achieve a lifecycle GHG emission reduction of at least 60%, compared to the gasoline or diesel fuel it displaces.
- Biomass-based diesel. Under the proposed rule, this includes both biodiesel (mono-alkyl esters) and non-ester renewable diesel (including cellulosic diesel). The definition is the same very broad definition of "biodiesel" that was in EISA and in RFS1, with three exceptions. First, EISA requires that such fuel be made from renewable biomass. Second, its lifecycle GHG emissions must be at least 50% less than the gasoline or

diesel fuel it displaces. Third, the statutory definition of “Biomass-based diesel” excludes renewable fuel derived from co-processing biomass with a petroleum feedstock.

- **Advanced Biofuel.** This is a renewable fuel other than ethanol derived from corn starch and which must also achieve a lifecycle GHG emission displacement of 50%, compared to the gasoline or diesel fuel it displaces. As
- **Renewable fuels.** Defined as fuel produced from renewable biomass that is used to replace or reduce the quantity of fossil fuel present in a transportation fuel, this ends up being the category into which corn ethanol requirements fall. In other words, although the entire standard is defined as a Renewable Fuels Standard, the carve-outs for cellulosic, biomass and advanced biofuels leave a remainder—15 billion gallons by 2015—that is filled by corn ethanol.

Although EPA is establishing a 20% greenhouse gas reduction threshold, only renewable fuel produced from new facilities which commenced construction after 19 December 2007 must meet that threshold. Facilities that commenced construction on or before 19 December 2007 are grandfathered in from the 20% requirement. In addition, EISA provides a further exemption from the 20% threshold requirement for ethanol plants that commenced construction in 2008 or 2009 and are fired with natural gas, biomass, or any combination thereof. The renewable fuel from such facilities is deemed to be in compliance with the 20% threshold, and would thus also be grandfathered.

Renewable Fuel Volume Requirements for RFS2 (billion gallons)

Year	Cellulosic biofuel requirement	Biomass-based diesel requirement	Advanced biofuel requirement	Total renewable fuel requirement
2008	n/a	n/a	n/a	9.0
2009	n/a	0.5	0.6	11.1
2010	0.1	0.65	0.95	12.95
2011	0.25	0.80	1.35	13.95
2012	0.5	1.0	2.0	15.2
2013	1.0	a	2.75	16.55
2014	1.75	a	3.75	18.15
2015	3.0	a	5.5	20.5
2016	4.25	a	7.25	22.25
2017	5.5	a	9.0	24.0
2018	7.0	a	11.0	26.0
2019	8.5	a	13.0	28.0
2020	10.5	a	15.0	30.0
2021	13.5	a	18.0	33.0
2022	16.0	a	21.0	36.0
2023 ⁺	b	b	b	b

^a To be determined by EPA through a future rulemaking, but no less than 1.0 billion gallons.

^b To be determined by EPA through a future rulemaking.

As shown in the table, the volume requirements are not exclusive, and generally result in nested requirements. Any renewable fuel that meets the requirement for cellulosic biofuel or biomass-based diesel is also valid for meeting the advanced biofuel requirement. Likewise, any renewable fuel that meets the requirement for advanced biofuel is also valid for meeting the total renewable fuel requirement.

Once RFS2 is implemented, EPA will conduct an annual notice-and-comment rulemaking process each year in order to determine the appropriate standards applicable in the following year. EPA included the proposed 2010 standards in the NPRM, and will issue a final rule by November 30, 2009 setting the applicable standards for 2010.

Greenhouse Gases. EISA sets the first US mandatory lifecycle GHG reduction thresholds for renewable fuel categories, as compared to those of average petroleum fuels used in 2005. EISA required a 20% reduction in lifecycle GHG emissions for any renewable fuel produced at new facilities (those constructed after enactment), a 50% reduction in order to be classified as biomass-based diesel or advanced biofuel, and a 60% reduction in order to be classified as cellulosic biofuel. EISA provides some limited flexibility for EPA to adjust these GHG percentage thresholds downward by up to 10% under certain circumstances.

EPA analyzed the lifecycle GHG impacts of the range of biofuels currently expected to contribute significantly to meeting the volume mandates of EISA through 2022, including those from domestic and international sources. The models and system boundaries are detailed in section VI of the NPRM.

EPA said that it worked closely with the California Air Resources Board (CARB) regarding their development of transportation fuels lifecycle GHG impacts and the Low Carbon Fuel Standard (LCFS). EPA said it will continue to coordinate with California on this rulemaking and the biofuels lifecycle GHG analysis work.

The EPA GHG lifecycle analysis combines a suite of peer-reviewed process models and peer-reviewed economic models of the domestic and international agricultural sectors to determine direct and significant indirect emissions, respectively (GREET, FASOM, FAPRI, Winrock, GTAP, CENTURY, DAYCENT, ASPEN-based models, MOVES and NEMS).

As required by EISA, the broad system boundaries of the analysis encompass all significant secondary agricultural sector GHG impacts, not only impacts from land use change. The analysis uses economic models to determine the area and location of land converted into cropland in each country as a result of the RFS program. Satellite data are used to predict the types of land that would be converted into cropland (e.g. forest, grassland).

EPA's draft results suggest that biofuel-induced land use change can produce significant near-term GHG emissions; however, displacement of petroleum by biofuels over subsequent years can "pay back" earlier land conversion impacts. Therefore, the time horizon over which emissions are analyzed and the application of a discount rate to value near-term versus longer-term emissions are critical factors.

In the NPRM, EPA highlights two options:

- One option assumes a 30 year time period for assessing future GHG emissions impacts and values equally all emission impacts, regardless of time of emission impact (i.e., 0% discount rate).

- The second option assesses emissions impacts over a 100 year time period and discounts future emissions at 2% annually.

Because of the varying degrees of uncertainty in the different aspects of the analysis, EPA conducted a number of sensitivity analyses which focus on key parameters and demonstrate how the assessments might change under alternative assumptions. In addition to the sensitivity analysis approach, EPA will also explore options for more formal uncertainty analyses for the final rule to the extent possible.

The 2010 standard. EPA believes that there are sufficient plans underway to build plants capable of producing 0.1 billion gallons of cellulosic biofuel in 2010, the minimum volume of cellulosic biofuel required by EISA for 2010, and is incorporating cellulosic biofuel into the 2010 requirements. Acknowledging the potential impact of the economy, EPA said that it is seeking additional and updated information that would be available prior to 30 November 30, 2009 which could result in a change in this.

EISA expanded the RFS application beyond gasoline to generally cover all transportation fuel, including gasoline and diesel fuel intended for use in highway vehicles and engines, and nonroad, locomotive and marine engines. As in RFS1, EPA is proposing that these provisions apply to refiners, blenders, and importers of transportation fuel (with limited flexibilities for small refiners), and that their percentage standards apply to the total amount of gasoline and diesel they produce for such use.

EPA is also proposing to use the current definition of motor vehicle, nonroad, locomotive, and marine diesel fuel (MVNRLM) to determine the obligated volumes of non-gasoline transportation fuel for this rule.

44. San Joaquin Air District Wants Smoky Diesels off the Road

The San Joaquin Valley Air Pollution Control District has announced a new program, intended to remove old, high polluting diesel trucks from Valley roads. A total of more than \$15 million dollars is available through the new Voucher Incentive Program, which will purchase and destroy old diesel trucks if owners will replace them with vehicles that meet 2007 emission standards.

Between \$30,000 and \$35,000 will be available per grant, depending on the age of the truck. Eligible trucks must have a 1993 or older engine, spend 75 percent of their time in California, and be registered with the Department of Motor Vehicles with a declared combined weight greater than 60,000 pounds. Additionally, the truck must have been registered in California for each of the past two years, during which time the vehicle traveled more than 30,000 miles per year or consumed 4,700 gallons of diesel fuel.

Additionally, truck fleets eligible for the program cannot contain more than three heavy-duty diesel trucks. Should an owner desire to participate in the program but his or her vehicles did not meet the mileage requirements, two trucks can be traded for one replacement payment.

Vouchers are approved on a first come, first-served basis. All approvals will be made within five business days of applying.

The Voucher Incentive Program is a component of the State of California's diesel emission reduction plan, which began in 2000. Recently, the state adopted new clean bus and truck

regulations and approved new aerodynamics standards for trucks, all of which are intended to cut climate change emissions by 30 percent by 2020

45. Construction Sites in Cook County Required To Install Filters

Cook County Board President Todd Stroger has signed an ordinance that will cut diesel pollution from construction equipment. Contractors must immediately begin using ultra low-sulfur fuel and then install filters to cut emissions 50 percent by 2011 and 90 percent by 2014.

The Respiratory Health Association of Metropolitan Chicago says diesel soot causes about 755 deaths, 1,000 heart attacks and 17,000 asthma attacks in the area annually. State data show construction equipment is one of the biggest sources of diesel soot.

46. EPA Says U.S. To Rely More on Scientists for Air Quality Standards

The U.S. government will reverse another Bush administration policy and increase the role of scientists in setting air standards for criteria pollutants harmful to human health, Lisa Jackson, the administrator of the Environmental Protection Agency, has announced. Jackson said the EPA will reinstate the role of a policy document called a "staff paper" written by agency scientists that contains analyses of options for the administrator to consider when setting air standards.

The Bush administration had replaced the staff paper process with a notice of proposed rule-making outlining options for air rules in the Federal Register, which environmentalists had long complained increased the role of political appointees early in the decision-making process.

"These changes will help us bring a greater rigor and openness to our standard-setting process and improve the scientific basis for our standards," Jackson said in a release.

The move was in line with President Barack Obama's pledge to increase the role of science in regulating pollutants.

The six "criteria" pollutants are particulate matter, carbon monoxide, lead, ozone, nitrogen dioxide and sulfur dioxide.

47. 186 Million In U.S. Live With Dangerous Air Pollution

Six in 10 U.S. residents -- more than 186 million people -- live in areas with dangerous levels of air pollution, the American Lung Association has reported. The air in many U.S. cities became dirtier last year, the association said in its annual "State of the Air" report.

"Despite almost 40 years since the Clean Air Act passed in 1970, six in 10 Americans still live in dirty air areas, areas where the air is unhealthy to breathe," the group's Paul Billings said in a telephone interview.

Los Angeles was ranked as the U.S. city with the worst ozone pollution, also known as smog, a position it has held for nine of the past 10 years. Bakersfield, California, was worst for year-round particle pollution and Pittsburgh, Pennsylvania, was worst for short-term particle pollution.

Many major cities -- including Los Angeles, New York, Atlanta, Philadelphia, Washington, D.C., and Baltimore -- have improved air quality over the last decade. But even with these

improvements, residents of some of these cities are breathing dirtier air than in previous years, the lung association said.

This year's air pollution numbers were far higher than in last year's report, which found 125 million people, or about 42 percent of U.S. residents, living with unhealthy air pollution.

Particle pollution is composed of tiny bits of soot, diesel exhaust, chemicals, metals and aerosols. These pollutants are measured both by the year-round levels in the air and by periodic spikes in their levels that can last for hours or days. Both kinds of particle pollution, if inhaled, can increase the risk of early death, heart attacks, strokes and emergency room visits for asthma and cardiovascular disease, the lung association reported.

Ozone -- a gas that forms when sunlight reacts with emissions from motor vehicles, factories and power plants -- is the most widespread form of air pollution and can immediately affect health if inhaled, irritating the lungs and causing wheezing, coughing and asthma attacks.

Almost all residents face some kind of elevated risk from air pollution, Billings said. Most vulnerable are children, the elderly, and people with lung diseases like asthma, diabetics or otherwise healthy adults who exercise or work outdoors.

The U.S. Environmental Protection Agency tightened standards for particle pollution in 2008, and the report based its findings on these new standards. Billings said even tougher standards are needed to protect human health.

The report noted that some of the biggest sources of air pollution, such as power plants, diesel engines and ocean-going vessels, also worsen global warming.

"As America faces the challenges of air pollution, global warming and energy, the American Lung Association urges Congress, the EPA and individuals to choose solutions that help solve all three challenges together," the association said in a statement.

48. Toyota Could Have Hydrogen Fuel-Cell Car on the Road By 2014

Honda's FCX Clarity fuel cell vehicle has grabbed lots of headlines, as has BMW's combustion-powered Hydrogen7 and Mazda's rotary RE line of vehicles, including the RX-8. But Toyota is working on a hydrogen fuel cell vehicle too, and it could be on the streets by 2014. The new date is a year earlier than scheduled due to changes in California's ZEV mandate

The company had previously released plans to have a hydrogen fuel-cell vehicle on the road by 2015, but that schedule has been bumped up a year to meet the incentives within California's Zero Emissions Vehicle mandate.

"So much of what happens is directly related to the California ZEV mandates — they're followed by at least 14 states, and they affect nearly half of the cars on the market in the United States. Phase IV of the mandates covers model years 2015 through 2017, so that means we could begin complying in late 2014," John Hanson, a Toyota spokesperson, told the New York Times.

49. Mexico's Pemex to Start Salamanca Low Sulfur Unit in July

Mexico's state oil company plans to begin building a 160-ton-a-day sulfur recovery unit at the Salamanca oil refinery in July as part of a wider effort to improve fuel quality. In a tender

document on Compranet, the state procurement Web site, a total of 20 companies have registered for the bidding round. Petroleos Mexicanos, or Pemex, originally planned to announce a winner in April, but it is still holding meetings with registered bidders for the 18-month project. Pemex bidding rounds routinely run into delays due to bureaucratic hurdles. Pemex also plans to build similar units at other refineries to improve fuel quality and reduce carbon emissions. Apart from the sulfur unit, Pemex plans to carry out a \$3 billion reconfiguration at Salamanca in the coming years to help increase gasoline supplies. Pemex also plans to build a 300,000-barrel-a-day refinery in Tula to ease dependence on imported fuel, which accounts for around 40% of domestic sales.

50. GM Touts Diesel-Like Gasoline Engine

General Motors Corp. is closer to building a gas engine that runs like its more-efficient diesel counterpart. GM officials showcased the homogenous charge compression ignition (HCCI) four-cylinder engine recently at the company's research and development center. A product of advanced technologies and ingenuity, the engine promises up to a 15 percent increase in fuel economy while reducing NOx emissions considerably.

Uwe Grebe, GM's executive director of powertrain advanced engineering, could not say when an HCCI engine would become production ready; noting only that it would be in the next decade. But the process can "be applied to many engines, including four-, six- and eight-cylinder engines," Grebe said.

Paul Najt, GM lab group manager of powertrain systems research, has been studying gasoline compression ignition for 30 years and said the science behind these engines has sped up dramatically with other engine advances such as direct injection.

The engine can run under compression ignition from idle to 3,000 rpm and cruise up to 60 mph with compression ignition. A spark plug also is connected to each cylinder to let the engine run in the traditional mode. However, when driving in compression mode, the cylinder's temperature is kept cooler, preventing pollutants from forming.

A typical gas engine ignites its fuel at 3,800 degrees Fahrenheit. When in compression mode, the HCCI engine ignites the same fuel at 2,900 degrees, Najt said.

Vijay Ramappan, staff engineer for calibration, said the HCCI engine still needs refinements but it will significantly improve city mileage for future cars and trucks. "From zero to 60, this engine can run completely in HCCI mode and basically work like a diesel," he said.

51. Pelosi Urges China-U.S. Partnership, Calling Climate Change a 'Game Changer'

China and the United States, "the biggest greenhouse gas emitters in the world," should work together to address global climate change, House Speaker Nancy Pelosi told attendees at an environmental conference in Beijing on May 26th.

"From my perspective, the global climate crisis is a game changer in the U.S.-China relationship," Pelosi said at the U.S.-China Clean Energy Forum, according to a transcript provided by her office. "We have no choice but to work together and to be successful."

Pelosi and Reps. Ed Markey (D-Mass.), James Sensenbrenner (R-Wis.), Earl Blumenauer (D-Ore.), Jay Inslee (D-Wash.), and Jackie Speier (D-Calif.) went to China during the congressional

Memorial Day recess to discuss international efforts to address climate change. The representatives are members of the House Select Committee on Energy Independence and Global Warming.

China, which is the world's largest carbon dioxide emitter, has set aggressive environmental and energy goals, including reducing "energy intensity" by 20 percent and its major pollutant emissions by 10 percent by 2010, reaching a 16 percent renewable energy share by 2020, and increasing fuel economy standards to 36 miles per gallon, Pelosi said.

Still, "China faces enormous challenges in meeting these goals, including lack of compliance by provincial and municipal authorities, insufficient monitoring capability, and limited access to clean technology," Pelosi said.

The delegation's visit follows approval on May 21st by the House Energy and Commerce Committee of climate and energy legislation that would require an 83 percent reduction in U.S. emissions from 2005 levels by 2050 through an emission cap-and-trade program, and a 20 percent renewable electricity standard. The American Clean Energy and Security Act of 2009 (H.R. 2454) now goes before eight other committees.

52. Climate Envoy Stern Says China Must Be 'in the Game'

China is at the forefront of major developing nations that must help reduce greenhouse-gas emissions in a new treaty to stem global warming, U.S. climate envoy Todd Stern said. The Asian nation, the world's biggest producer of heat-trapping gases, will need to make commitments in the worldwide agreement planned under United Nations leadership this year, the top U.S. treaty official said, without naming specific actions.

The U.S. and China together produce more than 40 percent of global emissions of heat-trapping gases. An effective agreement to slow climate change must reconcile their negotiating positions, analysts have said.

"I don't think that there's any question that China and the other major economies have to be in the game," Stern said on a conference call with reporters. "They're doing a lot already, but they're going to need to do more actions and commit to them and be able to quantify them."

The comments followed talks between officials from both nations in Beijing and remarks on May 26th by U.S. Energy Secretary Steven Chu that the U.S. may agree to emission-reduction targets in a new treaty even if China didn't.

The UN set a December deadline for the accord to be signed in Copenhagen. Stern's top negotiator, Jonathan Pershing, will lead the U.S. delegation at a two-week round of talks that begin in Bonn on June 1st.

The new agreement should require that certain actions to stem climate change should be undertaken by "all countries, developed and developing," Pershing said on the same call. "It shouldn't just say some countries do something and some countries watch."

Climate legislation that won recent approval in a House of Representatives committee would put the world's biggest economy on a similar emission-reduction track as the 27-nation European Union, Stern said. The U.S. bill calls for industry to make a reduction that's in the mid-range between the EU's two proposals, he said. The EU, using 1990 as a base year, has vowed to cut

gas emissions in 2020 by 20 percent or as much as 30 percent if other industrialized nations follow suit. Stern said using instead a base year of 2005 or 2004, the EU proposals work out to cuts of about 14 percent or 24 percent, respectively, compared with the 17 percent decline called for in the U.S. bill from 2005 levels.

That U.S. target would be a 4 percent reduction from Europe's base year of 1990, Stern said.

The U.S. is pushing forward on a "suite of policies" to bring down emissions, including improved vehicle fuel efficiency standards and \$150 billion of investment in renewable energy over 10 years.

In Bonn, delegates will begin to debate a draft treaty for the first time since a guideline for two years of negotiations was agreed in Bali in December 2007. The 53-page text, posted May 20th on the Web site of the UN Framework Convention on Climate Change will be the main focus of the Bonn talks, Pershing said. (See story below)

53. Exxon Mobil CEO Tells Shareholders That Fossil Fuels Have Long Future

Exxon Mobil Chairman Rex Tillerson issued a ringing defense of the oil titan at the company's annual meeting, where 11 shareholder proposals, all opposed by management, were roundly defeated in a spirited gathering. Tillerson praised Exxon's record-breaking financial performance in 2008, its handsome returns to shareholders in recent years, technological advances that have greatly enhanced oil and natural gas recovery, and its efforts to reduce the environmental harm of its far-ranging operations. He defended the company's large buybacks of company stock, saying that they have increased value to shareholders.

In comments at the meeting and a news conference afterward, Tillerson said U.S. gasoline consumption has probably peaked and will slowly decline as a result of increased fuel economy and a growing reliance on low-sulfur diesel fuel. But he said the world isn't anywhere close to reaching "peak oil," the point at which oil production will crest and then begin an irreversible decline as a result of dwindling petroleum deposits. A full-scale transition from fossil fuels could be "100 years away," he said.

Tillerson strongly indicated that Exxon's primary focus in coming decades will likely remain on its core businesses of oil and gas exploration and production, refining and chemicals. He said there appears to be "a pretty bright future" for drilling in previously untapped shales — such as the natural-gas-rich Barnett Shale of North Texas and Haynesville Shale in northwest Louisiana and East Texas — as a result of technological advances in horizontal drilling and hydraulic fracturing.

If Congress passes climate-change legislation designed to slow global warming, Tillerson said he prefers implementation of a carbon tax rather than a "cap-and-trade" system being most strongly considered in Washington. A carbon tax would be "far more efficient," he said.

Tillerson got complaints from shareholders, who variously alleged that the company is largely shunning the issue of global warming, needs to become more involved in renewable energy such as wind and solar power, should have a more independent board of directors and doesn't provide sufficient avenues for shareholders to weigh in on issues such as executive pay.

None of the 11 proposals offered by shareholders came close to passing. A "say on pay" proposal that shareholders take a nonbinding "advisory" vote at the annual meeting on

compensation for top executives was supported by 41.4 percent of shares voted. A proposal for calling of special shareholder meetings drew 40.8 percent, and a proposal to make the board of directors more independent by not allowing Tillerson to serve as both CEO and board chairman garnered 29.5 percent.

Environmental proposals fared even worse. Proposals to adopt goals for limiting greenhouse-gas emissions, craft a policy for renewable energy research and development, and establish a task force to report on the likely consequences of climate change drew 29, 27 and 10 percent of shares voted, respectively.

54. Oil Sands Production to Increase, Despite Move Toward Low-Carbon Fuels

Canada plans to more than double the amount of oil it extracts from Alberta's oil sands by 2025 and will sell it "somewhere else" if interest from the United States wanes as the Obama administration and the Democratic Congress encourage low-carbon fuels to reduce greenhouse gas emissions, an Alberta diplomat said on May 5th. "It is our intention to continue to develop this resource," said Gary G. Mar, Alberta's diplomatic representative to the United States. "In the event the United States seeks to eliminate its reliance upon the oil that comes from oil sands, then it will be sold somewhere else in the world."

Mar was speaking in Washington, D.C., after a U.S. congressional briefing on oil sands sponsored by the Environmental and Energy Study Institute, which also featured Ken England, an energy official with the Canadian Embassy.

Canada, which is America's fourth largest supplier of oil, has more than doubled the amount of oil produced from oil sands to 1.3 million barrels a day since 2000, and Mar said the country plans on increasing that figure to 3 million barrels a day by 2025.

But the process of extracting bitumen from the sands, which is then turned into synthetic crude oil, makes it "among the more carbon intensive sources of liquid fuels," James Burkhard, a managing director of Cambridge Energy Research Associates, said during the forum.

Oil sands-related greenhouse gas emissions in Canada total about 29 million metric tons a year, according to figures previously published by the Alberta provincial environment ministry, a figure that is expected to increase to between 200 million metric tons and 400 million metric tons a year by 2050, depending on the development and use of carbon capture-and-storage technology.

The majority of oil produced from oil sands is exported to the United States, according to the Environmental and Energy Study Institute, but plans to increase production could run afoul of environmental policies advocated by the Obama administration, congressional Democrats, and some states.

On April 23rd, California, adopted the first-ever low-carbon fuel standard, a regulation designed to cut the average "carbon intensity" of transportation fuels by 10 percent over the next 11 years. Additionally, at least 13 other U.S. states have expressed interest in such a standard, and a low-carbon fuel standard has been included in the American Clean Energy and Security Act of 2009, the draft climate and energy bill released by Reps. Henry Waxman (D-Calif.) and Edward Markey (D-Mass.).

Efforts to develop oil sands “really aren't consistent with the new path the United States has chosen to be on in terms of fighting global warming, thinking about climate security issues, and finding ways to move off our dependence on oil,” said Susan Casey-Lefkowitz, a Natural Resources Defense Council official. Casey-Lefkowitz also raised concerns about the impact of tar sands extraction in Alberta's boreal forest on migratory birds and the Athabasca River.

But Mar said the amount of land that is disturbed by tar sands mining is equal to one-half of 1 percent of the boreal forest, and that companies are required to post a bond, to be used for land reclamation. He added that the environmental standards that are established for extraction and development are “among the most stringent in the world.”

55. U.S. Calls for ‘Robust’ Emissions Targets in Submission to U.N. Climate Group

The United States wants “robust targets and ambitious actions” in the global climate change agreement to be negotiated in Copenhagen in December and is committed to imposing mandatory curbs on its own greenhouse gas emissions, according to a U.S. submission to the United Nations' negotiating body.

The May 4th submission, which is the Obama administration's opening salvo for talks in Copenhagen toward the next international climate deal, does not offer specific targets for U.S. emissions reductions. President Obama did call for cutting U.S. emissions 14 percent from 2005 levels by 2020 in his fiscal 2010 budget plan, released in February.

The submission to the United Nations is yet another indication of a change in U.S. policy more than eight years after President Bush officially withdrew the United States from the Kyoto Protocol and its binding emissions curbs. The United States “is committed to reaching a strong international agreement in Copenhagen based on both the robust targets and ambitious actions that will be embodied in U.S. domestic law,” according to the 21-page document, “U.S. Submission on Copenhagen Agreed Outcome.”

The submission cautions that U.S. acceptance of binding emissions cuts in a future global deal hinges “on the premise that the agreement will reflect the important national actions of all countries with significant emissions profiles to contain” their own emissions.

The United States offered its views—which were formally submitted to the U.N. Framework Convention on Climate Change secretariat—as international climate negotiators prepare for the next round of climate talks under the U.N. convention to be held June 1–12 in Bonn. The negotiators are expected to get their first glimpse in Bonn of draft negotiating text for the next climate deal, to be concluded at year's end in Copenhagen, which will succeed the Kyoto Protocol's mandatory emissions reductions when they expire at the end of 2012.

In its submission, the United States said the next climate accord should be negotiated as an “implementing agreement” under the United Nations Framework Convention on Climate Change, which was ratified by 192 countries including the United States and led to the Kyoto Protocol's binding emissions curbs. The U.N. framework remains the appropriate forum for negotiating a global deal that is “legally binding” on all parties, the United States said.

ASIA-PACIFIC

56. China Notes Environmental Progress but Pollution in Rural Areas Persists

China has made progress on reducing pollution and strengthening environmental policies, but water pollution remains a serious issue, rural pollution is increasing, and air quality in some cities is still a major problem, the government said in its State of the Environment Report for 2008, released on June 5th.

Across the country, sulfur dioxide emissions dropped 5.95 percent compared to the year before and fell 8.95 percent compared with 2005 levels, the Ministry of Environmental Protection said in the report. Chemical oxygen demand, a measure of water pollution, fell 4.42 percent in 2008 from the year earlier, and decreased 6.61 percent since 2005.

The ministry also said that it denied or suspended 156 projects that failed to meet environmental impact assessment standards and warned 579 others about noncompliance.

Pollution reduction measures helped to reduce water and air pollution. The level of organic pollutants discharged into China's waters fell by 38,400 tons and overall emissions of sulfur dioxide were cut by about 468,000 metric tons, the ministry said. Sulfur dioxide emissions in urban areas dropped by 7.7 percent over the previous year.

Urban air quality in 2008 was better than the previous year, according to the ministry, but acid rain persists.

Out of 579 cities that track air quality, 72.8 percent reached a Grade I or II level of air quality, based on a scale with Grade I being best and Grade III the lowest air quality level. Overall, 13.3 percent of cities had better air quality in 2008 than in 2007.

The government also shut down a total capacity of 16.69 gigawatts of outdated thermal power plants in 2008, according to the document.

57. Study Concludes That Weather Helped To Clean Air for Olympics

Beijing's dirty air got cleaner during last summer's Olympic Games, but the weather played a larger role than the government's massive pollution control measures, a new report says. The first major study on air pollution during the Olympics found that conditions in Beijing were far worse than at other recent Olympics, even with the government's cleanup campaign. Particulate levels often exceeded what the World Health Organization considers safe.

The report was published in the journal *Environmental Science and Technology*, and funded by the National Science Foundation in the U.S. and the National Science Foundation in China.

The Chinese government's plans to control air pollution for the Olympics gave international researchers a unique opportunity to observe a large-scale experiment. Scientists from Oregon State University and Peking University looked at Beijing's worst air pollutant, particulate matter, over an eight-week period before, during and after the games.

When Beijing won the bid for the Olympics in 2001, China poured some \$20 billion into "greening" the city, including doubling the number of subway lines, retrofitting factories with cleaner technology and building urban parks. Beijing officials also imposed drastic cleanup measures just before the games in mid-July, including pulling half the city's 3.3 million vehicles off the roads, halting most construction and closing dozens of factories.

The study found that particulate air pollution decreased by about one-third during the two-week Olympic period compared with other periods. But further investigation suggested that the weather, such as rainfall and strong winds from the north and northwest, played a much larger factor in clearing the air. Meteorological conditions accounted for 40 percent of the variation in concentrations of coarser particulate matter, or PM 10, while pollution control measures accounted for only 16 percent, the study said.

The findings also showed that the weather ushered some air pollution in to Beijing from industrial regions south of the capital that were not subject to pollution curbs, including Hebei, Shandong, and Shanxi. Those results indicated the difficulties in trying to control pollution from a city level when air masses tend to move regionally.

The level of particulate pollution that athletes faced in Beijing was twice as bad as in Athens, three times worse than Atlanta and 3.5 times higher than that of Sydney.

Levels of PM 10, the coarser particulate matter, exceeded levels that the WHO considered safe about 81 percent of the time, while concentrations of the smaller particulate pollution PM 2.5, which can cause more serious health consequences, exceeded WHO guidelines 100 percent of the time.

Air samples were collected from atop the seven-story geology building of Peking University for two weeks before the Olympics, two weeks during the games and a month afterward. Researchers then analyzed the particulate matter. At the same time they collected meteorological data, including wind speed and direction, precipitation and temperature. Results from the analysis of the particulate matter were compared to air pollution data taken by the Beijing Environmental Protection Bureau.

The levels were higher than what the Beijing Environmental Protection Bureau released, because of differences in the methods of measurement.

Using an air pollution index (API) in which a score of 100 or lower indicates air quality as 'good', all 17 days of Olympic events in Beijing made the grade. Overall, the city hit an all-time high of 274 good air days in 2008. But APIs can be calculated in various different ways. Beijing's includes measurements of sulfur dioxide, nitrogen dioxide and particles smaller than 10 micrometers - dubbed PM10.

Controversially, it has not previously used low-level ozone measurements to calculate APIs, and it does not report on the level of particles smaller than 2.5 micrometers. Both ozone and PM2.5 have negative impacts on health.

Jian Wang of the Chinese environment ministry's pollution-prevention division has admitted that visibility in eastern cities in China is deteriorating. He said that the cause is ozone pollution and, especially, PM2.5. "PM2.5 is to blame for the haze," said Wang. "Vehicle exhausts that contain black carbon, sulfates, and nitrates contribute a lot to the density of PM2.5, which is more damaging to the respiratory system than PM10," he added.

He added that the ministry will soon start to include ozone and PM2.5 in its API calculation, with pilot projects to monitor the pollutants expected to start in the deltas of the Yangtze and Pearl rivers next year.

Despite the criticism surrounding the API, Beijing has said that it was halfway to its goal of having 260 days with excellent or fairly good air quality this year.

58. China to Boost Fuel Economy Standards, Subsidizes Electric, Hybrid Vehicles

Chinese officials are deliberating a draft plan that could improve the fuel economy of cars built domestically by about 18 percent by 2015, say experts close to the planning. The plan aims to reduce China's reliance on foreign oil and encourage more technologically advanced automobile engines. Those same goals have inspired increased Chinese investment in alternative energy vehicles, including those powered by hybrid and electric systems, which have the added benefit of emitting fewer air pollutants and greenhouse gases than standard gasoline-powered vehicles.

China's top planning body, the National Development and Reform Commission, and the regulatory Ministry of Information Industry are the two main agencies reviewing the draft plan, which was completed in early May.

China also is looking to increase the number of alternative energy vehicles in the country. Research and consulting firm Roland Berger Strategy Consultants released a report on May 12th predicting that by 2020, as much as 50 percent of China's domestic auto market could be made up of hybrid and electric vehicles. Government spending, tax incentives, and subsidies are all working to encourage development of electric vehicles, according to the report, "Powertrain 2020—China's ambition to become market leader in e-vehicles."

In one such initiative, the central government is helping 13 municipalities purchase 60,000 hybrid and electric vehicles by 2012 for government fleets, including buses, postal, and sanitation vehicles. The 13 cities are Beijing, Shanghai, Chongqing, Changchun, Dalian, Hangzhou, Jinan, Wuhan, Shenzhen, Hefei, Changsha, Kunming, and Nanchang. For example, Beijing expects to take delivery soon of the first 50 of 860 hybrid buses it will purchase this year, according to the state-run Xinhua news agency. Fifty electric buses also will be purchased. So far this year, Beijing has spent about 122 million Yuan (\$17 million) to buy alternative energy vehicles and to expand the capacity of its charging stations.

The government's pilot project supporting hybrid and electric vehicles in the 13 targeted cities was launched in February through the joint efforts of the Ministry of Science and Technology (MOST), Ministry of Finance, Ministry of Industry and Information Technology, and the NDRC. The absence of the Ministry of Environmental Protection from the project indicates that the project's motivation is more economic than environmental, some analysts said.

China also sees an opportunity to leapfrog its competitors in the electric car industry. According to government figures of registered licenses for alternative energy vehicles, in 2008 2,617 hybrid cars were sold in China. And the government estimates that the production capability for alternative energy cars in China will reach 500,000 in the next three years.

State-run China Radio International recently quoted an industry study predicting a lower domestic sales volume of hybrid and electric cars of 100,000 per year by 2015, assuming that oil remains below \$150 per barrel. These numbers are still relatively small considering that in the first quarter of 2009 2.7 million vehicles were sold in China.

A number of domestically produced hybrids and all-electric vehicles are expected to begin rolling off China's production lines starting later this year and throughout 2010, including Great Wall Motor Co.'s all-electric car, the GWKulla.

In addition, General Motors plans to introduce its Volt electric car to China in 2011. And an alliance of Japan's Nissan Motor Co. and Renault of France will start selling electric vehicles in China in 2011 and has signed a memorandum of understanding to supply vehicles and to design a battery-charging network for Wuhan, the capital city of Hubei Province.

The Chinese government is expected to begin a public promotion campaign this month to urge people to buy hybrid and electric cars. Construction of infrastructure such as plug-in stations in the 13 cities targeted under the economic stimulus initiative will begin in December.

59. Chinese Farms Threatened By Melting Glaciers

The Chinese gateway to the ancient Silk Road is being flooded – and the culprit, researchers say, is climate change. Melting glaciers sitting above the Hexi corridor in Gansu province, once an important trading and military route into Central Asia, are fuelling dramatic regional floods.

The finding illustrates a major problem for the coming century: around the world: arid regions that sit next to glaciers will suffer a spate of floods, and then dry up completely when the glaciers melt away.

The Hexi corridor is sandwiched between the Qilian Mountains to the southwest and lower mountains bordering the Gobi desert to the northeast.

"This is an extremely arid area, with an average annual precipitation of about 125 millimeters," says Chi-Yuen Wang, a geologist and hydrologist at the University of California at Berkeley.

Water scarcity has been less of a problem in recent years. Although irrigation pulled the region's water table down during the 20th century, it unexpectedly began to rise again in 2003, and floods have been frequent since 2005.

By looking at the isotope composition of water in local springs, Wang and colleague Jian Sheng Chen of the hydrology lab of Hohai University in Nanjing, China, determined that most of this additional water seems to be coming from glaciers perched up in the surrounding mountains. This mixes with cyclic rainfall that largely stems from evaporation of the region's irrigation water.

The fact that precipitation at high altitude has not increased significantly in recent years, means it is very likely that the extra water in the Hexi corridor has come from increased glacier melt. Temperatures in Qilian Mountains have risen by 0.04 °C per year on average since the 1980s and the glaciers have been creeping back up the mountain slopes, sometimes by as much as 7 meters in a single year. Melting permafrost makes it easier for the glacier water to seep into the water table and eventually make its way into the springs.

These springs have been supplying oases and the cities that were set up around them for millennia. The irrigation water they provide for agriculture has turned the Hexi corridor into a regional breadbasket. Some 26 million people live along the corridor and rely on the springs for water.

When the springs flood, they can wreak havoc on the unprepared region. The cities of Zhangye and Jiuquan have flooded repeatedly in the past few years, most severely in the winter, when irrigation stops and the water table rises. According to the researchers, the swelling springs have forced about 1000 families to evacuate.

The team says the situation is unlikely to improve. Most of the glaciers along the Hexi corridor are predicted to disappear by 2050, and, like other arid regions at the foot of melting glaciers, the area is in desperate need of creative new ways of managing its water supply.

60. China Mulls Pollution Levy in Tax Overhaul

China could levy environmental taxes on polluting companies as part of tax reform being considered by the Ministry of Finance, the State Administration of Taxation, and the Ministry of Environmental Protection, state media reported. Zhang Lijun, vice minister of the Ministry of Environmental Protection, said at a June 5th press conference that a number of departments are researching the issue and that the environmental taxation system would be launched “when conditions are ripe,” according to the state-run newspaper China Daily.

Zhang said authorities are levying strict penalties on companies that fail to reduce airborne sulfur dioxide emissions and water pollution, measured as chemical oxygen demand, but conceded that problems persist.

61. Japan Sets GHG Emissions Target At 15 Percent Below 2005 Levels by 2020

Ending months of talks with industry and consumers, Prime Minister Taro Aso announced on June 10th that Japan will strive to reduce its greenhouse gas emissions 15 percent from 2005 levels by 2020. The mid-term target represents an 8 percent cut in emissions from levels in 1990, the benchmark year used in the Kyoto Protocol. Under the Kyoto Protocol, Japan is committed to trimming its greenhouse gas emissions 6 percent by 2012, compared with 1990 levels. Its total emissions are currently about 14 percent above that target.

Aso said he chose the 15 percent target to show Japan's leadership on the issue and to encourage all nations to participate in a post-Kyoto Protocol framework to be discussed at the 15th Conference of the Parties to the U.N. Framework Convention on Climate Change (COP-15) in Copenhagen in December. The new global framework to be negotiated at COP-15 must be equitable to all participants, the prime minister said. “If Japan imposes a tougher reduction target on itself, Japanese companies and factories would relocate to countries where targets are milder. This would just drain money and jobs to other countries and would not contribute to global greenhouse gas reductions,” he said.

Aso said a framework with mid-term goals to reduce emissions by 2020 needs to balance the environment and the economy to ensure that both can progress on a sustainable basis. The mid-range target “should not be a paper declaration; it needs to be endorsed by realistic steps,” the prime minister said.

The new global framework also should assure the halving of greenhouse gas emissions by 2050, Aso said, with the level of emissions from developed countries peaking in 2015 and those from developing nations reaching their peak by 2025 and then declining. For its part, Japan would strive to achieve a 60 percent to 80 percent cut from 2005 levels by 2050, he said.

To help meet the target, Aso said Japan would increase solar power generation and boost funding for the country's "Eco point" programs, which offer financial incentives for purchases of clean cars or energy efficient electronics.

A simulation conducted by the Ministry of Environment and the Ministry of Economy, Trade, and Industry examined the impact on Japan's economy of range of reduction targets. The study showed that reducing emissions 14 percent from 2005 levels by 2020 could reduce household income by \$400 per year, with annual household utility costs rising \$300. Under a 30 percent reduction, the study said income could plunge \$2,200 per year and utility costs could rise \$1,400, according to Aso.

Aso also compared his country's emissions reduction goals to those in the United States and the European Union. He said Japan's 15 percent reduction target is more ambitious than the Obama administration's goal for 2020 to reduce greenhouse gas emissions 14 percent from 2005 levels. Legislation currently working its way through the U.S. Congress, however, would cut U.S. greenhouse gas emissions 17 percent by 2020 from 2005 levels. The bill also would establish more stringent energy efficiency standards and would set a renewable electricity standard for states.

In addition, using 2005 as the benchmark, Aso said Japan's target also surpasses that of the European Union. Aso said the European Union's stated goal—to reduce emissions at least 20 percent by 2020 compared with 1990 levels—amounts to a 13 percent emissions cut compared to 2005 levels.

Moreover, Aso said Japan's target does not allow for the trading of emissions credits between countries or for emissions credits from programs like the Kyoto Protocol's flexibility mechanisms, which can provide credits for emissions-reduction projects in other countries.

Aso urged developing countries to not just criticize developed countries but to take their own initiative in reducing emissions. To support such efforts, he said Japan would offer environmental and energy conservation technology assistance to developing countries that agree to the post-Kyoto framework. He said that would mean providing assistance to developing countries from Japan's \$10 billion Cool Earth Partnership program, launched in 2008.

Tokyo Governor Shintaro Ishihara had criticized the Japanese government's emissions reduction debate as unrealistically backward. The Tokyo city government is enforcing a 25 percent reduction program by 2020 compared with 2000 levels, far more ambitious than the government's goal. Other Japanese municipalities have announced similar cuts.

62. Japanese Budget Adds Fiscal Incentives for Energy-Efficient Vehicles

The Japanese Diet (Parliament) has enacted a 13.9 trillion yen (\$144 billion) fiscal 2009 supplementary budget, the largest-ever supplemental budget that includes tax relief and incentives for consumers to trade in old motor vehicles and televisions for more energy-efficient products. The supplemental budget also includes provisions to encourage the installation of solar power equipment on public schools and other government buildings.

Japan's Eco Motor Vehicle program seeks to encourage consumers to trade in a total of 300,000 energy-inefficient vehicles older than 13 years, equivalent to about one-tenth of Japan's annual domestic vehicle sales, Ministry of Economy, Trade, and Industry (METI) and auto industry officials said on June 1st. Under the program, buyers of energy-efficient

automobiles will receive tax breaks on their Motor Vehicle Acquisition, Tonnage, and Road Taxes. To encourage consumers to trade in older vehicles for new cars, the supplemental budget allocated 210 billion yen (\$2.2 billion) in tax breaks for new vehicles, plus another 370 billion yen (\$3.8 billion) in incentives to trade in older cars.

The incentive to scrap older cars will range from 100,000 yen (\$1,000) for vehicles younger than 13 years to 250,000 yen (\$2,600) for vehicles older than 13 years. To qualify, car owners must prove they owned their previous vehicles for at least one year and they then cannot sell their new vehicles for at least one year.

The Eco Motor Vehicle program also extends incentives to replace old commercial vehicles. The scrapping incentives are retroactive to April 1, 2009, and continue until March 31, 2010.

63. Toyota Cancels All Plans for Diesel-Powered Prius

The Japanese car manufacturer Toyota has canceled all plans of coming out with a diesel hybrid variant of the Prius in the near future. A spokesperson for the carmaker said that, although other brands are going toward the diesel hybrids at the present time, the idea is still quite far for Toyota.

Having set a high standard with the latest 1.8-liter gasoline hybrid Prius, Toyota sees plug-in technology as the future of a truly ecological product. Diesel is not such a big thing with Toyota even when it has an agreement with Isuzu two years ago to create a new aluminum block 1.6-liter diesel powerplant which could be utilized for a diesel hybrid Prius. Production of that powerplant is still three years away at the soonest. The ultimate issue according to a company spokesperson is cost. Because the mass marketing of diesel hybrids require cleaner exhausts that consequently requires development. A combination of clean emissions technology and hybrid system cost will result in a powertrain that is just too expensive at this stage.

64. Zero-Emission Vehicles Moving Forward In Japan

A car that has neither an engine nor a muffler will debut on the Japanese market next month. Developed by Mitsubishi Motors Corp. the "i-MiEV" is the world's first mass-produced zero-emission minicar that does not need an internal combustion engine because it runs on a motor charged with electricity.

The car may usher in a new age of driving that does not require petroleum fuel.

Mitsubishi's sales target for the i-MiEV in fiscal 2009 is a modest 1,400 units. The company will sell the vehicle only to corporate and government customers until April 2010, when the general public will also be able to buy this green car. The company hopes to sell 15,000 units during fiscal 2011.

The i-MiEV's per-kilometer cost of electricity is only 3 yen, considerably less than the price of gas for the same distance. However, the car itself is certainly not cheap--about 3.2 million yen if the buyer qualifies for a government subsidy for green-car owners.

65. Indian Automakers to Expand Fleets of CNG Vehicles

Leading car manufacturers in India are expanding their fleets of alternative fuel vehicles to cash in on increased availability of compressed natural gas and to meet stricter emissions standards and increasing demand for cars that run on cheaper, more environmentally friendly fuels.

India's market leader, Maruti Suzuki, announced earlier this year that it is working to roll out electric cars and compressed natural gas (CNG) variants for three or four of its models. CNG models are slated to be unveiled by 2010 in each of the segments that Maruti Suzuki operates in, while electric cars will take up to five more years. The company has already tested the market with variants of its Maruti 800 and Maruti Wagon R that run on liquefied petroleum gas (LPG), a fuel mixture comprised primarily of propane and butane.

Auto market experts believe CNG vehicles could be more popular than LPG vehicles because the fuel will be more widely available. Although CNG vehicles often are more expensive up front, their running cost is lower than that of LPG-enabled cars.

Many Indians currently get their petrol or diesel cars retrofitted with a CNG kit, which costs about 40,000 rupees (\$850). And with India's Reliance Industries Ltd. tapping rich reserves of natural gas in the Krishna-Godavari basin, the company is set to put in place a pan-India CNG filling system.

Automakers Mahindra & Mahindra and Hyundai are also working on CNG models. Even luxury carmaker Mercedes-Benz introduced sedans using CNG fuel in June 2008. Tata Motors and Ford India also are expanding their CNG lineups.

Earlier this year, Toyota Kirloskar Motors Ltd. launched the CNG-powered Innova, the first alternative-fuel multipurpose vehicle in the country. The CNG Innova was first introduced in the cities of New Delhi, Mumbai, Surat, Hyderabad, and Ahmedabad. It will be rolled out in Baroda and Vijayawada later after all Toyota dealers there are equipped to sell and to service the CNG model.

India already has the fifth largest fleet of natural gas vehicles in the world, according to the International Association for Natural Gas Vehicles. By December 2008, India had 650,000 CNG vehicles on the road—five times the number in the United States, but far behind the million-plus figures in Pakistan, Argentina, Brazil, and Iran.

66. Indian Directive Slows Biodiesel Production; Producers Decry Mixed Signals

A directive from the Indian petroleum ministry banning the sale of biodiesel as transportation fuel directly to consumers has forced several manufacturers, already squeezed by a pricing cap, to slow production. The directive also has renewed calls for a comprehensive biodiesel policy to decide issues such as pricing, levels of biofuel to be blended with conventional fuel, and marketing to consumers and petroleum companies.

Biodiesel consists of chemicals known as fatty acid methyl esters that can be used as a diesel fuel substitute or as a diesel fuel additive. It is typically made from oils produced from agricultural crops. As with ethanol, another biofuel, biodiesel arguably has lower life-cycle carbon dioxide emissions than do its fossil fuel counterparts.

In a March 6 letter to the chief secretary of the state of Andhra Pradesh, the Ministry of Petroleum and Natural Gas stated that under the Essential Commodities Act, "No person shall sell ... any petroleum product or its mixture other than motor spirit or high speed diesel

authorized by the Central Government.” The ministry has made it clear that the right to market transportation fuel has to be secured from the government.

Biodiesel producers claimed that the directive is arbitrary and counterproductive.

“The rule cited in the letter was meant to check adulteration of fuels,” according to Sandeep Chaturvedi, director of Gujarat Oleo Chem Ltd. and president of the Biodiesel Association of India. “The petroleum ministry cannot start taking jatropha oil and peanut oil under its jurisdiction.”

Producers also claim that the lack of a unified policy is giving mixed signals, forcing them to face losses from operating below capacity.

“Some years ago, the Union government created hype about biodiesel as an alternative fuel, after which several state governments announced incentives for jatropha cultivation,” Chaturvedi said. This led to a large number of businesses being set up, with an investment of Rs 1,200 crore (\$250 million) to farm jatropha on more than 700,000 hectares (173,000 acres), according to the Biodiesel Association. Daimler-Chrysler selected India to test biodiesel use in its Mercedes Benz C-class automobiles. Indian Railways leased some of its land to the Indian Oil Corp. for biofuel plantations, and leading Indian cement maker ACC set up jatropha and castor tree plantations to produce energy for its own factories.

“But since the letter was issued, nearly all manufacturers, with combined capacity for some 3,000 [metric] tons of biodiesel a day, have suspended production,” Chaturvedi said.

Even before the letter, producers were working below capacity due to a pricing restriction. Biodiesel manufacturers can charge state-owned oil marketing companies such as Indian Oil Corp. and Bharat Petroleum Corp. a maximum of Rs 26.50 (55 cents) a liter, which is lower than the cost of feedstock. The price was set by the Ministry of Petroleum and Natural Gas.

The directive has also stalled manufacturers' plans to set up their own dispensing stations. Kolkata-based Emami Biotech had secured land for five biodiesel pumps in the states of West Bengal and Orissa. Hyderabad-based Naturoil Bioenergy Ltd. had similar plans for the state of Andhra Pradesh. Now they must wait for clearance from the central government, which is expected after a clear-cut policy is put in place.

“The government needs to intervene at a policy level. They cannot ask people to make [biodiesel] and then not let them sell,” said Chaturvedi.

Biodiesel producers have called for elimination of taxes and duties on their product and establishment of a guaranteed minimum price for oilseeds they grow for use in biodiesel. They also back a preference for Indian biodiesel and favor a certification mechanism for blending biofuels with conventional fuels in conformity with Bureau of Indian Standards specifications.

Meanwhile, environmentalists have said the policy should demand that biofuels be derived only from non-edible oilseeds grown on waste, degraded, or marginal lands.

The Ministry of New and Renewable Energy, under whose mandate the biofuels policy will fall, said the policy will be in place with the new few weeks. “The contours of the policy are ready,” said H.L. Sharma, director in the ministry, “Hopefully it should be through in the coming few weeks.”

67. Citing Economy, South Korea Delays New Regulations to Improve Air Quality

On May 27th, the Ministry of Environment announced that a set of existing or planned environmental regulations will be delayed or watered down to fulfill the South Korean government's March pledge of regulatory relief to ease the burden of the economic downturn on businesses and consumers. Regulations affected by the "go-slow" policy include a key provision to improve air quality in the country's economic heartland in and around the capital city of Seoul under a special law in force since January 2005.

The Special Law on the Improvement of Air Quality in the Capital Region phases in individual emissions caps for heavy polluters in Seoul and 25 cities around it. Businesses failing to meet emissions limits assigned by municipal authorities are assessed surcharges.

In the first phase that took effect in July 2007, workplaces emitting more than 30 metric tons of nitrogen oxides, more than 20 metric tons of sulfur oxides, and more than 1.5 metric tons of particulate matter a year became subject to the caps. A second phase expanding the program to smaller polluters was to begin July 1, but now delays of up to one year will be provided at the municipal level.

Another air quality measure facing delays is the ministry's plan to lower nationwide emissions limits for major pollutants, such as nitrogen oxides and sulfur oxides, by 10 percent to 15 percent from current limits, depending on different sources of pollution.

Municipal and provincial authorities can now grant reprieves up to one year from January 2010 when increased limits were originally set to take effect, thus helping companies collectively defer tens of millions of dollars in pollution prevention equipment costs, the ministry said.

The ministry's list also contains smaller measures to ease or delay many detailed compliance requirements covering anti-pollution equipment, various environmental surcharges, waste disposal procedures, and environmental training.

The ministry will complete changes to rules and regulations in June to put these and other measures into effect July 1.

68. Indoor Air Pollution Kills 46,000 People in Bangladesh Every Year

Around 32,000 children below five years and 14,000 adults die of acute lower respiratory infections (ALRI) caused by indoor air pollution every year in Bangladesh, according to the World Health Organization (WHO). Andrew Trevett, an environmental health advisor of the WHO, disclosed this while speaking at a workshop on indoor air pollution. Trevett said there is a double risk of pneumonia among kids besides tuberculosis, asthma, cardiovascular diseases, low birth weight and prenatal health outcomes due to the indoor air pollution.

Trevett, acting country representative of the WHO in Bangladesh, attributed the risk due to lack of using well-designed stoves for cooking meals across the country. Bangladesh's Health and Family Welfare Minister AFM Rahul Huque at the workshop said the conventional way is being followed by the villagers to cook food. They use woods, agriculture residues and cow-dung for cooking purpose, he said.

"Bringing about a change in traditional cooking system would not be possible overnight," the health minister was quoted as saying. He underscored the need for developing low-cost cooking method to benefit the community people at rural areas.

Joseph H Graziano, Chairman of the Department of Environmental Health Sciences at Columbia University, said nearly 3 billion people worldwide use bio-mass made of charcoal, wood, agriculture residues, dung and coal to cook food. Incomplete combustion of bio-mass emits powerful greenhouse gas pollutants including methane and black carbon contributing to climate change, said Graziano.

69. Asia Set To Become Biggest Climate Change Driver

Asia's share of global greenhouse gas emissions could rise to more than 40 percent by 2030, making it the world's main driver of climate change, according to experts. The most populous continent with the fastest-growing economies in China and India already accounts for a third of world emissions of gases blamed for warming weather, including carbon dioxide, Asian Development Bank President Haruhiko Kuroda told a conference in Manila. Its share of discharges from energy use has tripled over the past 30 years, he said.

Asia also stands out as the most vulnerable region to climate change. In addition to water shortages, crop yields in Central and South Asia could drop by 30 percent by 2050, and coastal cities including Bangkok, Jakarta, Karachi, Manila, Mumbai and Shanghai will be vulnerable to flooding or damage from unpredictable weather patterns, the ADB said. Within this century, people living in coastal Bangladesh, Maldives and Tuvalu in the southwest Pacific may be forced to flee because of rising sea levels.

Kuroda said it was imperative to step up efforts to put the region on a path of low-carbon growth. He said the ADB provided nearly \$1.7 billion last year for projects with clean energy components like wind power in China and India, exceeding its \$1 billion target.

70. Air Quality Still Moderate in Jakarta

The air quality in several areas in the country is still at moderate level, although the Air Pollution Index (API) in several locations records a higher reading.

The Department of Environment, in its report posted on its website, stated that as at 11am, the API reading at 31 of the 51 areas where the air quality level was being monitored was moderate, while the air quality in the remaining areas was healthy.

Among the areas where the air quality level deteriorated are Alor Setar, Kedah , with a reading at 74 from 70 yesterday; Bakar Arang, Sungai Petani (73); Seberang Jaya 2, Perai (83); Ipoh (73); Taiping (93) and Seri Manjung, Perak (72).

The API readings in the other areas are Pasir Gudang, Johor (58), Pengkalan Chepa, Kelantan (62), Nilai, Negeri Sembilan (67), Petaling Jaya (61), Port Klang (64), Shah Alam (62), Kuala Terengganu (54), Putrajaya (51) and Cheras (62).

API readings are categorized thus: 0-50 classified as good; 51-100 moderate; 101-200 unhealthy; 201-300 very unhealthy and above 300 considered hazardous.

71. Over 50% of Air Pollution in Azerbaijan Caused By Vehicles

The Joint Workgroup for Strengthening International Human Rights Standards presented results of the monitoring of the impact of traffic jams, emission of vehicles, and destruction of greeneries on the Baku environment. Chairman of the Workgroup Kamil Salimov said growth of vehicles and traffic density in Baku prejudices environmental protection from exhaust.

“Our workgroup has conducted monitoring and uncovered that over 50% of emission to air is caused by road transport and this indicator tends to grow against the background of growing number of vehicles in the country. Under calculations, only in 2009 transport emissions made 800,000 tons.” Salimov noted.

72. Shanghai Implementing Green Expo Actions

A better quality of gasoline and diesel that is designed to reduce vehicle emissions will be supplied to motorists from October as the city prepares for the World Expo. The municipal environmental protection bureau said motorists would be charged more for the new fuel but they did not reveal what the price increase would be. It follows an announcement by local government that all new cars, buses and vehicles used for cleaning and mail services must meet the "national IV standard" for vehicle emissions -- equivalent to Euro 4 emissions standards -- from Nov. 1. Shanghai is the second Chinese city behind Beijing to implement the emissions standard.

In addition, all new motorcycles must comply with the national III standard from July 1, the bureau said.

The fuel contains a maximum of 50 PPM sulfur.

Light-duty diesel powered vehicles (medium trucks) and long-distance vans are currently exempt from the new rules because most cities and provinces outside Shanghai are yet to offer the new fuel.

The fuels and vehicles initiative is designed to tackle Shanghai's air pollution problem as it prepares to host the World Expo next year. Bureau statistics showed that about 66 percent of the nitrogen oxide, 90 percent of the volatile organic compounds and 26 percent of particulate matter in the city's downtown area come from vehicle exhaust.

The national IV vehicle standards are scheduled to be introduced all across China by 2010, although the Ministry of Environment has taken comment on whether it should be delayed for some vehicle categories.

Meanwhile, Shanghai plans to extend its ban on heavy-polluting vehicles to further cut emissions. Under the plan, vehicles that do not meet national I emission standards will no longer be allowed to travel within the Middle Ring Road. Those vehicles are now banned within the Inner Ring Road area between 7am and 8pm.

There are now about 200,000 vehicles that fail to meet the national I standard, according to Su Guodong, director of the Pollution Control Department of the bureau. They account for 14 percent of local vehicles but generate 50 percent of vehicular emissions.

Shanghai is also planning incentives to encourage motorists to scrap their old cars and buy new ones meeting the national IV standard. Details about the plan are yet to be finalized by the city government, officials said. Official estimates show that if five percent or 50,000 of those old cars were traded in, the city would be able to reduce pollutants by eight percent.

73. China Adopts Euro III Equivalent Fuels Nationwide

On May 18th, 2009, China's State Council announced the "Petrochemical Industry Restructuring and Revitalization Plan". The announcement mandates nationwide China III quality gasoline motor fuel (150ppm sulfur) by 2009 and nationwide China III quality diesel motor fuel (350ppm sulfur) by 2010. The announcement also says that any fuels not meeting these standards may not be sold into the marketplace after the implementation dates.

The announcement represents a key, concrete step by China on the road to fuel desulfurization.

The following table summarizes the current status of nationwide fuel sulfur content in China:

Fuel	Standard #	Sulfur Content	Type	Nationwide Implementation Date
China II (gasoline)	GB 17930-2006	500ppm	mandatory	12/06/2006
China III (gasoline)	GB 17930-2006	150ppm	mandatory	12/31/2009
China I* (diesel)	GB 252-2000	2000ppm	mandatory	1/1/2002
China II* (diesel)	GB/T 19147-2003	500ppm	voluntary	10/1/2003
China III* (diesel)	announced by State Council; awaiting final approval from SAC	350ppm	mandatory	2010; no date fixed

* The terms China I / II / III are not officially used in the standards to describe diesel fuel grades.

The 5/18/09 State Council announcement merely affirms the existing standards for gasoline, but establishes, for the first time, a definitive timetable for nationwide implementation of 350ppm sulfur diesel.

Note that the diesel fuel standard is still in the final stages of approval; it is generally assumed, though, that due to the State Council announcement, approval of the standard is imminent.

Sinopec Corp., China's largest refining company by capacity, will invest eight billion Yuan in upgrading its refineries to help its refining products meet National Emission Standard III, reported The Beijing News. As required by the newly released stimulus plan, Sinopec said that after the upgrades, all of its refining facilities will be able to meet the new National Emission Standard III. Sinopec earlier showed that 50 percent of its production could reach the National Emission Standard III.

74. Sinopec Begins Production of Euro V Diesel for Export

On May 24th a branch of China Petroleum & Chemical Corporation (Sinopec), in the city of Zhenhai, Zhejiang Province, rolled out its first 10,000 tons of vehicular diesel oil in line with the Euro V emission standards. Such a move by Sinopec is part of its sweeping oil quality upgrading plan.

The first 10,000 tons of vehicular diesel have been shipped to Hong Kong from Zhongshan Port.

A spokesperson for Sinopec says that this is significant for the Chinese oil manufacturing industry especially at a time when the domestic and overseas markets are undergoing a sharp downturn, adding it will help Chinese oil makers shore up their exports and boost up their competitive edge in the international market.

The Euro V standards spell out that the content of sulfur cannot exceed 10ppm.

75. Gasoline, Diesel Retail Prices To Increase in China

Following the new pricing mechanism, requiring a price change in retail fuel if oil prices went up or down four percent in 22 consecutive working days, Chinese fuel prices should have been raised by 530 Yuan/ton and 590 Yuan/ton for gasoline and diesel, respectively, on May 26.

Sinopec board chairman Su Shulin said the central government can make the final decision on whether to raise fuel prices on May 28th. Su had previously said Sinopec would suffer losses if oil prices returned to 60 U.S. dollars per barrel.

Last time China adjusted its fuel retail price was on March 25, when the price of gasoline was lifted by 290 Yuan/ton and diesel by 180 Yuan/ton.

76. China Considers Carbon Tax on Fossil Fuels, Official Says

The Chinese government is developing plans to impose a carbon tax on consumers of fossil fuels and to reform other energy and environmental taxes, state media reported on April 21st. Su Ming, deputy director of the Institute of Financial Science under the Ministry of Finance, revealed the information during a panel discussion at a forum on sustainable development, held in Beijing on April 18th. This was the first public statement by a high-ranking official signaling the likelihood of a carbon tax.

Su said the initial tax would be set at a rate that would not overburden companies.

Yang Fuqiang, climate director of WWF China and a participant on the panel, delivered a paper that said the rate could be 40 to 50 Yuan (\$5.80 to \$7.30) per metric ton of carbon dioxide emitted, although there were also estimates it could be as high as 80 Yuan (\$11.70)

The Ministry of Finance initiated a carbon tax study two years ago, Yang said. Although Su did not give a time frame for the possible tax, Yang said it could be implemented in 2012.

Su said an official report on the tax will be released in two to three months.

Su also said that taxes on emissions of sulfur dioxide and nitrogen oxide, and discharges linked to chemical oxygen demand, a measure of water pollution, are possible, according to a report from the business publication China Securities Journal that was published in the official Communist Party newspaper People's Daily.

Plans to reform energy and environmental tax structures are also being developed separately and could be changed if a carbon tax were implemented, the China Securities Journal report said. According to the report, a carbon tax could be levied on individual and business consumers of fossil fuel products such as coal, gasoline, natural gas, and aircraft fuel. Yang said it could also include taxes on the use of natural resources in resource-intensive industries such as cement.

The tax plan is not expected to be part of the forthcoming 12th 5-Year Plan, which will cover the 2011–2015 period. Instead, it would be a separate directive issued by the Ministry of Finance as needed, said Yang.

77. Sinopec Signals Rebound in Chinese Fuel Demand

China Petroleum & Chemical Corp. said that its refineries are running at higher rates, adding to some tentative signs of economic recovery in China. But the rebound in international oil prices to around \$60 a barrel has pushed the company's refining business back into the red, because low, state-set fuel prices make it hard to recoup the greater costs.

Su Shulin, chairman of the state-owned company, known as Sinopec, said China's apparent consumption of fuel and other oil products rose 1.5% in April compared with a year earlier. Zhang Jianhua, senior vice president, said the company's refineries were running at 90% capacity.

Sinopec is Asia's biggest refiner, with a smaller presence in oil and natural-gas production. The company has struggled with low profit margins despite a new government policy that domestic fuel prices should more closely track the international markets where Sinopec buys its crude oil.

The company's profit fell 47% last year, its first annual earnings decline in seven years. Sinopec saw some relief when oil prices cratered, but the recent climb back toward \$60 a barrel has erased its profit margins. "The pressure is large," Mr. Su said.

To make up for losses on the domestic fuel market, Asia's biggest refiner has been exporting 600,000 tons of refined products a month, about half of it diesel, according to Mr. Zhang. The two Sinopec executives were speaking on the sidelines of the company's annual general meeting.

Chinese customs data showed that diesel exports rose to a record in April, while gasoline hit a near two-year high.

Separately, Mr. Su said Sinopec is actively assessing possible acquisition targets or ventures in South America and Africa.

78. Chinese City Grants Subsidies for Private Hybrid Cars

China will give 43,000 Yuan (\$6,300) in subsidies to buyers of hybrid cars in the southwestern city of Chongqing, the first state initiative for private cars, according to the Shanghai Securities News. The subsidy, from the local government, will be given for the Jiexun brand hybrid sedan made by Chongqing Changan Automobile Co, the newspaper said.

In late 2008, the Chongqing government had ordered 10 Jiexun from Changan and set a target to increase the number of hybrid vehicles in the city's public sector to 1,000 units in 3 years.

The hybrid version of Jiexun, priced at 140,000 Yuan, has received some pre-orders and will hit the market as early as June, the newspaper said, citing Ren Yong, deputy chief of Changan's clean energy auto subsidiary unit.

China pledged in February to subsidize purchases of clean-energy vehicles for public fleets in 13 cities as it moves to help its auto industry develop green technologies. Under the trial scheme covering public transport operators, taxi firms and postal and sanitary services in cities such as Beijing and Shanghai will get rebates of 28,000 Yuan to 250,000 Yuan for green vehicles, including electric, hybrid and fuel-cell vehicles.

79. Honda Insight First Hybrid to Rank Top In Japan

Honda Motor Co has announced that its new Insight model became the first hybrid to be crowned Japan's best-selling car last month. The Insight went on sale in Japan in early February as Honda's first real attempt to challenge Toyota Motor Corp's dominance in the gasoline-electric hybrid segment. A ranking of Japan's top 30 excluding 660cc minivehicles announced by the Japan Automobile Dealers Association showed the Insight selling 10,481 units in April, catapulting it from 21st place in March.

The car, whose main sell is its affordability with a price tag starting at 1.89 million yen (US\$19,190), was followed by Honda's Fit subcompact. Toyota's Vitz subcompact ranked third. Other Honda and Toyota models comprised the top 10 list. Toyota's flagship hybrid, the Prius, came in 21st ahead of the launch of its successor third-generation version on May 18th.

Honda was the only domestic brand to see its car sales rise in April from the year before.

80. Toyota Lowers Price of New Prius in Response to Honda

Toyota Motor Corp has announced that its new Prius had received pre-sale orders for 80,000 vehicles in Japan, kicking off what promises to be a fierce battle against hybrid rival Honda Motor Co. Toyota, which has dominated the market for gasoline-electric cars so far, is looking to take back the crown after Honda's new Insight became the first hybrid ever to top the best-sellers' list in Japan last month.

Introducing the third-generation Prius, Executive Vice President Akio Toyoda said the upgraded model, which costs about \$3,000 less than the previous version, had received more than 80,000 orders ahead of the start of sales in Japan, where it aims to sell 10,000 vehicles a month.

The new Prius, first unveiled at the Detroit auto show in January, will also go on sale in North America and Europe this month, followed by other markets later. Toyota has set a global sales target of 400,000 units for the car in 2010.

Although gasoline prices have nearly halved since peaking last July, automakers expect growing interest in the fuel-saving technology with consumers continuing to trade in big SUVs in favor of small cars, even in the United States.

"The hybrid market is going to be one of the fastest-growing segments in the world," said JPMorgan Securities auto analyst Takaki Nakanishi. "With the global economy in a recession, luxury and large cars are not selling but fuel-conscious cars are in fact growing. Toyota's earnings performance is hurting right now, and they can't afford to lose the lead in this market," he said.

By 2018, JPMorgan Securities expects roughly one in every 10 cars to be a hybrid, with global sales reaching 9.96 million vehicles as more brands such as Daimler's Mercedes-Benz and Volkswagen, as well as General Motors Corp's plug-in Chevy Volt, join the market.

Hybrid sales are also being supported by governments offering consumers incentives to trade in older gas-guzzling cars in favor of more fuel efficient models to stimulate demand amid the worst industry slump in at least three decades.

The new Prius will start at 2.05 million yen (\$21,620), or at least 300,000 yen less than what executives had originally said the car would cost. The about-face came after Honda's Insight became an instant hit after going on sale in Japan in early February. Honda sold nearly 10,500 Insights in April, more than double its target of 5,000 units a month.

Toyota had originally planned to raise the price on the latest Prius because it packed more advanced features, a bigger, 1.8-litre engine and better mileage of 50 miles per gallon, or 38 km/liter.

With an eye on competing with the Insight, Toyota will also take the unprecedented move of continuing to sell the entry-level grade of the previous Prius in Japan at the same price as the Insight's 1.89 million yen, with a monthly target of 3,000 units.

JPMorgan's Nakanishi agreed that striking a healthy balance with sales of non-hybrid cars will be crucial going forward. "As hybrids become more attractive and cost-competitive, we need to worry about how the other cars are going to hold their own. Hybrids still have lower margins (than gasoline cars,) so there's going to be some pressure on profitability. All that has to be taken into account while they sell their hybrids," he said.

81. Nissan Says Japan Green Car Orders Surge in May

Nissan Motor Co has announced that orders for its eco-friendly cars are up 30 percent in Japan in May from the same period a year earlier, helped by the government's new tax incentives for low-emission cars. With the addition of the NV200 Vanette light commercial vehicle, Japan's No. 3 automaker now has 15 vehicles in its domestic lineup that are eligible for the tax breaks, Chief Operating Officer Toshiyuki Shiga told a news conference.

Japan lowered taxes on greener vehicles in April in a step the auto industry expects will add 310,000 vehicle sales in the financial year to March 2010.

To make the most of the scheme, Nissan made improvements in its engines to expand its lineup of eligible cars from the previous six and kicked off a big marketing push for its eco-friendly vehicles. A climb in May would mark the first increase in Nissan's domestic sales in 10 months.

Japanese market leader Toyota Motor Corp said its overall domestic vehicle orders in April grew 20 percent, mostly helped by pre-sale orders for the new Prius hybrid, marking the first monthly rise in orders in two years.

Nissan's Shiga acknowledged that the lack of a hybrid car was a concern it often heard from dealers, but stressed that its extensive offering of fuel-efficient gasoline-engine cars would help lower emissions on the whole at the automaker. It said it had the highest ratio of cars eligible for a 75 percent tax reduction on fuel-economy standards in Japan.

In the year ended March 31, Nissan's domestic sales, including the 660cc mini vehicles it buys from Suzuki Motor Corp and Mitsubishi Motors Corp, underperformed the market with a 15 percent fall. Last year, Japan accounted for 18 percent of its total vehicle sales.

82. Japan Considering Taxes, Subsidies to Encourage 'Green' Commercial Vehicles

The Japanese government is seeking to offer expanded tax relief and new subsidies for environmentally friendly commercial vehicles. The Ministry of Land, Infrastructure, and Transport's fiscal 2009 supplemental budget request calls for allocating 15 billion yen (\$154 million) for tax breaks and subsidies for taxi, bus, and trucking companies that operate vehicles powered by compressed natural gas, clean diesel, electricity, and hybrid systems.

The request was included in a supplemental budget bill submitted on April 27th by the administration of Prime Minister Taro Aso to the Diet. In the initial fiscal 2009 budget, the ministry allocated only 1.7 billion yen (\$17 million) for tax incentives for commercial vehicles. An MLIT Road Transport Bureau official said the ministry expects these incentives to boost sales of environmentally friendly trucks and buses by about 20,000 this year. Annual motor vehicle sales in Japan total about 4 million.

The ministry proposes to offer a subsidy of about 150,000 yen (\$1,550) for each taxi powered by liquefied propane gas and 250,000 yen (\$2,600) for each gas-electric motor hybrid taxi, the official said.

In addition, the ministry would allocate 13 billion yen (\$133 million) separately in fiscal 2009 for fleet operators that buy hybrid and other eco-friendly commercial vehicles, he said. The ministry tentatively plans to offer incentives of 200,000 yen (\$2,050) for purchases of a qualifying small bus, 400,000 yen (\$4,100) for a mid-size bus, and 900,000 yen (\$9,200) for a large bus. Incentives would be doubled for fleet owners who replace vehicles more than 13 years old, the official said.

The Japanese government also plans to introduce a scrap incentive program as part of its fiscal 2009 supplemental budget that would pay up to 250,000 yen (\$2,600) in cash to a buyer replacing a vehicle more than 13 years old with a hybrid or other environmentally friendly car. The program would start later this year.

About 10 million of the 80 million motor vehicles on Japanese roads are more than 13 years old.

83. Japan Says 15-25 Percent GHG Emissions Cut Possible

Japan's environment minister Tetsuo Saito said cutting greenhouse gas emissions by 15 percent by 2020 from 1990 levels was possible, and 25 percent was achievable if emissions credits were purchased from abroad, according to the Asahi daily.

Prime Minister Taro Aso is expected to make a decision on Japan's official targets on midterm emissions cuts by mid-June, ahead of negotiations on a new international global warming pact to be held in Copenhagen in December.

Though the Japanese government is keen to carve out a role as a leader on the environment, the business community is nervous about setting stringent targets. A recent opinion survey found that a midterm cut of 7 percent was the most popular option with the public.

84. India to Consider Freeing Petrol, Diesel Prices; Possible Impediment Removed

One of the major impediments to accelerating the introduction of low sulfur fuels in India is the argument by the oil industry that price constraints are making investments unprofitable. This could change. After taking over as Minister of Petroleum and Natural Gas for a second term, Mr. Murli Deora said that the Government will consider deregulating petrol and diesel prices, "The issue of deregulation is being discussed and it will be put up to the Cabinet for a decision," he said, adding that a decision on the issue would be taken in about six weeks.

"My personal opinion is that it is the right time to free petrol and diesel prices. But [the] poor should continue to get cooking fuel like kerosene at subsidized rates. Nowhere in the world is kerosene sold at Rs. 9 a liter. It is cheaper than even mineral water," he added.

Earlier in the month, Oil Ministry sources had said that draft Cabinet notes have been readied for giving state-run oil marketing firms Indian Oil, Bharat Petroleum and Hindustan Petroleum the freedom to fix petrol and diesel prices when crude oil remains below \$75 a barrel. Once deregulation takes place, fuel retailers will be able to fix petrol and diesel prices periodically — it could be once a fortnight or once a month. The draft note also included the proposal of raising rates of natural gas produced by ONGC and Oil India Ltd from fields given to them on a nomination basis.

85. Indian Oil May Not Import Diesel From June to March

Indian Oil Corp may not import diesel during the rest of the fiscal year that ends in March as gasoil demand in India is seen declining due to a fall in industrial activity, company officials said. "Our diesel imports will be significantly low this year. At this stage we do not anticipate any diesel imports this year," IOC's director of finance S. V. Narasimhan told reporters.

IOC imported 120,000 tons of diesel in April and May. In the fiscal year to March 31, it had imported about 380,000 tons. India's diesel demand in May was flat on the year, he said.

"The growth was not there because of a high base. Last year there were rumors of fuel price increase so the sales volume was high," Narasimhan told a news conference.

He said there had been a recent downturn in diesel sales but he still expected a rise in diesel demand over the balance of the year. "There has been a slump that we find particularly in the sales of diesel in the recent past. There is certainly, definitely, a fall in demand for diesel, particularly because industrial demand has gone down," IOC's chairman, S. Behuria, said.

He expects 4-5 percent growth in India's diesel demand in the current financial year, and 8-9 percent in petrol sales.

86. Mangalore Refinery Shuts Diesel, Jet Fuel Unit

Mangalore Refinery & Petrochemical Ltd., a unit of India's biggest energy exploration company, partially shut its plant on May 8 for 30 days to upgrade equipment that removes impurities from fuel. The hydrocracker unit, which produces 1.6 million metric tons of diesel and jet fuel a year, was shut to change catalysts that help reduce sulfur content to meet higher emission norms, Managing Director U.K. Basu told reporters by telephone.

"Diesel and jet fuel supply will be partially affected during this shutdown," Basu said. "We informed buyers of the shutdown 45 days ago."

India will make it compulsory for refiners to sell Euro IV fuels in the major Metros starting April 2010.

Mangalore Refinery operates a 9.69 million ton-a-year refinery on the coast in the southern state of Karnataka. Oil & Natural Gas Corp. has a 72 percent stake in Mangalore Refinery, while Hindustan Petroleum Corp., India's third-largest state-owned refiner, owns 17 percent. The refiner plans to spend 124 billion rupees (\$2.5 billion) to increase the plant's capacity to 15 million tons a year by October 2011, Basu said.

87. Maruti to Expand Presence in Diesel Segment

Maruti Suzuki is now looking to be an aggressive player in the diesel segment, a category which is dominated by Tata Motors. After the success of the Swift hatchback and the Dzire sedan in the diesel variant, the company is hoping to replicate this success in its upcoming model Ritz.

To meet the growing demand for the diesel variants in its models, it is increasing the engine capacity by one lakh units as part of its Rs 9,000-crore expansion plan. This will then take its total production capacity for diesel engines to 3 lakh units by March 2010. The capacity expansion is to reduce the long waiting period on its diesel models.

Maruti also hopes to divert some of its export capacity in diesel engines for the domestic market. These engines used to earlier be exported to Hungary, but the demand in that market has decreased now. Last year, the company exported 20,000 units of engines to Hungary. "But with demand in the European market low, we will be able to use some of that capacity for the domestic market," said Mr. I.V. Rao, Executive Officer, Research and Development at Maruti Suzuki.

Currently, the Swift petrol model has a waiting period of 2-3 weeks. But the diesel variants of both Swift and Dzire have a waiting period of 3-5 months. The Swift hatchback sells about 9,000-10,000 units a month and Dzire too sells about 6,000-8,000 units. Of this, the ratio of diesel sales versus petrol is 70:30. The Ritz, set to be launched soon, and built on the Swift platform, will sport a 1.3-litre diesel engine.

When asked how many units of Ritz diesel variant the company intends to sell, Mr. Srivastava said, "We would like the ratio of 70 and 30 between diesel and petrol like we have had for the Swift."

When the Swift was launched, the company had planned a production of 4,000 units. But sales exceeded expectations.

Currently, the diesel range of passenger vehicles is dominated by Tata Motors. Though Mr. Nitin Seth, Head of the Passenger Car Business, Tata Motors, refused to divulge the ratio of diesel versus petrol cars being sold, he said, "We are still the largest players in the diesel segment. We cannot give the breakup of sales. But customers prefer the diesel variants because they are fuel efficient." Dealer sources say that the sales ratio for Tata Motors could be as high as 80:20.

Hyundai, which currently has only Getz in the diesel variant among its compact car models, is also planning to launch i20 in the diesel version by the year end.

88. India's Tata Group to Cut Greenhouse Gas Emissions

The India-based Tata group has appointed consultants McKinsey and Ernst & Young to help its five most polluting companies reduce their greenhouse gas emissions. The appointment was made by the group's steering committee, headed by Tata Sons director J.J. Irani, which is charting a road map to help the group's 100-odd entities cut their carbon footprint. Some 80 percent of the group's emissions come from its biggest companies—Tata Steel, Tata Motors, Tata Power, Tata Chemicals, and Tata Consultancy Services. The Tata group, in the international limelight since the launch of the \$2,500 car, the Tata Nano, and its acquisition of steel company Corus, has been keen to be seen to be greening its act. While many environmental groups have been critical of the Nano, fearing its low price could lure millions of new drivers onto roads, Tata chairperson Ratan Tata has noted that it is less polluting than most motorcycles on Indian roads. The Tata group plans to use adopting green technology as a business opportunity. A climate change division has been set up to craft a program to advise chief officers of all group companies. About 300 employees are being trained in the first phase of the program. The second phase will include smaller Tata companies like Voltas, as well as its telecom and construction equipment arms.

89. World Bank Helps Bangladesh Control Air Pollution

The World Bank has approved a \$62.2 million credit to help Bangladesh to control urban air pollution through cutting emissions in key polluting sectors such as transport and brick-making. The level of air pollutants in the capital Dhaka and other major cities has steadily increased in recent years, with an annual average well exceeding World Health Organization (WHO) guidelines.

"This project will not only help cut pollution and its health impacts and costs but also generate other benefits including better mobility in the case of transport and reduced energy consumption in the case of small industries," a World Bank statement quoted its Bangladesh Country Director Xian Zhu as saying.

More than a third of Bangladesh's population live in cities and forecasts suggest that proportion will increase to more than half by 2050. Most of this population growth is concentrated in and around Dhaka, the eighth largest city in the world.

A World Bank release said the World Bank Board approved the credit on May 12.

Greater Dhaka's population is projected to reach 20 million by 2020 and poor air quality in the urban area creates serious health hazards, adversely affects environment and quality of life.

The CASE project will provide technical assistance to the Ministry of Environment and Forest to improve air-quality monitoring in Bangladesh and also introduce cleaner technologies, in the very polluting brick-manufacturing sector. These energy-efficient new technologies will reduce energy consumption and lower air pollution, hence improving overall environmental quality.

In urban transport, the project will introduce low-cost measures to reduce conflict between motorized and non-motorized transport, reduce congestion and provide safer and cleaner mobility for pedestrians in pilot areas in Dhaka.

90. Australian Council Considers Vehicle Carbon Dioxide Standard

On May 22nd, Australian Federal and state environment ministers agreed to move forward on a national take-back scheme for electronic and electrical waste. Meeting as the Environment

Protection and Heritage Council (EPHC), ministers also agreed to refer to Prime Minister Kevin Rudd and state leaders a proposal to develop a regulatory impact assessment for a mandatory carbon dioxide emission target for new vehicles. The decision follows the completion of a study conducted by EPHC and the Australian Transport Council on vehicle fuel efficiency.

SOUTH AMERICA

91. State Prosecutor Sues Petrobras, Truck Makers to Reduce Sulfur Emissions

The São Paulo state prosecutor's office has filed a civil lawsuit against the state oil company Petrobras over the high-sulfur diesel the company supplies, asking the court to require Petrobras to provide diesel fuel in line with sulfur emissions limits set forth by Brazil's National Environmental Council (CONAMA) in 2002. The lawsuit also targets the country's eight truck and bus manufacturers and five engine makers, asking the court to require the manufacturers to build cleaner burning diesel engines and vehicles that can use the low-sulfur diesel to meet the CONAMA emissions limits, which initially were set to take effect Jan. 1, 2009.

São Paulo state prosecutor José Lutti filed the lawsuit (Case No. 053.09.006711-0) with a state court in the city of São Paulo, Latin America's largest metropolis. It asks the court to require Petrobras to immediately begin supplying low-sulfur S-50 diesel (with a sulfur content of 50 parts per million) to all gas stations in São Paulo state. Petrobras generally produces diesel for buses and trucks that has a sulfur content of 2,000 ppm, known as S-2000 diesel. But in Brazil's 14 largest cities where air pollution levels are at their highest, Petrobras provides fuel with a sulfur content of 500 ppm (S-500 diesel). Petrobras also provides the cities of São Paulo and Rio de Janeiro with low-sulfur, S-50 diesel for buses, but not other trucks, and not throughout the entire state of São Paulo.

Newer model trucks and buses must then be equipped with new generation motors and catalytic converters adapted for S-50 diesel in order to significantly reduce sulfur particulate emissions. The lawsuit also asks the court to require Brazil's eight truck and bus manufacturers—Volkswagen, Ford, Scania, Iveco (Fiat), Mercedes-Benz, Volvo, Agrale, and Hyundai—to begin selling in São Paulo state new models with engines, catalytic converters, and special exhaust filters that can use the S-50 diesel. The lawsuit also asks the court to require the country's five diesel engine manufacturers to immediately provide motors for such vehicles. By using S-50 diesel with appropriately equipped vehicles, the buses and trucks could then meet CONAMA's emissions limits.

Lutti said the state prosecutor's office filed the lawsuit because the office “adamantly opposed” an October 2008 agreement to allow the gradual, nationwide phase-in of low-sulfur diesel and to require new trucks and buses that use the cleaner fuel to comply with the more stringent CONAMA diesel emissions limits by 2012. The October 2008 agreement was signed by the federal prosecutors' office, the federal government, the São Paulo state government, Brazil's eight bus and truck manufacturers, the National Oil Agency, and Petrobras.

Lutti explained that the state prosecutor's office is a government watchdog agency whose actions are similar to, but independent of, those taken by the federal prosecutor's office in each state. “If a state judge rules in our favor, he can in São Paulo state require Petrobras, truck and bus manufacturers, and diesel engine makers to comply with our lawsuit's requests immediately,” Lutti said. “Petrobras is already beginning to produce and import low-sulfur diesel and Brazil's truck and bus manufacturers are making for-export models with engines, catalytic

converters, and special exhaust filters that can, by using 5-50 diesel, reach CONAMA's Jan. 1, 2009, emission reduction limits."

The lawsuit also asks the court to preserve a right of indemnity against Petrobras, bus and truck manufacturers, and diesel-engine makers for São Paulo state families whose members died as a result of respiratory problems caused by high concentrations of particulate matter in the air linked to high-sulfur diesel. That demand is based on the latest results of a study completed in January by researchers at the University of São Paulo. "Our study's most recent results show that, in the city of São Paulo, 7,900 people die each year because of air pollution, and that half of those deaths are caused by the particulate matter emitted by the burning of high-sulfur diesel," according to Dr. Paulo Saldiva, the study's main researcher.

Lutti said, "We hope the state court allows families whose members died as a result of respiratory problems caused by high-sulfur diesel to be indemnified, even though we know that proving this link, even with coroner's office cause-of-death certificates, will be difficult. We feel it is important to give those families at least the possibility of that compensatory option."

92. Brazil to Increase Biodiesel Requirement in July

Starting in July, Brazil's National Energy Policy Council (CNPE) will require all diesel fuel in the country to contain 4 percent biofuel (B4 biodiesel), an increase from the 3 percent biofuel content now required, CNPE President Edison Lobao announced on May 14th. The CNPE initially established the biofuel requirement for B2 biodiesel—generally a mix of vegetable oil and sugar cane ethanol with 98 percent standard diesel—in a 2005 law designed to grow the market for the renewable fuel. In July 2008, the council raised the biodiesel standard to 3 percent biofuel. Currently gas stations offer only the B3 biodiesel, which is mainly used by trucks and buses, and helps reduce carbon monoxide emissions. Making B4 biodiesel mandatory in July is an intermediate step toward requiring B5 biodiesel by 2010, announced Lobao, who is also the minister of mines and energy.

93. Brazil Could Adopt Greenhouse Targets: Lula

President Luiz Inacio Lula da Silva said Brazil was open to adopting targets for greenhouse gas emissions if rich countries did more to curb climate change. "Brazil should not be afraid of the challenge," Lula told reporters in an interview at the presidential residence in the capital Brasilia. "That issue is not a taboo for us," he added, saying that he may attend global climate talks scheduled for the end of this year in Copenhagen.

Developing countries, however, should not be expected to make the same sharp emissions cuts as rich countries, Lula said. "Rich countries, which are the biggest emitters of greenhouse gases, must do their part," he said, urging all countries to sign the expiring Kyoto protocol on climate change. "What we can't accept is people who already have their car, a third television, a third house telling Brazilians to remain poor."

Brazil relies heavily on clean hydro energy and has begun to reduce Amazon destruction, which emits carbon as trees burn or decompose. Destruction of the world's largest rain forest is the main contributor to Brazil's greenhouse gas emissions, which are among the world's largest. Last year, Brazil abandoned years of opposition to deforestation targets and said it would reduce Amazon destruction by 50 percent in a decade. Lula also said he would veto clauses in an Amazon land reform bill that would grant companies and non-residents land titles. The objective of the bill is to legalize land holdings of millions of people who settled in the Amazon in

recent decades, but environmentalists have criticized it as a land giveaway that could spur more deforestation.

"We want to be an example to the world in taking care of our own things," Lula said.

94. Public Parks in São Paulo Contaminated With Heavy Metals, Likely From Vehicles

Topsoil in public parks in São Paulo, Latin America's largest metropolis, contains heavy metals and other toxic substances at levels higher than recommended for residential areas, according to the author of a two-year study. The topsoil of all parks tested showed elevated levels of the heavy metals lead, copper, zinc, and barium, plus two other toxic elements, arsenic and antimony. The levels exceed limits set by CETESB, the Brazilian state's pollution control agency, for residential areas, study author Ana Maria Figueiredo said. The study, funded by FAPESP, a state scientific research institute, tested 14 of the city's 23 parks.

"The four of the 14 parks where the levels of heavy metals were the highest and were well above levels set by CETESB for residential areas were those in the center of city where traffic is the most concentrated," Figueiredo said.

"As lead, copper, barium, and antimony are emitted by car fuels and burnt lubricants as particulate matter, and as zinc is a car-tire residue, I believe that cars, in particular their emissions, are the main source of most of these heavy metal concentrations," Figueiredo said. "High arsenic levels could be the result of fertilizers."

Figueiredo said her study, published in May, did not deal with the health risks posed by heavy metals in park topsoil, but said that "as children play on the ground in these parks, these heavy metals put them most at risk." She added that "the best way to slow the rate at which these levels of heavy metals in park topsoils rise" is to improve mass transit through more subway lines and to set stricter emissions limits for vehicles.

To reduce traffic and air pollution, a city law allows only 20 percent of its 8.4 million cars to circulate each day during three-hour morning and late-afternoon rush periods. Weekdays are assigned by the final digit on license plates.

CETESB declined to comment on the study because it was unaware of the report's methodology and because CETESB sets recommended maximum levels of heavy metals and toxic substances only for three types of areas—residential, agricultural, and industrial—but not public parks, said spokeswoman Christina Couto.

95. Chile Urges Firms to Replace Diesel Fuel with Liquefied Natural Gas

Companies in central Chile should return to using natural gas in their operations starting this summer, when the country is due to begin importing the fuel by sea in the form of liquefied natural gas (LNG), Environment Minister Ana Lya Uriarte said on May 13th. Companies that do not switch from diesel and other dirtier fuels to natural gas could face fines for breaching their environmental licenses, she said.

Visiting the GNL Quintero LNG terminal 150 kilometers (93 miles) northwest of Santiago, which is due to receive its first shipload of natural gas in June, the minister said that a 2005 exemption permitting industries to switch to dirtier fuels like coal, diesel, and fuel oil was conditional on natural gas not being available.

Air quality in the Chilean capital Santiago improved markedly during the first half of this decade as companies switched to cleaner-burning natural gas imported from neighboring Argentina. But limits imposed on gas exports by Argentina's government in 2006 forced industry throughout the country, including power plants and copper smelters, to revert to diesel. Greater use of diesel fuel and other fossil fuels, combined with rising traffic levels and low rainfalls, has led to steadily worsening air pollution over the last three years.

The arrival of LNG is expected to reverse this situation while easing Chile's restricted energy supplies.

With the Quintero re-gasification plant expected to start pumping natural gas into the central Chilean network in July, the minister said companies should be preparing now to sign supply contracts.

Companies found to be in breach of their environmental licenses face fines of up 500 monthly tax units (equivalent to \$32,400) or the revocation of their licenses, forcing operations to be halted, Uriarte warned.

AFRICA

96. Study Indicates Emerging Addis Ababa Air Pollution

A study commissioned by Forum for Environment Ethiopia (FfE) has indicated the emergence of air pollution in Addis Ababa, mainly caused by emissions from the exhaust pipes of cars and industries. The study, conducted at five selected sites in the city—Kera, National Theater, Urael, Merkato and Behere Tsige areas (the latter being a control site), showed the ambient air surrounding these areas contains abundant toxic gases which may cause acute respiratory diseases.

The study indicated that the major sources of these emissions were hazardous elements, including carbon monoxide, sulfur dioxide and nitrous oxide which mainly proceed from the exhaust pipes of older cars and industries.

Presented to stakeholders this week, the study indicated the degree of air pollution in the selected sites. The study is expected to pave the way toward the adoption or introduction of potential air pollution control strategy.

The FfE, which commissioned the study, is a platform for communicating among people concerned with the Ethiopian environment. The forum was established in June 1997 by a group of people committed to the preservation and betterment of the environment.

GENERAL

97. Arctic Task Force Will Tackle Emissions of Black Carbon, Methane

On April 29th, the Arctic Council agreed to form a task force to examine how to limit emissions of soot, methane, and other non-carbon dioxide gases in the region. The meeting in Tromsø, Norway, ended with a declaration containing a series of measures aimed at protecting the arctic environment over the next two years.

The conference, which counted former U.S. Vice President Al Gore among its attendees, urged the International Maritime Organization to adopt “updated and binding guidelines for ships operating in arctic ice-covered waters” and to support the development of arctic safety and environmental protection regulations “as a matter of urgency.”

In the face of a steady growth in arctic shipping traffic, the declaration said, new national and international regulations governing pollution prevention, accident risk, and emergency responses are needed.

According to the final declaration, non-carbon dioxide emissions such as soot, also known as black carbon and methane are “important factors” in arctic climate change. The task force will identify measures to reduce these emissions and will recommend immediate actions, it said. Other recommendations related to infrastructure and ocean management and safety in oil and gas production. Recommendations on international cooperation in search and rescue operations were also issued.

The council also decided to meet at the political level once a year. It previously met at the foreign minister level every second year.

The Arctic Council includes representatives of Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden, the United States, and local indigenous populations. U.S. Deputy State Secretary James Steinberg represented the United States at the Tromso meeting.

98. Airlines Commit to Capping Emissions by 2020, Improving Fuel Economy

On June 8th, the International Air Transport Association (IATA) announced that the airline industry is committed to capping its greenhouse gas emissions by 2020. “Two years ago we set a vision to achieve carbon-neutral growth on the way to a carbon-free future. Today we have taken a major step forward by committing to a global cap on our emissions in 2020,” said Giovanni Bisignani, director general of IATA at the 65th IATA Annual General Meeting and World Air Transport Summit in Kuala Lumpur, Malaysia. “After this date, aviation’s emissions will not grow even as demand increases. Airlines are the first global industry to make such a bold commitment,” Bisignani said.

In addition, IATA committed to a 1.5 percent annual improvement in fuel economy and a 50 percent reduction in greenhouse gas emissions by 2050.

The organization said in a statement that the industry’s “carbon footprint,” or net emissions, is expected to decline by 7 percent in 2009. Of this, 5 percent is attributable to the worldwide recession, and 2 percent is related to efficiency gains in the industry.

Bisignani said airline success in meeting carbon dioxide reduction goals is contingent in part on government action. He called on the International Civil Aviation Organization to set binding carbon emissions standards on manufacturers for new aircraft. He also called for “a legal and fiscal framework to support the availability of sustainable biofuels” and for infrastructure projects to improve commercial aviation efficiency.

IATA in April called for specific government actions to improve efficiency, such as allowing a continuous gradual descent during landings, rather than the stepped descents common today. The organization also called for satellite-based navigation and for increased use of biofuels.

At the Kuala Lumpur meeting, IATA called for aviation emissions to be capped and accounted for globally, rather than by individual nations, as part of a successor agreement to the Kyoto Protocol to limit climate change that may emerge from international negotiations in Copenhagen in December. IATA said it would work with ICAO to ensure compliance.

99. IATA to Fund Energy Project with Proceeds From Offset Program

On June 5th, the International Air Transport Association (IATA) announced the launch of its first carbon dioxide emissions offset program with a carrier member, with proceeds to go toward development of a renewable energy project in Brazil. The program to compensate for carbon emissions from flights will be launched with Portugal's national carrier, TAP, the airline industry group said.

IATA administers a carbon dioxide emissions offset program on behalf of member airlines, including arranging the purchase of carbon credits, tracking emissions offsets, and advising on project selection. The association plans to have programs in place with 14 carrier members by the end of 2009.

Under the offset program, carbon emissions from a flight are calculated based on a methodology developed by the International Civil Aviation Organization (ICAO). Airlines and passengers then use IATA's system to purchase their offsets at the time tickets are booked. Purchase of the offsets by passengers is voluntary.

The program with TAP will be used to finance the Aquarius hydroelectric power plant in Brazil's Mato Grosso state. The plant will partially replace fossil fuel-powered energy generation, reducing emissions by approximately 15,000 metric tons of carbon dioxide equivalent per year.

According to IATA, nearly 30 airlines are already operating carbon offset programs, each with its own characteristics. To date, the association said, no survey has been carried out on take-up rates or the total amount of offsets achieved by the programs.

Carriers with offset programs in operation include American Airlines, United Airlines, and Continental Airlines in the United States, Japan Airlines, British Airways, Scandinavian Airlines (SAS), and European low-cost carrier Easyjet.

100. IMO Says Ship Efficiencies Could Reduce Greenhouse Gases 75 Percent

A report prepared by the International Maritime Organization said that ships could reduce greenhouse gas emissions by as much as 75 percent through efficiency and operational improvements. Among these steps are more efficient engines and more efficient designs of the hull and propeller that would allow for less resistance in the water.

Other improvements include better route designs to reduce distances traveled and more efficient operation of ports to prevent ships from stacking up while waiting for dock space, according to the report, Second IMO GHG Study 2009.

The IMO's Marine Environmental Protection Committee is scheduled to meet in July in London to discuss implementation of emissions standards for sulfur oxides and nitrogen oxides it adopted in 2008.

The IMO report estimated that shipping emitted 1,046 million tons of carbon dioxide in 2007, or 3.3 percent of the global emissions. International shipping alone is estimated to have emitted 870 million tons, or about 2.7 percent of the global carbon dioxide emissions in 2007. In the absence of emissions control measures, emissions may increase by 150 percent to 250 percent by 2050, the report said.

The report identifies technical and operational measures it says could reduce emissions by 25 percent to 75 percent.

Other emissions-saving measures outlined in the report include optimizing the ballast water in ships, using sails or kites to catch wind, and using low-carbon fuels and biofuels.

Another step that could be taken is slowing ships down, although the report said that would require more ships to be operating, which could reduce gains in efficiency.

Brian Wood-Thomas, vice president for environmental policy at the World Shipping Council, told reporters that slowing a ship down reduces fuel consumption exponentially. He said the price of fuel is expected to increase dramatically in the coming years, and that this should lead to more actions to increase efficiency.

Shipping already is by far the most fuel-efficient form of freight transportation, he said. For example, more fuel is used to carry a ton of freight overland 130 kilometers (81 miles) from a port in England than is used to carry it on a ship from Singapore to England. The IMO report said shipping in general has been shown to be energy-efficient compared to other modes, but not all shipping is more efficient than all other forms of transport.

The report also said sulfur dioxide emissions are estimated to decline 42 percent in sulfur emissions control areas adopted in 2008 by the Marine Environmental Protection Committee.

101. **Study Finds Problems with ‘Next Generation’ Low-Carbon Biofuel**

A new study finds a plant billed as a “next generation” biofuel feedstock faces the same problems besetting corn and other energy crops, suggesting its ravenous demand for water could place it in direct competition with food production, potentially causing significant land-use changes and associated greenhouse gas (GHG) emissions. Additionally, the study concludes that plants and other forms of biomass would in general be better used “to generate electricity than to produce a biofuel.”

The findings, published in Proceedings of the National Academy of Sciences, indicate the woody oilseed plant jatropha requires significantly more water than other biofuel feedstocks. Though capable of being grown on marginal, arid land, the study further suggests commercial jatropha producers will seek out the higher yields of premium farmland, likely increasing the lifecycle GHG emissions associated with jatropha-derived fuel and calling into question industry claims the feedstock can be grown sustainably on a large scale.

The results of the study are a likely setback to the aviation industry, which is pursuing alternative fuels as one means of arresting the sector’s rapidly growing GHG footprint. Earlier this year, Boeing and Air New Zealand successfully powered a flight using a 50-50 blend of fuel derived from jatropha and traditional jet fuel, and Boeing officials are currently lobbying Congress for a “revenue-neutral” means of subsidizing the industry’s alternative fuel research.

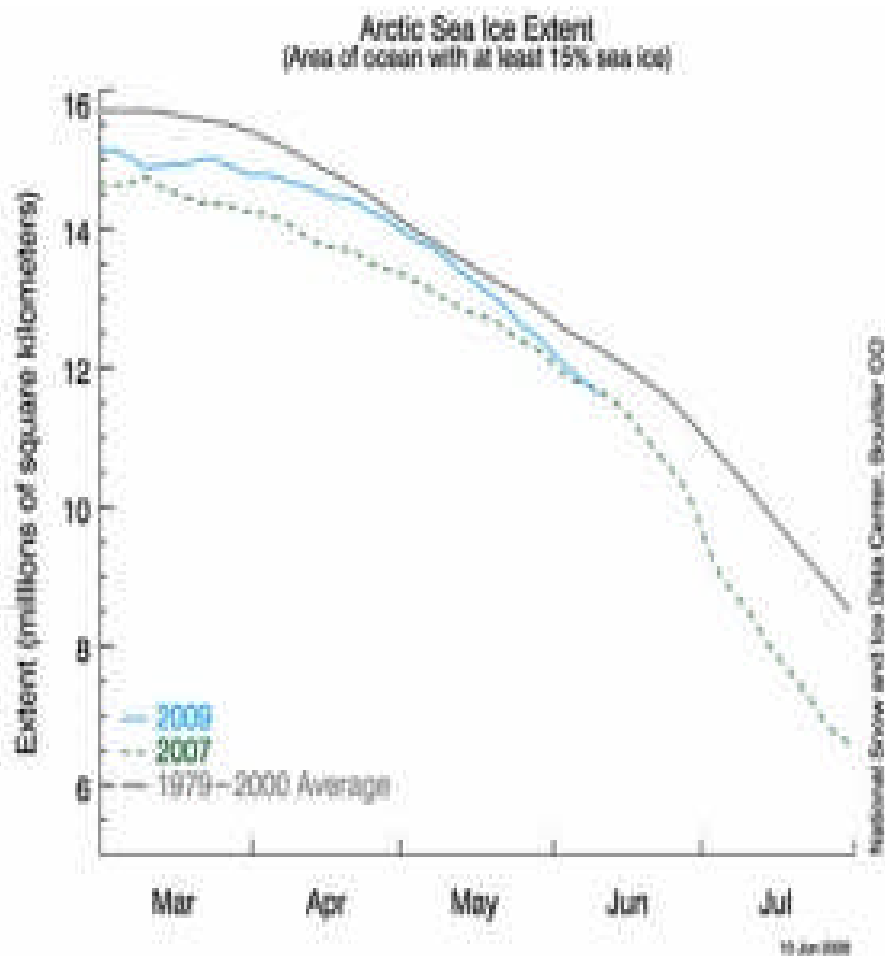
The Air Force is also pursuing research into jatropha and other biofuel feedstocks as a way of reducing its dependence on imported oil.

While the “scientific and the international political communities promote a shift toward renewable energy sources,” the study researchers write, “This study has shown that biomass production goes hand in hand with large water requirements.” Based at the University of Twente in the Netherlands, the researchers say jatropha requires more than twice as much water as soybeans, and nearly eight times as much water as biofuel feedstocks maize and sugar cane. In sum, jatropha is the “least water-efficient” bioenergy feedstock for electricity, rivaled only by rapeseed, and “the least favorable” in terms of water-use efficiency for biodiesel production.

Jatropha’s water-intensive production poses a problem since, “When agriculture grows bioenergy crops . . . it needs additional water that then cannot be used for food,” the researchers note. That means increased production of jatropha and other biofuels could lead to more people falling “below the hunger threshold,” a finding that clashes with the aviation industry’s stated desire to only pursue biofuels that can be produced without impacting food production or stressing local water supplies.

102. **Arctic Sea Ice Extent Trending Below Record 2007 Melt**

The annual melting of Arctic sea ice is trending toward another record-low. While it's still too



early to say whether the 2009 melt will exceed the record 2007 melt -- the annual low-point isn't reached until September -- the trend line for 2009 for the first time has dipped below 2007, according to the latest data from the National Snow and Ice Data Center, Boulder, CO.

Another record would be startling, but not surprising. Just 30% of the sea ice in the Arctic at the height of the winter freeze was thicker multi-year ice, leaving 70% susceptible to rapid melting. The amount of ice in the Arctic as of February 2009 -- the height of the annual freeze -- was the lowest on record. Most arctic scientists now

say they expect an ice-free Arctic in summer within the next three decades -- far ahead of the projections in the last comprehensive United Nations report on global warming.

The melting of Arctic sea ice is one of the clearest signals of global warming, and a leading indicator of what is to come. The melting is also an example -- one of many -- of a positive feedback loop that scientists expect will accelerate global warming: As sea ice melts, the darker water that is exposed absorbs more of the sun's energy, which leads to warmer waters and more melting ice.

103. **Bonn Lays Foundations for Copenhagen Climate Deal but Slowly**

UN climate talks in Bonn have produced draft negotiating texts that will form the basis for a new global deal to be signed in Copenhagen in December. Delegates spent the past two weeks clarifying their positions and elaborating specific proposals.

In a closing press conference UN climate chief Yvo de Boer called Bonn a "significant session... [that] has made clear what governments want to see in a Copenhagen agreement".

However several observers deplored the slow pace in ongoing negotiations, arguing little progress had been made in Bonn. July's summit of G8 leaders in Italy is now seen as industrialized nations' next opportunity to get closer to a deal. Mr. de Boer urged them to show greater ambition in proposed mid-term emission cuts.

Denmark's climate and energy Minister Connie Hedegaard warned world governments that work needed to be speeded up. "Of course we have to respect the way the UN works. But to me, there is no doubt that things are moving too slow," she said according to media reports.

Michael Zammit Cutajar, chair of the working group dealing with a draft overarching negotiating text for a climate deal, warned against any breakthroughs before Copenhagen: "This is like the evolutionary process in reverse - the Big Bang comes at the end."

Potential amendments to the Kyoto protocol were discussed in more detail in Bonn with attempts to consolidate proposals on forestry and developed country emission reduction targets. Such targets should have been agreed in Bonn, according to a work plan adopted last year but this did not happen.

Bonn was the second of five UN meetings planned before Copenhagen in December. It made important progress on technology transfer and deforestation, according to the UNFCCC. There were also new proposals on aviation and shipping. But debate on reforming Kyoto's flexible mechanisms had to be postponed due to lack of time, according to observers.

The first concrete figures for possible emissions reduction targets for wealthy countries under the next global climate change agreement emerged during the talks in Bonn. On June 7th, two possible targets were released that would require developed countries to cut greenhouse gas emissions within a range of 16 percent to 26 percent by 2020 from 1990 levels, depending on whether land-use changes are taken into account.

The targets call for emissions reductions of between 16 percent and 24 percent compared to 1990 levels when land-use changes and forestry are figured in. Those figures rise slightly to a range of 17 percent to 26 percent compared to 1990 levels when land-use changes and forestry are not counted but credits for avoided deforestation become part of the equation.

The ranges are based on proposed submissions from Annex I countries that have ratified the Kyoto Protocol.

Negotiators at the talks, meanwhile, said the process remains bogged down on key issues like financing mechanisms and whether the next-generation agreement should include binding emissions reduction targets for poor countries.

Another proposal that emerged on June 7th is a possible levy on international air and maritime transportation as a way of raising cash for a fund to help poorer nations adapt to the effects of climate change. Although the adaptation fund is estimated to require at least \$100 billion per year, the proposed 1 percent levy on international transportation would raise only \$10 billion to \$15 billion per year, according to estimates.

104. **Global Warming May Be to Blame for Collapse in Ancient Biodiversity**

Scientists have unearthed striking evidence of a sudden collapse in plant biodiversity from a trove of 200-million-year-old fossil leaves collected in East Greenland that raises new concerns about the dangers of global warming. One of the most likely culprits for this great loss of plant life, to be reported in the journal *Science*, was a relatively small rise in the greenhouse gas carbon dioxide, which caused the Earth's temperature to rise.

The international team, which includes researchers from the Smithsonian's National Museum of Natural History, University College Dublin and the University of Oxford, found rapid reductions in the density of plant-fossil distribution in the samples collected. In analyzing the stratigraphy of the sampled areas, they found normal patterns of density and diversity of life in the first 20 meters. "But the final 10 meters show dramatic losses of diversity that far exceed what we can attribute to sampling error," said Peter Wagner, paleobiologist at the museum. "The ecosystems were supporting fewer and fewer species of notable abundance."

Global warming due to a rise in greenhouse gasses has long been considered a cause for the extinction of species. The surprise find from this new study is that it looks like much less carbon dioxide in the atmosphere is needed to drive an ecosystem beyond its tipping point than previously considered.

Despite the probability of a carbon dioxide-fueled extinction, lead author Jennifer McElwain of UCD cautions that additional atmospheric gasses such as sulfur dioxide from extensive volcanic emissions may also have played a role in plant extinctions. "The problem is that as yet we have no way of detecting changes in sulfur dioxide in the past, so it is difficult to evaluate if sulfur dioxide in addition to a rise in carbon dioxide influenced the pattern of extinction we see among the fossils," said McElwain.

The time interval under study, between the boundary of the Triassic and Jurassic periods, is known to have witnessed plant and animal extinction on a grand scale. However, until this work, the pace of the extinctions was thought to have been gradual, occurring over millions of years. It has been difficult to tease out details, such as the pace of extinction, using fossils because they can inherently provide only "snapshots" or glimpses of the organisms that once lived and thrived at different times in the past.

Using a new technique pioneered by Wagner, the team was able for the first time to detect very early signs that these ancient ecosystems were deteriorating before plants started going extinct.

The method is pioneering in that it reveals the early warning signs that an ecosystem is at risk of extinction.

If estimates of how much carbon dioxide is needed to tip an ecosystem out of balance are correct, then the study may have alarming relevance to the modern world. By the year 2100, it is expected that the amount of carbon dioxide in the atmosphere may reach as high as two-and-a-half times today's level, assuming a continued intensive use of fossil fuel energy. This is a worst-case scenario, but it is at exactly this level (900 parts per million) at which McElwain and co-authors detected their ancient biodiversity crash in the Late Triassic world of East Greenland.

"Our study on ancient ecosystems shows that we must take heed of the early warning signs of deterioration within modern ecosystems," said McElwain. She also noted that very high levels of species extinctions can occur very suddenly, "but they are preceded by long interval of ecological change."

The majority of modern ecosystems have not yet reached their tipping point in response to climate change. However, many have already entered a period of prolonged ecological change, and the early warning signs of deterioration are apparent. "Even relatively small changes in carbon dioxide and global temperature can have unexpectedly severe consequences for the health of ecosystems," said McElwain.

105. **Drafts for Post-Kyoto Climate Accord Issued, Include Range of Options**

The first official drafts of the main documents that the United Nations hopes will form an agreement to succeed the Kyoto Protocol when it expires at the end of 2012 have been released. The documents, released May 15th and 20th contain few surprises and illustrate the amount of work remaining if the final text for a post-Kyoto climate change accord is to be completed by the end of the year as scheduled.

The United Nations has designated two main tracks for development of a post-Kyoto text: the Kyoto Protocol (KP) track, and the Long-Term Cooperative Action (LCA) track. The tracks could remain separate or could merge before the 15th Conference of the Parties to the U.N. Framework Convention on Climate Change (UNFCCC) convenes in December in Copenhagen.

If they remain separate, sources close to the process say the LCA track is more likely to evolve into the main post-Kyoto agreement, since it has a mandate that looks forward for decades rather than years. It also includes countries that are not parties to the Kyoto agreement, such as the United States and most developing nations and countries in transition.

The KP track document could present an alternative if the LCA track text is not finalized, or it could act as a bridge text if the LCA document is completed but not ratified in time to go into effect Jan. 1, 2013, once the greenhouse gas emissions reduction provisions of the Kyoto Protocol have expired.

The United Nations says the post-Kyoto agreement should be finalized by the end of the Dec. 7-18 Copenhagen meeting in order to give a full three years for the ratification process, a time line that UNFCCC Secretary General Yvo de Boer has called "extraordinarily aggressive." Ratification of the Kyoto Protocol took 41 months.

The KP track draft document, released on May 15th by the Ad-Hoc Working Group on Further Commitments for Annex I Parties [industrialized nations] under the Kyoto Protocol, focuses on

obligations for wealthy countries already required by the Kyoto Protocol to reduce emissions. The KP draft also includes discussions of whether or not to expand that group (the most ambitious proposal would expand it by six countries, all economies in transition) as well as the length of the second compliance period, which will commence at the expiration of the Kyoto Protocol's first compliance period, which runs from 2008–2012.

The LCA track document, produced on May 20th by the Ad-hoc Working Group on Long-Term Cooperative Action under the UNFCCC, is more wide reaching and includes discussion of obligations for poor countries and funding for climate change adaptation efforts. Most significantly, it places the topic of adaptation—the process of accommodating the effects of climate change—on the same footing as mitigation, which is the process of trying to curb those effects by reducing the density of greenhouse gases in the atmosphere.

Among the LCA document proposals, for example, are recommendations to limit the world's emissions anywhere from 35 percent to 85 percent by 2050 compared to 1990 levels. Other proposals would limit the amount of carbon dioxide in the atmosphere to 350, 400, or 450 parts per million; limit the rise in world temperatures to either 1.5 degrees or 2.0 degrees Celsius this century; or peg emissions caps on a per-capita basis or base them on each unit of a country's gross domestic product.

There are also proposals to change the baseline year for comparisons of emissions from 1990, which is currently in use, to 1995, 2000, 2005, 2007, or 2010.

Because both the KP and the LCA documents were cobbled together from hundreds of pages of proposals submitted by national delegations, groups of countries, multilateral groups, and other interested parties, they do not contain any significant surprises.

All told, more than 200 submissions were received for the two tracks. Since it has not ratified the Kyoto Protocol, the United States was precluded from submitting suggestions for the KP track text. It did, however, submit a 21-page document called “U.S. Submission on Copenhagen Agreed Outcome” on May 4th.

The wide array of proposals means that the two draft documents leave little decided. Text still to be negotiated is contained within brackets, and many brackets contain a great deal of text. The 21-page KP draft contains 889 sections of bracketed text; the 53-page LCA draft includes 1,244 of them.

The next step is for national delegations to study the text before meeting at UNFCCC headquarters in Bonn on June 1–12th for the 30th Session of the UNFCCC Subsidiary Bodies. Those talks are aimed at producing a second draft of the texts ahead of a series of negotiations scheduled to take place every few weeks until the Copenhagen summit in December.

106. Immediate Action Needed to Curb Warming, World's Economic Powers Agree

Representatives from 17 of the world's major economies agreed at a two-day U.S.-led forum that climate change poses “a clear and present danger to our world” and must be addressed through immediate action by developed and developing nations, according to a chairman's summary released on April 29th by U.S. Deputy National Security Adviser for International Economic Affairs Michael Froman. The April 27-28 Major Economies Forum on Energy and Climate, which brought to Washington officials from industrialized nations as well as fast-

developing China, India, and Brazil, concluded with a general consensus that curbing greenhouse gas emissions will require “near-term ambitious actions for all” such nations.

The participating nations have agreed to two additional preparatory meetings—the first to be held in France sometime in May—in the run-up to the higher level “leaders” meeting at the July Group of Eight Summit in Italy, according to the summary. The meeting in France will continue discussions on how to curb global emissions, provide support for nations imperiled by climate effects, and advance talks on providing financing for low-carbon technologies in developing nations, according to the statement.

Participants in the Major Economies Forum hope to build a consensus among the top greenhouse gas emitters that could spur a breakthrough in talks among the more than 190 nations that have committed to a new global climate deal to be worked out in Copenhagen in December.

That climate agreement would succeed the mandatory emissions curbs of the Kyoto Protocol, which expire at the end of 2012.

The Major Economies process should begin laying the groundwork for that global agreement with “a strong political signal” at the higher level leaders meeting in July, which will be held on the sidelines of the G-8 summit.

“Participants agreed that the Forum is not an alternative to the U.N. Framework Convention process, but could inform and complement and make a major contribution to success” in the Copenhagen talks, it said.

The Major Economies Forum includes representatives from Australia, Brazil, Canada, China, the European Union, France, Germany, India, Indonesia, Italy, Japan, Korea, Mexico, Russia, South Africa, the United Kingdom, and the United States. In hosting the forum, the United States appeared to have gained ground in convincing other countries of its desire to taking a lead role in crafting the next international climate agreement by the end of the year.

The new administration made clear to China and other fast-developing countries that the United States recognizes it has more work to do to convince world leaders of its re-engagement on climate change. Secretary of State Hillary Rodham Clinton told the leaders' representatives on April 27th that the “the United States is fully engaged and ready to lead and determined to make up for lost time, both at home and abroad.” “The president and his entire administration are committed to addressing this issue, and we will act,” Clinton said.

On April 28th, Yvo de Boer, who oversees climate negotiations under the United Nations Framework Convention on Climate Change, told reporters that the Washington talks “were very constructive” and that the U.S. pledges were particularly welcome. U.S. overtures “have been absent from this debate for eight years,” de Boer said. He noted that any consensus within the Major Economies Forum will likely funnel into the formal negotiations toward binding emissions reductions under the U.N. framework.

In a briefing on April 28th, João Vale de Almeida, the head of the European Commission Cabinet, noted that EU representatives were encouraged by the draft climate bill introduced on March 31st by Reps. Henry Waxman (D-Calif.) and Edward Markey (D-Mass.), but added that the bill does not need to be signed into law in order for U.N. climate change negotiations in

Copenhagen in December to succeed. "We see it as a comprehensive, encouraging, and very detailed climate bill," he said, declining to comment on the specifics.

107. **Study: 20% of Cars Will Be Hybrids in 2020**

Motor Trend magazine reports that based on its latest industry projections, JPMorgan predicts there will be a massive surge in hybrid popularity in the coming years as emissions requirements tighten and hybrid technology costs fall. While hybrids last year made up just 0.7% of new cars sales globally, JP Morgan's analysis says "those numbers will surge 13.3% globally, and 19.4 percent in the U.S., by 2020.

The study suggests that the increase in hybrid vehicle sales will be influenced by factors such as increased pressure from government agencies to reduce fuel consumption and overall vehicle emissions, as well as a drastic reduction in the cost of hybrid technology. The study considers extended-range electric vehicles like the Chevy Volt and Cadillac Converj to be hybrids.

108. **World Diesel Engines Market Expected To Rise**

A new report available for sale on the Internet, World Diesel Engines Market to 2012, forecasts that global diesel engine demand will rise 3.5 percent annually through 2012. The Asia/Pacific region will remain the largest market while North America will be among the fastest growing based on increased heavy vehicle output and use of diesel engines in light vehicles. Stationary power will be the fastest growing end use segment.

This study analyzes the \$129 billion world diesel engine industry. It presents historical demand data for the years 1997, 2002 and 2007, and forecasts for 2012 and 2017 by application (motor vehicles, off-highway equipment and stationary equipment), world region (e.g., Asia/Pacific, Western Europe, and North America) and for 26 major countries.

109. **Report Warns Of 250% Rise in Shipping Emissions**

Greenhouse gas emissions from ships could increase by up to 250% by 2050 if no further action is taken in this area, according to a report to be debated by the International Maritime Organization (IMO)'s marine environment protection committee in July. The committee will consider whether to recommend measures to address the sector's growing emissions. Report authors say significant reductions could be achieved through technical measures and the use of new technologies such as towing kites.

The authors also recommend speed reductions and ship upgrades. Other possible measures include emissions trading or a bunker fuel levy. Most of these measures appear to be cost-effective, say the authors. They could reduce emissions by 25 to 75% below current levels.

The report also provides emission data for 2007. Maritime shipping emitted 1.04bn tons of CO₂ that year, amounting to 3.3% of global emissions. By comparison international aviation's share was 1.9%. The findings were outlined at a meeting of shipping industry representatives in London on Monday.

The IMO has been under pressure from the EU to come forward with concrete proposals to reduce the sector's greenhouse gas emissions. Last year the agency said it would start considering emission reduction measures once the report was completed.

Earlier this year a study showed internalizing the health and environmental costs of air pollution and CO2 would reduce the profitability of major shipping companies by more than two-thirds. But on Monday green group WWF insisted emissions could be reduced by at least one fifth at no cost to the industry.

110. **Short-Term Air Pollution Exposure May Damage DNA**

Breathing polluted air for even a short period of time can cause some genes to undergo reprogramming, which may affect a person's risk of developing cancer and other diseases, say Italian researchers. Comparisons of blood DNA samples from healthy workers who were exposed to high levels of airborne particulates at a foundry near Milan revealed that after only three days of exposure, changes occurred in four genes that have been linked to tumor suppression, according to research presented Sunday at the International Conference of the American Thoracic Society, in San Diego.

This finding indicates "that environmental factors need little time to cause gene reprogramming, which is potentially associated with disease outcomes," investigator Dr. Andrea Baccarelli, assistant professor of applied biotechnology at the University of Milan, said in a news release issued by the conference's sponsor.

"As several of the effects of particulate matter in foundries are similar to those found after exposure to ambient air pollution, our results open new hypotheses about how air pollutants modify human health," Baccarelli said.

The changes in the foundry workers' genes may have been caused by DNA methylation, a chemical transformation process that has been linked to gene reprogramming and has been found in the blood and tissue samples of lung cancer patients, Baccarelli noted.

"The changes in DNA methylation we observed are reversible, and some of them are currently being used as targets of cancer drugs," said the researcher, who added that it might be possible to design early interventions that could program that gene back to normal and mitigate the increased health risks of air pollutants.

"We need to evaluate how the changes in gene reprogramming we observed are related to cancer risk," Baccarelli said.

111. **Future Climate Change Likely To Cause More Respiratory Problems in Children**

More children will end up hospitalized over the next decade because of respiratory problems as a result of projected climate change, according to a new study from Mount Sinai School of Medicine. The lead author of this research is Perry Elizabeth Sheffield, MD, Pediatric Environmental Health Fellow in the Department of Community and Preventive Medicine and the Department of Pediatrics at Mount Sinai School of Medicine.¹ Mount Sinai worked with Natural

¹ The abstract was presented on May 3, 2009 at the Pediatric Academic Societies Annual Meeting in Baltimore, Maryland. Mount Sinai Medical Center (2009, May 11). Future Climate Change Likely To Cause More Respiratory Problems in Young Children. ScienceDaily. Retrieved May 31, 2009, from <http://www.sciencedaily.com/releases/2009/05/090504205108.htm>

Resources Defense Council and the Columbia University Mailman School of Public Health on this research.

Ozone has many known negative respiratory health effects to which children are particularly vulnerable. An important projected consequence of climate change is the increase in ground-level ozone. Urban areas such as the New York City metropolitan area are at a higher risk of increasing temperature compared to rural areas. However, while more ozone is formed in higher temperatures, the downwind suburban areas are predicted in some of the models to experience higher ozone levels.

For this study, Dr. Sheffield and her colleagues created a model describing future projected rates of respiratory hospitalizations for children less than two years of age using baseline NYC metropolitan area hospitalization rates from publicly available corresponding state Department of Health databases. These hospitalization rates were then compared to a previously developed dose-response relationship between ozone levels and pediatric respiratory hospitalizations, and the expected New York City eight-hour daily maximum ozone levels for the 2020s, as projected by a regional climate model created by the NY Climate and Health Project, supported by a grant from the US Environmental Protection Agency. Two separate future scenarios were used. The two scenarios differed by the amount of projected ozone precursor emissions.

In both scenarios, ozone levels rise by 2020. The study found that by 2020, respiratory hospitalizations are projected to rise between four and seven percent for children under two years old because of projected air pollution (ozone) increases. The scenario with increased ozone precursors showed less of an overall increase in hospital admissions because of a paradoxical reduction in ozone due to the effects of air pollutant interactions sometimes referred to as the scavenger molecule effect. These are likely conservative estimates because population was held constant, a single dose response function was used for the entire area, and most counties were not weighted by race and ethnicity.

“These significant changes in children's hospitalizations from respiratory illnesses would be a direct result of projected climate-change effects on ground-level ozone concentrations,” said Dr. Sheffield. “This research is important because it shows that we as a country need to implement policies that both improve air quality and also prevent climate change because this could improve health in the present and prevent worsening respiratory illness in the future.”

“Our study supports the necessity of improving air pollution around the world. We need to begin to make these improvements through industry emission controls, traffic reduction policies, and increased enforcement of traffic regulations,” said study co-author Dr. Philip Landrigan, Professor and Chair of Community and Preventive Medicine, and Director of the Children's Environmental Health Center, at Mount Sinai School of Medicine.

112. **Pollution Causes Genetic Changes that Lead to Asthma**

Prenatal exposure to air pollution appears to cause genetic changes that predispose unborn infants to asthma later in life, according to a new study conducted by researchers from the Center for Environmental Genetics at the University of Cincinnati and published in the journal *PLoS ONE*.

"Our data support the concept that environmental exposures can interact with genes during key developmental periods to trigger disease onset later in life, and that tissues are being reprogrammed to become abnormal later," lead researcher Shuk-mei Ho said.

Researchers had pregnant women wear backpack air monitors that analyzed the women's exposure to polycyclic aromatic hydrocarbons (PAHs), a type of pollution produced by combustion that is characteristic of the air in high-traffic areas. The researchers also examined the expression of the ACSL3 gene in their unborn children.

High maternal exposure to PAHs was significantly associated with chemical changes in the fetus related to the expression of ASCL3. At the age of five, children who had exhibited these changes in the womb were significantly more likely to have asthma than children who had not. The researchers believe that air pollution induces changes in gene expression without actually changing the structure of the gene itself, as in a mutation.

"We know that children living in polluted areas have a higher incidence of asthma but what we didn't know was it was affecting a gene," said Keith Prowse, vice-president of the British Lung Foundation. "If you look at cord blood and you find the gene has been modified you know the child is more likely to get asthma so you can treat them early."

Scientists know that ASCL3 is expressed in the lung, and believe that it plays a role in setting or maintaining the structure of cell membranes. They do not yet know exactly how expression of the gene contributes to the development of asthma.