

Michael P. Walsh
3105 N. Dinwiddie Street
Arlington, Virginia 22207
USA
Phone: (703) 241 1297 Fax: (703) 241 1418
E-Mail mpwalsh@igc.org
<http://walshcarlines.com>



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Contents

EUROPE	3
1. Europe to Exceed Air Pollutant Emission Limits – NOx In Particular	3
2. European Commission Sends Final Warning to Italy Over Levels of PM10	4
3. British Government Backs Change in Tax on Aviation	6
4. European Court of Justice Told To Reject Challenge to MMT Limit in Fuels	6
5. Czech President Vetoes Higher Requirement for Biofuel Content in Fuel	6
6. French Program Spurs Near Quintupling Of Low Carbon Car Models	7
7. Transport Emissions Still Rising, EEA Data Show	9
8. Green Transport Losing Share to Higher Polluters	9
9. European Commission Tables Strategy on Clean and Energy Efficient Vehicles	10
10. MEPs Want Speed Limits to Reduce Van Emissions	11
11. Europe Reportedly Will Not Revise Air Quality Laws Until 2013	12
12. EU Outlines Sustainable Biofuels Criteria, Plan for Voluntary Certification Scheme	12
13. EU Official Says Black Carbon 'Must Not Distract From Cutting CO2'	14
14. CO2 From Vans Could Be Cut By 16% by Downsizing Alone, Says Study	14
15. Germany to Extend Motorway Toll, Says Minister	15
16. EU Bunker Emissions Have Dropped For First Time in Two Decades	15
17. German Carmakers Drop Plan to Be HFC-Free	16
18. Electric Cars Viable, Danish Report Concludes	16
19. Six Countries Taken To Court for Environmental Infringements	16
NORTH AMERICA	17
20. Obama Orders Agencies To Set Fuel, Emissions Rules for Trucks, Cars	17
21. Canada Proposes to Align Truck Emissions Standards With U.S.	19
22. Health Canada Reaffirms Human Health Risk for Inhaled Manganese	19
23. EPA, Navistar Reach Settlement in Suit Over Use of Selective Catalytic Reduction	22
24. USEPA Issues Report on U.S. Climate Change Indicators	23
25. North America Collaborates to Reduce and Replace Potent Greenhouse Gases	27

26.	Secretary Salazar Announces Approval of Cape Wind Energy Project	27
27.	Ontario Official Urges Vehicle Fuel Conservation.....	28
28.	Nissan: Electric Cars Could Shed Government Aid in 4 Years	28
29.	California Gives Insight into New Round of Auto Pollution Rules	29
30.	EPA Says Only 19 Percent of Trucks Reflashed To Lower NOx Emissions	30
31.	Road Builder Group Asks Supreme Court to Review EPA Nonroad Engine Rules	31
32.	Gloves Off In California Over Greenhouse Gas Law	32
33.	EPA Delays Decision on Ethanol Blends in Gasoline.....	33
34.	USDA Says 527 New Biorefineries Needed To Meet RFS Advanced Biofuel Target	34
35.	Ontario to Offer Subsidies for Hybrid Vehicles	34
36.	Senate Defeats Move To Stop EPA Greenhouse Emissions Regulation	34
37.	EPA Finds Senate Climate Bill Affordable	35
38.	Canada to Require Ships in Arctic Waters to Give Identity, Route	36
ASIA-PACIFIC.....		37
39.	China Issues Major Air Quality Guidance Document Targeting Regions, Pollutants	37
40.	Honda Eyes China to Develop Car Batteries.....	37
41.	China's Environment Ministry Punishes Cities, Companies for Air, Water Pollution	38
42.	China's Sulfur Dioxide Emissions Rise in First Quarter	39
43.	Hong Kong Council Considers Adopting Euro V Fuel Specification Standards	39
44.	Hong Kong Council Urges Steps to Improve Air Quality Despite Problems.....	40
45.	Hong Kong Targets Emissions from Off-Road Vehicles	41
46.	Rising Number of Motor Vehicles in India Contributes to Poorer Air Quality.....	41
47.	Delhi to Increase Road Tax on Vehicles to Clean Up Air Before Games Begin.....	42
48.	GM To Develop Electric Car in U.S.; Ends Reva Tie-Up.....	42
49.	Thailand Boosts Monitoring of Fine Particles in Air Following New Standards	43
50.	Vietnam Refinery Construction to Begin	44
51.	India Reforms Fuel Prices.....	44
52.	China to Spend \$1.8 Billion on Green Car Subsidies By 2012.....	45
53.	Guangdong Province Calls on Cities to Adopt Vehicle Emissions Standards Early.....	46
54.	Japan Considers Stricter NOx Emissions Standards For Diesel Trucks, Buses	47
55.	Fate of Climate Bill Uncertain As Japan Poll Nears.....	48
56.	China Sees Some Progress on Reducing Surge in Energy Use, Pollution	48
57.	China Extends Subsidy to Trade in Older Cars	49
58.	Difficult Times Predicted For Beijing City Pollution This Year	49
59.	Beijing Has Instituted a Month-Long Check Targeting Pollution.....	51
60.	New Zealand Government Proposes to Relax PM10 Air Quality Standards	52
61.	Indian Capital's Rapid Population Growth Takes Toll on Air, Water Quality	52
SOUTH AMERICA		53
62.	São Paulo State to Study Possible Market to Exchange Air Pollution Credits	53
63.	Brazilian Truckers Sign Emissions Monitoring Accord	54
64.	Colombia to Eliminate Import Fees on Clean Vehicles.....	55
GENERAL		55
65.	Air Pollution Associated With Heart Disease: AHA.....	55
66.	Academics Urge "Radical" New Approach to Climate Change.....	56
67.	World Warms as Public Cools to Climate Action	57
68.	Environment Worries to Lift Electric Car Sales: Report	58
69.	Strong Evidence on Climate Change Underscores Need for Actions	59
70.	North American, Nordic Countries Agree On Need for New Arctic Regulations	61
71.	Ship-Fuel Specifications Raise Compliance Issues for Oil Refiners, IEA Says.....	62
72.	IEA Says Second-Generation Biofuels Production Unlikely to Take Off Before 2015.....	62

EUROPE

1. Europe to Exceed Air Pollutant Emission Limits – NO_x In Particular

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

In 2010, around half of the European Union's Member States expect to miss one or more of the legal limits set by the Directive. According to recent data compiled by the European Environment Agency (EEA), 11 countries expect to exceed their ceilings by significant amounts — some missing NO_x targets by more than 40 %.

Of the four pollutants covered by the NEC Directive, EU Member States have the greatest difficulty meeting the emission limits for nitrogen oxides (NO_x), with road transport bearing most of the blame. The road transport sector contributed around 40 % of total EU-27 NO_x emissions in 2008 and although its overall emissions have decreased since 1990, the reduction has not been as large as originally anticipated. This is partly because the sector has grown more than expected and partly because vehicle emission standards have not always delivered the foreseen level of NO_x reductions.

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

Overview of "with measure" projections¹ as reported by the EU-27 Member States in December 2009

Member State	NO _x	NMVOC	SO ₂	NH ₃
Austria	X	x	√	√
Belgium	X	√	√	√
Bulgaria	√	√	√	√
Cyprus	√	√	√	√
Czech Republic	√	√	√	√

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

Denmark	√	√	√	√
Estonia	√	√	√	√
Finland	√	√	√	√
France	X	√	√	√
Germany	x	√	√	X
Greece	√	√	√	√
Hungary	√	√	√	√
Ireland	X	√	√	√
Italy	√	√	√	√
Latvia	√	√	√	√
Lithuania	√	√	√	√
Luxembourg	X	√	√	√
Malta	X	√	X	√
Netherlands	√	√	√	x
Poland	√	√	√	√
Portugal	√	x	√	√
Romania	√	√	√	√
Slovakia	√	√	√	√
Slovenia	x	√	√	√
Spain	X	X	√	x
Sweden	x	√	√	√
United Kingdom	x	√	√	√
√	16	24	26	24
X	11	3	1	3

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

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

National ceilings for non-methane volatile organic compounds (NMVOC) are expected to be missed by three countries: Spain, Portugal and Austria. Caps on methane emissions will be exceeded by the Netherlands, Germany and Spain.

Malta is the only country expected to miss its emission ceiling for SO₂. The EEA data also shows that Spain is facing the highest number of breaches, with three out of four pollutants covered by NEC expected to be exceeded, confirming earlier predictions.

2. European Commission Sends Final Warning to Italy Over Levels of PM10

The European Commission is pursuing legal action against Italy for failing to comply with EU air quality standards for dangerous airborne particles known as PM10. These particles, emitted

mainly by industry, traffic and domestic heating, have been linked to asthma, cardiovascular problems, lung cancer and premature death. A second and final written warning has been sent to Italy for exceeding the limit values for PM10 in many zones or agglomerations across the country.

EU Environment Commissioner Janez Potočnik said: "Air pollution continues to cause more than 350,000 premature deaths in Europe each year. There are still too many places in Italy where, for every 10,000 inhabitants, more than 15 people die prematurely due to particulate matter alone. Member States must continue to take the matter of EU air quality standards seriously and take the action needed to reduce emissions".

The Commission's action follows the entry into force in June 2008 of the new EU Air Quality Directive². The Directive allows Member States to request, under certain conditions and for specific parts of the country, limited extra time to meet the PM10 standards which have been in force since 2005.

At the beginning of 2009, first warning letters were sent to Member States that had by then not submitted notifications for time extensions or had not done so for all of the air quality zones exceeding the limit values for PM10.

As a result, most Member States involved submitted notifications for a time extension. Italy submitted two notifications covering about 80 air zones in 17 different regions and autonomous provinces. However, the Commission rejected most of the notified air quality zones as they did not meet all the conditions required by the Directive³. In most cases Italy was not able to demonstrate that the action taken will ensure that EU limit values will be respected by the extended deadline.

Italy did not submit new notifications. The Commission has therefore decided to send a final written warning. If Italy fails to take the necessary measures to comply with the legislation, the Commission could refer the case to the European Court of Justice.

The Commission is continuing to adopt decisions on the notifications of time extensions submitted by Member States. Further steps in infringement procedures against other Member States may be launched if the Commission raises objections to the requests.

Limit values for PM10 impose both an annual concentration value of 40 micrograms (μg)/m³, and a daily concentration value of 50 $\mu\text{g}/\text{m}^3$, which must not be exceeded more than 35 times per calendar year⁴.

Time extensions apply only in those air quality zones for which it is demonstrated that an effort was made to achieve the limit values in 2005 but that compliance was not possible due to specific external circumstances. Member States must also demonstrate, through the establishment of an air quality plan for each zone, that compliance will be achieved by expiry of the new deadline in June 2011.

² Directive 2008/50/EC on ambient air quality and cleaner air for Europe (see MEMO07/571 and IP/08/570),

³ Commission decisions: C(2009)7390 and C(2010)490

⁴ Directive 1999/30/EC of 22 April 1999 relating to limit values for sulfur dioxide, nitrogen dioxide and oxides of nitrogen, particulate matter and lead in ambient air

3. British Government Backs Change in Tax on Aviation

The United Kingdom's new government favors replacing the existing airline passenger duty (APD) with a per-plane tax, according to the May 11 coalition agreement between the ruling Conservative and Liberal Democrat parties. Previous attempts to replace the APD with a tax based on aircraft takeoff weight were dropped after a flurry of diplomatic protests.

On May 14th, Janette Wilkinson, the head of environmental taxes and incentives at KPMG in the United Kingdom, told reporters that "the move from APD to a per-plane tax will bring a clear environmental benefit by creating a stronger link between the pollution caused by flights and the tax paid. Under APD, fuel-inefficient, half-empty flights bear the lowest burden." She said the new tax could create a strong incentive for carbon-efficient behavior by encouraging airlines to switch to more efficient fuels and to increase load factors.

However, the per-plane tax also has a number of potential drawbacks.

"To increase load factors, operators are likely to cut flights on unprofitable, lower demand routes, resulting in lower competition among airlines, which, alongside suggestions that the new tax will raise greater revenues than APD, suggests the impact of the change will be borne by consumers," Wilkinson said.

Also at risk, she said, is the United Kingdom's position as a major transport hub if airlines opt to use continental European airports to avoid the tax.

4. European Court of Justice Told To Reject Challenge to MMT Limit in Fuels

An EU limit on metallic fuel additive MMT in gasoline adopted in the revised fuel quality directive does not violate EU principles on equal treatment and proportionality, according to an adviser to the European Court of Justice (ECJ). British MMT maker Afton Chemical has challenged the limit in the High Court of England and Wales. The court asked the ECJ for a preliminary ruling on the legality of the limit. The directive limits MMT in petrol to 6 milligrams per liter from 2011, down towards 2 mg/l Mn limit in 2014.

In her opinion, the court adviser said the directive did not breach the equal treatment principle. Afton points out the use of other metallic additives is not restricted. "Different scientific information warrants different precautionary measures," the adviser replied.

The adviser also rejected Afton's claim that the law breaches the proportionality principle, which says EU legislation must be proportionate to the problems it intends to solve. The uncertainty over risks posed by MMT is enough to justify the limit, she said.

Afton's claim that the labeling requirement for fuels containing MMT amounted to a ban was also rejected. "If the additives were more attractive, service stations would either pay the additional expense or do without fuels without additives," the court adviser said.

5. Czech President Vetoes Higher Requirement for Biofuel Content in Fuel

On May 12th, Czech President Vaclav Klaus vetoed an amendment that would have raised the nation's required biofuel content in motor fuels. The move's timing, 16 days before national parliamentary elections, ruled out any chance of a parliamentary override.

The government-sponsored amendment to Law No. 86/2002 on Clean Air passed without changes in the Chamber of Deputies in March and in the Senate a month later. It would have increased the required biofuel component from 3.5 percent to 4.1 percent in petrol and from 4.5 percent to 6 percent in diesel fuel by June 1.

The amendment was in line with EU Directive 30/2003/EC, which calls on member states to have a 10 percent biofuel component in motor fuels by 2020 and recommends that members increase the biofuel component in transportation fuels to 5.75 percent in 2010.

In a May 12 letter to Parliament Chairwoman Miroslava Nemcova, Klaus explained why he vetoed the amendment. He cited his doubts about the scientific evidence of global warming, potential environmental harm from increased cultivation of industrial crops, possible health damage caused by the burning of biofuels, increased costs of motor fuels, and concerns that Czech farmers would not get preferential treatment under EU law.

Parliament cannot override the veto, as there are no more scheduled sessions before the May 28–29 elections and the Constitution does not allow it to override a presidential veto in a special session. After the elections, the amendment would have to go through the entire legislative process again with a new parliament. If it did pass in 2010, the new limits would not come into effect earlier than Jan. 1, 2011.

According to the Czech Agriculture Chamber, farmers had planted 67,000 additional hectares (165,600 acres) of rape and other plants for industrial fuel in anticipation that the law would pass.

6. French Program Spurs Near Quintupling Of Low Carbon Car Models

A French government program that pays buyers of low carbon dioxide-emitting vehicles an “ecological bonus” while penalizing buyers of big emitters has helped to nearly quintuple the number of models eligible for the biggest bonuses in the past two years, a French agency reported on May 6th.

With the so-called Bonus-Malus program giving them a push, French car buyers are rapidly shifting to smaller, low-emitting models that are more fuel-efficient, and manufacturers are responding by offering far more of these kinds of cars, said Patrick Coroller, head of the transport and mobility department at the French Environment and Energy Management Agency (ADEME).

“We are at a turning point for consumer behavior,” he told reporters, adding that “the panorama for vehicles on the market has completely changed” as a result.

According to ADEME, the number of models on the market emitting less than 110 grams of carbon dioxide per kilometer (177 grams per mile)—qualifying for a Class B label for carbon emissions and energy efficiency—has nearly quintupled in two years, with 95 models offered in 2009 compared with 20 in 2007. French manufacturers sell about one-third of these models, it said.

Some 50 percent of new vehicles sold in France in 2009 emitted less than 120 grams of carbon dioxide per kilometer (193 grams per mile), putting them in class B, and 75 percent emitted less than 140 grams (225 grams per mile), earning them at least the lowest green label, or class C, up from 40 percent five years ago, Coroller said.

Meanwhile, sales of cars emitting more than 160 grams per kilometer (258 grams per mile), the so-called red category, dropped 6 percentage points from 2008 to account for just 8 percent of market share, he said.

Coroller made his comments while presenting ADEME's 2009 vehicle environmental rankings for both domestic and EU-wide sales. He also released the 2010 editions of two French-language reports by ADEME, Private Owned Vehicles in France and Conventional Fuel Consumption and Emissions of Carbonic Gas.

The Bonus-Malus program is part of France's comprehensive environmental framework known as the Grenelle program. In 2009 it paid buyers of cars emitting a maximum 130 grams of carbon dioxide per kilometer (209 grams per mile) a bonus ranging from €200 (\$255) to €5,000 (\$6,365), depending on emissions levels. For 2010, the maximum is 125 grams per kilometer (201 grams per mile), and bonuses are reduced.

The program also hits buyers of cars emitting more than 160 grams of carbon dioxide per kilometer (258 grams per mile) with a one-time tax ranging from €200 (\$255) to €2,600 (\$3,309), depending on the emission level.

For comparison, the U.S. Environmental Protection Agency and the National Highway Traffic Safety Administration announced April 1 that greenhouse gas emissions from cars and light trucks will be limited to an average of 250 grams per mile of carbon dioxide in 2016.

Coroller said some 2.8 million vehicles have been affected by the Bonus-Malus program. In addition, in December 2008 the country created a separate junkyard bonus of €1,000 (\$1,273) for trade-ins of cars over 10 years old. That was reduced to €700 (\$889) for 2009 and will be reduced to €500 (\$635) in 2010, he said.

The number of vehicles eligible for some kind of bonus more than doubled in two years, from 506 in 2007 to 1,156 in 2009. Coroller said sales of low-emitting cars do not appear to have slowed despite the toughening of bonus conditions in 2010.

Coroller said that for the first time in 2009, the rankings had vehicles emitting under 90 grams of carbon dioxide per kilometer (145 grams per mile): the Smart Fortwo diesel and the new gasoline-powered Toyota Prius hybrid. The Smart Fortwo was the lowest-emitting diesel, followed by the Ford Fiesta and the Seat Ibiza. The Toyota Prius hybrid was the lowest-emitting gasoline-powered vehicle, followed by the Toyota iQ 68 WT-i and the Honda Insight 1.3 i-VTEC, he said.

ADEME said that in 2009 eight diesel models—up from four in 2008—and two gasoline models emitted less than 100 grams of carbon dioxide per kilometer (161 grams per mile), earning a class A ecological label. Three manufacturers' French sales already have reached the European Union's 2015 goal of averaging 130 grams per kilometer (209 grams per mile): Toyota and Fiat with 127 grams and PSA-Peugeot with 130 grams. Renault was at 131 grams, Coroller said.

ADEME said the drop in average carbon dioxide emissions for new vehicles in the French market to 133 grams per kilometer (214 grams per mile) puts the nation at the top of EU rankings.

For the first time in 2009, average carbon dioxide emissions of gasoline-powered vehicles, at 130 grams per kilometer (209 grams per mile), were less than those of diesel vehicles, at 134 grams (216 grams per mile), Coroller said. French market share of diesel models declined in 2009, from 77 percent to 70 percent, as gasoline and hybrid vehicles gained share.

Coroller has previously attributed market-share gains for gasoline models to manufacturers' anticipating new Euro 5 pollution standards, which required particle filtering for diesel engines starting in September 2009, and Euro 6 standards, which start in 2014–2015. The Euro 6 standards will tighten nitric oxide emission standards for diesel engines to nearly the same levels as for gasoline-powered vehicles, raising costs for producing diesel models.

Sales of liquefied petroleum gas (LPG) vehicles in 2009 were at a record high, with close to 25,000 sold in France. The market share of LPG vehicles rose from 0.1 percent of new vehicles registered to 1 percent in 2009, Coroller said.

Hybrid sales increased 16 percent from 2008, with some 9,826 vehicles sold, he said.

7. Transport Emissions Still Rising, EEA Data Show

Greenhouse gas emissions from the transport sector continue to increase steadily, according to the latest data for the period 1990-2007 published by the European Environment Agency (EEA). The data cover all 32 EEA member countries. Total EU-27 transport emissions excluding aviation and international navigation increased by 26% over the period, the data show. In 2007, these emissions were slightly lower than the previous year, taking into account last year's EEA data.

But emissions from aviation and international navigation continue to increase rapidly. Road transport also remains a problem. These trends are especially worrying because transport is now the only sector where greenhouse gas emissions are not declining. (However, preliminary figures for 2008 show an overall decline of around 2% compared with 2007 because of the economic crisis. But emissions will not decrease in the long term unless the EU changes its approach to transport policy, says EEA.)

One way to improve the situation, says EEA director Jacqueline McGlade, is to integrate transport issues into a wider range of policy areas, for example not just industrial and environmental policy but also regional policy and spatial planning.

The EEA report paints a mixed picture of transport's environmental impacts. As reported in the past, there have been improvements in air quality. But the national NO_x emission ceilings and ambient nitrogen dioxide (NO₂) limits set for 2010 remain hard to achieve, says the European agency. (See above)

Road traffic is also by far the largest source of transport noise. The number of people exposed to damaging noise levels is expected to increase unless effective policies are developed and fully implemented, EEA says. The share of rail and inland waterways in total freight transport volumes declined.

8. Green Transport Losing Share to Higher Polluters

Europe's greenest modes of transport are falling behind the biggest polluters, which is contributing to a steep rise in climate-warming emissions, according to the European

Environment Agency. Road and air freight, which both have a large carbon footprint, grew slightly faster than the economy, at around 43 percent and 35 percent respectively between 1997 and 2007, the European Union agency added in its annual review of transport's environmental impact. The market share of the cleanest freight modes -- rail and inland waterways -- declined over the same period, it said.

The problem has been exacerbated by the fact that eastern European countries, which joined the EU in the 1990s, have traditionally had poor rail links to Western Europe.

European passenger airlines are increasing their traffic by about 48 percent each decade. While passenger demand for rail remained steady in Western Europe in the 10 years to 2007; it declined heavily in Eastern Europe.

The report came a day before the European Union's executive launched a green-transport strategy that put heavy emphasis on electric vehicles. Car journeys remained the dominant mode of transport in the EU's 27 member countries, accounting for 72 percent of all kilometers travelled, the EEA said.

European emissions from internal transport grew by nearly a third between 1990 and 2007 and now account for around 19.3 percent of overall emissions.

9. European Commission Tables Strategy on Clean and Energy Efficient Vehicles

The European strategy for encouraging the development and eventual widespread use of clean and energy efficient vehicles aims to help the European car industry to strengthen its leading role globally basing its production on clean and energy-efficient technologies. This strategy is laid down in a new Communication, tabled by the European Commission. It delivers on the consensus between Member States and European Commission Vice-President Antonio Tajani's commitment to move on from short-term recovery measures to a medium-term orientation that strengthens the competitiveness of the European automotive industry by linking it to clean technologies. The strategy also contributes to the Europe 2020 objectives of smart and sustainable growth. It contains an Action Plan composed of concrete and ambitious measures to be implemented by the Commission.

Commission Vice-President Antonio Tajani in charge of industry and entrepreneurship said: "In 2010, the automotive industry enters into a defining phase for its future success. The new European strategy will provide a supportive framework based on a twin-track approach: improving the efficiency of conventional engines and making ultra low-carbon mobility a reality for European consumers. Including all types of vehicles in the strategy will ensure that this parallel approach will strike the right balance between securing the future competitiveness of Europe's car manufacturing industry without compromising the long-term goals for the reduction of greenhouse gases and other pollutants. The strategy also aims at achieving common standards for electrical cars so that they can be charged everywhere in the EU."

Important national and regional actions are currently taken by the Member States and by EU's global partners to promote the mass production and market uptake of green vehicles. In parallel, the momentum is building with the industrial plans for the mass market dominance of the fuel-efficient conventional vehicles and an important roll-out of electric vehicles in 2011. With the new strategy, the Commission wants to provide an impetus on the European level and seize the full potential of green vehicles to contribute to fight the climate change, reduce the oil dependency of Europe and revitalize Europe's industrial fabric.

The Commission will among other steps:

- continue its legislative program on vehicle emission reduction including its midterm review;
- Supporting research and innovation in green technologies
- propose guidelines for demand-side incentives

The strategy builds on European leadership in the climate change fight and establishes bases for European leadership in clean transport.

While the Communication does not make any technological choices, it recognizes that until now the European framework has been mostly lacking on electric mobility. With electric vehicles (including hybrids) currently viewed as ready for the mass market and several Member States notably France, Spain, Germany, Portugal and Denmark promoting electro-mobility, a number of actions announced in the Communication focus on enabling this technology.

- ensure that alternative propulsion vehicles are at least as safe as conventional ones
- promote common standards that will allow all electric vehicles to be charged anywhere in the EU
- encourage installation of publicly accessible charging points
- Promote the development of smart electricity grids
- Update the rules and promote research on recycling of batteries.

The Commission looks forward to implementing the strategy by working with the Spanish and Belgian presidencies and by re-launching the CARS 21 high-level group.

10. MEPs Want Speed Limits to Reduce Van Emissions

Introducing speed limits for light commercial vehicles would be a cheap and effective way of reducing their CO₂ emissions, the European Parliament's environment committee was told during a debate on proposals to cut van emissions.

The MEP leading the parliament's debate on the proposals, Martin Callanan, said the limits should be introduced by 2015. Speed should not exceed 120 kilometers per hour, he added. There was broad support for the idea among committee members.

Mr Callanan pointed out that it is harder to achieve emission reductions from light commercial vehicles than it is for cars. Because they are used for commercial purposes, there is less room to modify their shape or weight, says the rapporteur.

The British MEP also specified his position concerning the European Commission's proposed emission reduction targets for these vehicles. He does not propose to change the short-term target of 175 grams per kilometer, to be phased in from 2014 to 2016. But he told committee members the 2020 target should be set at 150g/km and not 135g/km as proposed by the commission, confirming earlier remarks. Mr Callanan's proposed target is more achievable and remains ambitious, MEPs were told. The Greens and Liberals say this would weaken the proposals.

British MEP Chris Davies said the proposals should concentrate first and foremost on fuel efficiency and tire improvements rather than emission reductions through engines. Mr Davies has the support of veteran EPP member Karl-Heinz Florenz.

Mr Callanan reiterated the proposed penalties for manufacturers failing to meet emission limits were too high. Fines for cars and vans should be in line with each other, he said. This means van makers should be fined €95 per excess gram of CO₂.

Committee members are expected to table their own amendments in coming weeks. The environment committee will vote on the proposals on 27 September. This will be followed by a vote in the parliament's full assembly at the end of November.

11. Europe Reportedly Will Not Revise Air Quality Laws Until 2013

The European Commission does not plan to revise EU air quality laws such as the National Emission Ceilings (NEC) directive and a law limiting sulfur in marine fuels until 2013, according to press reports. A revised NEC directive was originally set to be adopted in mid-2007 and legislative proposals revising the sulfur in marine fuel law were due in 2008 together with an implementation report. This delayed report reportedly will be issued this year.

The two laws will not be revised before 2013 because environment commissioner Janez Potočnik intends to focus first on biodiversity, resource efficiency and water in the years 2010, 2011 and 2012 respectively. Green groups wrote to Mr Potočnik in June, urging him to revise air quality legislation this year.

EU countries are required to implement tougher pollution limits agreed by the International Maritime Organization (IMO) in 2008 by 1 July. As IMO members, it is the member states that are directly responsible for implementing the limits, not the EU. The revised marine fuel directive will only coordinate implementation. The European Commission will assess the costs and benefits of the IMO limits this year. It is unknown how many EU countries are on track to meet the July deadline. Finland has already said it will be late. The US and Canada have already implemented the limits.

12. EU Outlines Sustainable Biofuels Criteria, Plan for Voluntary Certification Scheme

In an effort to calm debate about whether biofuels produced for the European Union transport sector cause more environmental damage or produce more greenhouse gases than they save, On June 10th, the European Commission outlined a voluntary certification scheme backed by sustainable criteria. The Commission plan calls for biofuel production companies, governments, and nongovernmental organizations to set up voluntary certification schemes, with inspections by independent auditors who analyze the entire production chain, starting with the farmer raising the crops to be used as biofuel.

In addition, the European Union's sustainability criteria require that biofuels deliver greenhouse gas savings of at least 35 percent compared to fossil fuels. In an effort to promote the development of second generation biofuels, the criteria gradually raise the greenhouse gas reduction threshold to 50 percent by 2017 and 60 percent by 2018.

One criterion set out by the European Commission would prevent the use of biofuels that come from tropical forests or recently deforested areas as well as drained peat land, wetlands, or "highly biodiverse areas." The Commission said this criteria means that biofuels produced from palm oil plantations, such as those in Indonesia or Malaysia, that were planted on cleared tropical forest land will not be acceptable.

Based on the plan, which will begin at the end of 2010, all biofuels produced inside and outside the European Union should meet what the European Commission said were the most “stringent criteria” in the world.

The new scheme could have an impact around the world as 10 percent of all EU transport fuels must be produced from renewable sources as of 2020. Imports, which already account for 25 percent of EU biofuels, are expected to grow to even a larger amount. Most biofuel imports to the European Union currently come from Brazil and the United States.

“In the years to come biofuels are the main alternative to petrol and diesel used in transport, which produces more than 20 percent of the greenhouse gas emissions in the EU,” said Energy Commissioner Gunther Oettinger. “Our certification scheme is the most stringent in the world and will make sure that our biofuels meet the highest environmental standards. It will have positive effects also on other regions as it covers imported biofuels.”

The European Commission said the scheme was in compliance with World Trade Organization rules because it will apply to both domestic and foreign-based biofuel production. The European Union is engaged in a trade dispute with the United States over biofuels. It imposed anti-dumping duties on U.S.-produced biodiesel fuels because, the European Union alleges, the U.S. fuels benefit from illegal tax subsidies.

While EU law that takes effect in December would allow electric cars powered by renewable energy also to count against the 10 percent target, Oettinger said that automobiles running on electricity would make only a marginal contribution by 2020.

The European Union's 10 percent biofuel use target for 2020 has been a subject of controversy for years, and the debate has only grown more intense in the past year as various studies raise doubts about the environmental impact of biofuels and their potential negative effect on food security, as crops are used for fuel rather than food. The food security issue is an “indirect land use” impact, and the European Commission said it would try to address the issue later in the year.

Despite the claims by the European Commission that sustainability criteria will be the most stringent in the world, the plan seemed to do little to quiet critics. While welcoming the provision to prevent tropical forest clearing to produce palm oil, many leading environmental groups, including Greenpeace, the World Wide Fund for Nature, and Friends of the Earth, criticized the sustainability criteria as inadequate.

The European Green Party said the plan would undermine the European Union's climate policy, including its commitment to reduce greenhouse gases by at least 20 percent by 2020, compared with 1990 levels. “Among the more odious loopholes are the ‘by-product definitions,’ which take no account of the existing economic uses of by-products” from the biofuels production process, European Green Party member Bas Eickhout, who is also a member of the European Parliament Committee for the Environment, said in a June 10th statement. “This would mean that by-products could be diverted from economic usage to use as biofuels and be substituted by more greenhouse gas intensive alternatives without any attempt to factor in the resultant emissions increase.”

The European Green Party also said another important flaw concerned the “energy allocation definition,” which would allow undistilled ethanol to be classified as having near-zero emissions. “This makes a mockery of the lifecycle greenhouse gas assessment process and renders the

so-called 'sustainability criteria' nothing more than an exercise in greenwash," Eickhout said. The European Green Party also said the delay in providing "indirect land-use change" criteria was unacceptable. "This [land use] issue is absolutely crucial for assessing how much greenhouse gases these fuels account for over their lifecycle and is therefore fundamental to assessing the sustainability or not of biofuels," said the Green Party. "This prolonged delay is unacceptable ... it is also inimical to the interests of investors, who are badly in need of legislative certainty for their investments."

13. EU Official Says Black Carbon 'Must Not Distract From Cutting CO2'

Reducing emissions of black carbon, or soot, should be pursued as a 'no-regret' policy benefiting climate and health but it must not distract from cutting CO2, a senior EU official told a seminar at the European Parliament. Black carbon has been heralded as a potential quick fix to the climate change problem in the short term, since studies have suggested it is second only to CO2 as a contributor to global warming, but with an atmospheric lifespan of weeks rather than years.

It is primarily emitted by developing countries, which presents a problem for raising it as an issue in the international climate talks, said Niels Ladefoged of the European Commission's climate department. Developed countries risk being accused of trying to shift the problem to the developing world, he added.

Frank Raes of the commission's Joint Research Centre said black carbon emission reductions could come from road transport (diesel fuels), household biomass burning, and landfill and waste. Werner Reh from German NGO Bund called for a revision of EU legislation on non-road mobile machinery to cut these emissions.

Nick Nuttall, spokesman for the UN environment program, suggested that if it could be more accurately measured in future, black carbon could form part of a global climate deal via a mechanism whereby rich countries pay poor countries to reduce their emissions, such as a REDD+-type mechanism or even the carbon market.

14. CO2 From Vans Could Be Cut By 16% by Downsizing Alone, Says Study

Downsizing van engines to their 1997 power levels could reduce their CO2 emissions by up to 16%, according to a study published on Monday. By comparison, the European Commission's proposed 175 grams per kilometer limit represents a 14% cut. The study, conducted by researchers at CE Delft and TNO, was released ahead of two upcoming votes in the European Parliament's industry and transport committees. The committees will adopt opinions on the commission's proposal to cut van emissions.

The environment committee, which leads MEPs' discussions on the proposal, will not vote until after the summer. According to green group T&E, the study's findings show the EU impact assessment "completely ignored" the potential of using smaller engines and is "far too pessimistic" about how far fuel consumption can be cut. This has led to a political debate wrongly centered on the costs of advanced technologies needed to meet the proposed 175g/km limit for 2016, T&E continues. The study also shows that using smaller, less powerful engines could cut van purchase costs by up to 10% and total ownership costs by up to 12%.

Vans do not need the enhanced power of today's engines because the maximum weight they are allowed to carry has not changed since 1997, nor have speed limits, T&E asserts. More

powerful engines are an irrational consequence of light commercial vehicle manufacturers following the car market, it suggests.

Smaller engines could be easily fitted into existing van models, the group adds. And they would also make it a lot easier to meet the proposed long-term 135g/km limit, one of several sources of disagreement among member states.

15. Germany to Extend Motorway Toll, Says Minister

The German government plans to extend the motorway truck toll in 2011 on all four-lane federal roads according to an announcement by federal transport minister Peter Ramsauer. It is part of the austerity package recently agreed.

Four-lane federal roads are increasingly used by goods traffic in order to avoid motorway tolls, Mr Ramsauer said in an interview with the newspaper Hamburger Abendblatt. So far the truck toll is only charged on a limited number of federal roads heavily used by trucks. The extension could raise up to €150m per year.

Green MPs welcomed the plans but they say the charge should apply to lorries over 3,5 tons and not just those over 12 tons as under existing legislation. Transportation firms voiced their indignation of Ramsauer's plans. Given the economic situation, the sector will not be able to bear further charges, lobby group BGL warned.

16. EU Bunker Emissions Have Dropped For First Time in Two Decades

EU greenhouse gas emissions from shipping and aviation, also called bunker fuel emissions, dropped for the first time in nearly 20 years, according to an analysis of 2008 emissions data recently published by the European Environment Agency (EEA). The EEA found that shipping emissions fell by 2.1% to 171 million tons, while aviation emissions held steady at their 2007 level of 139 million tons. The drop in shipping emissions was due at least in part by the recession, said the agency.

Aviation emissions will have to drop from 2012 following the sector's inclusion in the EU's emission trading scheme (ETS), although a group of US airlines is contesting this. The European Commission will also propose to include shipping in the ETS if there is no global agreement to cut its emissions by 2011.

Bunker fuel emissions have been steadily rising over the years and account for about 6% of total EU emissions. But because they are excluded from the Kyoto protocol, these emissions have no bearing on efforts to achieve the EU's Kyoto target.

Wednesday's analysis updated preliminary 2008 data released in August, which showed the EU is well on track to meeting its Kyoto target. EU-15 emissions were 6.9% below 1990 levels, relative to a Kyoto target of minus 8% for the period 2008-12. EU-27 emissions were 11.3% below 1990 levels.

High coal and carbon prices, cheaper natural gas, greater use of renewables, and the recession all contributed to emission reductions in 2008, the agency said. The EU has committed to a 20% cut below 1990 levels by 2020. The EEA will release preliminary data on 2009 emissions at the end of the summer.

17. German Carmakers Drop Plan to Be HFC-Free

German car industry association VDA has backed away from an earlier commitment for its members to use HFC-free alternatives in mobile air conditioning (MAC) systems. Environmental groups strongly criticized VDA's change of heart on the matter. VDA will instead use a greener HFC, called HFC-1234yf (also known as HFO-1234yf). The MAC directive requires carmakers to stop using refrigerant HFC-134a from 2011. Carmakers can use either HFC-1234yf, which has lower global warming potential or CO₂-based refrigerants.

But there are safety concerns that HFC-1234yf is toxic and explosive. In 2007, VDA said publicly that their members would use the CO₂-based R744, saying other substances "will not be pursued any further as an alternative." VDA had so far been the only carmaker association to commit to R744.

This week, VDA announced its members will switch to using HFC-1234yf in all air-conditioning systems instead of R744. It would be too risky to export markets if Germany was the only country using the CO₂-based alternative, the association explained.

VDA added recent tests have shown that the flammability risks are not a concern because in its use as a refrigerant HFC-1234yf is hard to ignite and is therefore different from other flammable refrigerants. Earlier this month, the European Commission told MEPs the substance complied with the MAC directive's requirements.

18. Electric Cars Viable, Danish Report Concludes

A Danish report says electric cars can be a realistic alternative to conventional vehicles, provided they can effectively interact with the nation's electricity grid. Released on June 7th by the Climate and Energy Ministry, the report considered the merits of different charging systems and infrastructure, battery types, the legal status of electric and hybrid vehicles, and the freedom of motorists to choose among electricity suppliers. While the technology is improving, the report said that the ultimate success of the vehicles depends on the emergence of an "intelligent" electricity grid that will recharge batteries when demand for energy is low and will take power from charged batteries when grid demand is high. "The report shows that electric cars are part of the solution [to end dependence on fossil fuels] because they can be driven by green energy and function as an integral part of a future electricity system," Climate and Energy Minister Lykke Friis said in a June 7th statement. "While the traditional car continues to have advantages in range and production costs, I think that many people will be won over by electric vehicles as their price comes down and their range increases." In 2008, Denmark allocated 35 million Danish kroner (\$5.7 million) for research and development of electric cars over five years.

19. Six Countries Taken To Court for Environmental Infringements

On June 3rd, the European Commission said it would take six countries to the Luxembourg-based European Court of Justice (ECJ) for noncompliance with EU environmental laws. However, in five of the cases, concerning Cyprus, Finland, France, Greece, and Luxembourg, the referral was for non-implementation of the relatively minor EU INSPIRE Directive (Infrastructure for Spatial Information in the European Community, 2007/2/EC), which obliges countries of the 27-nation bloc to make available to one another geographic and environmental information, such as emissions data and the location of conservation sites. Under INSPIRE, EU countries should have put in place procedures for most categories of information by May 15, 2009.

In the sixth case, the Commission referred Belgium to the ECJ for non-implementation of the Groundwater Directive (2006/118/EC), which sets quality standards for water resources. The Commission said that not all regions of Belgium had put the legislation in place despite a transposition deadline of Jan. 16, 2009.

The Commission also sent formal first warnings pending ECJ referral to 12 countries for not providing river basin management plans, as required by the EU Water Framework Directive (2000/60/EC). The directive requires EU countries to ensure by 2015 that all surface waters have “good ecological status” and “good chemical status.” The Commission said the directive is a “cornerstone” of EU environmental legislation. Countries were supposed to have provided a first round of plans to the Commission by March 22.

EU Environment Commissioner Janez Potocnik said noncompliant states should “take action quickly, complete the public consultation, and submit their plans.”

Countries receiving the formal warnings were Belgium, Cyprus, Denmark, Greece, Ireland, Lithuania, Malta, Poland, Portugal, Romania, Slovenia, and Spain.

Separately, the Commission sent to the United Kingdom a second formal warning for contravening limits on fine particles in air in London and Gibraltar. Under EU procedures, member states are entitled to two warnings before being referred to the ECJ. Member states can be fined if the ECJ finds against them and breaches of EU law are not remedied.

NORTH AMERICA

20. Obama Orders Agencies To Set Fuel, Emissions Rules for Trucks, Cars

Little more than one year after he announced an agreement with the automobile industry on fuel economy standards, on May 21st, President Obama took the initial step toward developing first-ever standards for fuel economy and greenhouse gas emissions from medium- and heavy-duty trucks. Speaking at a Rose Garden ceremony at the White House, Obama directed the Environmental Protection Agency and the Department of Transportation to begin a rulemaking for the truck standards for model years 2014-2018.

He also told the agencies to develop new fuel economy and greenhouse gas emissions standards for cars and light trucks for model year 2017 and beyond, standards that would take effect after current rules for those vehicles expire in model year 2016. Obama also directed EPA to reduce emissions of conventional pollutants, such as nitrogen oxides, from motor vehicles.

“I believe that it’s possible in the next 20 years for vehicles to use half the fuel and produce half the pollution that they do today,” Obama said.

Obama said the program will bring down the cost of transporting goods and will reduce pollution. “We estimate, for example, that we can increase fuel economy by as much as 25 percent in tractor trailers using technologies that already exist today,” Obama said. Freight vehicles produce roughly one-fifth of transportation-related greenhouse gas emissions, he said.

Obama outlined his directive in a memo to EPA Administrator Lisa Jackson, Transportation Secretary Ray LaHood, Energy Secretary Steven Chu, and National Highway Traffic and Safety Administration head David Strickland.

In a sign of support for the initiative from a variety of interested parties, Obama was joined on the dais at the White House ceremony by representatives of truck manufacturers, fleet operators and drivers, and organized labor.

LaHood said in a telephone news briefing later that no decision has been made on the level of the standards. "We haven't gotten that far yet," LaHood said. "We're just starting."

Truck Standards Eyed in 2011

Obama's directive said the medium- and heavy-duty truck standards will be finalized by July 30, 2011, for implementation in 2014. For cars and light trucks, an administration official said the Transportation Department will work with automobile manufacturers, the state of California, and other stakeholders to "come up with a game plan" in September for proceeding with new standards.

California expects to play a leading role as the rulemaking proceeds. California plans to finalize its own greenhouse gas emissions standards for cars and light trucks for model year 2017 and beyond by the end of this year.

Medium- and heavy-duty trucks currently are not subject to fuel economy standards.

Mary Nichols, chairman of the California Air Resources Board, said in a statement that national standards for trucks "could reduce as much as 250 million metric tons of CO₂ and save up to approximately 500 million barrels of oil over the lifetime of the vehicles and achieve approximately \$70 billion in fuel saving."

The president's directive will include support for development of electric vehicles and other advanced-vehicle technology. "Through the directive I'm signing, we're also going to work with public and private sectors to develop the advanced infrastructure that will be necessary for plug-in hybrids and electric vehicles," Obama said. "And we're going to continue to work to diversify our fuel mix including biofuels, natural gas, and other cleaner sources of energy."

EPA and NHTSA announced new fuel economy standards on April 1st for cars and light trucks for the 2012-2016 model years and set for the first time greenhouse gas emissions standards for those vehicles. By model year 2016, combined fuel economy standards for cars and light trucks will be increased by 40 percent from 25 miles per gallon to 35.5 miles per gallon.

EPA's Jackson said in the telephone briefing that, like the current standards, the new standards will be written to provide manufacturers with flexibility in complying and to stimulate innovation.

Engine Manufacturers Association President Jed Mandel said in a statement, "As the primary manufacturers of medium and heavy-duty engines and vehicles in the United States, EMA members strongly support a uniform, national program to address greenhouse gas emissions and fuel efficiency." Mandel added, "A single coordinated EPA/DOT program should be designed to maximize the use of existing technologies that are feasible and effective while preserving the utility and functionality of work-performing vehicles in a highly competitive marketplace."

Dave McCurdy, president of the Alliance of Automobile Manufacturers, said in a statement, "The federal government is looking 15 years down the road and uniting all the diverse stakeholders to

work towards the same national goal. This approach achieved success once before, so we are optimistic that we can do it again.” “The federal government was responsive to our calls for a long-range national program. Auto technologies require long lead-times for research and development, typically 5-10 years and more,” McCurdy said. “So we need to start now.”

21. Canada Proposes to Align Truck Emissions Standards With U.S.

Environment Canada will develop proposed regulations for greenhouse gas emissions from heavy-duty vehicles that would be aligned with U.S. standards, federal Environment Minister Jim Prentice said on May 21st. The government will work with the trucking industry, including both manufacturers and users, to develop the regulations under the Canadian Environmental Protection Act. It will aim to issue a consultation draft in the fall and to implement final regulations between the 2014 and 2018 model years, Prentice said in a statement.

“Canada and the United States had great success in establishing common standards for regulating greenhouse gas emissions from passenger automobiles and light trucks,” Prentice said. “We are taking the next logical step by addressing emissions from heavy-duty vehicles.”

The regulations are essential to Canada's long-term climate change efforts, as the transportation sector accounts for about 25 percent of all greenhouse gas emissions, he said. Once implemented, the regulations will help the government meet its target of reducing overall greenhouse gas emissions by 17 percent from 2005 levels by 2020, Prentice said.

Major retailer Canadian Tire Corp. Ltd. welcomed the concept of tougher standards for heavy-duty trucks, noting that it will replace by 2013 its entire 70-vehicle transport fleet with trucks using the latest generation of low-emissions diesel engine technology. The company's trucks deliver about 2,700 53-foot container loads per week to its 480 retail outlets across Canada, President Stephen Wetmore said in a May 21 statement. “We look forward to working with the federal government on this initiative,” he said.

In addition to the regulatory initiatives, the federal government has established an Automotive Innovation Fund that will provide C\$250 million (\$235 million) over five years for large-scale research and development projects to build greener vehicles, Industry Canada said May 21 in a background document. The fund was first proposed in the federal government's budget for fiscal 2008-2009. The fund will support Canada's environmental agenda by boosting capabilities in fuel-efficient automotive technologies and greenhouse gas reductions. Industry Canada will consider funding proposals by the private sector of more than C\$75 million (\$71 million) over five years, the department said.

Projects will be evaluated on the strength of their business case, including innovation, environmental, and economic benefits, it said. Proposals will be considered in a range of areas, including advanced emissions technologies; energy-efficient engines and transmissions; advanced materials; advanced product testing that promotes cleaner, more efficient performance and reduces greenhouse gas emissions; development of new production methods and process technologies; and construction of new or expanded facilities to produce more energy-efficient vehicles and power trains.

22. Health Canada Reaffirms Human Health Risk for Inhaled Manganese

Manganese (CAS 7439-96-5) is a metal that is found naturally in air, water, soil and in living systems. Biologically, manganese (Mn) is an essential mineral and is required for the

functioning of a number of enzyme families. In addition to its essential role within the body, manganese is a well documented toxicant in humans at sufficiently high levels of exposure. Although manganese can be toxic to a number of organ systems including the reproductive and respiratory systems, the critical target organ is the central nervous system (CNS), where manganese accumulates within the basal ganglia of the brain. Very high levels of exposure can result in a clinical and severely debilitating neurological disease known as manganism. More moderate levels of exposure can result in worsening of subclinical neurological function including fine motor control, tremor, memory and cognitive ability, consistent with damage to the basal ganglia.

Review of the Science

Ingested manganese is subject to homeostatic controls, both at the point of absorption from the gastrointestinal tract as well as via biliary excretion (ingested manganese passes through the liver prior to entering systemic circulation). Only a small percentage of an oral dose of manganese enters systemic circulation. Conversely, inhaled manganese enters systemic circulation directly, making the manganese available for distribution to and accumulation in the body's tissues, including the brain. Manganese delivery to the brain can occur across the blood-brain barrier, through the choroid plexus and via direct olfactory transport. In the case of the latter, inhaled manganese deposited on the olfactory epithelium can be transported directly along the olfactory system to the olfactory bulb within the brain, providing a direct interface between the nervous system and the external environment.

Toxicological studies of manganese have used animal models to investigate the neuropathological, behavioral, developmental, and genotoxic effects of exposure to this metal. These studies have also examined how factors such as chemical form and valence affect toxicity, and how age, gender, diet and disease affect susceptibility. In general, the majority of toxicology studies have been performed with rodents using high exposure doses and small treatment groups. Some studies have used nonhuman primates, and an increasing amount of mechanistic *in vitro* work has been carried out with neural cell lines. The principal behavioral effect reported in manganese-exposed rodents is transient modification of spontaneous motor activity. Studies with nonhuman primates, though fewer, provide more detailed behavioral analyses, with symptoms of manganese intoxication often resembling those reported in humans. Hyperactivity is reported as a common early symptom, progressing to abnormal movements, muscular rigidity and limb flexion.

Based on data from toxicology studies with nonhuman primates and rodents, it can be hypothesized that a number of interrelated processes are set in motion as manganese intoxication progresses: i) cellular energy supplies are depleted by mitochondrial disruption and interference with oxidative phosphorylation and the citric acid cycle; ii) oxidative stress is induced by interference with cellular respiration, the oxidation of dopamine, and/or reduced antioxidant function; iii) cellular iron and calcium homeostasis are disrupted; iv) impaired astrocyte function leads to increased extracellular glutamate concentration and potential excitotoxicity; and v) apoptosis and/or necrosis is triggered in active neurons leading to cell death. The end result of these toxic processes is cytotoxicity and selective neurodegeneration in regions of the brain that accumulate manganese, in turn leading to an alteration in CNS neurotransmission that gives rise to the behavioral effects associated with manganese intoxication.

The effects of manganese exposure on human health have been investigated in a large number of epidemiological studies. These have primarily evaluated the impact of manganese exposure

on subclinical neurofunctional outcomes such as fine motor control, tremor, memory and aspects of cognitive ability. Of the many endpoints examined, measures of fine motor control, particularly of the fingers, hands and wrists, as well as tremor, have been most consistently affected by manganese exposure. Although most studies have made use of occupationally exposed populations, studies in the general population have shown an association between blood manganese levels and neurofunction in adults and children, as well as an elevated prevalence of parkinsonian symptoms in populations living in the vicinity of a large manganese industry.

Results from a population-based study of personal exposure in Toronto (1996) revealed that about 10% of adults had personal exposures greater than 0.05 $\mu\text{g Mn/m}^3$ in PM_{10} and greater than 0.014 $\mu\text{g Mn/m}^3$ in $\text{PM}_{2.5}$. (PM_x refers to particulate matter with a mass mean aerodynamic diameter of x microns.) Between 2003 and 2005, annual average ambient manganese levels in Canadian cities without major manganese-emitting industries ranged from 0.003-0.025 $\mu\text{g/m}^3$ in PM_{10} and from 0.002-0.014 in $\text{PM}_{2.5}$. In some areas of cities with major manganese-emitting industries such as Hamilton and Sault Ste. Marie, the annual average level of PM_{10} manganese in air (2003-2005) has ranged from 0.06-0.22 $\mu\text{g/m}^3$ in PM_{10} . There is only limited information on personal exposure to manganese in locations with large manganese-emitters.

Derivation of a reference concentration for inhaled manganese

A study of Italian ferroalloy workers⁵ was identified as the critical study for a quantitative risk assessment of the neurotoxic effects of manganese and the derivation of a new reference concentration for manganese. This dataset includes exposure variables, neurofunctional outcome variables, serum prolactin, and confounder variables. Dose-response assessment was carried out with benchmark concentration analysis methodology. Two exposure metrics were used: 1) work history average respirable manganese (ARE); and 2) average respirable manganese over the five years prior to testing (ARE5). ARE5 was investigated based on biological evidence of the clearance of manganese from the brain over months to several years. The analysis revealed three significant dose-response models for ARE (three tests of fine motor control) and ten significant dose-response models for ARE5, including six tests of fine motor control, two aspects of memory tests, one test of mental arithmetic and serum prolactin.

Results from the benchmark concentration analysis were used in the derivation of the new reference concentration for inhaled manganese. Benchmark concentration analysis results were adjusted to account for conversion from an occupational exposure regime (5/7 days per week and 8/24 hours per day) to constant exposure as experienced by the general population. One uncertainty factor of 10 was applied to the benchmark concentration analysis results to account for interindividual variability in response to manganese. Specifically, evidence regarding the possible enhanced susceptibility of the elderly, infants and children, individuals with asymptomatic pre-parkinsonism, individuals with chronic liver disease or on parenteral nutrition, females and individuals with iron deficiency was considered. A second uncertainty factor of 10 was applied to account for the following limitations in the database: a) the general population may be exposed to more soluble forms of manganese, which can enhance delivery of manganese to the brain; b) the lack of extensive studies of the effect of prenatal exposure to manganese; and c) the impact of manganese exposure on serum prolactin. Results from the

⁵ Lucchini, R., P. Apostoli, C. Perrone, D. Placidi, E. Albini, P. Migliorati, D. Mergler, M. P. Sassine, S. Palmi, and L. Alessio. 1999. Long-term exposure to "low levels" of manganese oxides and neurofunctional changes in ferroalloy workers. *Neurotoxicology* 20, no. 2-3: 287-97.

dose-response models with ARE5, a more sensitive measure of the critical manganese exposure affecting the health outcomes, yield reference concentrations of 0.05-0.08 µg/m³.

This review and analysis concludes that the new Health Canada reference concentration for inhaled manganese is 0.05 µg/m³ in PM_{3.5}. This value reflects the concentration to which the general population, including sensitive subgroups, can be exposed for a lifetime without appreciable harm.

23. EPA, Navistar Reach Settlement in Suit Over Use of Selective Catalytic Reduction

The Environmental Protection Agency has reached an agreement in principle in settlement talks with truck maker Navistar Inc. over a challenge to EPA guidance on how heavy-duty diesel truck engine manufacturers can use selective catalytic reduction systems to control nitrogen oxide emissions (Navistar Inc. v. EPA, D.C. Cir., No. 09-1113, emergency motion filed 5/3/10).

The U.S. Court of Appeals for the District of Columbia Circuit had been scheduled to hear oral arguments in the case on May 10th, but the parties filed a joint emergency motion on May 3rd asking the court to vacate oral arguments and hold the case in abeyance pending settlement negotiations. According to the motion, the parties have reached agreement in principle, but the Department of Justice must approve the settlement, and it must be subjected to public comment before it can be finalized.

In the challenge, filed in 2009, Navistar alleged that EPA is allowing competing manufacturers to use selective catalytic reduction (SCR) to control emissions in violation of its own rulemaking in 2001, which said SCR is not a feasible way to control emissions.

Navistar said in a May 4th statement that the agreement provides that EPA will “engage in a public process to reexamine its policies, for future 2011 and later model year engines” during which it will “provide a thorough review of EPA's policies regarding operation of SCR-equipped engines.” The agency also has promised to “ensure, among other things, that SCR equipped heavy duty diesel engines are designed to properly control emissions as required under applicable regulations,” Navistar said.

According to EPA, due to recent advances in SCR technology, it now can be considered an effective means of emissions control.

A group of competing manufacturers maintain that Navistar made a business decision to control emissions without SCR and now seeks to discredit effective emissions control technologies used by the competitors.

Navistar alleges that guidance documents issued by EPA in February and December 2009 allow engine manufacturers to use SCR to reduce emissions, and that guidance constituted final actions that required a notice-and-comment rulemaking.

According to Navistar, SCR does not control emissions well enough to meet the standard set by EPA in 2001, and effective in 2010, of 0.20 grams of nitrogen oxide per brake horsepower-hour.

EPA countered in a brief filed on April 9th that the guidances were not final actions but merely advisory. They do not establish standards for the industry to meet, but only guidance on how the 0.20 grams standard can be met. In addition, EPA said that Navistar engines, which emit 0.5

grams of nitrogen oxide per bhp-hour, will meet 2010 requirements only through the use of banked emissions credits.

Navistar said in an April 5th brief that EPA, when it issued the 0.20 gram standard in 2001, specifically said that SCR is not a feasible technology for meeting the standard. Navistar said it relied on the EPA rulemaking in deciding not to use SCR. Instead, the company relies on exhaust gas recirculation technology to control emissions.

According to EPA, however, the original rulemaking did not flatly prohibit SCR, nor any form of technology, but left it to the manufacturers to decide how to reduce emissions. EPA said the competing manufacturers came to the agency to discuss technological developments that would allow the use of SCR to reduce emissions, and it issued guidance to advise on how that may be done. Since the original rulemaking did not prohibit SCR, EPA would still have authority to certify engines using SCR as meeting the 0.20 grams standard with or without the guidance, EPA said.

In addition, Navistar said SCR as outlined in the guidance would not meet the 0.20 gram standard. It would allow truck operators to drive up to 2,000 miles without the aqueous urea charge needed to achieve emissions reductions. In addition, Navistar said, the procedures in the guidance would allow operators to repeatedly disconnect the SCR systems to avoid having to recharge them with aqueous urea.

The engine gas recirculation system does not require recharging and is resistant to tampering, the company said.

According to the Navistar brief, the credits the company is using to comply with the 2010 standard were earned by producing engines cleaner than was required prior to 2010. Using these credits will allow it to further develop engine gas recirculation. In contrast, Navistar said, EPA is allowing competitors without credits to evade compliance.

The competitors' in an April 6 friend-of-the-court brief said the Navistar lawsuit is designed more for marketing its engine gas recirculation technology than for meaningful judicial review. According to the brief, Navistar's predecessor, International Truck and Engine Corp., said in 2006 that the industry consensus is that SCR is "the only technology path" to meet the 0.20 gram standard in 2010.

The EPA guidance explained how manufacturers could satisfy requirements in EPA certification regulations through measures such as driver warning systems and strategies to deter tampering, the competitors' brief said. EPA emphasized the nonbinding nature of the guidance, the competitors said. The companies that filed the friend of the court brief were Cummins Inc., Daimler Trucks North America LLC, Detroit Diesel Corp., Mack Trucks Inc., and Volvo Group North America Inc.

24. USEPA Issues Report on U.S. Climate Change Indicators

Collecting and interpreting environmental indicators play a critical role in the understanding of climate change and its causes. An indicator represents the state of certain environmental conditions over a given area and a specified period of time. Examples of climate change indicators include temperature, precipitation, sea level, and greenhouse gas concentrations in the atmosphere.

EPA's Climate Change Indicators in the United States report is intended to help readers interpret a set of important indicators to better understand climate change. The report presents 24 indicators, each describing trends related to the causes and effects of climate change. It focuses primarily on the United States, but in some cases global trends are presented to provide context or a basis for comparison. EPA will use these indicators to collect data and generate analyses to:

- Monitor the effects/impacts of climate change in the United States
- Assist decision-makers on how to best use policymaking and program resources to respond to climate change
- Assist EPA and its constituents in evaluating the success of their climate change efforts

Summary of Key Findings

The indicators in this report present clear evidence that the composition of the atmosphere is being altered as a result of human activities and that the climate is changing. They also illustrate a number of effects on society and ecosystems related to these changes.

Greenhouse Gases

U.S. Greenhouse Gas Emissions. In the United States, greenhouse gas emissions caused by human activities increased by 14 percent from 1990 to 2008. Carbon dioxide accounts for most of the nation's emissions and most of this increase. Electricity generation is the largest source of greenhouse gas emissions in the United States, followed by transportation. Emissions per person have remained about the same since 1990.

Global Greenhouse Gas Emissions. Worldwide, emissions of greenhouse gases from human activities increased by 26 percent from 1990 to 2005. Emissions of carbon dioxide, which account for nearly three-fourths of the total, increased by 31 percent over this period. Like in the United States, the majority of the world's emissions are associated with energy use.

Atmospheric Concentrations of Greenhouse Gases. Concentrations of carbon dioxide and other greenhouse gases in the atmosphere have risen substantially since the beginning of the industrial era. Almost all of this increase is attributable to human activities. Historical measurements show that the current levels of many greenhouse gases are higher than any seen in thousands of years, even after accounting for natural fluctuations.

Climate Forcing. Climate or "radiative" forcing is a way to measure how substances such as greenhouse gases affect the amount of energy that is absorbed by the atmosphere. An increase in radiative forcing leads to warming while a decrease in forcing produces cooling. From 1990 to 2008, the radiative forcing of all the greenhouse gases in the Earth's atmosphere increased by about 26 percent. The rise in carbon dioxide concentrations accounts for approximately 80 percent of this increase.

Weather and Climate

U.S. and Global Temperature. Average temperatures have risen across the lower 48 states since 1901, with an increased rate of warming over the past 30 years. Seven of the top 10 warmest years on record for the lower 48 states have occurred since 1990, and the last 10 five-year periods have been the warmest five-year periods on record. Average global temperatures show a similar trend, and 2000-2009 was the warmest decade on record worldwide. Within the

United States, parts of the North, the West, and Alaska have seen temperatures increase the most.

Heat Waves. The frequency of heat waves in the United States decreased in the 1960s and 1970s, but has risen steadily since then. The percentage of the United States experiencing heat waves has also increased. The most severe heat waves in U.S. history remain those that occurred during the “Dust Bowl” in the 1930s, although average temperatures have increased since then.

Drought. Over the period from 2001 through 2009, roughly 30 to 60 percent of the U.S. land area experienced drought conditions at any given time. However, the data for this indicator have not been collected for long enough to determine whether droughts are increasing or decreasing over time.

U.S. and Global Precipitation. Average precipitation has increased in the United States and worldwide. Since 1901, precipitation has increased at an average rate of more than 6 percent per century in the lower 48 states and nearly 2 percent per century worldwide. However, shifting weather patterns have caused certain areas, such as Hawaii and parts of the Southwest, to experience less precipitation than they used to.

Heavy Precipitation. In recent years, a higher percentage of precipitation in the United States has come in the form of intense single-day events. Eight of the top 10 years for extreme one-day precipitation events have occurred since 1990. The occurrence of abnormally high annual precipitation totals has also increased.

Tropical Cyclone Intensity. The intensity of tropical storms in the Atlantic Ocean, Caribbean, and Gulf of Mexico did not exhibit a strong long-term trend for much of the 20th century, but has risen noticeably over the past 20 years. Six of the 10 most active hurricane seasons have occurred since the mid-1990s. This increase is closely related to variations in sea surface temperature in the tropical Atlantic.

Oceans

Ocean Heat. Several studies have shown that the amount of heat stored in the ocean has increased substantially since the 1950s. Ocean heat content not only determines sea surface temperature, but it also affects sea level and currents.

Sea Surface Temperature. The surface temperature of the world’s oceans increased over the 20th century. Even with some year-to-year variation, the overall increase is statistically significant, and sea surface temperatures have been higher during the past three decades than at any other time since large-scale measurement began in the late 1800s.

Sea Level. When averaged over all the world’s oceans, sea level has increased at a rate of roughly six-tenths of an inch per decade since 1870. The rate of increase has accelerated in recent years to more than an inch per decade. Changes in sea level relative to the height of the land vary widely because the land itself moves. Along the U.S. coastline, sea level has risen the most relative to the land along the Mid-Atlantic coast and parts of the Gulf Coast. Sea level has decreased relative to the land in parts of Alaska and the Northwest.

Ocean Acidity. The ocean has become more acidic over the past 20 years, and studies suggest that the ocean is substantially more acidic now than it was a few centuries ago. Rising acidity is

associated with increased levels of carbon dioxide dissolved in the water. Changes in acidity can affect sensitive organisms such as corals.

Snow and Ice

Arctic Sea Ice. Part of the Arctic Ocean stays frozen year-round. The area covered by ice is typically smallest in September, after the summer melting season. September 2007 had the least ice of any year on record, followed by 2008 and 2009. The extent of Arctic sea ice in 2009 was 24 percent below the 1979 to 2000 historical average.

Glaciers. Glaciers in the United States and around the world have generally shrunk since the 1960s, and the rate at which glaciers are melting appears to have accelerated over the last decade. Overall, glaciers worldwide have lost more than 2,000 cubic miles of water since 1960, which has contributed to the observed rise in sea level.

Lake Ice. Lakes in the northern United States generally appear to be freezing later and thawing earlier than they did in the 1800s and early 1900s. The length of time that lakes stay frozen has decreased at an average rate of one to two days per decade.

Snow Cover. The portion of North America covered by snow has generally decreased since 1972, although there has been much year-to-year variability. Snow covered an average of 3.18 million square miles of North America during the years 2000 to 2008, compared with 3.43 million square miles during the 1970s.

Snowpack. Between 1950 and 2000, the depth of snow on the ground in early spring decreased at most measurement sites in the western United States and Canada. Spring snowpack declined by more than 75 percent in some areas, but increased in a few others.

Society and Ecosystems

Heat-Related Deaths. Over the past three decades, more than 6,000 deaths across the United States were caused by heat-related illness such as heat stroke. However, considerable year-to-year variability makes it difficult to determine long-term trends.

Length of Growing Season. The average length of the growing season in the lower 48 states has increased by about two weeks since the beginning of the 20th century. A particularly large and steady increase has occurred over the last 30 years. The observed changes reflect earlier spring warming as well as later arrival of fall frosts. The length of the growing season has increased more rapidly in the West than in the East.

Plant Hardiness Zones. Winter low temperatures are a major factor in determining which plants can survive in a particular area. Plant hardiness zones have shifted noticeably northward since 1990, reflecting higher winter temperatures in most parts of the country. Large portions of several states have warmed by at least one hardiness zone.

Leaf and Bloom Dates. Leaf growth and flower blooms are examples of natural events whose timing can be influenced by climate change. Observations of lilacs and honeysuckles in the lower 48 states suggest that leaf growth is now occurring a few days earlier than it did in the early 1900s. Lilacs and honeysuckles are also blooming slightly earlier than in the past, but it is difficult to determine whether this change is statistically meaningful.

Bird Wintering Ranges. Some birds shift their range or alter their migration habits to adapt to changes in temperature or other environmental conditions. Long-term studies have found that bird species in North America have shifted their wintering grounds northward by an average of 35 miles since 1966, with a few species shifting by several hundred miles. On average, bird species have also moved their wintering grounds farther from the coast, consistent with rising inland temperatures.

25. North America Collaborates to Reduce and Replace Potent Greenhouse Gases

Canada and Mexico have joined the United States in proposing to expand the scope of the Montreal Protocol on Substances that Deplete the Ozone Layer to fight climate change. The proposal would phase down hydrofluorocarbons (HFCs), which are a significant and rapidly growing contributor to climate change. The U.S. Environmental Protection Agency (EPA) led the analysis in the proposal, which demonstrates environmental benefits equal to removing greenhouse gas emissions from 59 million passenger cars each year through 2020, and 420 million cars each year through 2050. Reducing HFCs would help slow climate change and curb potential public health impacts.

During the phase-out of chlorofluorocarbons (CFCs) under the Montreal Protocol and the Clean Air Act, manufacturers of equipment such as car air conditioners and kitchen refrigerators substituted HFCs. The trilateral proposal would phase down HFCs, which are up to 14,000 times more damaging to the Earth's climate system than carbon dioxide. Even though efforts over the past decade have reduced emissions, global atmospheric concentrations of HFCs continue to increase. Without this proposal, HFC use in developing countries is anticipated to grow substantially, driven both by increased demand for refrigeration and air-conditioning and because HFCs were developed as alternatives to ozone depleting substances.

Signed in 1987, the Montreal Protocol is a treaty with 196 countries to help restore the ozone layer by ending the production of ozone-depleting substances and now potentially phasing down HFCs.

EPA evaluates substitute chemicals and technologies for ozone-depleting substances. Additionally, as part of the actions recently outlined, EPA will propose four refrigerants as possible substitutes in U.S. household and commercial refrigerators and freezers. These hydrocarbon-based coolants would replace existing refrigerants that harm the stratospheric ozone layer and the climate system. The proposal lists isobutane, propane, HCR-188C, and HCR-188C1 as potentially acceptable substitutes for the ozone-depleting chemicals CFC-12 and HCFC-22.

26. Secretary Salazar Announces Approval of Cape Wind Energy Project

Secretary of the Interior Ken Salazar today approved the Cape Wind renewable energy project on federal submerged lands in Nantucket Sound, but will require the developer of the \$1 billion wind farm to agree to additional binding measures to minimize the potential adverse impacts of construction and operation of the facility.

“After careful consideration of all the concerns expressed during the lengthy review and consultation process and thorough analyses of the many factors involved, I find that the public benefits weigh in favor of approving the Cape Wind project at the Horseshoe Shoal location,” Salazar said in an announcement at the State House in Boston. “With this decision we are

beginning a new direction in our Nation's energy future, ushering in America's first offshore wind energy facility and opening a new chapter in the history of this region."

The Cape Wind project would be the first wind farm on the U.S. Outer Continental Shelf, generating enough power to meet 75 percent of the electricity demand for Cape Cod, Martha's Vineyard and Nantucket Island combined. The project would create several hundred construction jobs and be one of the largest greenhouse gas reduction initiatives in the nation, cutting carbon dioxide emissions from conventional power plants by 700,000 tons annually. That is equivalent to removing 175,000 cars from the road for a year.

A number of similar projects have been proposed for other northeast coastal states, positioning the region to tap 1 million megawatts of offshore Atlantic wind energy potential, which could create thousands of manufacturing, construction and operations jobs and displace older, inefficient fossil-fueled generating plants, helping significantly to combat climate change.

Salazar emphasized that the Department has taken extraordinary steps to fully evaluate Cape Wind's potential impacts on traditional cultural resources and historic properties, including government-to-government consultations with the Wampanoag Tribe of Gay Head (Aquinnah) and the Mashpee Wampanoag Tribe and that he was "mindful of our unique relationship with the Tribes and carefully considered their views and concerns."

Because of concerns expressed during the consultations, Interior has required the developer to change the design and configuration of the wind turbine farm to diminish the visual effects of the project and to conduct additional seabed surveys to ensure that any submerged archaeological resources are protected prior to bottom disturbing activities.

Under these revisions, the number of turbines has been reduced from 170 to 130, eliminating turbines to reduce the visual impacts from the Kennedy Compound National Historic Landmark; reconfiguring the array to move it farther away from Nantucket Island; and reducing its breadth to mitigate visibility from the Nantucket Historic District. Regarding possible seabed cultural and historic resources, a Chance Finds Clause in the lease requires the developer to halt operations and notify Interior of any unanticipated archaeological find.

27. Ontario Official Urges Vehicle Fuel Conservation

The government of Canada's Ontario province should refocus its energy conservation efforts on the transportation sector, Environment Commissioner Gord Miller said on May 3rd. An emphasis on reducing residential electricity use has left motor vehicles largely forgotten, although they account for 36 percent of total energy use, compared to 18 percent for electricity, Miller said at a news conference to release Volume 1 of a planned annual report on Ontario's energy conservation efforts. "Ontario needs a comprehensive energy conservation strategy which encompasses all major energy sources, not just electricity," he said. Miller recommended the benchmarking of energy consumption by sector, noting this would help in deciding on the need for reduction targets for natural gas, oil, propane, and transportation fuels. He also urged more public input in developing electricity policy and improved reporting of conservation progress. The report's second volume, due later in 2010, will detail ongoing initiatives and assess energy savings and progress on conservation targets.

28. Nissan: Electric Cars Could Shed Government Aid in 4 Years

Nissan Motor Co and alliance partner Renault could market electric vehicles without government incentives within four years as global sales reach 500,000 to 1 million vehicles per year, according to executives. Nissan, which is introducing a mass-market Leaf electric car later this year, needs government incentives to spark initial demand but understands those incentives will not be permanent, Nissan-Renault Chief Executive Carlos Ghosn said.

"You need to jump start electric cars at a certain level so that we can get scale and the scale will allow us to reduce costs," Ghosn told reporters after a groundbreaking at a plant in Tennessee that will produce the Leaf and its battery. "We think that scale for us is between 500,000 and 1 million cars a year," he said. "When you get between 500,000 and 1 million cars per year, we don't need government support."

Nissan-Renault could have as many as eight electric vehicles between them within a few years, allowing the companies to reach the scale that would make the government incentives unnecessary, executives said.

"We believe we will need two to four years of incentives and supports to reach the level of volume that will free up the cost reductions that we need to implement," said Carlos Tavares, Nissan's chief of the Americas.

Tavares expects the cost of batteries used in the Leaf and other electric vehicles to come down sharply within four years for Nissan and Renault.

Nissan broke ground on a \$1.7 billion project to expand its assembly plant in Smyrna and build an adjacent lithium-ion battery plant that will be one of the biggest in North America. When it is fully functioning, the Smyrna plant will be able to produce 150,000 Leaf electric cars per year. The new battery plant will have the capacity to produce 200,000 battery packs. The facilities are expected to create 1,300 jobs.

Tavares said Nissan has an edge in battery development by being first in the industry to introduce a mass-market electric vehicle in late 2010 in Japan, the United States and Europe. The first Leaf vehicles and their lithium-ion batteries are being built in Japan.

Nissan has not said yet whether the additional battery capacity would be used for a different electric vehicle within the Nissan or Renault family. Nissan has said it would be open to selling the batteries to other automakers.

The Nissan plant investment was supported with \$1.4 billion of U.S. Energy Department loans.

Nissan started taking orders for the Leaf in April. It already has about 13,000 fully refundable orders in the United States and 6,000 in Japan.

"We have enough capacity to start the mass marketing of electric cars, but if we see when December comes that the hand-raising and pre-orderings transform fully to sales, we are going to have to make a decision about adding additional capacity," Ghosn said.

29. California Gives Insight into New Round of Auto Pollution Rules

California aims to double greenhouse gas emissions cuts and fuel efficiency gains in a new round of regulation for vehicles that will start late this decade and may spur draft federal goals later this year, the state's top climate change regulators have announced. The new round in

2017-2025 could have similar cost consequences as the national standards adopted on April 1 for model years 2012 to 2016, adding about \$1,000 per vehicle in cost and delivering fuel savings of around \$3,000, they said.

California is uniquely able to set pollution standards for cars, and the environmentally minded state was ahead of the federal government in folding carbon dioxide and other climate-warming greenhouse gases into regulated pollutants.

"We're expecting to see a continuation of the move toward electric drivetrain vehicles, meaning either plug-in hybrids or fuel cells or battery electrics," Mary Nichols, the chair of the Air Resources Board, said in a telephone interview.

Federal standards will cut average vehicle greenhouse gas emissions to 250 grams per mile and improve fuel economy to 35.5 miles per gallon for 2016 models, according to the U.S. Environmental Protection Agency. President Barack Obama has announced a push for 2017 and beyond, saying he believed it was possible in 20 years for vehicles to cut pollution and fuel use in half.

More than 60 percent of U.S. oil consumption and over 25 percent of domestic carbon pollution comes from cars and trucks, environmental statistics show.

California is keen to lead the next round of vehicle rules, building on a 30 percent improvement in greenhouse gas emissions compared with California's base year of 2009. "We think we can sort of double the reduction," said Tom Cackette, the board's chief deputy executive officer and head of car regulation. He forecast a 50-60 percent improvement versus 2009 in greenhouse gases. Gains in fuel efficiency, not covered by California rules, would be similar, he said. "We still think we are in that curve where costs will be much less than the economic benefits derived in fuel savings," he added. "There's nothing here for the next stage that is something that requires a wild invention of something new."

The April 1 regulations were drafted by the U.S. National Highway Traffic Safety Administration, which sets fuel efficiency standards, and the U.S. Environmental Protection Agency, which sets greenhouse gas emissions standards.

Nichols said engineers from the federal agencies and California would work together over the summer to set goals and conform to the early predictions by California. The goals could be announced at the end of September and turned into rules for greenhouse gas emissions and fuel economy by mid-2012.

30. EPA Says Only 19 Percent of Trucks Reflashed To Lower NOx Emissions

Only about 19 percent of the more than 1 million diesel trucks outfitted with illegal software in the 1990s have received updated software to reduce nitrogen oxide emissions, the Environmental Protection Agency said on June 14th.

EPA and the Department of Justice conducted a conference call meeting on progress in implementing consent decrees reached in 1998 that required heavy-duty truck engine manufacturers to supply the low-emissions software to repair shops for use when an engine is rebuilt.

In the meeting conducted by EPA, Anne Wick of the Office of Enforcement and Compliance Assurance said that about 19 percent of the trucks covered under several consent decrees had installed the new software.

The new software, or “chip reflash,” replaces software that engine manufacturers installed in 1.1 million vehicles in violation of federal and state nitrogen oxide emissions standards. The software enabled the engines to pass EPA tests in the laboratory while increasing emissions of nitrogen oxides on the open road. Under the consent decrees, the manufacturers were required to provide the chip re-flash software, also known as “low-NOx rebuild kits,” to their dealers and others who request it at no additional cost for 10 years. The requirement expired in December 2009. The software modifies the injection timing adjustment that caused the excess nitrogen oxide emissions.

The companies involved in the enforcement action are Caterpillar Inc., Mack Trucks Inc., Renault Vehicles Industries, Volvo Truck Corp., Cummins Engine Co., Detroit Diesel Corp., and Navistar International Transportation Corp.

Neither EPA nor the Justice Department offered any characterization of the program as to whether it was successful, although the percentage of trucks on which the kits have been installed has increased in recent years. According to EPA, in 2006, 16.6 percent of the trucks had the new software. In July 2007, 17.8 percent of the trucks had the new software.

Going forward, although the requirement to offer the rebuild kits for all engine rebuilds is no longer in effect, the manufacturers will still need to offer the kits for those cases in which computers are reprogrammed as part of the rebuilds, according to Wick.

The consent decrees were reached after EPA discovered that engine manufacturers had installed the software on trucks. To resolve the allegations, the seven engine makers agreed in 1998 to pay EPA \$83.4 million in civil fines and to spend millions more on corrective actions, including the chip re-flash program.

31. Road Builder Group Asks Supreme Court to Review EPA Nonroad Engine Rules

On June 3rd, a transportation construction trade association asked the U.S. Supreme Court to review a lower court ruling that dismissed as untimely its challenge to nonroad engine emissions rules under the Clean Air Act (*American Road & Transportation Builders Ass'n v. EPA*, U.S., No. 09-1485, 6/3/10). Specifically, the American Road & Transportation Builders Association asked the court to review a decision by the U.S. Court of Appeals for the District of Columbia Circuit, which said the association lacked subject matter jurisdiction because it did not petition the Environmental Protection Agency within 60 days of the rule's publication in 1994.

At issue are provisions of the Clean Air Act that preempt state regulation of emissions from nonroad construction equipment and other nonroad engines.

The association, which represents companies that construct roads, public transit, airports, ports, and waterways, sought standardization of the nonroad engine rules, and the EPA regulation bars states from adopting measures stricter than federal rules in most cases. In its petition to the Supreme Court, the association said it wants to avoid problems with conflicting state and federal regulations that might occur unless the federal preemption doctrine is enforced. Section 209(e) of the Clean Air Act allows flexibility in the form of EPA waivers, however, primarily for California and states that seek to follow California's regulatory approach.

In 1994, EPA issued an interpretative rule that said it believes states are not precluded from regulating the use and operation of nonroad engines, such as regulations of hours of use, daily mass emissions limits, or limits on sulfur in fuel. In 2008, the association petitioned EPA seeking federal preemption of state rules governing air pollutant emissions from nonroad engines, which the agency denied. ARTBA then filed suit in the D.C. Circuit, saying the agency improperly denied its petition.

In its Dec. 11, 2009, decision, the D.C. Circuit said that what “dooms the organization's petition” is the fact that the statute expressly states that any “petition for review under this subsection shall be filed within sixty days” from the date of promulgation (*American Road & Transportation Builders Ass'n v. EPA.*, 588 F.3d 1109, 69 ERC 1833 (D.C. Cir. 2009); 237 DEN A-1, 12/14/09).

The D.C. Circuit acknowledged that ARTBA filed suit within 60 days of EPA's decision rejecting its petition, but held the agency action did not open up “a new filing window.”

The Supreme Court concludes its October 2009 Term at the end of June. If the case is accepted for review, it would be briefed and argued in the October 2010 Term, beginning this fall and running into 2011.

32. Gloves Off In California Over Greenhouse Gas Law

California environmentalists have opened fire on a measure approved for the state's November ballot that would roll back a landmark law regulating greenhouse gas emissions. Linking the measure to the historic oil spill in the Gulf of Mexico, the Sierra Club and other environmental groups lambasted the measure, noting in a statement that Texas-based oil companies Valero and Tesoro have put money behind it.

The measure, certified by California's top elections official for the ballot, would suspend the law until the unemployment rate in the most populous U.S. state, currently more than 12 percent, drops to 5.5 percent or less for four consecutive quarters.

Governor Arnold Schwarzenegger signed the law, AB32, in 2006 and it has been a sore subject with many traditional businesses ever since while green technology companies, many investors, and environmentalists have celebrated it as a milestone in regulating pollution tied to climate change. The law requires greenhouse gas emissions in California to be rolled back to 1990 levels by 2020, which would require substantial investment in equipment at refineries, power plants and factories, heavy use of alternative energy and much more.

Opponents and supporters have been churning out reports that predict the law will either be bane or boon to California's economy, arguments reflected in the positions the two major party candidates running to succeed Schwarzenegger have taken on AB32. Fellow Republican and former eBay Inc CEO Meg Whitman says the law would put California's businesses at a disadvantage to rivals in other states. Like other prominent Democrats in California, Jerry Brown, the state's attorney general and former two-term governor, supports AB32.

The measure's campaign spokeswoman said California cannot afford to let AB32 go into effect with its economy in such dire shape. “We need to rethink the timetable,” said Anita Mangels, spokeswoman for the California Jobs Initiative. Otherwise, she said that “Employers will probably have to choose between obeying AB32's regulations and laying people off.”

33. EPA Delays Decision on Ethanol Blends in Gasoline

U.S. environmental regulators have delayed a decision on whether to allow higher concentrations of ethanol in gasoline.

Ethanol makers and farmers had expected the Environmental Protection Agency to decide in July whether to allow an increase in the blend rate of ethanol in gasoline to 15 percent from 10 percent for cars built after 2001. Ethanol producers are worried about a developing glut in ethanol as U.S. laws require ethanol volumes to rise to 15 billion gallons annually by 2015 from 10.5 billion now. U.S. ethanol makers say their fuel, made mostly from corn, is cleaner and safer than oil, a point they are emphasizing after BP's massive spill in the Gulf of Mexico.

Carmakers on the other hand have lobbied against the higher blends, worrying the fuel could damage engines. And some environmentalists reject ethanol as a green fuel because farming is energy intensive and can increase water pollution.

The EPA has hinted that tests show modern cars can burn E15 without difficulty. Results from tests on the blends so far "look good" it said. The EPA also got the process rolling last year on how filling stations would deal with labeling issues should higher blends be approved. So it would not be a stretch for the EPA to approve higher blends for late model cars.

An approval for late model cars could give a small boost to the ethanol industry that suffered widespread bankruptcies last year as prices spiked for corn, the main ingredient to make the fuel. But it would only open the market to 40 million to 50 million cars of the U.S. fleet of about 250 million, so both farmers and ethanol makers would push for E15 to be allowed for more cars.

A move to higher blends for older cars faces powerful opposition from automakers, oil refiners and gasoline marketers. Many think their pressure could influence the EPA to limit its approval of higher blends for older cars.

The Alliance of Automobile Manufacturers believes E15 can weaken performance of older engines. Refiners and gasoline marketers also fear they could be sued if owners of older cars mistakenly buy fuel not meant for their cars. Also, many filling stations do not want the costs of changing pumps or adding more of them.

If EPA does not approve E15 for older cars, it could mean the ethanol industry would have to convince more gasoline stations, especially in the eastern United States, to sell a fuel containing 85 percent ethanol, used by flex-fuel cars. So far only about 2,000 stations, mainly in the Midwest and the South, sell the 85 percent blend.

It would also mean the growth rate in demand for U.S. corn, a third of which now goes to making ethanol, could stagnate.

Brazil, a model in the biofuels industry, began its ethanol program in 1975 after the world oil crisis sent its economy into a nose dive. The country was importing about 80 percent of its crude at the time. It now mandates 20 to 25 percent ethanol in all gasoline and its auto industry adapted engines to the more corrosive fuel in 1979. Ethanol now holds equal market share as gasoline and sales of cars that run on it are booming.

The necessary part design and technologies for E15, however, are already being used in Brazil by the very same automakers operating in the United States, such as General Motors, Fiat, Volkswagen and Ford.

In Brazil, the 100 percent ethanol car is no longer produced. It has given way to flex-fuel technology in engines that allow motorists to fill up with any blend of ethanol or gasoline depending on the price advantage at the pump. Flex-fuel cars, which began production in 2003 in Brazil, overtook regular car sales in 2005 and now account for 95 percent of all new light vehicle sales. The technology is equivalent to the so-called E85 vehicles that run on a special 85 percent ethanol blend in some regions of the United States.

Brazil now has over 30,000 filling stations that offer 100 percent hydrate ethanol from sugar cane as well as the E20-E25 gasoline blend.

34. USDA Says 527 New Biorefineries Needed To Meet RFS Advanced Biofuel Target

The Department of Agriculture has released a report offering a regionally-centered roadmap for meeting -- or surpassing -- the Renewable Fuels Standard target of producing 36 billion gallons of biofuels by 2022 required under the 2007 energy law. The report notes that meeting the RFS's advanced biofuels goals will require building 527 biorefineries, an effort that will cost \$168 billion. "While we expect the market to react to this need," the report states, "biorefineries will need to be constructed in a timely manner, while accounting for transportation needs for feedstocks and fuel distribution."

35. Ontario to Offer Subsidies for Hybrid Vehicles

Starting July 1, the Canadian province of Ontario will provide a rebate of C\$5,000-8,500 (\$4,900-8,300) to consumers, businesses, or other organizations that purchase new, plug-in, hybrid electric, or battery electric vehicles, Transportation Minister Kathleen Wynne said on June 18th. The rebate, available to the first 10,000 qualified applicants, is intended to help the provincial government meet its goals to have 5 percent of the province's vehicles electrically powered by 2020 and to reduce emissions of greenhouse gases 6 percent from 1990 levels by 2014, Wynne said in a written statement. "We've made and will continue to make steady progress building the groundwork for Ontario's electrical vehicle market," she said. The provincial government also is promoting the use of electric vehicles through special green license plates that permit drivers of electric vehicles to use carpool lanes, even if there is only one person in the vehicle, she said.

36. Senate Defeats Move To Stop EPA Greenhouse Emissions Regulation

The Senate killed legislation that would have stripped the Environmental Protection Agency's power to regulate greenhouse gas emissions from large factories, electric power companies and automobiles. The defeat of the Republican-inspired measure knocked down the most serious legislative challenge the EPA faced on regulating planet-warming gases, though it may still face lawsuits from companies and industry groups.

In a procedural move, the Senate voted 53 to 47 to block the bill offered by Alaska Senator Lisa Murkowski.

The EPA was relieved. "We managed to avoid taking a big step backwards, and now it's time to come together and focus on creating clean energy jobs and moving into an energy independent future," said agency spokeswoman Adora Andy.

The defeat of the bill could give new life to the effort in Congress to pass broad energy and climate legislation, a top goal of President Barack Obama's even before the BP Plc oil spill in the Gulf of Mexico. That's because many heavy industry companies, like power utilities and steel and cement makers, prefer that Congress craft a plan to cut emissions over facing likely tougher rules issued by the EPA that industry will have little say in writing.

"Today's vote is yet another reminder of the urgent need to pass legislation that would help America transition to a 21st century clean energy economy that would create jobs, strengthen our national security, and protect our environment for our children," Obama said in a statement. Obama has always said he prefers that Congress deals with climate, but that EPA would act if a bill failed.

In fact, the EPA last month finalized rules that would require large power utilities, manufacturers and oil refineries to get permits to emit greenhouse gases starting next year. In addition it has issued rules on requiring autos to use less gasoline and diesel fuel and reduce carbon dioxide emissions.

The comprehensive climate bill unveiled last month by Senators John Kerry, a Democrat, and Joe Lieberman, an independent, would preempt climate regulation by the EPA. But passing a climate bill in the Senate, which would require 60 votes rather than the simple majority that Murkowski's resolution required, faces an uphill battle amid opposition from many lawmakers from oil and coal states.

Still, Senate Leader Harry Reid has said he wants a climate bill to move to the Senate floor in coming weeks. "There will be a discussion in the caucus next week about our options (on climate change legislation)," Assistant Democratic Leader Richard Durbin said after the vote. Durbin said Democrats had several options and the discussions among Democratic leaders and key Senate committee chairmen did not produce any final decisions.

37. EPA Finds Senate Climate Bill Affordable

U.S. environmental regulators said the climate and energy bill in the Senate would only add slightly to average household costs, but the finding was not expected to boost chances for the legislation that would cap greenhouse gas emissions.

The climate bill unveiled last month by Senators John Kerry, a Democrat, and Joseph Lieberman, an independent, would cost households an average of \$79 to \$146 per year through 2050, the Environmental Protection Agency said in an economic analysis. Through 2020 consumer energy costs would go down before picking up in following decades, the EPA said in the analysis that Senate Majority Leader Harry Reid promised Republicans last year the bill would have to face.

The EPA's cost estimate of the Kerry-Lieberman bill was similar to the price tag it put last year on an analysis of the climate bill narrowly passed by the House of Representatives, which gained no traction in the Senate.

The EPA analysis also showed that prices for carbon permits in the cap and trade market outlined in Kerry-Lieberman should hit \$16 to \$17 per ton in 2013 and \$23 to \$24 per ton in 2020. Those prices were well within range of the bill's initial floor and ceiling prices.

For his part, Kerry centered on the part of the analysis that showed costs would fall at first. "Well-designed climate change and energy legislation is good for American consumers," Kerry told reporters. He also added the EPA analysis does not factor in other benefits to the U.S. economy that would be achieved from getting global warming under control. Those include, he said, avoiding lower crop yields, extreme weather-related deaths and more destructive storms.

38. Canada to Require Ships in Arctic Waters to Give Identity, Route

Canada has established a regulated vessel traffic zone requiring ships of specific sizes to identify themselves, their position, and route, as part of the government's response to the increased shipping activity expected in the Arctic as polar ice melts due to climate change, Transport Canada said in final rules published on June 23rd. In addition, the department issued a final order extending jurisdiction over Arctic waters, including under the new vessel reporting requirements, to 200 miles from Canada's coastline.

The regulations establishing the Northern Canada Vessel Traffic Services Zone require ships to report their identity, position, intended route, and other information to the Canadian Coast Guard. This will help the Canadian Coast Guard to prevent pollution and to coordinate pollution response and search and rescue activities, the department said in a regulatory impact analysis released with the finalized regulations, which appeared in the June 23 issue of the Canada Gazette, Part II.

The regulations, which take effect July 1, 2010, apply to vessels of 300 gross tons or more, vessels engaged in towing or pushing a vessel if the combined gross tonnage is greater than 500 tons, and vessels carrying pollutants or dangerous goods as cargo. They were issued under the Canada Shipping Act.

"Climate change is expected to lengthen the navigation season and increase accessibility to arctic areas; navigation in the Arctic will therefore be an ongoing challenge ... The probability of an incident and the associated risk of environmental damage increase as shipping traffic increases," Transport Canada said. "For Canada to exercise effective stewardship in the Arctic, particularly given the potential increase in shipping activity, the legal and regulatory regime that governs shipping and the operational services that support it must be updated," the department said.

No changes were made in response to submissions received during a 30-day comment after proposed regulations were released Feb. 27th, the department said. A number of questions were received about the consistency of the reporting requirements with international law, but the department said the regulations are fully consistent with international rules, including with the 1982 United Nations Convention on the Law of the Sea.

The Shipping Safety Control Zones Order promotes improved environmental protection by making the Arctic Waters Pollution Prevention Act consistent with other statutes on Canadian sea boundaries, the department said in a regulatory impact analysis statement accompanying the order in the Canada Gazette, Part II. The order responds to amendments to an act passed into law June 11, 2009, by the Canadian Parliament that extended the outer limit for regulation

of “Arctic waters” to the 200 miles established for Canada's Exclusive Economic Zone, double the previous 100-mile limit, it said.

ASIA-PACIFIC

39. China Issues Major Air Quality Guidance Document Targeting Regions, Pollutants

China's State Council and nine ministries have issued a major guidance document instructing local, municipal, and provincial governments to improve regional air quality controls “as soon as possible” to address increases in acid rain, smog, and other pollution that threaten public health, the Ministry of Environmental Protection announced on its website on May 14th.

The document called for joint prevention and control of regional air pollution and the formulation of regional air pollution laws, regulations, and standards by the end of 2015.

Efforts will focus on the key areas of Beijing municipality; Tianjin municipality; the Yangtze River Delta region, including Shanghai municipality and the upriver city of Wuhan; the Pearl River Delta region in south China, as well as in the northeastern provinces of Liaoning and Shandong, the coastal Fujian province, and the adjoining Taiwan Strait.

The document prioritized the control of major pollutants, such as sulfur dioxide, nitrogen oxides, volatile organic compounds, and particulate matter emitted from key industries, including thermal power sources, steel and nonferrous metal facilities, petrochemical facilities, cement and chemical plants, and other large industries.

Stricter local and regional environmental impact assessments, curbs on expansion, and relocations are possible for these industries in the key areas, the ministry said, adding that policies relating to this will be crafted by the Ministry of Environmental Protection.

Cleaner production standards and technologies will be promoted; stronger emissions controls for sulfur dioxide, nitrogen oxides, volatile organic compounds, and particulate matter will be implemented; and tighter controls on vehicle emissions and coal-fired power plant emissions will be needed, the ministry said.

The ministry document called for improved regional air quality monitoring systems and indexes, as well as plans for the regional management of air pollution to be submitted by the end of 2011.

Provinces, municipalities, and local governments have until the end of June 2010 to submit suggestions and responses to the Ministry of Environmental Protection.

40. Honda Eyes China to Develop Car Batteries

Honda Motor Co is interested to develop electric car batteries in China to tap the country's technology and vast resources, its chief executive said, adding that a breakthrough was needed to bring the zero-emission cars into the mainstream.

"If there is a suitable chance, we hope to work with China to (develop) batteries," Honda Chief Executive Takanobu Ito told reporters in southern China, where he announced a plan to boost annual production capacity by a third to 480,000 units at a Chinese joint venture, Guangqi Honda.

Honda has been among the least enthusiastic among Japan's automakers toward electric cars, and runs the risk of falling further behind domestic rivals Toyota Motor Corp and Nissan Motor Co, after the former tied up recently with Silicon Valley-based electric car maker Tesla Motors Inc.

"There needs to be a major breakthrough in battery technology," Ito said, predicting it would take 10-20 years before battery-run electric cars became mainstream. Japan's No.2 automaker would instead focus on hybrids and other fuel-efficient vehicles for the near term, he said.

Honda is considering bringing electric cars in limited numbers to the United States, Europe and Japan, but unlike many rivals has no strategic partner with which it has committed to developing batteries for the vehicles. Honda has a joint venture with Japan's GS Yuasa Corp to collaborate on lithium-ion batteries specifically for hybrid cars, and has said the two could work together on electric car batteries too, if the need arose. GS Yuasa already develops and produces electric car batteries in a joint venture with Japan's Mitsubishi Motors Corp.

Having surpassed the United States as the world's biggest auto market last year, China has become an increasingly important battleground for global automakers, which are keenly awaiting Beijing's policy on the promotion of greener cars. With China's new-car market of more than 10 million vehicles a year, Beijing's stance toward electric cars could well determine the speed of roll-out for many automakers that are still on the fence.

Volkswagen AG, China's top foreign brand, said last month Chinese consumers' reaction to its electric cars would determine the fate of its plans to lead the industry in battery-powered vehicles by 2018.

Electric cars may well get the boost they need from China. The Shanghai Securities News has reported the government was set to announce by the end of this month plans to subsidize buyers of pure electric vehicles by up to 60,000 Yuan (\$8,787) each and only 3,000 Yuan for hybrid cars. The move could be a boon for local automakers such as BYD Co, whose battery technology has attracted investment and interest from Warren Buffett and Daimler AG.

Honda sold about 580,000 vehicles in China last year -- about half what it sold in its most profitable U.S. market -- but Ito said China was growing in importance, and had the potential to become its No.1 market after 10 years.

He said he expected annual U.S. car sales to bounce back to 15-16 million in the next three to five years. Analysts forecast U.S. car sales to reach 11-12.5 million this year, versus just 10.4 million in 2009 at the height of the global recession.

41. China's Environment Ministry Punishes Cities, Companies for Air, Water Pollution

China's Ministry of Environmental Protection announced on May 13th that it had penalized two cities and businesses in several provinces for failing to meet standards for wastewater discharges and sulfur dioxide emissions.

The ministry said in a notice on its website that it had barred the cities of Shuangyashan in the northeastern province of Heilongjiang and Wenzhou in the eastern coastal province of Zhejiang from approving environmental impact assessments on future projects that discharge wastewater. The ban will not be lifted until the cities meet standards for wastewater chemical oxygen demand, a measure of water pollution, according to the announcement.

Private sewage treatment plants located in Zhejiang, Shanxi, Jilin, Guangdong, and Sichuan provinces and the municipality of Tianjin had wastewater discharges that did not meet chemical oxygen demand standards and were ordered to improve or risk being shut down.

In addition, the ministry said it had barred Lianyuan Steel Group Co. Ltd. in Hunan province from applying for environmental impact assessments on future projects until their current projects meet sulfur dioxide emissions targets. In China, impact assessments are produced by qualified third-party auditors who submit them to the environmental protection department that has jurisdiction over that area.

Two other steel companies, Echeng Iron and Steel Co. Ltd. in Hubei province and Dazhou Iron and Steel Group Co. Ltd. in Sichuan province, were ordered to shut down and to upgrade their technology to filter sulfur dioxide. They will not be allowed to resume operations until they comply, the ministry said.

In the ministry statement, Minister for Environmental Protection Zhou Shengxian called on local governments to “take responsibility” for environmental protection. He warned that companies violating key pollution standards would be “severely dealt with.”

42. China's Sulfur Dioxide Emissions Rise in First Quarter

China's sulfur dioxide emissions rose 1.2 percent in the first quarter of 2010 compared to the same period a year earlier, the first increase since 2007, the state-run Xinhua news agency reported on May 17th. Xinhua quoted Zhou Shengxian, minister of environmental protection, as saying “there's no reason we will fail to realize this year's target of reducing [sulfur dioxide] emissions.” China's State Council also recently announced that energy intensity—or energy use per unit of gross domestic product—had increased 3.2 percent in the first quarter compared to the same period in 2009. A rapid economic rebound from the global financial crisis is to blame for the rise in both, Chinese experts said. The country's GDP surged 11.9 percent in the first quarter of 2010 compared to the same period a year earlier. China has pledged under its current national plan to reduce sulfur dioxide emissions by 10 percent compared to 2005 levels by the end of 2010. The Ministry of Environmental Protection said Jan. 25 that the country had already met that goal by the end of 2009 based on preliminary estimates.

43. Hong Kong Council Considers Adopting Euro V Fuel Specification Standards

The Legislative Council of the Hong Kong Special Administrative Region is considering an amendment to motor vehicle fuel specifications under the region's air pollution control regulations that would require diesel and unleaded gasoline fuels sold in Hong Kong to meet the European Union's Euro V standards, according to documents on the Council's May 12th proceedings. The Euro V fuel regulations would limit sulfur content in the fuels to 0.001 percent (10 parts per million) and would reduce sulfur dioxide emissions by around 80 percent. The standards also would reduce by 10 percent emissions of carbon monoxide, nitrogen oxide, and hydrocarbon emissions from vehicles using unleaded gas and would reduce respirable suspended particles released from diesel-powered vehicles by around 5 percent, the Special Administrative Region government said in a statement on May 7th.

The legislative council has until June 6th to approve the amended regulations, which would go into effect on July 1st, if there are no significant changes made.

All diesel fuel sold in Hong Kong meets Euro V fuel standards, the government said. Unleaded gasoline that meets Euro V standards accounts for roughly half of the fuel imported to Hong Kong. Local oil companies have told the government that they would be able to supply unleaded gasoline that meets the Euro V standard and that they have been offering the fuel in many areas since December 2007.

44. Hong Kong Council Urges Steps to Improve Air Quality Despite Problems

On May 5th, the Legislative Council of the Hong Kong Special Administrative Region unanimously passed a nonbinding motion to improve air quality, partly in response to worsening air pollution and recent sandstorms that blew in from mainland China, legislators said. The motion called for a better early warning system for air pollution, specific guidelines for suspending school and work when Air Pollution Index levels are “severe” and “extremely severe,” low emissions zones in areas with serious air pollution, more support and subsidies for replacing high-emissions vehicles, adoption of more stringent World Health Organization standards as Hong Kong’s air quality objectives, and better coordination with the neighboring Chinese province of Guangdong on air pollution control.

The Hong Kong advocacy group Clean Air Network said in a May 6th statement that while it does not expect the Legislative Council “to rubber stamp the EPD’s [Environmental Protection Department] toughest proposals,” the move by Hong Kong’s legislature signals “majority support for more stringent, aggressive government action than what has been attempted to date.”

According to Hong Kong’s environment department, the final quarter of 2009 and the first quarter of 2010 had the highest average number of days with “very high” or “severe” Air Pollution Index readings on record—23.8 percent of the time between October and December 2009 and 13.4 percent of the time in the first three months of 2010.

Two separate reports on 2009 air quality showed mixed results.

A report released on April 29th by the Pearl River Delta Regional Air Quality Monitoring Network—a collaboration between environmental authorities in Guangdong and Hong Kong—showed regional sulfur dioxide levels decreased 26 percent, nitrogen dioxide levels dropped 7 percent, and ozone concentrations rose 10 percent compared with 2008. The data came from three monitoring stations in the Hong Kong region and 13 in Guangdong province.

Overall, the Pearl River Delta region met air quality standards 75 percent of the time in 2009, compared to 68 percent of the time in 2008, the Hong Kong environment department said in a statement about the Pearl River Delta report.

Regional air pollution was lower from June through August 2009 due to rainfall and wind currents from the southern monsoon, but higher in the drier months, the department said. The data show little change in overall levels of respirable suspended particles (PM-10)—those 10 microns in diameter or smaller—from 2008 to 2009.

Meanwhile, the Hong Kong region published its own preliminary 2009 air quality statistics on April 27th. It showed average annual roadside nitrogen dioxide levels of over 100 micrograms per cubic meter in the heavily populated and trafficked Causeway Bay, Central, and Mong Kok areas. These readings do not meet Hong Kong’s air quality objectives and are 13 percent higher on average than in 2008, the Environmental Protection Department said.

The three locations also had PM-10 levels higher than Hong Kong's standards, though sulfur dioxide, nitrogen oxide, nitric oxide, carbon monoxide, and ozone all met annual average limits.

The Hong Kong region is currently considering whether to upgrade its air quality objectives to align with World Health Organization standards.

45. Hong Kong Targets Emissions from Off-Road Vehicles

The government of the Hong Kong Special Administrative Region is seeking comment on a proposal released on May 5th for controlling emissions from “non-road mobile machinery.” The measure would cover imported and Hong Kong-manufactured off-road vehicles powered by internal combustion engines, such as those in use at airports, shipping terminals, and construction sites. Vehicles already in use would not be subject to the requirements at this time. Off-road vehicles imported for re-export would not be subject to the emissions controls, but importers and manufacturers would be required to seek Environmental Protection Department approval for vehicles intended to be used in Hong Kong. The government estimates about 13,500 such vehicles are currently operating in Hong Kong, most of which were imported and are being used in construction. These vehicles are not currently subject to air pollutant emissions controls. They contribute about 7 percent of Hong Kong's nitrogen oxide emissions and 11 percent of respirable suspended particle emissions, the government said. The comment deadline is July 5th.

46. Rising Number of Motor Vehicles in India Contributes to Poorer Air Quality

A rising number of vehicles and poor road planning have led to acute deterioration of air quality in most Indian cities, the federal Central Pollution Control Board said in a report released May 12th. In major metropolitan areas like Delhi and Mumbai, vehicles account for 70 percent of all carbon monoxide emissions, 30 percent to 40 percent of nitrogen oxide emissions, and 30 percent of particulate matter in the air, according to the report, Status of the Vehicular Pollution Control Program in India. Two-thirds of the vehicle pollution in major cities comes from two-wheeled vehicles, the board said in the report. The board is an autonomous body of the Ministry of Environment and Forests.

The high levels of pollutants contribute to respiratory and other ailments, including lung cancer and asthma, whose incidence is significantly higher in cities than the national average, the report said.

The transportation sector is responsible for over 50 percent of India's oil consumption, making it one of the biggest polluters and producers of greenhouse gases. Among the factors making the sector a major fuel guzzler are the high vehicle density in cities; the predominance of older vehicles; inadequate public transportation; and a ramshackle road infrastructure and poor land-use planning, which causes higher idling emissions and traffic congestion.

Traffic has grown far more quickly than India's road network, the report said. From 1951 to 2004, the number of vehicles grew by 10.9 percent annually, while road miles were added at an annual rate of 3.6 percent and national highways were expanded by only 2.3 percent each year, the report said.

While the report said “air quality can be improved through a combination of technical and non-technical measures, legislative reforms, institutional approaches and market-based instruments,” the country faces a number of unique challenges. These include the need for pedestrians, non-

motorized carts and bicycles, and motorized vehicles to share limited road space. A large number of India's older vehicles use technologies considered obsolete in developed countries. While vehicles older than 10 years make up only one-third of all vehicles in India, they contribute 60 percent of vehicular air pollution, the report said.

In addition, cities generally lack a robust enforcement and monitoring system for transportation.

However, the country has taken some measures to improve the situation, the report said, including enforcement of stricter fuel emission standards and better traffic planning and management. It said much more needs to be done to improve roads, to provide adequate public transportation, to enforce existing laws, and to improve city and traffic planning.

47. Delhi to Increase Road Tax on Vehicles to Clean Up Air Before Games Begin

The government of the National Capital Territory of Delhi has announced that it will raise the registration fee, or road tax, for cars and two-wheel vehicles starting on June 1st in an effort to discourage vehicle use and improve air quality. On May 24th, the Cabinet of Ministers decided that owners of two-wheel vehicles costing more than 25,000 rupees (\$543) will pay a 4 percent tax. Owners of less expensive models will pay 2 percent.

Owners of cars costing up to Rs 6 lakh (\$13,043)—considered low-range—will pay 4 percent, twice the tax they have been paying. Owners of mid-range cars costing Rs 6 lakh to Rs 10 lakh (\$21,739) will pay 7 percent. Owners of more expensive cars will be taxed at 10 percent. Owners of mid-range and luxury cars previously paid 4 percent. The tax is paid once at the time of registration.

“This is meant to discourage the use of private vehicles in the city,” Chief Minister Sheila Dikshit told reporters after making the announcement.

Taxes will not change for public transport vehicles such as auto-rickshaws and taxis.

The new tax rates for mid-range and luxury cars are several times higher than rates in the neighboring states of Haryana and Uttar Pradesh.

This move is part of the Delhi government's efforts to improve air quality in the city ahead of the Commonwealth Games in October. The government also has proposed levying congestion charges on vehicles entering Delhi, though no final decision has been made.

Delhi is coming under the same pressure as Beijing before the 2008 Olympics to clean up its air quality—for the benefit of athletes as much as for the city's image.

The Delhi-based advocacy group the Center for Science and Environment said Central Pollution Control Board monitoring has detected increasing levels of suspended particulate matter and nitrogen oxides, with their presence below danger levels on only 30 percent of days in 2009. In April, only 8 percent of the days were considered “clean-air” days, meaning the levels of particulate matter and nitrogen oxide were below danger levels, the center said.

48. GM To Develop Electric Car in U.S.; Ends Reva Tie-Up

General Motors will develop electric car technology for the Indian market in its home town of Detroit, after ending a partnership with Indian firm Reva, the head of its operations in the

country said. The announcement follows Indian utility vehicles maker Mahindra & Mahindra's deal to acquire a 55 percent stake in Reva Electric Car Company.

GM India, which had originally planned to launch an electric version of the Chevrolet Spark, will now offer the hybrid electric vehicle Chevrolet Volt in the fourth quarter of 2010, after its global launch in November, Karl Slym said.

Carmakers worldwide are investing large sums in electric vehicles as they seek to meet ever-tighter regulations for emissions and struggle to pull themselves out of a savage industry downturn.

In January GM announced it would set up a \$246 million facility to build electric motors to power hybrids and possibly pure electric vehicles.

India's Reva had entered into an agreement with General Motors India last year to develop electric cars in the country, including an electric version of the Chevrolet Spark. "Now with Reva changing its ownership we saw no particular value in doing this experiment," Slym said.

Slym said the decision to end the agreement with Reva was taken around two months ago as GM had a parallel program to develop electric vehicles globally. He did not give a timeframe for the introduction of full-fledged electric vehicles in the Indian market.

General Motors' joint venture with China's SAIC would launch small commercial vehicles in India in late 2011 while passenger cars from the venture will follow a year later, Slym said.

The joint venture between the two companies was announced late last year and was formed in February this year, he added.

49. Thailand Boosts Monitoring of Fine Particles in Air Following New Standards

Thailand's National Environment Board is stepping up monitoring to determine which areas do not meet new air quality standards for fine particulate matter, according to an official at Thailand's Ministry of Natural Resources and Environment. The standards are contained in Notification No. 36 of 2010 (B.E. 2553), which was announced on January 28th and came into effect with its publication in the official Government Gazette on March 24th.

Phunsak Theramongkol, environmental specialist in the ministry's Pollution Control Department, said the government will monitor areas reported or found to exceed the standards. Such areas might include central Bangkok's Din Daeng district and the northern city of Chiang Mai, he said. "It is a very new standard," Theramongkol said, "so we have to see what measures we should implement. For now, we will have to keep monitoring areas."

Asked how the notification might affect businesses operating in Thailand, he said that "the standard is more about monitoring the general atmosphere" and "not directly about companies." "It's our duty to monitor and inform people in the areas when we find out about the problem," Theramongkol said.

Under the new standards, fine particles (PM-2.5)—those 2.5 microns or less in diameter—must measure no more than 50 micrograms per cubic meter (μm^3) averaged over 24 hours or 25 μm^3 averaged annually. In contrast, the U.S. Environmental Protection Agency's national

ambient air quality standards for PM-2.5 are 35 μm^3 averaged over 24 hours and 15 μm^3 averaged annually.

Theramongkol said that while Thailand's standard is less strict than that in the United States, it does meet the Interim Target-2 in the World Health Organization's air quality guidelines.

Nittaya Chaisaard, environmental officer in the Pollution Control Department, told reporters, "If the present standard works well and we have no problem [with it], in the future we will improve our standard to be more strict."

50. Vietnam Refinery Construction to Begin

Construction of the Vung Ro Oil Refinery in central Phu Province was set to begin this summer after more than two years of delays caused by land clearance difficulties, according to the Phu Yen Planning and Investment Department. The department said the US\$1.7 billion land clearance phase of the project was nearly complete, allowing construction of the refinery to begin in June or July.

Vung Ro Oil Refinery, which is the country's first wholly foreign-invested oil refinery project, will produce liquefied petroleum gas (LPG), jet fuel, gasoline, diesel, polypropylene, benzene and sulfur.

The project, which is being implemented by the UK's Technostar Management Ltd and Russia's Telloil, covers roughly 200 hectares of land and 210 hectares of water surface near the Vung Ro Port in Dong Hoa District.

Crude oil will be obtained from the Viet Nam National Oil and Gas Corporation (PetroVietnam) and imported from sources in the Middle East.

A lack of sufficient domestic refineries has forced the country to export crude oil and import refined products. Last year, nearly \$6.3 billion was spent on importing 12.6 million tons of refined petrol products while 16.29 million tons of crude oil worth \$7.8 billion was exported, according to the General Statistics Office.

The country currently considers the Dung Quat Oil Refinery as 'operational' while three others, including the Vung Ro Oil Refinery, as 'planned'.

The country's annual demand for petroleum products is forecast to surge to 20 million tons by 2012.

51. India Reforms Fuel Prices

Sound economic reason and political sense have dictated the Indian government's decision to decontrol petrol price and hike that of other fuels, say experts. In a long overdue policy reform in the energy sector, the government freed petrol from administrative control and hiked the prices of diesel, kerosene and cooking gas to help oil exploring and marketing companies which are losing revenues by selling fuels at discounted rates.

The government has taken advantage of the lower international crude prices. Currently, retail prices of auto fuels are pegged at crude price of \$65-70 per barrel. Experts say oil prices are not expected to rise for the time being due to high crude oil inventories. It will also take the pressure

off the government's subsidy burden and cut its fiscal deficit, bringing it closer to the target of achieving a deficit of 5.5 per cent for 2010-11 and 4 per cent in the next fiscal. Also, money spent on oil subsidies can now be diverted to other social sector programs.

The government's chief economic advisor, Kaushik Basu, said the move will help the country become an efficient user of energy and help bring down prices in the long-run. "It will rationalize the way we spend money, the kinds and amount of energy we use, and the cars we manufacture. It is an important step in making India a more efficient, global player," Basu said.

Energy experts said that by decontrolling petrol, the government has sent the right signal to the consumers to use the scarce resource carefully.

The immediate impact of the decision is likely to stoke inflation. But Basu said it will help in lowering prices. "Though the immediate impact of this policy will be to increase inflation, in six to nine months we will have lower prices than what would have happened in the absence of this much-needed reform." India's annual inflation touched double digits at 10.16 per cent in May, rising from 9.59 per cent in April.

He said the policy change was a much needed reform and would help in reducing the fiscal and revenue deficit of the government. "To describe the government's decision to deregulate petroleum and diesel as an act of raising prices is to get it completely wrong. It is one of the most major reforms of recent times and should have beneficial effects on the entire economy," said Basu.

Industry experts said the government move is also a "game changer" in the oil sector as it is expected to help private companies like Reliance Industries and Essar, who had shut down their oil retailing outlets given the price difference between their selling price and that of state-run oil marketing companies.

Politically, the government has chosen an opportune time in undertaking the reform as only one state election in Bihar is due in this fiscal year. Reforms would be difficult to implement later as there would be at least five state elections after fiscal 2011, including that of West Bengal and Tamil Nadu where the Trinamool Congress and the Dravida Munethra Kazhagam, respectively, have vital stakes.

52. China to Spend \$1.8 Billion on Green Car Subsidies By 2012

China will spend at least 12 billion Yuan (\$1.76 billion) to subsidize smaller, fuel efficient cars by 2012, as part of broader plans to cut fuel emissions in the world's biggest auto market, the country's top economic planning agency has announced.

Beijing unveiled plans this week to offer nationwide subsidies of 3,000 Yuan for purchases of cars with 1.6 liter engines or smaller and which consume 20 percent less fuel than current standards. The program is estimated to cover more than 4 million such vehicles by 2012, the National Development and Reform Commission said in a statement on its website.

China will also hand out subsidies to buyers of electric cars and plug-in hybrid models in five select cities. Residents of Shanghai and Shenzhen, as well as Hangzhou and Hefei in the east of the country and Changchun in the northeast would receive up to 50,000 Yuan (\$7,320) in subsidies if they buy plug-in hybrid cars, the Ministry of Finance said on its website. The maximum subsidy for those who bought fully electric cars was 60,000 Yuan, the ministry said.

Beijing's tax incentives for small cars and subsidies for vehicle buyers in rural areas helped domestic vehicle sales surge 46 percent last year to 13.6 million units, surpassing the United States as the world's top auto market.

The impact of the new subsidies on green car sales was unlikely to be very large in the short term because of high battery costs and an inadequate charging network, but would make it easier for those interested in cars fueled by alternative energy to decide to buy such vehicles, analysts said.

Taking cues from the government, the biggest players in the Chinese auto market, from top state auto group SAIC Motor Corp to rising star Geely Automotive Holding, have been ramping up efforts to bring low-emission vehicles onto the roads. SAIC plans to roll out its first hybrid car this year, while Shenzhen-based car and battery maker BYD Co started retail sales of its plug-in hybrid F3DM in March.

The government would also allocate unspecified funding to bankroll the construction of charging stations and battery recovery networks in the pilot cities, the finance ministry added.

Instead of handing out subsidies to consumers directly, the government would allocate the money to carmakers, which would then lower the prices of relevant models accordingly, it said, without indicating when the program would begin. The level of handouts would be reduced after carmakers sold a total 50,000 green cars, it said, without elaborating.

The government started to offer subsidies for purchases of cleaner buses in early 2009, as part of another pilot program in 13 cities.

53. Guangdong Province Calls on Cities to Adopt Vehicle Emissions Standards Early

The Environmental Protection Bureau of south China's Guangdong province has directed nine cities to begin implementing China IV motor vehicle tailpipe exhaust emissions standards (equivalent to Euro IV requirements) ahead of the national deadline, the Guangdong provincial government said in a notice posted to its website on June 8th. The notice called for municipal governments in Dongguan, Foshan, Guangzhou, Huizhou, Jiangmen, Shenzhen, Zhuhai, Zhongshan, and Zhaoqing to "step up" their implementation of level IV vehicle emissions standards and to publish new guidelines "as soon as possible."

The national standards, which take effect in 2011, set limits for the amount of carbon monoxide, hydrocarbons, nitrogen oxides, and particulate matter emitted per kilometer driven. The provincial notice says the nine cities were told to have implemented the standards by June 1, 2010.

China's State Council and the Ministry of Environmental Protection (MEP) issued implementation guidelines to municipalities in Guangdong on May 17th, according to the notice on the Guangdong provincial website. Those guidelines called for the cities to allow the sale of only those light and heavy-duty vehicles that meet China IV vehicle emissions standards as of June 1 and to halt sales and registration of vehicles that do not meet those requirements.

The specific standards being implemented are GB18352.3-2005 for light duty vehicles and GB17691-2005 for heavy-duty diesel vehicles. Nationwide, the regulations apply only to heavy-

duty vehicles sold after Jan. 1, 2011, and to light duty vehicles sold after July 1, 2011, according to MEP.

The guidelines issued by the State Council and MEP call on Guangdong province to “strengthen and standardize” emissions testing and monitoring of sales of vehicles to “ensure that the emission control performance meets national emissions standards.” The guidelines also state that the “actual situation” regarding availability of diesel and other fuels that can be used in the China IV vehicles should determine how quickly the rules are implemented in these municipalities.

The implementation guidelines also call for cities in Guangdong to start using a yellow and green sticker system to identify older vehicles. The MEP issued nationwide guidelines last year on its yellow and green sticker labeling system. Under the program, gasoline-powered vehicles that meet China I emissions standards or better may display green stickers. Diesel vehicles can use the green stickers if they meet China II emissions standards or better. All other vehicles below these two standards are allowed to display only yellow stickers.

The labeling system has been implemented in some large municipalities, such as Shanghai and Beijing, and is used to subject yellow sticker vehicles to pollution traffic control regulations in certain areas. In Beijing, for example, vehicles with yellow stickers are not allowed inside the 5th Ring Road, which circles the city about 25 kilometers (15.5 miles) from the city center.

The labeling system has yet to be implemented nationwide.

54. Japan Considers Stricter NOx Emissions Standards For Diesel Trucks, Buses

Japan is considering tougher rules for diesel-powered trucks and buses as well as for vehicles that use ethanol blends to reduce emissions of nitrogen oxides and fine particulates, an official with the Ministry of the Environment said on June 23rd.

On June 22, the ministry's expert panel on automobile emissions opened a 30-day public comment period on a proposal to reduce nitrogen oxide emissions from motor vehicles 9 percent by 2020 and 35 percent by 2030, compared to 2009 levels, according to Yoshitaka Tada, technological specialist with the ministry's Environment Management and Technology Office. The proposal would set different emissions standards based on vehicle type.

Under the proposal, diesel-powered trucks and buses would have to meet new standards for nitrogen oxide emissions by the end of 2016. Tractors would have until the end of 2017 and vehicles less than 1.7 tons gross weight until the end of 2018.

In addition to the tougher nitrogen oxide emissions standards for diesel trucks and buses, the expert panel also proposed establishing emissions tolerance standards for vehicles that use E-10 fuel, a blend of 90 percent gasoline and 10 percent ethanol, Tada said. “If tolerance levels are established, fuel manufacturers and automakers can take measures so as not to cause the release of harmful gases into the atmosphere,” he said.

In making the proposal for tougher rules for nitrogen oxide emissions, Tada said the panel also hopes to push automakers, fuel manufacturers, and other stakeholders to take proactive steps to reduce emissions of fine particles that are smaller than 2.5 microns in diameter (PM-2.5), Tada said.

Once the public comment period ends, the proposal will be presented to the ministry's Air Quality Policy Commission. After the commission approves the standards, it will forward the proposal to the full Cabinet, which then will submit the plan as a piece of legislation to the Diet for consideration. The process is expected to take about two years, Tada said.

Tada said the expert panel decided to propose tougher emissions standards because many air quality observation stations in Japan continue to register nitrogen oxide in amounts above acceptable levels.

55. Fate of Climate Bill Uncertain As Japan Poll Nears

Japan's government could run out of time to enact a climate bill before upper-house elections expected next month, fuelling worries it might drop a plan to trade carbon emissions by setting obligatory caps on firms. Japan is the world's fifth-biggest greenhouse gas emitter and a pledge to cut emissions by 25 percent from 1990 levels by 2020 has become a cornerstone of the government's long-term economic growth strategy. The target is among the most ambitious of all rich nations but has also sparked nationwide debate over how to attain it without hurting the world's No.2 economy.

The powerful lower house passed the climate bill last month, including the emissions cut goal and a shortlist of steps to reach it, such as the launch of a compulsory emissions trading scheme. Upper house debate has just started.

Japanese media have reported that the new government could extend parliament's current session beyond June 16 to enact a bill to scale back postal privatization. The postal bill is strategically more important than the climate bill for Kan's ruling Democratic Party of Japan (DPJ) to keep a tiny coalition partner happy ahead of the election. The extension would provide more time to address the climate bill.

If passed, the climate bill would give the government a year in which to craft rules for a new emissions trading scheme. The rules would then take effect as early as next year if an emissions trading bill is enacted when the government holds the next regular parliamentary session in early 2011.

When trading will actually start remains unclear, with analysts divided between 2012 and 2013.

If parliament is not extended, the climate bill may be shelved ahead of the upper house poll. The DPJ will stay in power regardless of the poll's outcome because of its huge majority in the lower house, and would likely compile a bill later with the same 2020 goal. The same bill might be submitted to the lower house during a parliament session due to start after the July election.

But the risk of the DPJ falling short of a majority in the upper house means the bill could be changed to appease new coalition partners.

Currently, Japan only has a voluntary carbon market at the national level based on companies' pledged goals, which are mostly caps on emissions per unit of production and leave room for rises in emissions when output grows.

56. China Sees Some Progress on Reducing Surge in Energy Use, Pollution

Tougher policies implemented by China's State Council in May have helped to reduce a surge in energy consumption and pollutant emissions such as sulfur dioxide across the country, but some regions are lagging behind, the deputy director of the National Development and Reform Commission said in an interview with the state-run People's Daily newspaper published on June 16th. The official, Xie Zhenhua, said further action could be taken to help China meet its 11th Five-Year Plan reduction goals in these areas.

On June 13th, China's National Energy Administration said that the nation's electricity consumption was 23.1 percent higher in April and 20.8 percent higher in May than in the same periods in 2009. China also recently announced increases in sulfur dioxide emissions and energy intensity, or use per unit of gross domestic product. Sulfur dioxide emissions rose 1.2 percent in the first quarter of 2010 and energy intensity 3.2 percent, both compared to the first quarter of 2009.

Xie reiterated Premier Wen Jiabao's statement that China must use an "iron fist" to deal with industries that are threatening the energy intensity and pollutant emissions goals the country pledged to meet by the end of 2010, and that while the new policies had produced results in some areas, "there are still some difficulties and problems". Xie told the newspaper that, to deal with the situation, as of June 1st, the Commission had started ordering the removal of preferential electricity rates for businesses with high consumption. Shutdowns or limits on production could be imposed on certain high-energy-consuming businesses, he said.

Special energy-savings inspectors are being dispatched by the State Council to implement the policies announced in May, he said.

Xie said he foresaw "greater difficulties" with meeting energy savings goals in the provinces of Hainan, Guizhou, and Qinghai and the autonomous regions of Xinjiang and Ningxia. Xie also named Hebei, Liaoning, Shandong, Henan, Guangdong, and Jiangsu provinces as places where energy consumption was too high and said rapid growth in energy consumption in Sichuan and Shanxi provinces and the Guangxi Zhuang autonomous region was harming the effort to meet national targets for reducing energy intensity.

Special funding from the central government budget will be released to implement energy conservation projects and eliminate outdated production in some of these areas, Xie told People's Daily.

57. China Extends Subsidy to Trade in Older Cars

China has extended to December 31st its subsidy program on purchases of newer vehicles to encourage the trading in of older, higher-emissions vehicles, the Ministry of Commerce said on June 13th. The trade-in program, launched in June 2009 and initially set to expire on May 31st, allowed consumers to claim rebates of between 3,000 and 6,000 Yuan (\$440 and \$880) off the purchase of newer vehicles when they trade in qualified small- and medium-sized trucks and certain mid-sized passenger vehicles. At the end of 2009, the ministry increased the subsidy to 5,000 and 18,000 Yuan (\$730 and \$2,640), the current level of the subsidy. By May 31, the government had provided 1.7 billion Yuan (\$250 million) in subsidies and had replaced 127,000 older vehicles, the ministry said.

58. Difficult Times Predicted For Beijing City Pollution This Year

Despite an 11-year improvement in air quality, officials from the Beijing municipal environmental protection bureau said the chain might be broken this year because of a booming economy and mounting numbers of cars.

In the recently-released Beijing Environmental Statement 2009, last year's eco-environment was rated "good" by the city's environmental protection bureau. Statistics from the bureau show the city had a record 285 blue-sky days, about 78 percent of the whole year, which is 11 days more than in 2008. The report also noted that emissions of major air pollutants were decreasing, with SO₂ down by 3.59 percent compared with 2008. And the water quality in rivers, lakes and reservoirs had also slightly improved.



The growing number of privately owned vehicles poses a serious threat to the environment.

Xu Qing, deputy director of the bureau, said the report shows a set of accomplishments that need to be considered in tandem with a GDP increase of 10.1 percent in the local economy.

"The regional product expenditure per person exceeded \$10,000 last year. The population in Beijing hit 17.55 million and the number of cars exceeded four million," he said, in a press conference, adding proudly that the environment has been improving since the Beijing Olympic Games.

However, the city's air quality was ranked 28 out of 31 provincial capitals and municipalities nationwide last year, according to the annual report on environment development of China.

The percentage of inhalable particles is 21 percent higher than the national grade II urban air quality standard, with the frequency of acid rain even greater, at 25 percent higher on average.

Officials from the environmental protection bureau said they will be under tremendous pressure this year. Wang Dawei, director of the atmospheric division of the Beijing municipal

environmental protection bureau, said more energy has been consumed by factories since the second half of last year, resulting in more pollutants in the air.

In addition to these industrial pollutants, waste from daily life - especially emissions from vehicles - is a major concern of the bureau. Wang estimated the total number of cars in Beijing could hit five million by the end of 2010, with a growing number of privately owned vehicles causing massive challenges to his division.

"We are trying to devise solutions. We will try to remove heavily polluting vehicles from the streets and might expand the no-car-day ban," Wang said. The policy blocks certain license plate numbers from entering urban areas every five days. Wang's division is considering banning two license plate numbers every five days.

He said this year's blue-sky target is 73 percent. "That would equate to seven fewer blue sky days than last year," Wang said noting he was not optimistic about this year's air quality.

Zhang Shiqiu, director of the environment and economy institute with Peking University, said the source of pollution in Beijing has changed its source. According to statistics, as many as 30 percent of nitrogen oxides, the cause of acid rain, are produced by car emissions in China. "But the number in Beijing is definitely more than 30 percent," she said, adding it is time to raise public awareness of environmental protection and encourage a reduced use of private vehicles.

Jiang Kejun, director of the energy research institute with the National Development and Reform Commission, echoed the concern. He said because Chinese people are getting rich quickly, controlling the number of vehicles is a big problem for the government.

Jiang said though the government has initiated a series of countermeasures, which include car bans, it still has a long way to go. According to his research, car ownership is triggered by the income status of a family, a level that is annually increasing. He estimated that by 2030, the total number of vehicles in China could top 400 million. "It is too late to control the number by increasing parking fees. The increase in people's income is much faster than their ability to use their minds," he added.

Jiang said while European countries are offering more street space for cyclists, Beijing is doing the complete opposite.

59. Beijing Has Instituted a Month-Long Check Targeting Pollution

The Beijing environmental protection bureau began a one-month intensive crack-down on some of the city's vehicles to counter worsening pollution. The bureau said it would mainly focus on heavy freight vehicles, construction tippers, "yellow label" vehicles - those that fail to meet the European No 1 standard for exhaust emissions - and trucks registered outside the capital. Most vehicles are not allowed inside the Fifth Ring Road and are linked to issues of overloading and excessive emissions.

"These vehicles' main threat to the city is their heavy emissions," said Li Kunsheng, director of the vehicle emission management division of the city's environmental protection bureau. "We will set more than 100 remote sensing monitoring points to check the emissions of passing vehicles," Li said. Vehicles registered outside of Beijing that are breaking emission rules will be asked to leave immediately, Li said.

"This is actually all routine work, but we have increased our frequency of checks, have greater resources and are prepared to take tougher action," he said.

60. New Zealand Government Proposes to Relax PM10 Air Quality Standards

On June 10th, the New Zealand government proposed to relax national ambient air quality standards by allowing a greater annual number of instances when limits for particulate matter less than 10 microns in diameter (PM-10) can be exceeded. The government had announced a review of air quality standards in June 2009, following industry complaints about the economic impact of current regulations. In particular, existing rules requiring regional councils to stop issuing air emission permits in noncompliance areas by 2013 were causing concern.

In New Zealand, domestic heating (mainly log burners and open fires), not industry, is the main source of air pollution.

Environment Minister Nick Smith said the existing standard of only one exceedance per year is "unrealistic and would require banning home log burners and industries in communities where air quality is generally very good." "The existing standard is also unfair in severely punishing businesses when the vast bulk of pollution comes from home fires and motor vehicles," Smith said.

The proposed amendments to the standard are set out in a discussion document that was released on June 10th. The main recommendation in the document is to increase from one to three the number of times per year that the limit value for PM-10 may be exceeded. The current limit is an average of 50 micrograms per cubic meter over a 24-hour period.

Even with such a change, substantial action would still be required in 15 airsheds that contain 45 percent of the country's population and have multiple exceedances every year. Other options under consideration are a deferral of the 2013 compliance deadline to 2018 and a requirement for regional councils to report to the government their progress on airshed implementation plans.

Mandatory reporting of PM-10 monitoring results by regional councils to improve transparency and accountability may also be required after 2013.

Public submissions on the proposal must be received by July 9th.

61. Indian Capital's Rapid Population Growth Takes Toll on Air, Water Quality

India's national capital is growing quickly but is paying a heavy environmental price for it, according to a report released on June 6th. The State of the Environment Report for Delhi, 2010, prepared for the Delhi government by the Energy and Resources Institute, said an influx of residents drawn by economic opportunity is putting pressure on land, water, and energy availability. The area population is approximately 18 million.

According to data from India's transportation department cited in the report, the number of vehicles has grown steadily. Between 1998–1999 and 2008–2009, the number of private vehicles grew at an annual compounded rate of 7 percent versus 9 percent growth for commercial vehicles.

Emissions from an increasing number of leather, plastic, rubber, and coal factories have increased the amount of particulate matter in the city's air to critical levels, the report said.

Groundwater has been severely depleted and its chemical composition has changed with increasing industrial and residential use. Salinity of groundwater has increased in southwest and northwest Delhi, the report said. In the eastern Delhi area of Shahdara and the Kanjhawala village of northwest Delhi, nitrate content in groundwater has measured more than 1,000 milligrams per liter, rendering it unfit for human consumption.

In releasing the report, Chief Minister Sheila Dikshit said Delhi must limit its consumption of energy and water and that the government may hike fees to discourage overuse. Citing the report, she said 42 percent of the water distributed by the state-owned utility Delhi Jal Board is wasted.

While acknowledging the government's efforts to plant trees as carbon sinks, the report said that "other assets like ponds, lakes, ground water and rivers are under constant threat due to their over exploitation." It recommended mapping of these natural resources as a first step toward their conservation.

SOUTH AMERICA

62. São Paulo State to Study Possible Market to Exchange Air Pollution Credits

Public and private-sector groups in Brazil's São Paulo state have agreed to study how to structure an emissions credit market whereby industrial businesses wanting to build or expand in regions with heavy air pollution could do so by buying credits from nearby companies that have cut emissions, according to representatives of those groups.

The goal of the program would be to use market mechanisms to reduce emissions of nitrogen oxides, sulfur oxides, carbon monoxide, volatile organic compounds, and particulate matter.

Signers of an April 28 technical cooperation accord included Cetesb, the pollution control agency of the São Paulo State Environmental Secretariat; BM&FBovespa, Brazil's securities, commodities, and futures exchange; FIESP, São Paulo state's federation of industries; and Investe São Paulo, a government investment promotion agency.

The market structure chosen "will depend on market liquidity, the amount of supply and demand for such credits generated in heavily polluted areas," Guilherme Fagundes, BM&FBovespa's manager of environmental products, told the press on May 17th. "If the market doesn't appear to be very liquid, emission-reduction credits could be sold via auctions organized by the BM&FBovespa. If it is liquid, continuous trading markets, either on BM&FBovespa or over-the-counter trades done on and off the exchange, are options."

The concept of the trading mechanism results from a 2006 São Paulo state decree (No. 50,753), which capped industrial emissions by requiring all new or expanding facilities in heavily polluted regions to offset additional emissions by buying emission-reduction credits from other companies in their respective regions. The new regulations, slightly revised in a 2007 decree (No. 52,469), do not seek to reduce emissions, but only to stabilize them at current levels.

The decree affects more than 100 cities in six of the most heavily industrialized regions of the state, including the big metropolitan areas of São Paulo, Santos, Campinas, Sorocaba, Ribeirão Preto, and São Jose dos Campos. The areas were chosen based on air pollution levels measured against World Health Organization standards.

São Paulo state is Brazil's industrial hub and is responsible for 33 percent of the country's gross domestic product.

The São Paulo decree also covered emissions of nitrogen oxides, sulfur oxides, carbon monoxide, volatile organic compounds, and particulate matter. Under the decree, companies in the affected regions have to obtain credits for new industrial facilities that surpass a yearly emissions threshold of 40 metric tons of nitrogen oxides, 250 metric tons of sulfur oxides, 100 metric tons of carbon monoxide or particulate matter, or 40 metric tons of volatile organic compounds.

Ten large companies—among them the state oil company Petrobras, the Cosipa steel mill, and electricity generation businesses—located in pollution-saturated areas have asked Cetesb to audit their emissions reductions since 2007, when the revised decree took effect, and to certify their credits for each of the five types of pollutants, Carlos Eduardo Komatsu, Cetesb's head of environmental quality, told the press. Komatsu said various other companies planning to open up new facilities in those areas, among them carmakers Toyota and Hyundai, are in the market to buy enough credits to offset the expected emissions from their plants for all five types of pollutants. But “so far, none of the companies which have received credits, certified by Cetesb, valid for six years, wants to sell them because they might need them to offset emissions for future expansions,” he said.

Walter Lazzarini, president of the environmental council of FIESP, the state federation of industries, agreed that “right now there is a sellers' market for these emissions-reduction credits because most potential sellers want to keep them for use in case they decide to expand in the same heavily-polluted areas.” “Still I think companies wanting to close plants in those areas will be able to earn credits for having reduced their emissions by simply shutting down, credits they will be eager to sell to industrial firms wanting to set up shop in those areas,” Lazzarini said. “So I believe there is enough potential credit supply to cause a market to be structured around it.”

Komatsu said that any company, even recently installed ones, in a pollution-saturated area can earn credits as long as it notifies Cetesb in advance of its intentions and how it plans to cut pollutant emissions. After that, the agency must audit and certify the emissions reduction. Komatsu also said that, although companies could buy and sell credits among themselves, trading would be easier in a structured market.

Fagundes of BM&FBovespa said any of a number of market models could be used. As one possible model, Fagundes cited the California-based program RECLAIM, which required industries and businesses to cut emissions a specific amount each year to reduce total nitrogen oxide emissions by 70 percent and total sulfur oxide emissions by 60 percent by 2003. Both pollutants contribute to acid rain. Businesses that complied with annual emissions limits and reached their reduction targets could trade their credits on the open market.

63. Brazilian Truckers Sign Emissions Monitoring Accord

The federation of trucking companies in Brazil's Rio de Janeiro state (Fetranscarga) has signed an agreement under which members will have particulate matter emissions measured four times a year to check compliance with limits set by the National Environmental Council (CONAMA). The agreement was signed on May 13th with INEA, the enforcement arm of the state's Environmental Secretariat. CONAMA requires all trucks and buses, nearly all of which are diesel-fueled, to have their particle emissions measured annually by state agencies. A stricter

2007 Environmental Secretariat regulation requires bus companies, trucking companies, and firms with truck fleets in Rio de Janeiro state to have particle emissions measured every three months. Those that meet standards get “green seal” window stickers. The rest must undergo maintenance and repair work to bring them within limits. “Few, if any, trucking companies in the state were complying with the norm, and INEA doesn't have the manpower to monitor compliance with it,” Paulina Porto, the agency's air quality manager, told reporters. Now that Fetranscarga has agreed to “monitor member compliance with the norm, there should be more compliance, and this should improve air quality in the state.” Fetranspor, the federation that represents state bus companies, signed a similar “green seal” accord in 2008.

64. Colombia to Eliminate Import Fees on Clean Vehicles

Colombia will allow the importation of three types of low-emission vehicles duty-free, the minister of the environment announced on June 10th. The policy will apply to electric, hybrid, and natural gas-powered cars, as well as buses and trucks. It will take effect as soon as the government issues the relevant decree, which is expected “within a few days,” Environment Minister Carlos Costa said in a ministry statement. The current import duty is 35 percent. The policy initially will apply to a “first lot of 100” vehicles, he said. “This measure is intended to produce incentives for the importation of low-emission cars which also conserve gasoline,” Costa said in a ministry statement.

GENERAL

65. Air Pollution Associated With Heart Disease: AHA

People exposed to air pollution face greater risk of heart attack, stroke and cardiovascular death, the American Heart Association (AHA) has warned. The AHA pointed to fine particulate matter, PM_{2.5}, as the most evident threat because its tiny size makes it more likely to infiltrate even the smallest airways.

"Particulate matter appears to directly increased risk by triggering events in susceptible individuals within hours to days of an increased level of exposure, even among those who otherwise may have been healthy for years," report lead author Dr. Robert D. Brook said in an AHA news release. "Growing evidence also shows that longer-term PM 2.5 exposures, such as over a few years, can lead to an even larger increase in these health risks," he added.

As a result, fine particulate matter "should be recognized as a 'modifiable factor' that contributes to cardiovascular morbidity and mortality," the AHA report said⁶.

Those at highest risk from PM_{2.5} exposure include the elderly, people with existing heart diseases, and possibly those with diabetes, according to the report.

Major sources of PM 2.5 include fossil fuel combustion from industry, traffic and power generation, according to the report.

⁶ Brook RD, Rajagopalan S, Pope A, et al. Particulate matter air pollution and cardiovascular disease. *Circulation* 2010; DOI:10.1161/CIR.0b013e3181d8e1. Available at: <http://circ.ahajournals.org>.

66. Academics Urge “Radical” New Approach to Climate Change

A major change of approach is needed if society is to restrain climate change, according to a report from a self-styled "eclectic" group of academics. The UN process has failed, they argue, and a global approach concentrating on CO2 cuts will never work. They urge instead the use of carbon tax revenue to develop technologies that can supply clean energy to everyone.

Their so-called Hartwell Paper is criticized by others who say the UN process has curbed carbon emissions. The paper is named after Hartwell House, the Buckinghamshire mansion, hotel and spa where the group of 14 academics from Europe, North America and Japan gathered in February to develop their ideas.

Its central message is that climate change can be ameliorated best by pursuing "politically attractive and relentlessly pragmatic" options that also curb emissions. These options include bringing a reliable electricity supply to the estimated 1.5 billion people in the world without it, using efficient and low-carbon technologies.

"The raising up of human dignity is the central driver of the Hartwell Paper, replacing the preoccupation with human sinfulness that has failed and will continue to fail to deliver progress," said lead author Prof Gwyn Prins. Prof Prins is director of the Mackinder Program for the Study of Long Wave Events at the London School of Economics and Political Science, and an adviser to the Global Warming Policy Foundation, the UK charity chaired by Lord Lawson that aims "to help restore balance and trust in the climate debate".

The paper says that the outcome of December's UN climate summit, plus the "ClimateGate" affair and inaccuracies within the Intergovernmental Panel on Climate Change (IPCC) 2007 report, means "the legitimacy of the institutions of climate policy and science are no longer assured". So, successfully tackling climate change initially means re-framing the issue.

The academics advocate concentrating first on short-term fixes for greenhouse gases or other warming agents, such as black carbon - particles emitted from the incomplete burning of fossil fuels, principally in diesel engines and wood stoves. These particles warm the planet by several mechanisms, including darkening snow so it absorbs more solar energy. Black carbon may be the second most important man-made warming agent after carbon dioxide. As it remains in the atmosphere for a matter of weeks, some researchers have suggested that cleaning up its production could be the quickest way of curbing warming, as well as bringing health benefits to poor countries by reducing air pollution.

"To date, climate policy has focused on carbon dioxide primarily, and even to the exclusion of other human influences on the climate system," the report says. "We believe this path to have been unwise... early action on a wider range of human influences on climate could be more swiftly productive."

However, they acknowledge that carbon emissions do in the end have to be constrained. To that end, they recommend implementing a hypothecated carbon tax in developed economies to fund development of low-carbon energy technologies.

The damaging effects of climate change in developing countries, meanwhile, would be tackled by having Western countries meet the internationally agreed target of contributing 0.7% of their GDP to overseas aid, rather than through specific and complex new climate adaptation funds.

"Just this one action alone would swamp the miserly amounts of money being offered under the Copenhagen Accord," said Prof Hulme.

The Hartwell Paper initiative was supported by funding from the Japan Iron and Steel Federation, the Japan Automobile Manufacturers Association, the US-based Nathan Cummings Foundation and the Fondation Hoffmann, Geneva.

67. World Warms as Public Cools to Climate Action

This year is on track to be the warmest worldwide since records began in the 19th century yet voters seem to be cooling to strong action to combat climate change. Their doubts may be quietly sapping the will of governments and companies to cut greenhouse gas emissions after the Copenhagen summit in December failed to agree a treaty meant to slow more droughts, floods and rising seas, analysts say.

"There has been a resurgence of skepticism" that humans are to blame for global warming, said Max Boykoff, an assistant professor and expert in environmental policy at the University of Colorado-Boulder. Yet so far in 2010 there has been record warmth especially in many tropical regions, Australia and parts of the Arctic -- despite a chill start to the year in Western Europe and some eastern parts of North America. "It's more likely than not -- greater than a 50 percent chance -- that it will be the warmest year on record," said Vicky Pope, head of climate change advice at the British Met Office Hadley Center, referring to global temperatures.

That would eclipse 1998 and 2005 as the warmest years since records began and undermine an argument used by some skeptics that warming has peaked. The decade just finished was the warmest on record, ahead of the 1990s.

"It's a very consistent ongoing warming trend," said Tom Karl, director of the U.S. National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center. "Right now it would be extremely unlikely to see this year falling below the top three warmest years on record," he said, saying it was too early to say exactly where 2010 would rank because of an early 2010 El Nino warming of the eastern Pacific. In the first four months, land and ocean temperatures were 56 degrees Fahrenheit (13.3 C) and 1.24 F (0.69 C) above the 20th century average, the warmest on record in NOAA data.

But public perceptions do not track global temperatures.

Economic slowdown, skepticism about climate science after the U.N. panel of climate experts exaggerated the melt of Himalayan glaciers and a scandal over leaked e-mails from a British university have all dimmed public enthusiasm.

Scientists say many people wrongly judge global warming by temperatures at home. Karl said he would be rich "if I had a nickel for every time someone asked me: 'global warming? We had record snows and cold temperatures'."

Among examples of widening public doubts, a YouGov opinion poll published recently in Britain showed that the number of people interested in the problem of global warming had fallen to 62 percent from 78 percent in 2007.

In December, a global poll by the Nielsen Institute showed a global average of 37 percent of people were "very concerned" by climate change, down from 41 percent in 2007.

"The economic slowdown has a real big influence on thinking in the United States," Boykoff said, with fears of job losses and the impact of possible carbon capping legislation probably figuring far larger than worries about the science.

Less public interest in climate change means an opportunity for some "politicians to move it down the list of priorities", especially with mid-term U.S. elections in November, he said.

Legislation in the U.S. Senate to curb emissions is stalled. The United States is the number two emitter of greenhouse gases, mainly from burning fossil fuels, after China.

Christopher Monckton, a British skeptic associated with the U.S. Science and Public Policy Institute, said that many more people this year were finding reasons to doubt findings by the U.N.'s Intergovernmental Panel on Climate Change (IPCC).

An independent panel is looking into the IPCC, partly after it exaggerated the melt of the Himalayas in a 2007 report.

IPCC leaders reject suggestions of any bias, such as a charge by Monckton that they also over-estimated the warming effect of carbon dioxide.

68. Environment Worries to Lift Electric Car Sales: Report

Global sales of electric vehicles are set to rise this year due to worries about security of oil supply, the environment and fuel costs, according to UK consultancy J.D. Power. Global sales of electric cars are expected to reach 940,000 units this year compared with 732,000 units last year, with the number jumping to 3 million in 2015, J.D. Power analysts said in a report.

The uptake of battery powered cars is seen as key to fighting climate change by cutting carbon emissions, as well as a way to wean economies off imported or difficult to reach oil, as highlighted by BP's Gulf of Mexico oil spill.

More than 98 percent of sales are expected to be of hybrid electric cars, which are part petrol, part battery, rather than plug-in cars, which are wholly battery powered and need to be charged from a power point.

J.D. Power also said it expected the U.S. to account for 55 percent of the hybrid market by 2015, followed by Asia with most of the sales in Japan. "We think Asia as a whole will account for about 30 percent of global hybrid sales in 2015, with Japan's volume at nearly 750,000 units, or about 25 percent of the global hybrid market," it said.

In the smaller plug-in market, sales were forecast to be 23,000 this year, rising to 500,000 by 2015, but growth would be hampered by high vehicle costs and poor driving ranges compared with hybrids. "The (plug-in) Nissan Leaf and the Tesla Roadster have a driving range of 100 miles to 250 miles, depending on the size of the battery, whereas a (hybrid) Toyota Prius can go 600 miles," it said.

Hydrogen powered fuel cell vehicles sales were predicted to be flat. "We think sales of cars powered by fuel cells will remain below 20,000 units per year for the next 10 years: The technology is currently too expensive, and this isn't likely to change soon," the report said.

69. Strong Evidence on Climate Change Underscores Need for Actions

As part of its most comprehensive study of climate change to date, the National Research Council has issued three reports emphasizing why the U.S. should act now to reduce greenhouse gas emissions and develop a national strategy to adapt to the inevitable impacts of climate change. The reports by the Research Council, the operating arm of the National Academy of Sciences and National Academy of Engineering, are part of a congressionally requested suite of five studies known as America's Climate Choices.

"These reports show that the state of climate change science is strong," said Ralph J. Cicerone, president of the National Academy of Sciences. "But the nation also needs the scientific community to expand upon its understanding of why climate change is happening, and focus also on when and where the most severe impacts will occur and what we can do to respond."

The compelling case that climate change is occurring and is caused in large part by human activities is based on a strong, credible body of evidence, says *Advancing the Science of Climate Change*, one of the new reports. While noting that there is always more to learn and that the scientific process is never "closed," the report emphasizes that multiple lines of evidence support scientific understanding of climate change.

"Climate change is occurring, is caused largely by human activities, and poses significant risks for — and in many cases is already affecting — a broad range of human and natural systems," the report concludes. It calls for a new era of climate change science where an emphasis is placed on "fundamental, use-inspired" research, which not only improves understanding of the causes and consequences of climate change but also is useful to decision makers at the local, regional, national, and international levels acting to limit and adapt to climate change. Seven cross-cutting research themes are identified to support this more comprehensive and integrative scientific enterprise.

The report recommends that a single federal entity or program be given the authority and resources to coordinate a national, multidisciplinary research effort aimed at improving both understanding and responses to climate change. The U.S. Global Change Research Program, established in 1990, could fulfill this role, but it would need to form partnerships with action-oriented programs and address weaknesses that in the past have led to research gaps, particularly in the critical area of research that supports decisions about responding to climate change. Leaders of federal climate research should also redouble efforts to deploy a comprehensive climate observing system.

Substantially reducing greenhouse gas emissions will require prompt and sustained efforts to promote major technological and behavioral changes, says *Limiting the Magnitude of Future Climate Change*, another of the new reports. Although limiting emissions must be a global effort to be effective, strong U.S. actions to reduce emissions will help encourage other countries to do the same. In addition, the U.S. could establish itself as a leader in developing and deploying the technologies necessary to limit and adapt to climate change.

An inclusive national policy framework is needed to ensure that all levels of government, the private sector, and millions of households and individuals are contributing to shared national goals. Toward that end, the U.S. should establish a greenhouse gas emissions "budget" that sets a limit on total domestic emissions over a set period of time and provides a clear, directly measurable goal. However, the report warns, the longer the nation waits to begin reducing emissions, the harder and more expensive it will likely be to reach any given emissions target.

The report does not recommend a specific target for a domestic emissions budget, but suggests a range of emissions from 170 to 200 gigatons of carbon dioxide (CO₂) equivalent for the period 2012 through 2050 as a reasonable goal, a goal that is roughly in line with the range of emission reduction targets proposed recently by the Obama administration and members of Congress. Even at the higher end of this range, meeting the target will require a major departure from "business-as-usual" emission trends. The report notes that with the exception of the recent economic downturn, domestic emissions have been rising for most of the past three decades. The U.S. emitted approximately 7 gigatons of CO₂ equivalent in 2008 (the most current year for which such data were available). If emissions continue at that rate, the proposed budget range would be used up well before 2050, the report says.

A carbon-pricing system is the most cost-effective way to reduce emissions. Either cap-and-trade, a system of taxing emissions, or a combination of the two could provide the needed incentives. While the report does not specifically recommend a cap-and-trade system, it notes that cap-and-trade is generally more compatible with the concept of an emissions budget.

Carbon pricing alone, however, is not enough to sufficiently reduce domestic emissions, the report warns. Strategically chosen, complementary policies are necessary to assure rapid progress in key areas such as: increasing energy efficiency; accelerating the development of renewable energy sources; advancing full-scale development of new-generation nuclear power and carbon capture and storage systems; and retrofitting, retiring, or replacing existing emissions-intensive energy infrastructure. Research and development of new technologies that could help reduce emissions more cost effectively than current options also should be strongly supported.

Reducing vulnerabilities to impacts of climate change that the nation cannot, or does not, avoid is a highly desirable strategy to manage and minimize the risks, says the third report, *Adapting to the Impacts of Climate Change*. Some impacts – such as rising sea levels, disappearing sea ice, and the frequency and intensity of some extreme weather events like heavy precipitation and heat waves – are already being observed across the country. The report notes that policymakers need to anticipate a range of possible climate conditions and that uncertainty about the exact timing and magnitude of impacts is not a reason to wait to act. In fact, it says boosting U.S. adaptive capacity now can be viewed as "an insurance policy against an uncertain future," while inaction could increase risks, especially if the rate of climate change is particularly large.

Although much of the response to climate change will occur at local and regional levels, a national adaptation strategy is needed to facilitate cooperation and collaboration across all lines of government and between government and other key parties, including the private sector, community organizations, and nongovernmental organizations. As part of this strategy, the federal government should provide technical and scientific resources that are lacking at the local or regional scale, incentives for local and state authorities to begin adaptation planning, guidance across jurisdictions, and support of scientific research to expand knowledge of impacts and adaptation.

Adapting to climate change will be an ongoing, iterative process, the report says, and will involve decision makers at every scale of government and all parts of society. A first step is to identify vulnerabilities to climate change impacts and begin to examine adaptation options that will improve resilience. To build the scientific knowledge base and provide a basis for increasingly effective action in the future, adaptation efforts should be monitored and analyzed

to judge successes, problems, and unintended consequences. The report also calls for research to develop new adaptation options and a better understanding of vulnerabilities and impacts on smaller spatial scales.

Adaptation to climate change should not be seen as an alternative to attempts to limit it, the report emphasizes. Rather, the two approaches should be seen as partners, given that society's ability to cope with the impacts of climate change decreases as the severity of climate change increases. At moderate rates and levels of climate change, adaptation can be effective, but at severe rates, adapting to disturbances caused by climate change may not be possible, the report says.

The new reports stress that national climate change research, efforts to limit emissions, and adaptation strategies should be designed to be flexible and responsive to new information and conditions in the coming decades. Because knowledge about future climate change and possible impacts will evolve, policies and programs should continually monitor and adjust to progress and consequences of actions.

America's Climate Choices also includes two additional reports that will be released later this year: Informing an Effective Response to Climate Change will examine how to best provide decision makers information on climate change, and an overarching report will build on each of the previous reports and other work to offer a scientific framework for shaping the policy choices underlying the nation's efforts to confront climate change.

The project was requested by Congress and is funded by the National Oceanic and Atmospheric Administration.

70. North American, Nordic Countries Agree On Need for New Arctic Regulations

A conference bringing together officials from the Nordic nations, the United States, Canada, and Greenland's self-rule government ended on June 11th with agreement on the need for a treaty establishing new shipping regulations for the Arctic region. The meeting, held at Ilulissat, Greenland, addressed the impact of climate change on the region and the potential effects of increased shipping and oil exploration. Greenland and Canada also met on June 9th to discuss cooperation on drilling and environmental protection.

The conference's final declaration said oil spills continue to be the "most significant threat to the Arctic marine environment from shipping," and it recognized the need for measures to reduce this risk within the framework of the United Nations' Convention on the Law of the Sea and International Maritime Organization (IMO) rules.

IMO is currently drawing up a Polar Code of mandatory shipping regulations for both the Arctic and Antarctic regions. The code is to cover all shipping, including fishing, industry, and cruise ships. The Arctic Council's next ministerial meeting, scheduled in May 2011, is due to issue recommendations regarding the new shipping rules.

While expressing "deep concern" over the Gulf of Mexico oil spill, the conference's final declaration did not refer to differing national opinions on how much, if any, new oil drilling should be permitted in the Arctic. Most nations oppose new drilling and the United States supports a ban until at least 2011.

The informal conference, which was held in connection with Denmark's presidency of the Arctic Council, was described in a June 11 MST statement as a "one of a kind" event. Sweden, which takes over the council's chairmanship in April 2011, has not announced any plan for a similar meeting, Mogensen said.

Attending were ministers and officials from Canada; Denmark, Greenland and the Faroe Islands; Finland; Iceland; Norway; Sweden; and the United States. Though a Danish protectorate, Greenland enjoys broad autonomy. The Faroe Islands, located about halfway between Scotland and Iceland, are a self-governing region of Denmark

71. Ship-Fuel Specifications Raise Compliance Issues for Oil Refiners, IEA Says

Tighter international fuel specifications that go into effect July 1 will raise immediate and long-term compliance issues for oil refiners, particularly in Europe, the International Energy Agency said on June 10th. The new rules are aimed at reducing harmful emissions from ship engines.

The Paris-based agency made its comments in its monthly oil market report for June.

The 58-page report noted that the new regulations under the International Convention on the Prevention of Pollution from Ships (MARPOL) will limit the sulfur content of seaborne vessel fuel to 1 percent, down from the current 1.5 percent, in Sulfur Emission Control Areas (SECAs) that include parts of Europe's Baltic and North seas. This level will apply until 2015, when it will fall to a much stricter 0.1 percent, according to IEA. In 2011, new standards also will apply in North American waters, according to the International Maritime Organization (IMO), a U.N. agency concerned with maritime safety, security, and marine-pollution prevention.

IEA said the sulfur limit standard taking effect on July 1st has implications most immediately for European refiners. Producers of bunker, or ship, fuel might have to switch their prevailing feedstock away from sour grades toward sweeter grades, it said. More imports of low-sulfur fuel oil into the region also might be required, IEA said.

"In the longer term, tighter bunker fuel specifications raise the issue of whether the industry adopts on-board sulfur scrubbing, or shifts towards greater use of diesel bunkers," IEA said.

There are currently two SECAs, in the Baltic and the North seas. In March, IMO's Marine Environment Protection Committee formally adopted Emission Control Areas proposed by the United States and Canada for waters within 200 miles of the nations' coasts. According to IMO, the North American ECAs will be formally established in August 2011. IEA noted that under the 2015 requirement for SECAs, ships there must use diesel fuel with a maximum sulfur content of 1,000 parts per million. Ships have used fuel with sulfur content as high as 45,000 ppm. In contrast, the sulfur content in diesel fuel used in heavy-duty trucks in the United States is limited to 15 ppm.

The IEA report noted that new ships operating in the Baltic Sea, North Sea, and U.S. and Canadian ECAs will be required to reduce emissions of nitrogen oxides by 80 percent by 2016. IMO said in May that by 2015 ships operating in the U.S. and Canadian ECAs will be required to reduce particulate matter emissions by 85 percent. The IEA report did not address particulate matter emissions.

72. IEA Says Second-Generation Biofuels Production Unlikely to Take Off Before 2015

Although second-generation biofuels are considered important to meeting environmental and energy-security goals, commercial production of these fuels is unlikely to significantly take off in the next five years due to technological, logistical, and cost barriers, according to a report released on June 23rd by the International Energy Agency.

The Paris-based agency, which advises member countries of the Organization for Economic Cooperation and Development, made its comments in its Medium-Term Oil & Gas Markets outlook. The report makes supply and demand growth projections for energy markets to 2015.

The report said overall biofuels production would increase by about 800,000 barrels per day from 2009 to 2014, to reach 2.4 million barrels per day in 2015. This projected growth, 75 percent of which would come from the United States and Brazil, is up from the IEA forecast in December of 600,000 barrels per day growth for the period.

The report also forecasted an increase in production of second-generation biofuels, particularly due to a U.S. cellulosic biofuels mandate that took effect this year.

However, IEA said current data indicate that global production “potential” for second-generation biofuels will reach a maximum 150,000 barrels a day by 2015, with 55 percent coming from ethanol and the rest from biodiesel. “Technology development delays and difficult economics may keep actual production well below this level,” the agency said. It noted that the U.S. Environmental Protection Agency recently downgraded its 2010 requirements for cellulosic biofuels blending.

First-generation biofuels are made largely from edible sugars and starches like corn. Second-generation biofuels are made from nonedible plant materials—basically crop and forest residues; and third-generation biofuels are made from algae and microbes.

Congress passed the Energy Independence and Security Act (Pub. L. No. 110-140) in 2007, requiring that the country's fuel supply include 36 billion gallons of ethanol or other renewable fuel by 2022, including 16 billion gallons from cellulosic sources and 5 billion from other advance biomass sources. The target for 2010 is 12.95 billion gallons, including 100 million gallons of cellulosic ethanol.

EPA issued a rule in February that established the 12.95 billion-gallon standard in regulations. But recognizing that cellulosic ethanol production had gotten off to a slower start than anticipated, the agency waived the 100 million-gallon requirement and set a standard of 6.5 million gallons. EPA published the rule March 26 (75 Fed. Reg. 14,670).

First-generation biofuels, produced mainly from food crops like grains, sugar beets, and oil seeds, have been criticized for driving up food costs and for shortcomings in their capacity to achieve targets for oil-product substitution, climate change mitigation, and economic growth. On the other hand, second-generation biofuels are mainly produced from nonfood, cellulosic sources and provide greater greenhouse gas savings than standard fuels and most first-generation fuels, the IEA report said.

For OECD countries to meet their targets for biofuels use, they will require increased volumes of second-generation fuel, it said.

Until now, higher technology, feedstock, and cost hurdles have limited commercial development of these fuels.

IEA said a “dramatic investment push” could help surmount these obstacles. It noted that the U.S. government has approved \$800 million in funding for biomass projects, many involving second-generation biofuels. Other countries as well as major companies are planning investments.

But because companies are targeting several different technologies, ranging from biobutanol to algae-derived biodiesel, no winning technology has emerged for which production could be ramped up to a cost-effective scale, the report said.

IEA said much of the biofuels industry depends on government support in the form of blending mandates, production subsidies, or both. In the United States, mandates in the form of requirements are explicit and rise gradually, while in Europe they are implied through increasing greenhouse gas emissions criteria.

Such support can provide a floor for growth but also a ceiling to expansion, the report said.

Ultimately, higher oil prices may provide the most effective incentive to higher production, IEA said. It cited data that cellulosic ethanol and biobutanol could begin competing with fossil fuels at a “real” cost of \$120 per barrel.