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CAR LINES

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EUROPE	4
1. EP Committee Calls for 2025 CO2 Target For Cars.....	4
2. Eight Member States Breach EU Air Quality Rules	5
3. EU Industry Boss Defies German Pressure on Car Coolants.....	6
4. Volkswagen to Use CO2 as Future Refrigerant for Air Conditioning Systems	7
5. Norway Shows The Way With Electric Cars, But At What Cost?.....	7
6. France's Electric Car Push Presents Power Grid Challenge	8
7. Report Claims EU Sulfur Targets Costly For UK Shipping Sector	9
8. European Routes Contribute 30% of Maritime CO2	10
9. Details of CO2 Reporting Obligation for Ships Emerge	10
10. European Commission Calls for Binding 2030 GHG, Renewable Energy Targets.....	11
11. EU Faces Energy Policy Vacuum After 2020	12
12. EU Parliament Rejects Carbon Market Rescue Fix	13
13. Study Concludes Fuel Efficiency Law to Stimulate EU Growth.....	14
14. EU Sees Global, Market-Based Measure As Best Solution to Limit Airline Emissions	17
15. EU Strikes Deal on ETS Derogation for Non-EU Flights.....	17
16. Parliament Suspends Inclusion of Third-Country Flights from ETS.....	18
17. UK Airlines to Gain €47-67m from ETS Derogation	19
18. Edinburgh Eyes Low Emission Zones to Improve Air Quality	20
19. Diesel Tax Plan Galls French Drivers.....	20
20. Complete Climate Deal Unlikely By 2015, Says EC	21
21. Irish Presidency Suggests Changes to ILUC Proposal	21
22. Environment Ministers Slam ILUC Proposal.....	22
23. T&E Accuses Carmakers of Manipulating Emissions Test	23
24. EC Proposes To Make Trucks More Energy Efficient.....	23
25. Austria Targets Particulates from Non-Road Mobile Machinery.....	24
26. Stakeholders Back Tighter Air Pollution Controls.....	25
27. ECHA Asked To Revisit Decision on HFO-1234yf.....	26
28. Germany and Cyprus Warned Over Access to Environmental Justice	27
29. EU Ministers Debate Green Products, Air Pollution	28
30. Baltic States Mull Implications of NOx Controls.....	29
31. French Government Urged To Raise Diesel Taxes, Consider Tax on F-Gases	29

32.	EP Rapporteur Strengthens Biofuels Proposal	30
NORTH AMERICA		31
33.	EPA Proposes Tier 3 Vehicle and Fuel Regulations	31
34.	EPA's Tier 3 Proposal Receives Strong Support Except From Oil Industry	32
35.	McCarthy's Republican History Should Smooth Path to EPA Administrator	34
36.	Gulf Coast Refineries Will Increase Diesel Production	36
37.	Diesel Exports from US Rising As Plant Maintenance Winds Down	36
38.	Ground to Be Broken For Western ND Diesel Refinery	38
39.	Obama's Climate Agenda May Face Setbacks in Federal Court	38
40.	EPA Says U.S. Vehicle Fuel Economy Rose to 23.8 MPG in 2012	41
41.	Nobel Prize Winners Urge Obama to Back Carbon Pricing.....	41
42.	Old Diesel Equipment Still Spewing Soot into Pittsburgh's Air	42
43.	Canada Publishes Greenhouse Gas Rules for Trucks	43
44.	Report Finds Large Scale DPF Removal	43
45.	NRC Issues Report On How to Cut Vehicle-Related Carbon Emissions By 80%	45
46.	US Truckers Considering Natural Gas Over Diesel Say Transition Costs Still Too High .	46
47.	Automobile Industry Petitions Supreme Court to Hear Lawsuits Challenging E15	47
48.	Los Angeles Retains Notorious Rankings for Worst Smog, Traffic.....	48
49.	Levels of Diesel Exhaust around Port Of Los Angeles Coming Down	49
50.	Jury Finds Exxon Liable For \$236.4 Million in U.S. Pollution Suit	50
51.	Metro Vancouver to Crack Down On Diesel Trucks	50
52.	U.S. Drivers Buying Diesels - Registrations Rise 24.3 Percent between 2010 and 2012 ..	51
53.	EPA Finds Keystone XL Pipeline Analysis by State Department Not Sufficient	51
54.	Justices Reject Challenge to EPA Air Pollution Rule	52
55.	Supreme Court Asked To Hear EPA Greenhouse Gas Challenge	53
56.	Obama Would Increase Clean-Energy Spending; Energy Nominee Moving Forward	54
57.	EPA Voids Certificates of Over 70,000 Small Recreational Vehicles from China.....	55
58.	UPS To Expand Natural-Gas Truck Fleet	56
59.	New York AG Urges Supreme Court to Reinstate Rules Cutting Interstate Air Pollution.	56
ASIA-PACIFIC.....		57
60.	Only 2 Out Of 190 Cities Had Low Level of Pollution in India	57
61.	Additional \$ 5000 Mn Subsidy to Be Given To Oil Companies	58
62.	IOC Raises Diesel Prices	59
63.	Diesel Vehicle Sales Likely To Be Negative In Q4	59
64.	India Can Cut Emissions Through Better I&M	60
65.	Air Pollution Turning Charminar Black	61
66.	Plan to Give Hong Kong World-Class Air Quality in 7 Years	62
67.	Marine Diesel Must Be 10 Times Cleaner By 2014.....	64
68.	FedEx Express Launches Zero-Emission All-Electric Vehicle Fleet in Hong Kong	65
69.	Report Finds Air Quality Poor in 90 percent of Chinese Cities	65
70.	Standing Committee Member Says China Must Reject Status Quo of Pollution.....	66
71.	Pollution, Ecological Damage Cost China 3.5 Percent of GDP, Official Academy Says ...	66
72.	Chinese Ministry to Address Air Pollution with Special Focus on Three Regions	67
73.	In China, Rising Public Anger over Secrecy on Environment.....	68
74.	Residents Believe Guangdong Air Quality Worsening.....	69
75.	Official Says Japan, China, South Korea to Discuss China's Fine Particle Pollution	69
76.	Chinese Ration License Plates in Effort to Curb Traffic Congestion, Air Pollution	70
77.	China's New Leaders Could Boost Domestic Auto Industry.....	71
78.	Under Mounting Pressure, VW Agrees To Recall Vehicles in China	71
79.	China Unveils Tougher Fuel-Economy Standards.....	73
80.	China to Continue Promoting 'New Energy' Vehicles	73
81.	Beijing to Exempt EV Buyers from Monthly License-Plate Lottery	74
82.	Pacific Push To Cut Diesel Reliance	74
83.	New Policy to Limit Fuel Subsidy in Indonesia.....	75
84.	Worst Pollution This Year Envelopes Hong Kong	76
85.	China to Spend \$16 Billion to Tackle Beijing Pollution Crisis	77

86.	'Green' Awareness Levels Drop In Beijing.....	77
87.	China, India, Singapore Could Join New Arctic Circle Forum	78
88.	Australia Under Pressure to Tighten Diesel Standards.....	79
89.	China Climate Chief Says EU CO2 Crisis Will Not Hurt Domestic Plans	79
90.	Global Automakers Target Central, Western China for Growth.....	81
91.	Chinese Car Makers Turn to Hybrids, Hope for Beijing Backing	83
92.	China's BYD Mulls Leaner, Greener	85
93.	Great Wall Motor Recalls Diesel Vehicles	86
94.	Indus Towers Says 20% of Its Sites Are Diesel Free	86
95.	With Eye on Karnataka Assembly Polls, Moily Pauses April Diesel Price Hike	87
96.	Delhi Metro Helps Reduce Vehicular Air Pollution, Indicates Research.....	87
	CARIBBEAN	87
97.	Jamaica Gasolene Retailers Association Welcomes Low-Sulfur Diesel	88
	MIDDLE EAST	88
98.	Jerusalem Considering an Air Pollution Master Plan.....	88
99.	Tel Aviv Strikes Agreement with Main Public Bus Company to Curb Diesel Emissions..	89
100.	Air Pollution Threatens Health and the Environment in Cairo	89
	GENERAL	92
101.	International Shipping 'Impacting On Air Quality'	92
102.	Air Pollution Linked With Thickening of the Arteries, Cardiovascular Problems	92
103.	Decarbonisation Alarmingly Slow, Warns IEA.....	93
104.	Toyota Hybrid Sales Pass 5 Million Mark.....	95
105.	Climate Scientists Try To Explain Warming Slowdown; Oceans Seem Likely Cause	96
106.	Scientists Find Antarctic Ice Is Melting Faster	98
107.	Air Pollution Scourge Underestimated, Green Energy Can Help: U.N.....	99
108.	Environmental Groups Pressure U.N. Body for Carbon Aviation Deal.....	100
109.	Report: EVs to Make Up Only 2% to 10% of World's Cars by 2035.....	100

EUROPE

1. EP Committee Calls for 2025 CO2 Target For Cars

CO2 emissions from new cars should be limited to 68-78 grams per kilometer from 2025, says the European Parliament's environment committee. A resolution adopted at their recent meeting called on the European Commission to put forward a precise figure by 2017. The committee's proposed range would be about a quarter tighter than the existing 95g/km limit set for 2020.

The MEPs were responding to a proposal tabled by the commission last year laying down rules for achieving carmakers' CO2 targets for 2020. The EU executive said it would review the need for a post-2020 target by the end of 2014, while the parliament's rapporteur Thomas Ulmer proposed completing the review by the end of 2017. Neither the commission nor the rapporteur suggest a figure or range indicating what this target should be.

Other recommendations from the environment committee included:

- The committee backed a 'super credit' scheme for cars emitting less than 50g CO2/km, which would be counted as 1.5 cars in 2016-23 and capped at 2.5g per year per manufacturer. This means to achieve 2.5g of weakening they need to sell about 7% electric cars per year – very few will achieve this maximum potential weakening. Before Wednesday's vote, the commission had warned about allowing use of too many credits.
- The MEPs also strengthened the rapporteur's draft resolution by banning the banking of such credits between years. The commission welcomed this decision.
- The MEPs also backed switching to CO2 targets based on vehicle footprint, rather than mass, after 2020. This would provide an incentive to produce lighter and more fuel-efficient vehicles.
- The environment committee also wants to close loopholes in emission testing procedures that can exaggerate fuel efficiency.

Mr Ulmer has been asked to begin negotiations with the member states, whose diplomats will discuss the proposal on 15 May.

The proposal still has to be voted on by the full European Parliament and needs the endorsement of member states, notably Germany, which has led calls for leeway for its carmakers at a time that the industry is suffering from recession and reduced demand.

Ireland, holder of the rotating EU presidency, has said it hopes for a final deal before the Commission holiday in August.

The Commission, the EU executive, has pushed for efficiency and lower emissions as part of wider goals to cut greenhouse gases and curb reliance on expensive oil imports. The Commission predicts that implementation of a 95 g/km target for cars by 2020 and 147 g/km for vans will result in fuel savings of 160 million tons of oil equivalent over the decade to 2030.

Ivan Hodac, secretary general of the European Automobile Manufacturers' Association which represents EU carmakers, said it was too early to decide on the details of any targets beyond 2020. "Yes we need to have a long-term target, but it has to be based on a scientific assessment, not a political target," he said in a press interview.

The EU car industry has led the shift to lower-carbon, fuel-efficient vehicles, but the United States is catching up. U.S. President Barack Obama has launched clean car standards which he said would nearly double fuel efficiency by 2025 compared with that of vehicles already on the roads. Non-profit research organization the International Council on Clean Transportation said the U.S. standards equated to 93 grams of CO₂ per kilometer by 2025 for ordinary cars, excluding sport utility vehicles.

2. Eight Member States Breach EU Air Quality Rules

Eight EU states, including France and Germany, are likely to have failed to meet EU emission standards in 2011, down from 12 countries in 2010, according to preliminary figures released on March 18th by the European Environment Agency (EEA). Transport emissions were a major cause for overshooting the agreed limits and debate continues in the European Parliament on how to implement tougher targets on vehicle emissions that can help nations adhere to air quality laws.

Member states can be taken to the EU courts for non-compliance.

The European Commission has said its standards are already too lax compared with stricter guidelines that the World Health Organization says are needed to protect against health problems such as cardiovascular and lung disease. It is working on more rigorous air quality limits, possibly to be proposed later this year, as it tries to free the air of toxic chemicals that shorten thousands of lives.

Although the trend is positive, EEA scientists say air quality, especially in cities where traffic is concentrated, is far from adequate and a recovery from recession could have a further negative impact.

In Europe, the most serious air pollutants are microscopic particles, including soot, as well as nitrogen oxides and ozone. Road transport contributes approximately 40 percent of emissions of nitrogen oxides in the European Union. Industry is also a major source.

Reductions from the transport sector have not been as great as originally expected, the EEA said, partly because of higher than expected transport demand and partly because vehicles in the real world emit much more than laboratory testing suggests. Research has exposed how carmakers exploit loopholes in the testing system, just as debate continues in the European Parliament to try to agree implementation of new emissions standards for cars and vans.

Austria, Belgium, France, Germany, Ireland, Luxembourg, and Spain exceeded their ceilings for nitrogen oxides. Finland, Germany, and Spain exceeded limits on ammonia, and Germany exceeded its limit for non-methane volatile organic compounds and ammonia.

The NEC Directive places country-by-country ceilings on emissions of sulfur dioxide, nitrogen oxides, volatile organic compounds, and ammonia, the main pollutants that cause acid rain. The directive implements the European Union's commitments under the Gothenburg Protocol to the U.N. Convention on Long-Range Transboundary Air Pollution. EEA said that an "early" analysis

of final data for the pollutants for 2010 showed that 12 countries had exceeded their ceilings for one or more of the pollutants in that year. In addition to the countries that exceeded limits in 2011, Denmark, Malta, the Netherlands, and Sweden exceeded their ceilings for one or more pollutants in 2010. Figures for 2010 are significant because the requirement for EU countries to meet the emission limits in the NEC directive went into effect that year.

Although transport in general is still a big problem, the European Union has made strides in cutting some emissions. Sulfur dioxide emissions, which cause acid rain, have dropped by more than 60 percent from ships in EU ports since a new policy began on shipping fuel in 2010.

3. EU Industry Boss Defies German Pressure on Car Coolants

The European Union's industry boss defied opposition from Germany, insisting he would enforce new rules that ban extremely potent greenhouse gases in car air cooling systems. Luxury car giant Daimler AG says the alternative less polluting fluid on the market is dangerously flammable and is therefore refusing to use it. German ministers have written to the Commission asking for a temporary suspension of the new law.

Industry Commissioner Antonio Tajani said he had to listen, but he would begin infringement proceedings against any member state that did not comply. "I am saying very clearly that the directive is in force and has been since January 1. There is no extension. The directive must be respected throughout the European Union," Tajani told the environment committee of the European Parliament. "Since there was some information from Germany there was a problem, I am obliged to ask for information, but it's not giving them time. I am not weak."

A separate Commission statement underlined that any car maker using R134a, the former industry standard for air conditioning, would face infringement procedures that can lead to daily fines.

British Liberal Democrat member of the European Parliament Chris Davies has followed the car air conditioning systems debate since it first began 2003. He welcomed Tajani's stance. "The Commission position is very strong indeed. In fact so strong, it amounts to a declaration of war on Daimler," he said. "New models using the old refrigerant must not be sold."

Since 1 January 2013, Daimler has been in breach of the EU's 2006 Mac (mobile air conditioning) Directive because of its use of the refrigerant HFC-134a, which has a global warming potential (gwp) 1,400 times higher than carbon dioxide. Daimler said internal tests had showed dangerously flammability in a much less-polluting replacement refrigerant developed by Honeywell. But environmentalists were incensed, with the Liberal MEP Chris Davies denouncing the company as "evil bastards".

As such, Daimler declaration of intent -along with fellow German car-makers Audi, BMW, Porsche and VW -to switch to a CO₂-based system with a gwp of just 1 caught its detractors by surprise.

Daimler's announcement followed a call by Germany's federal environment agency for a CO₂ switchover – in return for a three year delay in the EU's implementation of the air conditioning law. Daimler is not only at odds with the European Commission, but with U.S. firm Honeywell International Inc., which developed the coolant, adopted as the new industry standard, in partnership with DuPont. Honeywell says its coolant is highly efficient and safe and has been subject to comprehensive testing.

Named HFO-1234yf, the Honeywell fluid is only four times more potent than CO₂ and therefore easily meets the EU requirement that bans air conditioning fluids with a global warming potential exceeding 150 times the impact of CO₂. The old standard R1234a is more than 1,000 times more potent than CO₂. The Commission does not prescribe which coolant is used provided that it meets the criteria, but the problem is that any alternative Daimler can develop will take time.

In a Daimler test of HFO-1234yf last year involving a simulated leak, the new coolant burst into flames.

4. Volkswagen to Use CO₂ as Future Refrigerant for Air Conditioning Systems

The Volkswagen Group is choosing CO₂ as the future refrigerant for its air conditioning systems. At the Geneva International Motor Show, the Volkswagen Group announced its entry into CO₂ technology, which will be rolled out progressively over its entire vehicle fleet. CO₂ (carbon dioxide) as a refrigerant -also known as R744 -is a naturally occurring gas with significantly lower greenhouse gas effects than conventional refrigerants, and it is ideal for use in specially designed automotive air conditioning systems. With a GWP (Global Warming Potential) value of 1, it is 99.3 per cent below the EU specified GWP limit of 150.

5. Norway Shows The Way With Electric Cars, But At What Cost?

Pure electric cars made up 3.0 percent of February car sales in Norway, with a population of 5 million, compared to fractions of one percent in most nations. In the United States, for instance, they made up just 0.1 percent of all car sales in 2012. But the factors that have made the car sell in Norway show how hard it would be to make the proposition work anywhere else: the car can't go long distances and isn't economical unless the government kicks in hefty incentives like tax breaks, free road tolls and free parking.

State subsidies, intended to promote a less polluting form of travel and cut greenhouse gas emissions, help bring the price of buying the top-selling electric Nissan Leaf in Norway down to 240,690 crowns (\$42,500), competitive with the 1.3-litre Volkswagen Golf at 238,000 crowns (\$42,000). But in Britain, for example, while the Leaf is cheaper at 23,490 pounds (\$35,500), including a 5,000-pound government subsidy, the same Golf sounds a bargain at 16,285 pounds (\$24,600).

Norway's center-left government says small nations can lead the way for others like the United States, which is the world's largest market for electric cars with 14,687 sold in 2012 but which has backed away from a goal of putting a million electric cars on the roads by 2015. But its example shows the huge cost involved -one that only a country like Norway, which has escaped the global economic slowdown thanks to vast revenues from oil and gas, can afford.

Norway's tax breaks on the purchase for electric cars are worth almost \$11,000 or \$1,400 a year over a car's lifetime, according to a study by Statistics Norway. Commuters driving into Oslo from the surrounding areas save an annual \$1,400 in road tolls can get free parking worth \$5,000 and avoid other charges of \$400. It all adds up to as much as \$8,200 per car, per year, before taking account of the benefit of driving in the bus lane rather than sitting in a queue with other cars.

The incentive scheme is due to run until 2017, when it will be reviewed.

Oslo has 446 parking places with free recharging and the municipality plans to add 800 more at a cost of 59 million crowns (\$10.33 million) over the next four years. Drivers can also recharge at home.

The range issue -many can only go about 100 miles or less without recharging -is a huge problem in countries like the United States, where long-distance driving is a way of life. One U.S. study said 70 percent of drivers surveyed wanted driving ranges of 300 miles before they would consider buying an electric car despite federal tax breaks worth up to \$7,500, in addition to state incentives.

Tesla Motors says its Model S car, due on sale in June, will be able to reach such ranges if driven correctly.

Experts say electrification with renewable energy is essential if rich nations are serious about goals of cutting greenhouse gas emissions by 80 percent by 2050 -transport now accounts for about a fifth of all greenhouse gas emissions. European Union member states, for example, are aiming for at least 9 million electric vehicles by 2020, against less than 100,000 now. The group also wants 10 percent of transport in the EU to run on renewable fuels by 2020 -such as biofuels or 'green' electricity, up from 4.7 percent in 2010.

On this issue, Norway again stands head and shoulders above the rest -almost 100 percent of electricity is generated from clean hydropower, so a shift from gasoline and diesel cuts pollution. But Norway is not the norm. Elsewhere, electric cars may cut pollution locally by eliminating exhaust but are often charged from electricity generated by high-polluting coal-fired power plants elsewhere.

6. France's Electric Car Push Presents Power Grid Challenge

France's power grid, already under strain at peak periods, could struggle to cope if growing numbers of electric car owners all recharge their batteries when they sit down for dinner, power sector executives say. Renault launched its long-awaited electric car Zoe in France this month at a price on a par with petrol peers, making it the first electric vehicle with mass-market potential. The government, meanwhile, has been encouraging the technology with generous subsidies. But this comes in a country with a power grid that is already extremely sensitive to spikes in demand because of its high reliance on electric heating.

Though the prospect of a fleet of hundreds of thousands of electric cars remains some distance off, France needs to consider how it will cope when cold winter evenings prompt households to turn on the heaters, lights and electric gadgets at the same time. "If it's badly managed, it could prompt power surges, which would cost a lot in peak production, CO2 emissions and would also necessitate the construction of relatively costly infrastructure," Olivier Grabette, head of R&D at French power grid RTE, told the press.

Grabette said that under the "ambitious" scenario of a fleet of two million electric vehicles by 2020, total French annual electricity consumption would rise by 1 to 3 percent. "It's not huge in terms of energy," Grabette said. "But if all these vehicles charge at peak times, even with slow car chargers, it could add between 3 and 6 gigawatts (GW) of peak demand, which would be felt if it comes at the wrong moment."

The heavy reliance on electrical heating in France was instigated by successive governments to absorb surplus nuclear power. Its 19 nuclear power plants make France Europe's biggest

electricity exporter and ensure generally steady power supplies. However, it lacks flexible capacity -usually generated by gas, coal or oil-fired plants -to meet peak evening demand during cold snaps. Peak demand has hit record highs in each of the past 10 winters. In February last year demand at one point hit more than 102 GW and pushed the network to its limits, obliging France to import a record 9 GW.

RTE and other state agencies identified the problem in a 2011 report and recommended car chargers that take up to eight hours to recharge a vehicle. Though quick chargers do the job in about 30 minutes, these draw more energy than a dozen electric hot-water heaters.

There is also the problem of a geographical concentration of cars drawing power from quick chargers; at supermarkets, motorway service stations or business districts, for instance. "The issue is not the total number of vehicles, it's how they will spread -and we think they will spread in clusters," said Laurent Schmitt, Smart Grid Vice-President at French engineering company Alstom. "You can have only 1,000 cars, (but) if 500 of these are connected to the same building, you'll have a problem with this building and the neighborhood around it," he said.

The key could be off-peak charging via "smart grids" able to communicate with chargers that can then be operated remotely.

7. Report Claims EU Sulfur Targets Costly For UK Shipping Sector

Last year, EU environment ministers backed tough new limits for shipping fuel, which will be phased in across EU waters as part of efforts to cut pollution from toxic chemicals. From 2015, the maximum sulfur content of shipping fuels will be cut by 90 percent to 0.1 percent in restricted Sulfur Emission Control Areas, which include some of Europe's busiest waters, versus 1 percent now.

European Union targets to reduce sulfur emissions from the shipping sector will lead to huge costs for the British marine industry and reduce the country's competitiveness, according to a report by UK engineering consultancy AMEC. The report, commissioned by trade association the UK Chamber of Shipping, recognized the need to reduce sulfur emissions for environmental and health reasons but said the speed at which shipping operators needed to implement changes would be costly and reduce Britain's competitiveness.

To meet the EU targets, ships have three options. They can either use low-sulfur fuel which costs at least \$300 a metric ton (1.1023 tons) more than the heavy fuel oil currently used; fit technology to reduce sulfur from heavy oil or use liquefied natural gas (LNG) as a fuel, which is feasible for new builds but not for most of the existing UK fleet.

For ships which cannot yet use LNG or are not willing to invest in technology, sea route operators would need to increase ticket prices by up to 20 percent for passengers and up to 29 percent for freight to offset the cost of low-sulfur fuel, the report said. This could threaten some shipping routes, forcing them to be reduced or shut down altogether, and put more than 2,000 jobs at risk in Britain and Europe.

Increased ticket prices for sea routes could also mean more freight is moved by road, which would emit more carbon dioxide emissions.

According to the European Commission, shipping companies will face extra costs of 2.6 billion to 11 billion euros (\$3.2-\$13.6 billion) to switch fuels or to fit exhaust filters that would scrub out

the sulfur in marine fuel oil. But the new limits could also result in up to 30 billion euros of public health savings.

8. European Routes Contribute 30% of Maritime CO2

Regulating CO2 emissions from ships entering or leaving European ports could cover up to 30% of the sector's global contribution to climate change, new European Environment Agency (EEA) research suggests.

CO2 emissions from ships departing from European ports increased by around 35% in the 20 years to 2010, while other key pollutants increased by 35-55%, the agency said. Reducing fuel consumption, including by reducing speed, is the best way to cut shipping's emissions, the agency advised.

Cutting ships' emissions of certain air pollutants is likely to increase the sector's net contribution to global warming because of the complex effects of some gases on the atmosphere, the research also shows. The Marpol Convention, enacted in EU legislation last year, places progressively tighter limits on the sulfur content of maritime fuels. The resulting reduction in SO2 and particulate concentrations will reduce their cooling effect on the atmosphere. That effect is caused by the pollutants' influence on cloud formation, among other effects. These effects currently outweigh the shipping's greenhouse gas emissions – 3.3% of the global total – meaning the sector has a net cooling effect on the atmosphere.

But the study's author, John van Aardenne, stressed that there is still major uncertainty surrounding shipping's cooling effect. And the differing lifetimes of long-lived CO2 and shorter lived air pollutants should also be borne in mind. For those reasons, the cooling phenomenon should not be taken out of context as an argument against taking action on maritime air pollution, he told the press.

Shipping is currently one of the world's most unregulated sources of air pollution and a major problem in Europe, the agency said. In some of Europe's worst affected areas like the Strait of Gibraltar, shipping accounts for up to 80% of nitrogen oxide (NOx) and sulfur dioxide (SO2) concentrations, 25% of fine particulate pollution and 15% of ozone.

The European Commission has said it will bring forward rules on monitoring, reporting and verification of CO2 from shipping in early 2013. The International Maritime Organization has made little progress on agreeing a market-based mechanism for cutting the sector's greenhouse gas emissions.

9. Details of CO2 Reporting Obligation for Ships Emerge

The EU will require large ships sailing in its waters to monitor, report and verify their CO2 emissions from about 2017, according to a draft regulation being finalized by the European Commission's climate department. The proposal, announced late last year, reportedly should be published in May or June.

The EU hopes to see the principles of its reporting regime adopted internationally as the basis of global controls on maritime greenhouse gas emissions. It would be compatible with a variety of measures under discussion, such as emissions trading or an efficiency standard and based on data that ships must already gather.

Current plans are for the regulation to cover ships of 5,000 gross tons or more, excluding fishing and some other vessels. This would cover about half of the EU fleet but about 90% of its emissions, according to estimates. Operators would have to disclose CO2 emissions from the last port of call outside of Europe, movement within EU waters and to the first port of call outside the region. Reporting emissions of methane or black carbon could be introduced later.

A derogation for ships that enter EU ports only a few times a year is unlikely to be adopted. The commission thinks this would be burdensome on industry and member states because of the paperwork involved.

Ships will need a CO2 monitoring plan verified by a third party. Verified emissions data would be sent to the European Maritime Safety Agency and the flag state annually. Port authorities would be responsible for checking compliance.

The commission believes the monitoring, reporting and verification obligations will secure a 2% cut in CO2 emissions. Shipping to and from EU ports accounts for about 30% of global maritime emissions, says the European Environment Agency.

A paper on long-term policy for the sector, such as extending the EU's emissions trading scheme to shipping, should come out alongside the draft regulation.

10. European Commission Calls for Binding 2030 GHG, Renewable Energy Targets

On March 27th, the European Commission issued a Green Paper that sets in motion a legislative process to establish 2030 targets for greenhouse gas emission reductions, renewable energy generation, and energy efficiency. The new targets would boost the European Union's faltering trading system for greenhouse gas emission allowances, encourage clean energy investment, and reduce dependence on foreign oil and gas, and further efforts to mitigate global warming, according to EU officials.

The Commission did not set specific targets in the Green Paper, which is expected to be followed by a formal legislative proposal by the end of the year. However, the Commission said studies show a 40 percent reduction of greenhouse gas emissions from 1990 levels by 2030 is necessary for the bloc to cut emissions 80 percent to 95 percent by 2050, consistent with the internationally agreed-on target to limit atmospheric warming to 2 degrees Celsius (3.6 degrees Fahrenheit) above pre-industrial levels.

The Commission also noted that the policy scenarios in the bloc's Energy Roadmap 2050 indicate a share of about 30 percent for renewables in 2030.

The Commission insisted that both the 2030 greenhouse gas emission reduction target and the renewable energy targets be legally binding. The European Union has a legally binding target for the bloc as a whole to reduce greenhouse gas emissions 20 percent by 2020 from 1990 levels. It also has a legally binding 20 percent target for renewable energy's share of total energy and a voluntary target to increase energy efficiency by 20 percent by 2020.

According to EU Energy Commissioner Günter Oettinger, the European Union is on target to meet both the 2020 greenhouse gas and renewable energy targets but is lagging on the energy efficiency goal. Oettinger said the bloc has cut emissions 16 percent as of the end of 2011, and renewable energy accounted for a 12.7 percent share of electricity production as of the end of 2011.

However, the European Commission released a separate report March 27 that said EU member states must boost investment and remove regulatory obstacles to renewable energy development, especially wind energy.

Oettinger and Climate Commissioner Connie Hedegaard insisted at a March 27th news conference that the current economic crisis was no excuse for not setting new, ambitious targets. "The fact is that our studies show that a business-as-usual approach will cost just as much as if we move ahead with new 2030 targets," Hedegaard said. "We can also clearly show that investments in new energy such as renewables have helped create jobs."

Both Oettinger and Hedegaard emphasized that 2030 targets would provide certainty for new energy infrastructure investment and help "stabilize" the EU Emissions Trading System. The current carbon price is considered too low to provide an incentive for emissions-reducing investment. Higher carbon prices, they said, could in turn boost investment in carbon capture technology.

The European Commission Green Paper was criticized by the leading business lobby group BusinessEurope. It said the EU industrial sector, especially manufacturing, is falling behind in competitiveness with the United States and China, where energy prices are much cheaper.

The European Parliament would have to sign off on the European Commission consultation paper and ultimately any legislation setting 2030 binding targets. Public comments on the Green Paper will be accepted until July 2.

11. EU Faces Energy Policy Vacuum After 2020

EU ministers meeting in Dublin stood far apart on what energy and environment policy could follow a set of 2020 targets, with a binding legal deal unlikely before 2015. Energy firms, with long investment cycles, say there is an urgent need for a new EU policy framework.

Debate has become much harder following economic crisis and the shale gas revolution, which has handed the United States the advantage of cheap energy. EU heavy industry argues too much regulation will add to Europe's competitive disadvantages.

Ireland, holder of the EU rotating presidency, and host of the recent talks, said there was consensus on the need for an EU-wide post-2020 framework, but not on the form it should take.

In 2007, EU ministers agreed in outline three 2020 goals: to cut carbon emissions by 20 percent, increase the share of renewables in the mix to 20 percent and improve energy savings by 20 percent. These entered the statute books in 2009.

Representing the range of opinion within the 27 member states, German Environment Minister Peter Altmaier said he supported a set of three targets, mirroring the 2020 model, while Poland said nothing should be agreed yet.

The European Commission has outlined possible 2030 goals. It hopes to come out with a formal proposal by the end of the year, Energy Commissioner Guenther Oettinger said, but agreement will take time because of European Parliament elections and a new set of commissioners who will take office next year. He said he supports a new carbon cutting goal and a new renewable energy target, but is flexible.

The European Union is broadly on course for cutting carbon and increasing renewables, but will not hit the energy savings goal, even after a new Energy Efficiency Directive was agreed last year. Oettinger has said it is too soon to consider another one.

The collapse of the EU Emissions Trading Scheme (ETS) (see below) has further complicated the quest for a unified EU energy policy.

Poland, reliant on carbon-intensive coal, led opposition to efforts to boost the ETS and says policy debate must focus on EU competitiveness and what the rest of the world is doing. Warsaw will host U.N. climate change talks later this year, followed by Paris in 2015 - the deadline for a new global deal on tackling climate change. Polish Environment Minister Marcin Korolec said that the bloc should not decide its energy and environment policy ahead of the U.N process.

However, EU commissioner Connie Hedegaard has warned that Europe must agree on climate change targets for 2030 quickly to show leadership in the run up to UN negotiations on a new international mitigation and adaptation deal. "Those who say we could wait to define Europe's targets until after an international deal is done have not understood the message that the EU must get its act together to have the maximum power to influence the international climate talks," the commissioner said at a ministerial meeting in Dublin. Ms Hedegaard added that Europe would be "foolish" not to define its post-2020 policy soon so it can discuss them on the international stage.

At a recent meeting in Warsaw, a coalition of six eastern European countries said they want some flexibility – both for developing nations and EU member states. But Ms Hedegaard said that flexibility must be limited to stay below a two-degree increase in global average temperature above pre-industrial levels.

In a joint statement, the V-4 group of Poland, Czech Republic, Slovakia and Hungary, plus Bulgaria and Romania, said that for the new agreement to be fair it must "recognize the mitigation contributions and efforts countries already made".

12. EU Parliament Rejects Carbon Market Rescue Fix

European Union politicians rejected a plan to prop up the world's biggest carbon market recently, sending it plunging to a new record low and raising questions about its survival. After months of bitter debate, a plenary session of the European Parliament in Strasbourg rejected by 19 votes a Commission proposal to remove temporarily some of the oversupply that has overwhelmed the market for permits to emit carbon dioxide.

Ireland, holder of the rotating EU presidency, said support for the carbon market was still a priority and it would seek agreement from member states, debating in parallel with the parliamentary process, as a matter of urgency.

The Commission, the EU executive, and many in the power sector are keen for a higher carbon price to drive investment in lower carbon energy.

Traders took the lack of political support as a signal to sell, driving the market down to its lowest yet. Immediately after the vote, carbon prices dropped by around 40 percent to 2.63 euros a ton. They were trading at 3.14 euros, down 34 percent, by later in the day.

Climate Commissioner Connie Hedegaard said the Commission still believed its proposal, known as backloading, could restore confidence in the Emissions Trading Scheme (ETS) pending deeper reforms. "We will now reflect on the next steps to ensure that Europe has a strong EU ETS," Hedegaard said. "The market, the investors and our international partners are all waiting." But she said forging agreement on climate policy had become a lot harder following economic crisis.

The Commission's backloading plan was meant to be a quick fix that could be agreed by the end of last year. But it exposed deep divisions, with interest groups intensively lobbying members of the European Parliament.

Hedegaard and many analysts have said failure to agree on EU steps would fragment environmental policy as EU member states tried to safeguard their own green targets. Britain, for instance, already has a carbon price floor.

Analysts say a price of around 50 euros is needed to encourage a switch away from coal to generation from less polluting sources.

The power sector and other energy companies, such as Royal Dutch Shell, keen to promote natural gas, have strongly supported the Commission plan. Together with more than 40 firms, representing more than 875 billion euros (\$1.15 trillion) in turnover, Shell placed a full-page advertisement in the Financial Times newspaper, saying backloading was needed as a stop-gap measure. "Without agreement on the backloading proposal the price will fall further threatening the long-term survival of the EU ETS and lead to fragmentation of the single energy market through a patchwork of national regulations," it said.

Opposition has been led by energy intensive industries. They have argued intervention in the ETS will push up energy costs when Europe is already suffering a competitive disadvantage compared with the United States, which has benefited from abundant supplies of shale gas.

Debate on deeper, structural reforms, such as the permanent withdrawal of allowances, is under way, but is expected to take a long time via the EU process.

At member state level, EU sources have told the press that a majority supports backloading even though Poland, heavily reliant on carbon-intensive coal, is opposed to it and Germany has failed to take a formal position because of divisions within its government.

"Reducing the number of emissions certificates would be an intervention in a functioning market system. It would place an additional burden on our industry and harm the competitiveness of Germany and the whole EU," German Economy Minister Philipp Roesler said in a statement. German Environment Minister Peter Altmaier had a very different view, saying it was "not a good day for Germany". "My concern is that critics of backloading haven't thought about the fact that calls for regulatory intervention by the state will grow louder now, so I hope we will manage to push it through in a second attempt in the European Parliament," he told German television channel ARD.

13. Study Concludes Fuel Efficiency Law to Stimulate EU Growth

British-based consultancies Cambridge Econometrics and Ricardo-AEA, using Commission and industry data, found that more fuel-efficient cars and vans could save the bloc 57 billion to 79

billion euros (\$74.5-\$103 billion) per year in fuel costs. "The results suggest that if a cost-effective transition to fuel-efficient cars can be realized, it will generate jobs across the European auto sector and its supply chain, as well as improving the spending power of European consumers," Phil Summerton, the research project coordinator at Cambridge Econometrics, said. "It will also reduce Europe's dependency on oil imports and the economy's exposure to possible increases in future oil prices."

Rather than helping to finance development of fuel supplies beyond Europe, more efficient conventional engines as well as hybrid and battery-powered cars and vans would generate between 356,000 and 443,000 jobs by 2030 compared with business as usual, the consultants estimated.

Ireland, holder of the rotating EU presidency wants to get agreement on a new auto law before the end of June, following the Commission's publication last year of plans to implement a goal of 95 grams per kilometer (g/km) on average across the EU car fleet by 2020. That compares with an earlier target of 130 g/km by 2015.

The Commission says it is pushing for a low-carbon Europe that is less dependent on oil imports, which currently cost the European Union roughly 1 billion euros a day.

The new report considered one scenario with vehicle efficiency frozen at the current level. A second scenario assumes an increased rate of improvement, which the study says is plausible because some carmakers have met their 2015 goals already. The researchers found that, in the higher technology scenario, renewing the EU car and van fleet would cost a total of 472 billion euros by 2030, or 46 billion euros more as innovation costs are passed on to consumers. At the same time, the avoided annual fuel costs amount to 79 billion euros by then, for a gain of 33 billion euros a year to feed into the wider economy.

Germany, whose manufacturers Daimler, BMW and Audi dominate the premium car segment, says it supports innovation but that ultimately the market and consumer preference should be left to decide.

European consumer groups are pushing for even more stringent emissions targets for cars to keep driving as affordable as possible. The European commission has proposed a cap on vehicle emissions of 95g of CO₂ per kilometer driven by the end of the decade. BEUC, the European consumer organization is lobbying for a further target of 70g/km by 2025, arguing that greater efficiency would shield consumers from the impact of soaring oil prices.

While more fuel-efficient cars are likely to be more expensive to buy in the short-term, savings at the pump would offset that outlay in three years, BEUC believes. Analysis has shown that rising fuel prices mean some drivers are paying more than £100 to fill up a large family car.

Which?, BEUC's British member carried out a survey that found fuel costs were the number one consumer worry following an average increase in prices across the European Union to 1.6 euros (\$2.08) from 1 euro per liter for petrol and to 1.5 euros from 93 cents for diesel between 2005 and 2013.

Technology changes to make cars use less fuel are expected to add to the purchase price of a new vehicle, but the Commission and academic research say that would be offset by fuel savings in roughly three years.

Sapped by recession and reduced demand, the European car industry is divided between makers of powerful luxury cars and those already producing lighter, less fuel-thirsty models.

Beyond the auto sector, other interest groups range from smelters, keen for changes to introduce more light-weight aluminum into vehicles, and oil refiners, which have long suffered poor profit margins, and would face reduced demand.

Germany, home to manufacturers of premium cars, such as Daimler and Volkswagen, has led a push for loopholes, known as super credits, which reward very low emission cars, such as electric vehicles. Because the 95 g/km target is an average across the EU fleet, the super credits could be used to offset the continued manufacture of relatively high emission vehicles. The Commission says super credits can spur innovation but too many would undermine the aims of lowering emissions and oil use.

Speaking in Geneva on 4 March, the chairman of VW's management board, Professor Martin Winterkorn said that the company was well on the way to becoming the world's greenest carmaker by 2018. Specifically, Winterkorn said that VW would meet the EU's proposed 2020 fuel efficiency standard of 95g grams of CO₂ per km (g/CO₂ per km) – the first car company to make such a commitment – and he hinted that it would do so without the use of loopholes.

Recently, in the first of a series of European Parliament votes, the industry committee, regarded as the most pro-industry of the committees, voted to cap the extent to which super credits can be used at 2.5 grams of CO₂ per kilometer per year. "The compromise on super credits strikes a balance, giving industry more flexibility and incentives to invest in low carbon cars while not watering down the agreed 2020 target," British Liberal Democrat Fiona Hall, who steered the committee debate, told reporters. "A 2.5 gram cap per manufacturer per year equates to low emission vehicles being eligible for super credits up to the point where they account for around 6 percent of total EU car sales each year." While non-binding, the vote is a test of the parliamentary mood.

Campaign groups oppose any dilution of the EU's CO₂ reduction targets.

The Commission has used modeling to predict that implementation of a 95 g/km target for cars by 2020 and 147 g/km for vans would result in fuel savings of 160 million tons of oil equivalent over the decade to 2030.

The EU has led attempts to cut vehicle emissions as part of its efforts to tackle climate change, but the United States is catching up. U.S. President Barack Obama has launched clean car standards which he said would nearly double fuel efficiency by 2025 compared with that of vehicles already on the roads. Comparison is not precise, but non-profit research organization the International Council on Clean Transportation said the U.S. standards equated to 93 grams of CO₂ per kilometer by 2025, for ordinary cars, excluding sports utility vehicles.

Next Steps

- May 2013: European Parliament committee vote on CO₂ in Vans
- 2014: Proposed deadline for EU decision on 2025/2030 targets
- 2015: 130 grams of CO₂ per km target to be enforced across Europe
- 2020: Proposed deadline for 95g/km target for cars

- 2025: European Commission could impose another milestone on the road to decarbonisation by 2050
- 2030: European Commission could impose another milestone on the road to decarbonisation by 2050

14. EU Sees Global, Market-Based Measure As Best Solution to Limit Airline Emissions

The European Commission wants the airline industry to agree on steps toward a global, market-based solution for addressing carbon emissions, a representative of the body said on March 28 at a U.S. Chamber of Commerce Aviation Summit. If such an agreement is reached at an assembly of the International Civil Aviation Organization this fall, the Commission will reassess its plan to include foreign airlines in the EU Emissions Trading System (ETS), said Felix Leinemann, transport counselor in the EU delegation to the United States.

If the Commission decides the ICAO plan is “satisfactory” for significantly reducing airline emissions, it will work to convince the EU Parliament and member states that the ICAO system is better than the EU ETS, he said. Or it may revise the EU ETS as it applies to airlines in light of an ICAO agreement, Leinemann said.

Paul Steele, executive director of the Air Transport Action Group and director for the aviation environment of the International Air Transport Association, said airlines are currently spending \$7 billion a year on environmental fees. The aviation industry contributes 3.5 percent to the global gross domestic product and \$2.2 trillion to the global economy, Steele said. In 2012, the industry produced 676 million tons of carbon dioxide-equivalent, about 2 percent of global man-made carbon emissions. Its share of emissions could increase due to industry growth and emissions reductions in other sectors.

In 2010, the airline industry set goals at ICAO to increase fuel efficiency by 1.5 percent by 2020 and cut emissions in half by 2050 compared to 2005 levels.

Julie Oettinger, assistant administrator for policy, international affairs, and environment at the Federal Aviation Administration, said that a high-level group of representatives from 17 countries currently working toward a solution in ICAO is making progress. The group is discussing rules and criteria that should govern decisions by countries or regions if they choose to implement a market-based measure, she said. For example, it is trying to determine how and if a national measure could apply to other countries. The group also is studying the feasibility of a global, market-based measure, she said. The group will make its recommendations to the ICAO assembly in the fall.

15. EU Strikes Deal on ETS Derogation for Non-EU Flights

European Parliament and member state negotiators have reached agreement on a legislative proposal to delay the inclusion of flights to and from non-European destinations in the EU's emissions trading system (ETS). Meanwhile, the European Commission has warned member states that progress on the adoption of a market-based mechanism to cut airlines' emissions globally has been limited. The ETS derogation is meant to facilitate international talks.

A majority of countries showed “very little interest” in hammering out a deal on market-based measures to tackle airlines' greenhouse gas emissions, the commission said in a note to member states last week.

Following the triologue agreement in Strasbourg, the proposed derogation will go to a plenary vote in the parliament in April and will be formally approved by EU ministers without discussion at a council meeting. This means it should be in place before the 2012 ETS compliance deadline at the end of April, a spokeswoman for the Irish EU presidency said. Under the agreed text, Switzerland will not be included in the derogation. The country had argued that it should be exempt, along with most other non-EU countries.

Europe's low-cost air carriers have promised to fight the proposed exemption in court on competition grounds. And German airline Lufthansa is mulling a separate legal challenge linked to Switzerland's status under the policy.

Climate commissioner Connie Hedegaard has proposed exempting flights to and from non-European countries from the ETS while governments attempt to reach a global deal at the International Civil Aviation Organization (ICAO). She brought forward the proposal in November after countries' representatives meeting at ICAO agreed to establish a high-level working group to examine global market-based measures to cut emissions. But progress to date at the high-level group, which is considering measures including offsetting and emissions trading, has been limited, the commission told transport ministers in an information note for Monday's council meeting.

"Ideally, the [group] should be seeking to set a clear way forward for the development of a global market-based mechanism scheme by launching real negotiations and establishing a timeline for agreement and implementation," the commission said. "However, the [group] discussions on this item have been very limited and the majority of [its] members have shown little interest," it added.

An agreement "in principle" on a market-based mechanism would be "clear progress", the commission added. This seems to suggest that countries agreeing in principle to adopt a particular market-based measure could be enough for the commission to decide to extend the time-frame of the derogation.

In the explanatory memorandum to the "stop the clock" proposal, the commission said it would propose further legislative action if "clear and sufficient progress is made at the ICAO Assembly", an international meeting in October this year.

The inclusion of international aviation in the ETS had followed years of inaction at ICAO. It has been strongly opposed by countries including the US and China.

16. Parliament Suspends Inclusion of Third-Country Flights from ETS

The European Parliament has approved a proposal to suspend the inclusion of third-country flights (the 'stop-the-clock' proposal) from the EU Emissions Trading Scheme. Parliament had reached an agreement with Council beforehand.

As early as 2008 the EU had agreed to include aviation in the EU Emissions Trading System. The decision was unanimous in Council and agreed on by over 90 percent of MEPs. "The European Union is ready to reach a global deal on aviation emissions. There has been huge opposition from third countries against the current EU legislation, but the EU reaffirms again its position on this agreement," said Peter Liese MEP, who is European Parliament Rapporteur, and Richard Seeber MEP, EPP Group spokesperson on environment.

The stop-the-clock proposal is a signal to the international community that it is not the European Union that stands in the way of an international agreement. "Now, it is up to the other ICAO members. Do they want an international solution or have they just been paying lip service? Aviation emissions trading is not the problem, but the solution and our legislation is here to stay. The EU will consider any further legal action only on the basis of a substantial outcome at the ICAO Assembly. This either means that ICAO finds a solution or we will continue to cover intercontinental flights in our scheme as foreseen," said Liese and Seeber.

The decision intends to reinforce the positive momentum within the International Civil Aviation Organization towards a global market-based approach to reducing greenhouse gas emissions in the aviation sector. The decision temporarily defers enforcement of the obligations of aircraft operators in respect of incoming and outgoing international flights under the EU emissions trading system for 2012. It will temporarily exempt airlines from the ETS requirement to report carbon emissions for flights between EU airports and third countries, and sanctions will not be imposed for failure to report.

"Only intercontinental flights are covered by the derogation and only for a limited period of one year. For flights within Europe everything will remain the same. It was right that the EU stood firm against international pressure. Now we have reached a suitable stage for negotiations at international level," the two EPP Group MEPs said.

The decision intends to reinforce the positive momentum within the International Civil Aviation Organization towards a global market-based approach to reducing greenhouse gas emissions in the aviation sector.

17. UK Airlines to Gain €47-67m from ETS Derogation

A plan to temporarily exempt non-European flights from emissions trading obligations could save UK-registered airlines around £40-57m (€47-67m) on their 2012 compliance costs, according to a government impact assessment. Although the sector would save money overall, the 'stop the clock' proposal may slightly increase costs for their intra-European flights, the assessment finds. The increase would be less than 1% this year and just over 1% next year.

Another finding is that aircraft operators taking advantage of the derogation may also experience "further temporary benefits" by saving on administrative costs for monitoring, reporting and verifying their emissions. They may also benefit from paying reduced fees to British regulators. The government's energy and climate department was unable to quantify these administrative cost savings. Fewer than 10 of the 80 UK-registered commercial airlines and 120 private firms operate only on non-European routes.

Europe's low-cost airlines plan a court challenge to the 'stop the clock' proposal once it is officially adopted because they believe it will put them at a competitive disadvantage compared with airlines that operate many long-haul flights.

The slight increase in the carbon price linked to the proposal could also mean that ETS participants other than airlines would have to spend an extra £2.9m on compliance in 2013, according to the assessment.

Two airlines believed to have sold carbon allowances they received for free before the derogation was proposed are now likely to have to return them to the authorities. The unnamed

airlines have removed the allowances from their registry accounts and “may encounter some cost in recovering an equivalent number of allowances in order to return them if the allowances have already been sold”, the assessment states.

A UK consultation on rules amending the country’s emissions trading regulations to take account of the EU proposal is open until 1 April.

A study for green transport group T&E estimated that European airlines may have earned up to €486m from passing on carbon costs to customers in 2012 that never materialized due to the proposal. The UK government notes it is up to airlines themselves to decide whether they want to return these profits.

18. Edinburgh Eyes Low Emission Zones to Improve Air Quality

A feasibility study that has been ordered into plans to introduce low emission zones (LEZs) to improve Edinburgh air quality has seen further progress. The Scotsman reported that the plans, which have been drawn up in an effort to tackle air pollution in Scotland's capital, would see trucks, buses and coaches banned from areas of the city if they failed to meet environmental measures.

The European Union will begin to fine cities that fall below stringent air quality standards from 2015. As a result, many cities are considering how best to reduce pollution in line with EU targets.

City councilors have now order a full feasibility study into LEZs. Vehicles that do not meet emissions levels will be forced to take alternate routes. Some of the areas highlighted for the policy include main roads into the city and the city center. There are currently three 'air quality management areas' in Edinburgh that have been identified as having unacceptably high levels of nitrogen dioxide as a result of vehicular traffic. These are likely to be the backbone of the LEZ program.

The feasibility study is expected to cost around £15,000, which is expected to be offset by government grants for air quality schemes.

19. Diesel Tax Plan Galls French Drivers

More than 80 per cent of the fuel used on French roads is diesel and this is the fuel that powers 73 per cent of the new cars registered last year. In France, the average saving on diesel fuel compared to lead-free petrol is a useful 20 centimes a liter. Removing or even substantially reducing the price advantage may sound like electoral suicide for a left-wing president and government already struggling for popular approval. But in a move that would fire up costs for haulers as well as private road-users, François Hollande's administration is under pressure from its own financial watchdog as well as the European Union -to equalize petrol and diesel prices.

The privileged status of the French motorist using diesel is matched in other European countries. There are exceptions. For example, Britain, where diesel is more highly taxed than petrol and is always more expensive, by as much as £1 (Dh5.57) for every couple of gallons. Romania, Hungary and Cyprus are also nations where motorists also face steeper bills for diesel, although without the tax being greater. Recent comparisons from the European Commission illustrate the widespread tendency for diesel to be cheaper, from marginal differences in Sweden and Austria to as much as 31 centimes per liter in Greece and the Netherlands.

The impetus for price parity reflects EU thinking, driven by concerns about the diesel's role in causing pollution and threatening public health. But it comes in France's case from the *august cour des comptes*, a government body that audits public institutions. The court is more troubled by public debt than electoral inconvenience and believes the measure could, at a stroke, produce revenue of €7 billion to €8bn a year.

Fuel duty has been lower for diesel in France for decades, an anomaly rooted in the country's traditionally fierce defense of its agricultural sector. This, in turn, has led French refineries pointing out that demand far exceeds what domestic producers can supply. The French lobby group for petroleum industries (UFIP) estimates that while France last year had net petrol exports of 4 million tons it imported five times as much diesel, with total consumption reaching 38 million tons after a year-on-year increase of 7.5 per cent.

20. Complete Climate Deal Unlikely By 2015, Says EC

World governments are unlikely to agree by 2015 on how 'precisely' to share global carbon reduction efforts fairly and equitably, the European Commission believes.

In 2011, governments meeting in Durban, South Africa, committed to reaching a climate deal within four years for implementation in 2020. But in a recently issued consultation paper, the commission said the controversial issue of equity, known in UN jargon as "common but differentiated responsibility", has little chance of being resolved by that deadline. Emerging economies and the US are at loggerheads on this matter.

The consultation asks stakeholders both within and outside the EU how "to ensure that countries can pursue sustainable economic development while encouraging them to do their equitable and fair share in reducing global greenhouse gas emissions". Participants have until 26 June to respond.

The commission believes a good 2015 deal would have to be "grounded on a sense of shared responsibility and on fair individual starting points" for achieving the 2°C objective, as well as providing the "tools and processes to enable the further strengthening of individual and collective ambition". But such loose language leaves the crucial question of what would constitute a successful agreement wide open.

The commission also wants to know how to make the UN negotiation process more effective and how the how 2015 deal could address climate adaptation. Changes it may propose to the UN climate negotiators include making international climate decisions without consensus and possibly holding fewer high-level meetings.

The EU executive plans to present a separate proposal on an "integrated EU approach to financing and other means of implementation". Only a handful of EU countries committed new climate finance at the last UN climate meeting.

NGO coalition Climate Action Network Europe welcomed the consultation but noted that the document did not "connect the dots" by acknowledging what they perceive as the urgent need to step up the EU's climate ambition.

21. Irish Presidency Suggests Changes to ILUC Proposal

The Irish presidency of the EU has suggested increasing the proposed 5% limit on biofuels from food crops to address concerns expressed by member states. This is one of two options put forward recently in a bid to reach a compromise.

Energy commissioner Günther Oettinger has already signaled that he could accept a higher limit after a number of countries said the 5% cap was too strict. Biofuels from food crops are projected to account for 8.6% of transport fuels by 2020. The other option put forward by Ireland would be to restrict the 5% cap to oil crops and to allow 'good' biofuels to count towards national renewable energy targets.

In its draft directive to tackle the indirect land use change (ILUC) impact of biofuels, the European Commission proposed to target oil crops, sugar and cereals. It also gave a list of biofuels that would count double and quadruple towards the EU's 10% target on the share of renewables in transport fuels. But the UK has argued this incentive to use more advanced biofuels would have a negative knock-on effect on achievements in other sectors unless it applies to its overall renewables target.

Ireland also added provisions to alleviate fears expressed by France and others about the risk of fraud that may arise from the advantages given to multiple-counting biofuels, especially materials that are intentionally modified to count as waste.

The two options put forward by the EU presidency will be debated by an ad-hoc working party on ILUC comprised of member states and commission officials.

22. Environment Ministers Slam ILUC Proposal

The European Commission's proposal to tackle the indirect land use change (ILUC) impact of biofuels was criticized by environment ministers. Echoing views expressed by their energy colleagues, most of the ministers had major reservations about the proposed 5% cap on the amount of food-based biofuels that could be counted towards the EU's renewables target for transport fuels.

Environment and energy ministers share responsibility for the file.

Climate commissioner Connie Hedegaard defended the 5% ceiling as a "very pragmatic approach" to tackling the ILUC problem, balancing the environmental concerns against support for Europe's existing biofuels industry.

"In this debate, almost everyone has very clearly expressed the view that there is a need for Europe to do something. It is not enough to say 'we should do something, yes there is a problem', and then risk ending up with continuing business-as-usual," Ms. Hedegaard told the ministers. "What I didn't hear in this debate were the alternative proposals. I hear people saying 'we must do something, but not exactly this'. We must look each other in the eye and say, 'are there any better proposals out there?'" she said.

At last month's meeting, energy commissioner Günther Oettinger suggested he may be more willing to re-examine the 5% figure.

Summarizing Thursday's debate, Irish environment minister Phil Hogan said that while there was general support for tackling the ILUC problem, there were doubts about the effectiveness of this proposal. "There is also support for advanced biofuels but existing investments must be

protected and sufficient levels of advanced biofuels may not be available by 2020. Many of you had concerns about the proposed 5% cap although some delegations also called for a more stringent cap," he told the meeting.

Italy suggested that in order to support non-food biofuels, a minimum 3% target should be set up for them, replacing the 5% cap for food-biofuels.

An ad-hoc working group will continue to work on the plan with a view to presenting a progress report to ministers by the end of the Irish EU presidency in June.

23. 19. T&E Accuses Carmakers of Manipulating Emissions Test

Environmental NGO Transport & Environment (T&E) has accused carmakers of manipulating the EU car emissions tests following the publication of its report showing a growing gap between official and actual emissions figures.

The "Mind the Gap!" report was published in March, with T&E commissioning the Dutch consultancy TNO to measure fuel consumption and CO2 emissions on six standard new cars using the official test procedures. On average, TNO found the results of their tests to be 23% higher than the official figures presented by carmakers.

T&E says the data 'demonstrates that the current (NEDC) test is outdated and unrepresentative of real-world driving and current vehicles, and that lax testing procedures are allowing carmakers to manipulate the official tests to produce unrealistically low results'. As a result T&E says the current test regime should be replaced by a new test in 2016, and follow-up checks should be carried out on cars to show their results are consistent with the official test results.

According to Mind the Gap!, there are about 20 ways that carmakers 'creatively reinterpret' test procedures to make fuel consumption and CO2 emissions lower. Among the techniques used are:

- Taping over cracks around doors and grilles
- Overinflating the tires
- Adjusting the wheel alignment and brakes
- Using special super-lubricants
- Minimizing the weight of the vehicle
- Testing at altitude, at unrealistically high temperatures and on super-slick test tracks.

T&E says that the World Light Duty Test Procedure (WLTP) could be used as an alternative testing procedure. This has been developed as part of the work of the United Nations Economic Commission for Europe (UNECE) and is aimed at enabling consumers to get a more realistic picture of vehicles' real fuel consumption.

24. EC Proposes To Make Trucks More Energy Efficient

The European Commission has tabled draft legislation to make trucks more fuel efficient. The proposed changes to a directive on the maximum weight and dimensions of heavy duty vehicles were backed by manufacturers and NGOs alike.

An industry study issued last year showed that, at high speed, aerodynamic losses account for 15 to 22% of fuel use of a typical tractor semitrailer in the US. Possible design modifications to reduce this fuel waste include adding 'boat tails' at the back.

Existing rules discourage manufacturers from making streamlined trucks because limits on vehicle length mean that they would have to reduce load capacity significantly. The cost of this to operators would exceed fuel savings. The revised directive would ensure that more rounded cabs or 'boat tails' would not count towards vehicle length, removing this barrier to their adoption. In combination, the two features would cut CO₂ from a typical long-distance lorry by some 7-10%. Rounder cabs would also improve road safety.

Some manufacturers, such as Germany's MAN, have concept designs. But the EU executive estimates these will not hit the road until 2018-20.

The Commission's proposal also confirms that 25-metre long 'gigaliner' trucks may cross between neighboring EU member states, if certain conditions are met. MEPs from the European Parliament's right-wing EPP and ECR groups and centrist party ALDE backed the wider use of extra-long 'gigaliner' trucks during a transport committee debate. Jacqueline Foster of the ECR could not understand the argument against them, pointing to research showing gigaliners lead to fewer trucks on roads.

Dieter-Lebrecht Koch of the EPP group also spoke against limiting their use. Another supporter, ALDE MEP Philippe De Backer, said the EU should "stop putting barriers in the path of a single European transport market".

But several members of the Greens/EFA and socialist groups repeated fears that allowing gigaliners to cross EU borders would shift more freight from rail to road. These trucks weigh up to 60 tons and are up to 25 meters long. The parliament's transport committee stated its opposition to this last year.

The debate followed the publication of proposals to reform a 1996 directive on the maximum weight and dimensions of heavy duty vehicles. The main aim, to make trucks safer and more aerodynamic, has been welcomed by all stakeholders.

The EU executive also proposes granting an additional weight allowance of one ton for trucks with hybrid or electric propulsion. This would provide only for the weight of batteries and other equipment and not contribute to load capacity. The maximum weight of buses would also rise by a ton. This is partly to provide for emissions abatement equipment to be fitted, to comply with the Euro VI standard that entered force in January for new type approvals.

Other planned changes include the transport of extra-long 45-foot containers and inspections and penalties for overloaded vehicles.

In other business, the committee said it wants electronic road tolling systems for heavy vehicles to be interoperable across the EU. "Drastic action" is needed to achieve the goal, states an amended draft resolution adopted on Tuesday. The EU executive is due to table legislation on vignettes and electronic tolling this summer or early autumn, according to an update from a commission source.

25. Austria Targets Particulates from Non-Road Mobile Machinery

Legislation entering into force in Austria later this year will restrict the use of older and more polluting types of non-road mobile machinery (NRMM). The recently adopted regulation gradually tightens standards on particulate emissions from diesel-powered machinery. Because many exemptions were agreed - sectors not covered include emergency generators, machinery and tractors for agricultural and forestry use and some industrial equipment - it will mainly apply to construction equipment. The rules will also only apply to zones struggling to comply with the EU limit on coarse particulate (PM10) levels or target value for fine particulates (PM2.5).

The law should cut emissions of particulates from NRMM by about a fifth in two years' time, according to the environment ministry, and help Austria meet limits on PM2.5 emissions under the revised Gothenburg protocol.

The restrictions will be in place seasonally, between October and the end of March each year. This coincides with the winter heating season, when Austrian particulate concentrations are at their worst.

Emissions from the NRMM sector are smaller than those from road vehicles but are still significant. A 2009 study produced by the Austrian environment agency states that NRMM engines used in construction emitted 452 tons of particulates in 2007. This compares with 2,900t from road vehicles.

From October, most machinery used in the zones must comply with EU 'stage I' emission standards. Machinery with engines rated from 37 to less than 75 kilowatts will have one more year to comply with the standards. Stages II and IIA follow in 2015 and 2018, both with a year's delay for less powerful equipment. Compliance can also be achieved through fitting particulate filters.

Stage I has been mandatory for new equipment sold in the EU since 1999, with stage II following in 2001. Stage IIIA has been in force since 2006.

26. Stakeholders Back Tighter Air Pollution Controls

A summary of the 1971 responses to the European Commission's latest consultation on air quality policy was presented to stakeholders at a recent meeting in Brussels. The document shows that clear majorities of the public, experts and national authorities support policies such as more stringent caps on air pollutant emissions. Stricter ceilings have already been agreed under the Gothenburg Protocol. The EU should also tighten emission controls to comply with air quality standards, according to the responses. There was little support for relaxing the standards or delaying compliance deadlines.

Unsurprisingly, businesses prefer non-legislative measures. These could include further collaboration between the European Commission and member states to address air quality problems, rather than initiating legal proceedings.

Three quarters of stakeholders want targets for 2020 under the national emission ceilings directive (NECD) to go beyond the new Gothenburg Protocol. But national authorities say they should not deviate too much from the protocol.

Tony Zamparutti, principal policy advisor at consultancy Milieu, told the meeting that there was "quite strong support" among the public, civil society groups and experts for capping black

carbon emissions through the NECD. Businesses were opposed while national authorities were split.

Respondents also want action on other short-lived climate forcers such as methane.

Mr Zamparutti added there was also strong support for introducing a binding air quality standard for fine particulates (PM2.5) for 2020. Only 17% of national authorities that participated in the consultation were opposed.

The public, civil society groups and experts want air quality standards to be more closely aligned with World Health Organization guidance, whereas national authorities propose lowering them once the EU has further reduced pollutant emissions. The business sector mostly favors maintaining existing standards.

Summing up the presentation, Tom Verheye, head of the commission's industrial emissions and air quality unit, told delegates that the responses had been "quite green... I could imagine more conservatism sneaking in".

Respondents to the consultation have also mostly backed stronger rules under the non-road mobile machinery (NRMM) directive. The consultation suggested bringing more types of engine under the scope of air pollution rules, as well as tightening emission limits for oil-fuelled machinery. Respondents from industry and from national and regional authorities are mostly in favor of such measures, the commission's preliminary analysis suggests.

The NRMM directive regulates emissions from bulldozers, trains, chainsaws, larger inland boats and many other forms of machinery. As newer and cleaner machines enter the regulated market, addressing unregulated ones is becoming more important, the commission says. They already produce around 14% of the sector's particulate emissions, or about 0.7% of the EU's total output, according to the consultation document.

There was broad support for at least matching EU standards for currently unregulated machinery with those in place in the US. Doing so would avoid unnecessary compliance costs and stimulate exports, according to the commission. New emissions standards that would limit the number of particulates emitted, rather than their overall mass, are also on the table. Recent science has pointed to health risks from ultrafine particles, the consultation document noted.

These rules would enter force towards the end of the decade.

Respondents had mixed views on revising a flexibility scheme that would allow some engines to be sold that do not meet current emission standards.

The directive could also be extended to stationary engines and converted into a regulation, which would not require transposition into national law.

27. ECHA Asked To Revisit Decision on HFO-1234yf

The European Chemicals Agency (ECHA) has failed to demonstrate that a 90-day inhalation study on rabbits is required to further assess the toxicity of refrigerant HFO-1234yf, the body's board of appeal has concluded. The study was requested by ECHA in a decision published in March 2011, after information submitted by producer Honeywell in its REACH registration dossier for the substance showed that it could be lethal to rabbits.

The board of appeal agreed with the agency that further analysis was needed but said it had not sufficiently looked at alternative ways of investigating the risks posed by HFO-1234yf, registered under the name 2,3,3,3-tetrafluoropropene. Article 25(1) of REACH states that animal testing should only be a last resort.

Honeywell, which appealed against the decision, wanted the identity of the substance and its uses to be treated as confidential but their request was rejected. The firm did not contest the need for additional toxicological information. Its criticism focused on the method advocated by ECHA. But it did make clear during the proceedings that there was no reason to suspect HFO-1234yf of being either a carcinogen or toxic to reproduction.

In a statement, Honeywell said it “looked forward to reviewing existing data and testing with ECHA in response to the board of appeal decision”. “HFO-1234yf has been the subject of a comprehensive battery of third-party scientific research including 21 studies conducted by four independent contract laboratories and two distinguished research centers over the past nine years,” it added, pointing out that the substance was safe for use as an automobile refrigerant.

HFO-1234yf is an alternative to HFC-134a, a banned refrigerant with a high Global Warming Potential (GWP). Daimler and Volkswagen challenged the ban last year, arguing that HFO-1234yf was not safe. Volkswagen has since said it plans to use CO₂.

A European Commission official said the EU executive is not currently planning to take enforcement action against Germany for failing to enforce the MAC directive, which governs refrigerants used in vehicles and other equipment. It is still waiting for the country's authorities to substantiate safety concerns about HFO 1234-yf.

28. Germany and Cyprus Warned Over Access to Environmental Justice

The European Commission has announced it will bring Germany and Cyprus to court unless they take swift action to comply with EU law on access to environmental justice. Warnings were also issued to several other countries.

According to the commission, German law “contains a number of shortcomings regarding individuals and NGOs and their access to justice”, especially decisions on the environmental impact assessment of projects and IPPC permits. And Cypriot legislation ‘overly’ restricts the access to justice of certain NGOs.

Earlier this month, the European court of justice ruled that bringing environmental cases in the UK can be prohibitively expensive, which is against EU law. Currently, national courts assess liability for costs based, in part, on a claimant’s ability to pay. But the court ruled that other factors, such as whether the costs are ‘objectively unreasonable’ should be considered too.

Slovenia and Spain were also targeted in the EU executive’s latest round of infringement proceedings against member states that breach environmental law. The two countries have not yet transposed the revised Energy Performance of Buildings Directive (EPBD) into national laws, says the commission.

Poland may be brought to court over a flood prevention plan in the southeast of the country. According to Brussels, the impacts on the river Vistula have not been properly considered. The plan could destroy habitats and jeopardize water quality goals.

Other EU countries warned about breaches of law include Estonia, which does not fully comply with rules on access to environmental information. Greece has failed to notify which national bodies will certify companies handling equipment containing fluorinated gases, such as air-conditioning systems. The commission also says Spain continues to operate a landfill that does not comply with EU waste management legislation. And the UK is being urged to change its end-of-waste criteria for waste oils, which if burnt in a combustion plant could release high levels of contaminants.

29. EU Ministers Debate Green Products, Air Pollution

Environment ministers “broadly welcomed” the European Commission proposals on creating a single market for green products at an informal meeting in Dublin, according to the Irish presidency of the EU. Adopting the package will address the “proliferation of green claims”, help the EU in decoupling resource consumption from economic growth and improving global competitiveness, Irish environment minister Phil Hogan said.

The ministers also debated the ongoing revision of EU air pollution, with many signaling that they see a need for better implementation of existing legislation.

Ahead of the meeting, environmental groups called for ambitious caps on air pollutants under the National Emission Ceilings Directive (NECD) and reductions from all major sources of pollution as well as better implementation.

In a paper issued following a stakeholder meeting in April, power sector association Eurelectric said more ambitious ceilings should be introduced in 2030 rather than 2025 as suggested in a report from Austria-based institute IIASA. The EU needs to wait until power plants have been sufficiently decarbonized, it noted.

Asked about their appetite for strengthening the NECD, Mr Hogan said the member states would wait until the commission tables its proposals in the autumn. “There was a lot of positive discussion about the level of legislation that is there at the moment. Some [said] ‘let’s enforce what is already there for a little while longer’ [before] considering new initiatives and stricter limits,” the minister added.

A discussion paper issued by the Irish presidency cited the findings of an EEA report from last year showing that, in 2010, 21% of Europe’s urban population was exposed to PM10 concentrations higher than the EU daily limit value. More than 80% were exposed to levels above the more stringent WHO standards.

European cities should be given “special attention as nodes for action” on improving air quality, according to some scientists whose work fed into the presidency paper. And there are untapped opportunities for improvements from agriculture, they said.

In other business, it seems likely that member states will amend a controversial proposal to limit the amount of food-based biofuels counting towards the EU’s 10% target on transport fuels from renewable energy sources. The issue was not discussed at the Dublin meeting, but Mr Hogan said there was strong support in the Council of Ministers for the Irish presidency’s attempt to find a compromise on the matter. Changes suggested by MEP Corrine Lepage were presented to the European Parliament’s environment committee.

30. Baltic States Mull Implications of NOx Controls

The North Sea should be designated a nitrogen oxides emission control area (NECA) along with the Baltic, some of the region's heads of government said at a recent meeting in St Petersburg. Participants moved closer to the implementation of a NECA for the Baltic Sea, although the launch date remains undecided. Some said there was not enough evidence that the technology needed to cut NOx emissions is available.

Poland and Russia also told the Baltic Sea Forum they would like the same regulation to be brought in for the North Sea at the same time for competition reasons. Latvia had previously raised similar economic concern.

"While it seems that the question of availability of NECA compliant technology is not fully clear to all countries and the timing of the submission to IMO is still to be discussed, overall none of the countries acted against the NECA proposal," said Mikhail Durkin of Helcom, the commission for the protection of the Baltic Sea.

The Baltic Sea extends as far west as Denmark and Sweden. If the North Sea also had a NECA, Norway, the Netherlands, Belgium, France and UK would be involved.

Forty-four per cent of respondents to a recent EU consultation on air quality supported the designation of a NECA in EU regional seas, possibly including the North Sea, "provided that such a measure is cost-effective".

The biggest challenge now facing the Baltic States in terms of environmental cooperation is to agree stronger measures for reducing nitrogen pollution, Mr Durkin said. Helcom has proposed new targets that would include nitrogen emitted to the air.

Promotion of LNG as a shipping fuel is an area of environmental policy that could benefit from greater regional coordination in the Baltic, Mr Durkin said.

31. French Government Urged To Raise Diesel Taxes, Consider Tax on F-Gases

The French government's advisory committee on environmental taxation has backed the environment minister's push to end tax breaks for diesel. The tax breaks are indefensible in light of the environmental costs associated with a large diesel vehicle fleet, the committee said. Partial tax reimbursements or exemptions for diesel vehicles, for example for freight operators and farmers, have led to a €0.17 per liter gap between diesel and petrol prices, higher than the EU average of €0.12/l.

France's court of auditors had already made a similar recommendation, which environment minister Delphine Batho has said she supports. But the minister for industrial recovery, Arnaud Montebourg, is opposed on the basis that it would hurt French carmakers.

Taxes on transport fuel are lower in France than the EU-15 average, the committee noted. Partly because of tax incentives, diesel accounts for more than 80% of total transport fuel consumption in France, compared with nearly 70% across the EU.

Diesel vehicles in France would retain some competitive advantage even if tax breaks were eliminated because their fuel consumption is lower than that of petrol vehicles, the committee said.

In a separate opinion, the committee recommended that tax instruments be developed with a view to meet goals set out in the EU's F-gas regulation, which is under review. In 2010, F-gases were responsible for 3% of France's total greenhouse gas emissions. A tax of €20 per ton of CO₂ equivalent emitted could cut greenhouse gas emissions from F-gases by 30% by 2020, while a price of €60 would cut them by 50% by 2020, according to 2012 research by another government agency.

The environmental taxation committee's recommendations, which have also recently included the creation of a carbon tax, will be considered as part of a broader fiscal package for 2014.

32. EP Rapporteur Strengthens Biofuels Proposal

French MEP Corinne Lepage has tabled a number of amendments that strengthen the European Commission's legislative proposal on how to address the indirect land-use change (ILUC) impacts of conventional biofuels. Presenting her own proposals, the European Parliament's rapporteur on the matter said ILUC impacts must be taken into account in EU legislation.

Under the commission's proposal tabled last October, these impacts would not be included in sustainability criteria until at least 2021. And fuel suppliers would not have to account for them to meet their 6% greenhouse gas reduction obligation set by the 2009 fuel quality directive, although they are required to report the ILUC-related emissions of their products.

Ms Lepage argues that existing calculation methods are sufficiently strong to integrate ILUC impacts in legislation. There is always some degree of scientific uncertainty but this should not be used as an excuse to do nothing, she says.

However, the MEP offers a number of concessions to alleviate the impact of her beefed-up proposal. To protect existing jobs, a certain quantity of conventional biofuels equivalent to 2012 production levels would not have to apply ILUC values. This is in line with the commission's 5% limit.

ILUC values or factors are usually expressed in terms of grams of CO₂ equivalent per megajoule. The commission's proposed values for sugar and cereal crops for example are 13g and 12g of CO₂eq/MJ respectively.

The MEP adds that conventional biofuel producers, the majority of which make biodiesel, would not have to comply with such values until 2020 - three years later than in the commission's proposal. And fuel suppliers would be given another five years to meet their GHG reduction target.

She supports incentives for second-generation biofuels but stresses safeguards must be put in place to make sure their integrity is not questioned. As a result, the MEP added a new annex clarifying the status of various types of waste and residues.

Other changes to the commission's proposal include introducing a separate 1.5% target for electric vehicles, in line with national projections. Ms Lepage also wants a 12% energy efficiency objective set for the transport sector.

Her proposals will be debated in the environment committee on 6-7 May. Committee and plenary votes are tentatively planned in July and September.

*A report by the International Institute for Sustainable Development (IISD) found that in 2011 biofuel subsidies cost about €10bn with limited benefits to the economy.

NORTH AMERICA

33. EPA Proposes Tier 3 Vehicle and Fuel Regulations

Based on extensive input from auto manufactures, refiners, and states, the U.S. Environmental Protection Agency (EPA) has proposed standards for cars and gasoline that will significantly reduce harmful pollution, prevent thousands of premature deaths and illnesses, while also enabling efficiency improvements in the cars and trucks. These cleaner fuels and cars standards are an important component of the administration's national program for clean cars and trucks, which also include historic fuel efficiency standards. Once fully in place, the standards will help avoid up to 2,400 premature deaths per year and 23,000 cases of respiratory ailments in children.

Following a systems approach that addresses vehicles and fuels as an integrated system, the proposal will enable the greatest pollution reductions at the lowest cost. The proposal will slash emissions of a range of harmful pollutants that can cause premature death and respiratory illnesses, including reducing smog-forming volatile organic compounds and nitrogen oxides by 80 percent, establish a 70 percent tighter particulate matter standard, and reduce fuel vapor emissions to near zero. The proposal will also reduce vehicle emissions of toxic air pollutants, such as benzene and 1,3-butadiene, by up to 40 percent.

The proposal supports efforts by states to reduce harmful levels of smog and soot and eases their ability to attain and maintain national ambient air quality standards to protect public health, while also providing flexibilities for small businesses, including hardship provisions and additional lead time for compliance.

By 2030, EPA estimates that the proposed cleaner fuels and cars program will annually prevent up to 2,400 premature deaths, 23,000 cases of respiratory ailments in children, 3,200 hospital admissions and asthma-related emergency room visits, and 1.8 million lost school days, work days and days when activities would be restricted due to air pollution. Total health-related benefits in 2030 will be between \$8 and \$23 billion annually. The program would also reduce exposure to pollution near roads. More than 50 million people live, work, or go to school in close proximity to high-traffic roadways, and the average American spends more than one hour traveling along roads each day.

EPA's proposal is estimated to provide up to seven dollars in health benefits for every dollar spent to meet the standards. The proposed sulfur standards will cost refineries less than a penny per gallon of gasoline on average once the standards are fully in place. The proposed vehicle standards will have an average cost of about \$130 per vehicle in 2025. The proposal also includes flexibilities for small businesses, including hardship provisions and additional lead time for compliance.

The proposed standards will reduce gasoline sulfur levels by more than 60 percent – down to 10 parts per million (ppm) in 2017. Reducing sulfur in gasoline enables vehicle emission control technologies to perform more efficiently. This means that vehicles built prior to the proposed standards will run cleaner on the new low-sulfur gas, providing significant and immediate benefits by reducing emissions from every gas-powered vehicle on the road.

The proposed standards will work together with California's clean cars and fuels program to create a harmonized nationwide vehicle emissions program that enables automakers to sell the same vehicles in all 50 states. The proposal is designed to be implemented over the same timeframe as the next phase of EPA's national program to reduce greenhouse gas (GHG) emissions from cars and light trucks beginning in model year 2017. Together, the federal and California standards will maximize reductions in GHGs, air pollutants and air toxics from cars and light trucks while providing automakers regulatory certainty and streamlining compliance.

Once published in the Federal Register, the proposal will be available for public comment and EPA will hold public hearings to receive further public input.

34. EPA's Tier 3 Proposal Receives Strong Support Except From Oil Industry

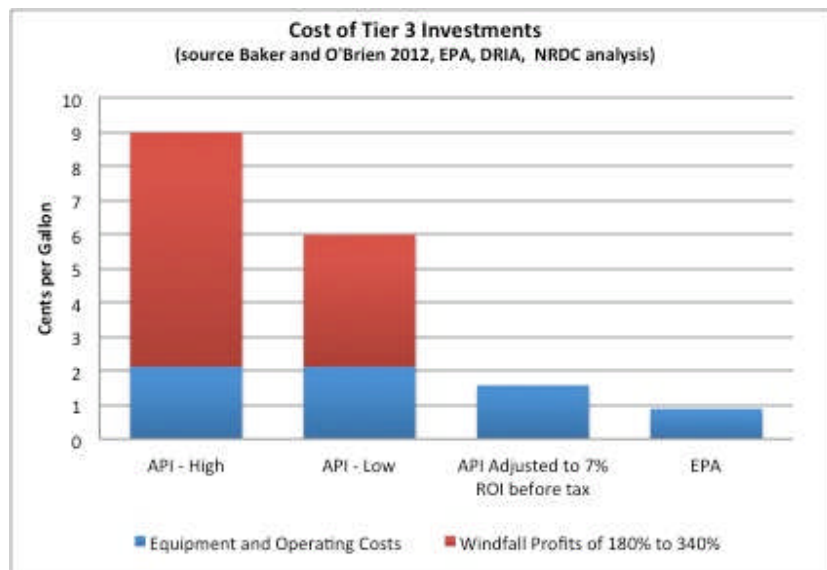
Oil industry representatives provided the only testimony in opposition to the Environmental Protection Agency's proposed Tier 3 gasoline and vehicle emission standards at the agency's first public hearing on the proposal, which was held April 24.

EPA's proposal to reduce the allowable sulfur content of gasoline to 10 parts per million from the current standard of 30 ppm would cost refiners \$10 billion in up-front capital costs and \$2.4 billion a year in operating costs, adding six cents to nine cents per gallon to the marginal cost of gasoline in most markets, Patrick Kelly, American Petroleum Institute senior policy adviser, told a panel of five EPA officials. Unlike the Tier 2 standards that were adopted more than a decade ago, which were costly but produced significant air quality benefits, the proposed Tier 3 standards would be equally costly but have only a minimal impact on air quality, Tim Hogan of the American Fuel and Petrochemical Manufacturers said. Hogan told the panel that the energy-intensive equipment and processes necessary to comply with the low-sulfur fuel standard would likely increase greenhouse gas and carbon dioxide emissions at refineries.

Both men took issue with the 2017 compliance date in the proposed rule, saying refiners need at least five years and preferably six years of lead time to modify or install new equipment without disrupting normal maintenance schedules, potentially increasing costs and disrupting gasoline supplies. They also asked EPA to extend the June 13 comment deadline on the proposed rule by at least two months.

The oil industry's concerns about the proposed rule were dismissed by a number of the nearly 100 people who signed up to testify at the hearing. Most directly, Clean Air Watch President Frank O'Donnell noted that the industry opposed EPA's proposal to remove lead from gasoline in the 1970s, the proposed Tier 2 standards in 1999, and clean diesel fuel standards in 2000, in each case claiming the changes would provide no public health benefit and would result in supply shortages; their claims were never borne out. "Let's remember the oil industry has cried wolf so many times in the past," said. O'Donnell.

(The most devastating critique of the oil industry cost estimates has come from NRDC's Andy



Stevenson who noted that API's cost estimate is roughly ten times higher than the EPA's cost estimate of 0.89 cents per gallon. He pointed out that in its Draft Regulatory Impact Analysis, the EPA found that the main difference between these two cost studies was that the API study assumes a profit margin of 4 to 7 cents per gallon for installing the new equipment. A "windfall" profit for the refining industry of \$4 to \$8 billion annually or the equivalent of

a 180 to 340% rate of return on investments for meeting the new clean gas requirements.

The remaining 1.23 cent per gallon difference between the API cost study and the EPA cost study is largely due to two reasons. First, the API commissioned study assumes a 10% rate of return on investment (ROI) after tax rather than a 7% pre-tax return in the EPA study. When the two studies are measured "apples to apples", the API cost falls from 2.12 cents per gallon to 1.58 cents per gallon. Second, the remaining 0.69 cents per gallon difference can largely be attributed to differences in capital costs with the API study using cost estimates that are 350% higher than the industry average estimates used in the EPA study.)

Speakers represented environmental, environmental justice, public health, consumer, and faith-based groups as well as automakers, vehicle pollution control equipment makers, and state and local environmental officials, all of them firmly in support of EPA's proposal. For example:

- John German, a senior fellow at the International Council on Clean Transportation, said a 2011 evaluation by petroleum refining consultants MathPro Inc. concluded it would cost between 0.8 cents and 1.4 cents per gallon to cut gasoline sulfur from 30 ppm to 10 ppm. "The benefits of sulfur reduction are much larger than this modest cost," German said. He emphasized that sulfur affects older vehicles at least as much as Tier 3 vehicles and that sulfur's negative impact on catalytic converter performance is reversible. As a result, reducing gasoline sulfur results in "immediate and very large reductions" in emissions from the fleet of vehicles now on the road, not just future benefits from the next generation of cleaner cars, German said.
- Several people noted that the United States lags behind much of the world in mandating low-sulfur gasoline. Gasoline with no more than 10 ppm sulfur has been required since 2007 in Japan, since 2009 in Europe, and will be required in China beginning in 2017. More than 40 other countries have gasoline sulfur limits lower than 30 ppm. "This is not a question of whether we have the technology to do this in a cost-effective way," said Meghan Higgins of the Union of Concerned Scientists.

- “Tier 3 is a bargain at a 9-to-1 benefit-to-cost ratio to society,” Tim Johnson, director of emerging technologies and regulations for Corning Environmental Technologies, told the EPA panel. Johnson applauded EPA’s approach of reducing vehicle pollution by addressing vehicles and fuel as a system, saying only small compact cars can reach Tier 3 emission standards with gasoline containing 30 ppm of sulfur. Technologies that reduce vehicle greenhouse gas emissions result in lower exhaust temperatures, which make sulfur even stickier and intensify its poisoning effect on catalysts, making lower-sulfur gasoline a must as automakers strive to meet stricter emissions standards, Johnson said.
- Another official from a company that makes catalytic converters added to support for the proposal by tying it to the CAFE rulemaking and warning that vehicles built to meet the CAFE rule need lower-sulfur fuel. Dr Phil Blakeman of manufacturer Johnson Matthey said reducing fuel sulfur content is essential because the CAFE rules will lead to a reduction in the temperature of exhaust gases. Reducing the operating temperature of exhaust streams increases sulfur deposition on catalysts, more quickly degrading their performance and increasing pollution.
- The proposed Tier 3 program was praised repeatedly during the hearing for largely harmonizing national standards with those of California’s Low-Emission Vehicle 3 program. It would cost automakers \$15 billion over 10 years to meet the requirements of the proposed rule, according to Julie Becker, vice president of environmental affairs for the Alliance of Automobile Manufacturers. Becker said EPA estimates the auto industry’s overall investment in the Tier 3, fuel economy, and greenhouse gas programs through 2025 would top \$216 billion, “100 times the investment that the oil industry is being asked to make today to help reduce vehicle emissions.” She said the proposal benefits the industry “by allowing us to design, develop, build, and distribute one of each model, rather than diverting precious resources to building two of everything. And it provides the fuels needed to meet those standards.”

EPA estimated the cost of implementing the Tier 3 program at about one cent per gallon of gasoline, \$130 per vehicle, and \$3.4 billion overall in 2030. The annual monetized health benefits are estimated by EPA to be between \$8 billion and \$23 billion, as it is expected to reduce premature deaths, hospital admissions and emergency room visits, asthma attacks, respiratory symptoms in children, and lost school and work days.

Nancy Seidman, representing the National Association of Clean Air Agencies, echoed others who testified at the hearing when she urged EPA to stick to its schedule and finalize the Tier 3 proposal by the end of 2013, so it will apply to model year 2017 vehicles. “Otherwise, a year will be lost,” Seidman said.

A second hearing took place in Chicago on April 29th with the results summarized by Tim Regan, president of the Emissions Control Technology Association (ECTA). “What is unique about this proceeding is the refining industry is pretty much isolated, pretty much alone,” Regan told the press. “You have a lot of agreement,” Regan said. “You have the auto industry, you have technology guys that supply the auto industry with emissions control technology, you have the unions here, you have the main environmental associations, you have the NGOs, you have the scientists with the Union of Concerned Scientists, and you have the states.”

35. McCarthy's Republican History Should Smooth Path to EPA Administrator

After a long career in public service including work for two Republican governors, Gina McCarthy is expected to win confirmation as the next head of the Environmental Protection Agency, thanks to her reputation as a practical, fix-it regulator. If confirmed, she will have her work cut out heading an agency that is a magnet for controversy as it seeks to balance the need for economic growth with the impact of development on human health and the environment.

In the next few months, the EPA is due to present rules for curbing greenhouse gas emissions from power plants and it is now investigating the impacts of hydraulic fracturing, or fracking.

Nevertheless, when President Barack Obama said on Monday that McCarthy was his pick to lead the EPA, leaders of the energy and industry quickly signaled their acquiescence. "We congratulate Gina McCarthy on her nomination," Jack Gerard, president of the American Petroleum Institute, said in a statement. The U.S. Chamber of Commerce said that it too would not stand in the way of Obama's pick.

McCarthy's nomination will have to be confirmed by the Senate and she will likely face searing questions from foes of the EPA. But even those lawmakers expect the official with more than 25 years' experience on clean air and water issues to assume office. David Vitter of Louisiana, the most senior Republican on the senate environment panel, said he would demand answers for past EPA decisions but that he could envision McCarthy in office.

McCarthy, 58, who now serves as the EPA's clean air chief, could be grilled over rules written in the last four years, but two stints working for Republican governors may well guarantee her eventual confirmation.

As the top environmental enforcer in Massachusetts under then Governor Mitt Romney and later in neighboring Connecticut, McCarthy proved herself a master administrator, according to former colleagues and policy partners.

Those who worked with McCarthy at the state level say she is more motivated by booking successes than pushing a rigid agenda.

McCarthy was elevated from a junior state post in Massachusetts after Romney took office in 2003 wanting to find a way to "bust silos" that stood between agencies for housing, transportation, energy and the environment. She helped promote the initiative by balancing the big picture with retail messaging such as a plan to retire the state's fleet of gas-guzzling sports utility vehicles.

McCarthy worked well with industry in an effort to clean up Boston Harbor, but she was also able to soothe the power sector when Romney set tough goals to curb the greenhouse gases blamed for climate change.

That work continued when McCarthy took over as head of Connecticut's environmental protection agency under Republican Governor M. Jodi Rell in 2004. With a mandate to curb greenhouse gas without unduly increasing power rates for consumers, McCarthy was setting policy at the crossroads of energy needs and conservation.

Connecticut led an effort to curb greenhouse gas emissions in the Northeast -an endeavor that Romney initially supported and then opposed. If she does step into the top role at the EPA, one of McCarthy's big tasks will be to set emissions rules for the power sector that accounts for about 40 percent of greenhouse gas emissions.

36. Gulf Coast Refineries Will Increase Diesel Production

Gulf Coast refineries are expected to boost production of diesel by more than 100,000 barrels a day in 2013, allowing them to easily meet increased demand in Latin America. Energy Security Analysis Inc.'s Global Refining Outlook suggests that a significant expansion in U.S. Gulf Coast hydrocracking capacity will allow refineries to maintain strong diesel exports. That's important for the bottom line as demand for gasoline and other refined products remains flat in the United States.

Demand is growing in Latin America, Asia and the Middle East, with demand for diesel growing especially quickly. Gulf coast refineries are well-placed geographically to capture the export market to Latin America.

According to the ESAI report, additional hydrocracking capacity will allow refiners to shift production to diesel and away from gasoline. The Gulf Coast is expected to add nearly 200,000 barrels per day of hydrocracking capacity by the middle of 2013, according to the report.

The expansions come in the midst of a broader \$15 billion expansion at chemical plants along the Texas Gulf Coast, as the plants take advantage of low-cost natural gas. The companies use natural gas and natural gas liquids to produce a number of products.

For refineries, the expansions are expected to provide flexibility.

"The new hydrocracking units will increase the region's flexibility to produce additional diesel barrels," ESAI Energy's Chris Barber said in a statement. "This additional capacity will allow some U.S. refiners to boost diesel production, even when U.S. gasoline demand softens, making it easier to supply Latin America's diesel requirements without relying as heavily on stocks."

37. Diesel Exports from US Rising As Plant Maintenance Winds Down

Exports of diesel fuel from the U.S. Gulf Coast are poised to climb as refineries returning from maintenance boost production, widening the price gap between the Gulf and Europe while freight rates hover near a six-month low. Plants are ramping up after planned work in the first quarter that took 1.13 million barrels a day of capacity offline, 45 percent above the five-year average, according to IIR Energy. The rate to book a vessel from the Gulf to Europe dropped 33 percent to a 2012 low on March 20, Baltic Exchange data show.

Refineries including Motiva Enterprises LLC's Port Arthur, Texas, plant and Chevron Corp. (CVR)'s Pascagoula, Mississippi, site are expected to complete work next month, boosting output at a time when European maintenance may peak. Shipments to Europe and Latin America may keep the so-called arbitrage open, sustaining profit margins for refiners even as domestic demand slides.

"There are increasing runs in the Gulf Coast, lower runs in Europe and demand increasing from the Southern Hemisphere," Tom Finlon, director of Energy Analytics Group Ltd., said in a phone interview on March 22 from Jupiter, Florida. "Low freight rates help the arbitrage opportunity in the Gulf."

Ultra-low-sulfur diesel swaps that settle based on prices in the Gulf Coast spot market slipped to \$3.0054 a gallon (\$919.65 per metric ton) yesterday, according to fair-value data compiled by Bloomberg. Swaps for diesel cargoes delivered in Northwest Europe were \$949.63 a ton. Including freight costs, the profit to buy diesel and ship it to Northwest Europe was \$9.33 per metric ton, according to data compiled by Bloomberg. That doesn't include additional expense to blend the fuel to European specifications.

"The arb to Europe is going to be open for a while, certainly through the month of April," Finlon said.

Crude and other feedstocks processed by Gulf Coast refiners jumped to 7.84 million barrels a day last week, the highest level for this time of year in Energy Information Administration data back to 1993.

Across the U.S., plant rates rose to 85.7 percent in the week ended March 22 from 81 percent as of March 8, the lowest level since September 2011, EIA data show.

The boost in refinery production comes as U.S. consumption has yet to recover from the worst economic downturn since the Great Depression, encouraging refiners to export excess fuel to Europe, where plant capacity is declining. Distillate demand in December was 8.4 percent lower than a year earlier.

IIR, an energy information provider based in Sugar Land, Texas, estimates maintenance from April to June will slide to an average of 676,000 barrels a day. "We've had very heavy maintenance and now we're going to see these refineries start to come back on," Carl Larry, broker with Atlas Commodities LLC, said in a phone interview from Houston. "As long as U.S. demand stays low and Europe is in turnaround, we're probably going to ship there."

Traders and oil companies will hire eight tankers to load diesel fuel for the Gulf Coast-Europe voyage in the two weeks to April 3, according to the median estimate in a survey of five shipbrokers who specialize in arranging diesel cargoes. The number of ships seeking charters will be 32, up from 31 in early March. The survey is based on a so-called single voyage, or spot, charters.

Six European refineries with a total capacity of about 1.51 million barrels a day are expected to conduct maintenance during the month of April, according to Emirates National Oil Company. Among the biggest plants are Total SA's Antwerp, Belgium, refinery, PCK Raffinerie GmbH's Schwedt, Germany, site, and TNK-BP Ltd.'s Ryazan, Russia, facility.

"The market is currently well supplied, with normal demand seen in the U.K., Germany and France," a mid-March ENOC report showed. "April maintenance is expected to lower production in Germany, Poland and Italy."

Motiva's 600,000-barrel-a-day Port Arthur refinery, the largest in the U.S., began 38 days of work on a sulfur recovery unit, delayed coker and pipestill No. 2 around Feb. 14. Chevron's Pascagoula plant was conducting a turnaround on a crude distillation unit, vacuum distillation unit, coker and hydrotreater this month.

Cargoes will also head to Latin America, where the EIA forecast fuel consumption will grow 4 percent to 7.01 million barrels a day in the second quarter from a year earlier.

Latin American refinery throughput is expected to average 5.9 million barrels a day in 2013, about 70,000 barrels more than a year earlier, according to data compiled by Energy Security Analysis, Inc. The increase is a result of fewer refinery disruptions and the expectation for a full return of Petroleos de Venezuela SA's 645,000-barrel-a-day Amuay plant in the second half of the year, Christopher Barber, a senior analyst at Energy Security Analysis, Inc., said by phone.

Amuay, part of PDVSA's 955,000-barrel-a-day Paraguana complex, which shut twice since February, is processing about 352,000 barrels a day, according to a company statement. The refinery has been operating at reduced rates since an August explosion. "It's not that we'll see runs increase but they won't fall off as much," said Barber, who is based in Boston. "That should keep a steady flow of exports to Latin America."

Booking rates for the voyage rallied to 86.43 Worldscale points yesterday from 60.54 March 20 as demand for cargoes to service the U.S. Gulf Coast increased, according to George P. Los, shipping analyst with Charles R. Weber Co. They fell to 60.54 on March 20, the lowest since Sept. 13, 2012. The Worldscale points indicate what percentage of a dollars-a-ton flat rate set for various shipping routes once a year by the Worldscale Association that traders booking tankers are paying.

"The activity strength can be attributed to the fact that the Gulf Coast refineries are preparing for an end to a strong seasonal maintenance period," said Los, who is based in Stamford, Connecticut.

The fixture of medium-range tankers in the Gulf rose to 28 last week from 16 in the week-earlier period, a weekly report from the company showed. Nine ships were bound for points in Europe, while eight headed for Latin America and five were sent to the Caribbean, according to the report. "Shipping is still relatively inexpensive," said Bill Day, a San Antonio, Texas-based spokesman for Valero (VLO) Energy Corp. "Keep in mind that the U.S. has been importing much less crude oil and refined product in recent months, so there are ships available. Valero watches the arbs closely."

The European turnaround season is "definitely a good sign," said Barber. "The capacity to produce diesel is huge now on the Gulf and Europe is always short. It creates a bigger export market and it's a strategic move for Gulf refiners."

38. Ground to Be Broken For Western ND Diesel Refinery

Officials are breaking ground for a diesel refinery in western North Dakota. Bismarck-based MDU Resources Group Inc. and Indianapolis-based Calumet Specialty Products Partners are building the Dakota Prairie Refinery west of Dickinson. Officials have said it could cost up to \$300 million. The facility will process crude from the rich Bakken and Three Forks formations in western North Dakota, helping meet an unprecedented need for diesel fuel in the oil patch.

North Dakota currently has only one oil refinery, the Tesoro Corp. facility at Mandan.

39. Obama's Climate Agenda May Face Setbacks in Federal Court

President Barack Obama's plan to use federal agencies, and the Environmental Protection Agency in particular, to drive his second-term climate change agenda might be in peril if he cannot fill vacant seats on the federal court that has jurisdiction over major national regulations, legal experts say. Obama is the first full-term president in more than a half century not to have

appointed a single judge to the powerful U.S. Court of Appeals for the District of Columbia Circuit. The court, considered the second most important in the nation, decides cases challenging agency regulations such as those involving the EPA's Clean Air Act and often serves as a feeder to the Supreme Court.

New York attorney Caitlin Halligan, Obama's first nominee to fill one of four vacant seats on the 11-judge bench, announced her withdrawal recently after Republicans twice blocked her nomination over concerns about a 2001 case in which she represented New York State and argued that gun manufacturers had created a "public nuisance" under state law. Obama said in a statement that he was "deeply disappointed" that a minority of senators continued to block an up-or-down vote on her nomination after two and a half years.

Meanwhile, Obama's second pick, former corporate lawyer Sri Srinivasan, will have a Senate Judiciary Committee hearing in the next few weeks after being delayed in 2012 by Republican requests for more information about his role in the settlement of a housing act case as a U.S. deputy solicitor general.

While some fault Republicans for slow-walking the appointment of judges that would shift the balance of the court to Democrat-appointed judges, others fault Obama for not taking advantage of the now-four open seats and making judicial appointments a political priority. Two of the four vacant seats have been open since Obama came into office in January 2009. The seat Halligan was nominated for has been vacant since 2005.

Some legal experts warn that under the status quo -four Republican appointees and three Democratic appointees among active judges -Obama's plan to bypass a deeply partisan Congress to address climate change using existing authorities will not be easy. "There is really no moving forward with regulation without going to the DC Circuit and the decision of the court could really have major consequences," said Michael Livermore, executive director of the Institute for Policy Integrity at New York University's law school.

The court hears all challenges to government agency regulations. And regardless of the political balance, some warn the short-staffed court will have a hard time handling a growing case load of challenges to increasingly complex EPA regulations. "There is a reason why there are 11 judges on that court of appeals," said John Cruden, director of the Environmental Law Institute. "They (cases) will take longer to resolve than they are right now because they are more complicated and they require and demand a lot of attention."

A former D.C. circuit judge on the court from 1979 to 1999 last month termed the ongoing vacancies a cause of "extreme concern" because the court lacks the manpower to carry out its "weighty mandate," which includes cases ranging from environmental protection to civil rights to national security. Patricia Wald, who was an appointee of Democratic President Jimmy Carter, wrote in a February 28 op-ed in the Washington Post that the number of pending cases per judge has grown to 188 today from 119 in 2005.

Although the court's six senior status judges can hear cases, they cannot participate in rehearings. Five of those six judges are Republican appointees.

Obama said in his February State of the Union address that he would direct his cabinet to take steps to curb carbon emissions if lawmakers fail to enact legislation -a likely outcome in the deeply divided Congress. The EPA is expected to be at the center of Obama's climate efforts. It is due this year to finalize emissions standards for new power plants and industrial facilities.

After that, it will set a standard for the country's power plants and industrial sources that account for nearly 40 percent of domestic emissions. The proposed regulations will almost certainly be challenged by industry, including electric utility companies and manufacturers, who argue the agency is wrongly interpreting the Clean Air Act to write its standards.

"He (Obama) can lean as heavily as he wants on the EPA and it's all for nothing if he gets the wrong panel reviewing what they do," said Tom McGarity, a law professor at the University of Texas law school in Austin, who specializes in environmental and administrative law.

Three-judge panels are assigned randomly to resolve cases brought to the court. With just seven active judges, many of the same judges will deliberate similar EPA challenges.

Some analysts say the court has become more polarized on these issues, making the outcome largely dependent on the panel that gets selected -a roll of the dice.

Some also expect delays or revisions to the EPA's proposed standard for new power plants beyond an April 13 deadline as the agency anticipates inevitable challenges in the DC circuit and uncertainty about how the judges will rule.

"It's certainly possible that the EPA has recognized that it needs to be a little less aggressive in its interpretation and implementation of its authority," said Jonathan Adler, a law professor at Case Western Reserve University.

Recent setbacks in the DC circuit might have reminded EPA that its technical and legal analysis needs to be bullet proof. One such loss was the court's 2-1 decision in August to strike down an EPA rule to curb sulfur dioxide and nitrogen oxide emissions from power plants that cause acid rain and smog across state lines. The decision called on the agency to rewrite the rules, a process that could take years. Two of the three judges ruling on the case said the EPA exceeded its "jurisdictional limits" in interpreting the Clean Air Act. The EPA asked for a full-court hearing in January but it was denied.

The court ruled more favorably for the EPA in June, though, when it upheld agency rules on greenhouse gas emissions, including the scientific justification to regulate them because they endanger public health.

But new standards for power plants, mercury and hazardous materials, ozone rules and other controversial regulations will face uncertain fates in the court if the status quo continues.

NYU's Livermore said that, while recent decisions on the EPA's interpretation of the Clean Air Act have been mixed, the court has clearly demonstrated it is not afraid to strike down rules and send the agency back to the drawing board. "This is not a court that is afraid to act and use its powers. There is no getting around these guys. It is small, so one or two judges can make a big difference in the ultimate decision," he said.

Observers say Obama needs to make more nominations for the court or broker a deal with Republicans to get at least some of his judicial picks confirmed, or he will risk missing out on a chance to leave his mark on the court.

"If we continue on the current path of invalidating critically important rules, the DC circuit will be the graveyard for all programs, initiatives that are being pushed by the Obama administration

and will affect all of us," said Nan Aron, president of the judicial rights group Alliance for Justice. "The DC circuit has that much power."

40. EPA Says U.S. Vehicle Fuel Economy Rose to 23.8 MPG in 2012

Model year 2012 passenger vehicles sold in the United States had an average fuel economy rating of 23.8 miles per gallon, the highest on record, the U.S. Environmental Protection Agency said recently. Last year's models showed a 1.4 mpg improvement over 2011, the biggest annual improvement since the EPA began keeping records on fuel economy.

Improving fuel economy is a key component of the Obama administration's effort to cut U.S. oil consumption and polluting greenhouse gases, which cause global warming.

Model year 2012 cars and light-duty trucks sold in the United States average emissions of 374 grams of carbon dioxide, down from 398 grams per mile in the previous model year, the EPA report said. Carbon dioxide accounts for the lion's share of greenhouse gas emissions globally. The EPA said the figures released in its report are preliminary.

Among major manufacturers, Honda Motor Co showed the highest average fuel economy of 26.4 mpg, followed by Volkswagen AG at 26.2 mpg, Mazda Motor Corp and at 25.9 mpg. Among U.S. automakers, Ford Motor Co vehicles reported the best average fuel economy at 23.2 mpg, up from 21.1 mpg for its 2011 models, the EPA said.

Hyundai Motor Co would have the highest for 2012 vehicles, at 28.8 mpg, but its figures are under investigation by the EPA. In November, the EPA announced that it was investigating Hyundai and its corporate sister KIA Motors Corp after its own tests showed less performance than what the automakers claimed.

U.S. automakers have more pickup trucks and large sport utility vehicles in their lineups, which increases their corporate average fuel economy (CAFE) ratings.

Auto manufacturers have increased the number of hybrid gasoline-electric vehicles, plug-in vehicles as well as increased fuel economy for internal combustion gasoline engines in recent years, largely spurred on fuel economy targets set by the Obama administration.

In 2011, Obama reached a deal with major automakers that fuel economy for each manufacturer will rise to an average of 54.5 mpg by 2025. By model year 2016, U.S. cars and light-duty trucks by each manufacturer are to average 35.5 mpg.

The EPA said the longer term trend of improving fuel economy ratings began with the 2005 model year, during the Bush administration.

Since the 2007 model year, U.S. passenger vehicles have shown a 13-percent increase in fuel economy ratings and a 16 percent reduction in carbon dioxide emissions.

41. Nobel Prize Winners Urge Obama to Back Carbon Pricing

A group of leading economists, including eight Nobel Prize winners, has written to President Barack Obama urging him to support a carbon price on aviation. An EU law requiring all aircraft using EU airports to pay for emissions via the bloc's Emissions Trading Scheme (ETS) last year stirred international outcry and threats of a trade war. Eventually, the Commission, the EU

executive, announced it would freeze its law for a year, to spur agreement of a less contentious global alternative at U.N. body the International Civil Aviation Organization (ICAO).

In the letter, dated March 14, the eight Nobel Prize winners and 24 other economists call on Obama to back a market-based measure, like the EU scheme, as the cost-effective way to encourage technological change and lower emissions. "While we recognize the barriers to a uniform global price on all carbon emissions, pricing emissions in the aviation sector via ICAO would be a good start," the letter said. "Absent such an agreement in ICAO this year, U.S. airlines will face a growing patchwork of international regulations and compliance costs, while aviation emissions will continue to rise and contribute to dangerous climate change."

Some of the same economists wrote to Obama a year ago, asking him to drop his opposition to the EU plan. Instead, he signed the EU ETS Prohibition Act to shield U.S. airlines from complying with the EU law.

The U.S. law also gave the U.S. government the authority to steer talks on a global solution to aviation emissions.

So far progress has been slow, as the industry has campaigned for greater efficiencies, rather than market-based measures. The assembly is only held every three years, so if a deal is not agreed then, the risk is there will be many more years without a global solution to aviation emissions. The European Union says it will automatically reinstate its law in the absence of agreement.

The Nobel Prize-winning signatories are Kenneth Arrow, William Sharpe and Al Roth, all of Stanford University, Eric Maskin of Harvard University, Thomas Sargent, New York University, Robert Myerson of the University of Chicago, Christopher Sims of Princeton and Joseph Stiglitz of Columbia University.

42. Old Diesel Equipment Still Spewing Soot into Pittsburgh's Air

The Pittsburgh City Council passed a "clean construction" law more than 18 months ago. But, to date, no dozers, diggers or dump trucks have had to comply. Called the Clean Air Act of 2010, the law focused on construction sites that received public dollars. If the development's budget was larger than \$2.5 million and it received at least \$250,000 in public subsidies, it would have to retrofit a percentage of its diesel equipment.

Regulations for the ordinance haven't been finalized, making it unenforceable. Supporters of the ordinance have cried foul. "If we truly want to be the most livable city, we have to contend with our air pollution," said Rachel Filippini, the executive director of the Group Against Smog and Pollution, known as GASP. "And one way to do that is to clean up construction vehicles." GASP was part of a coalition of health, environmental, faith, industry and labor organizations that helped draft the legislation. It is similar to "clean construction" laws that have sprouted across the country, and it is modeled after New York City's version.

The Environmental Protection Agency has set standards for new diesel engines, but it's the old engines that produce what's known as "dirty diesel" fumes.

Dirty diesel exhaust contains tiny particles of soot, also known as black carbon. The smallest of these particles can go straight into the bloodstream and are linked to cancer, asthma and stroke. Children, the elderly and people with chronic lung and heart conditions are among the most

vulnerable to dirty diesel's impact. And workers who operate diesel equipment are the first to breathe the emissions.

Pittsburgh City Councilman Bill Peduto, who was the main sponsor of the ordinance and is running for mayor in the May 21 primary, sent copies of New York City's regulations to Pittsburgh's Law Department. Meetings concerning the regulations to implement the ordinance have been going on for more than a year, according to Mr. Peduto's office.

However, the regulations have not been finalized, said Daniel Regan, Pittsburgh's solicitor. Mr. Regan said they are waiting to hear from several city departments. He had no estimate of when the regulations might be in place.

43. Canada Publishes Greenhouse Gas Rules for Trucks

On March 13th, Environment Canada published finalized regulations to limit greenhouse gas emissions from heavy-duty, on-road vehicles and engines that align standards with those in the United States. The Heavy-duty Vehicle and Engine Greenhouse Gas Regulations, issued under the Canadian Environmental Protection Act, set progressively more stringent standards through the 2014-2018 model years for manufacturers of large pickup trucks; short-and long-haul tractors; buses; and freight, delivery, service, and cement trucks, the department said in a regulatory impact analysis published with the regulations in the Canada Gazette, Part II. The changes are expected to cut greenhouse gas emissions from heavy-duty vehicles by 19.1 million metric tons over the life of vehicles produced in the 2014-2018 model years, helping Canada meet its Copenhagen Accord target of a 17 percent reduction in emissions from 2005 levels by 2020. On February 25th, Environment Minister Peter Kent had announced details of the final regulations, including changes to improve their alignment with U.S. standards.

44. Report Finds Large Scale DPF Removal

Although it is technically illegal to obstruct or dismantle pollution controls on trucks, the almost total lack of enforcement across Canadian jurisdictions has allowed some vendors to quickly fill this niche. Calling around, within half an hour, reporter Harry Rudolfs found several independent garages in Ontario and Quebec that would remove and delete the EGR/DPF systems from almost any EPA-compliant engine.

Either by Internet or word of mouth, truck owners are attracted to shops and vendors that promise better fuel mileage, more horsepower and an end to expensive DPF maintenance bills. With the addition of a straight pipe running through the gutted DPF canister, the modified tractors look almost identical to the ones coming from the factory.

Beyond the reach of Environment Canada, and existing in the grey area of seemingly unregulated "aftermarket modifications," the practice seems to have picked up steam in the last six months. One garage in Montreal has a two-week waiting list and claims to process 20 rigs per day. A simple search of the Internet turned up an online vendor in British Columbia who openly boasted, "SAVE UP TO 3 MPG!...We can eliminate the DPF-EGR from your Cat C7,C9, C13 or C15, Cummins ISB, ISC, ISL, ISX, Detroit DDEC 4&5 engines."

The president of J-Ball Electronics, Don Jenner, answered the phone himself when I called an 800-number listed on the above Web site, posing as the owner of a 2009 Peterbilt having problems with the DPF system. "You and about four million other people!" he joked. "I can take you back to the good old days," he assured Rudolfs. He promptly e-mailed him a prospective

work order and pricing for “several scenarios” as well as step-by-step instructions on how to remove the turbo and EGR cooler. The final step declared: “Kiss your downtime goodbye!”

Located in Vernon B.C., most of Jenner’s business is by mail order, it seems, with truck owners removing the ECMs from their trucks and shipping them to him by courier for reprogramming. Most likely, his clients would engage a private shop to get their work done using the plates and gaskets that can also be ordered from this supplier, depending on what strategy is employed to defeat the soot burner and EGR cooler.

Reprogramming the ECM to run at a much leaner mixture is crucial to this process and costs thousands of dollars. Evidently, DPF deletion takes about six hours to complete, but the real cash cow in all this is the software. Once the engine codes have been hacked and modified, the program costs nothing to copy and is easy to franchise to other garages, and is the most expensive part of the procedure.

Checking with a few black market garages, the price for the modifications varies from around \$3,000-\$6,600 depending on the model engine and which methodology the customer wishes to pursue. And Jenner didn’t flinch when Rudolfs asked him if the tampering is illegal, although he admitted, “We are bending the rules.” Another vendor admitted, after some prodding, “It is illegal...I guess.”

In over-the-phone conversations with other DPF Delete providers, assurances were given that this won’t hurt the engine, but rather, will dramatically increase performance. And the fuel savings can be astronomical, tens of thousands of liters per year is the claim. One garage owner in Central Ontario told Rudolfs that he could expect to get 50 or 60 more horsepower and much better mileage. More importantly, he promised to tune the exhaust so that it could pass emissions thresholds set by the Ministry of Transportation during inspections that are required every two years in Ontario. A technician at J-Ball Electronics in Vernon, B.C. seemed to concur: “We’ve had lots of guys (from Ontario) running these and haven’t had any complaints or issues.”

It’s worth noting that these are not small, fly-by-night repair shops, as some drivers suggested on the CB radio. The businesses I contacted were mainstream engine tuning and truck repair operations. One fellow was hungry enough for businesses that he called Rudolfs back a couple of times, and told me he’d been doing these conversions for two years. He also claimed to have deleted the DPF-EGR on an entire fleet of Class 8 trucks.

But frustration around EPA-compliant engines post-2007 is understandable. Replacement parts are very expensive: a blown EGR cooler can cost thousands of dollars. Perhaps part of the problem lies with the OEMs, themselves, and poor communications after some start-up problems with the first generation EGRs. It’s not hard to find drivers who have had problems with these engines. One service manager told Rudolfs about a fleet of 12 trucks that was literally “glued to the yard” because of DPF problems.

Via e-mail, owner/operator Elwood Rines complained about the cost of maintaining the DPF, cleaning the filter and injectors and “all of the things that the dealer doesn’t tell you about.” Rines runs long-haul for Bison Transport out of Winnipeg. He had heard through the grapevine that DPF deletion was going on. But Rines is pretty sure removing the EGR/DPF is not the solution. “Not interested,” said Rines. “I traded in a 2009 last April because it was regenerating at inappropriate times. But this 2013 Volvo has been good so far with mileage between 7 and 7.5 mpg.”

It is worth noting that some of the shops Rudolfs called were strongly against this practice, while others were quite willing to provide referrals to places that had no qualms about doing so. But one garage manager and part owner takes a dim view of businesses offering this service. "It is totally illegal and unethical," according to Joe Cuffaro of Cambec Diesel in Montreal, Quebec. "These trucks are born with this. In the long run they may have to reverse the process."

"It's not the case that these trucks are spewing a lot of pollution," he says. "If you do a sniffer test on them you'll find they run very, very clean. But what gives them the right to remove the original equipment? If I'm Paccar, I have to answer to federal regulations, but who do these guys answer to? The worst-case scenario would be if one of our customers got nailed doing this and it got traced back to us. That's why we don't do it."

DPF delete suppliers might argue that they are providing a service that customers want, and since the modified units will pass emissions tests, what is the harm in doing so? As well, if the regulations are vague, unenforceable and no one has been charged, why not provide this option?

But from another perspective, disconnecting emissions controls is wrong on many levels. The tragedy of this situation is that the latest EPA10-compliant engines seem to have most of the bugs worked out of them, and they produce almost zero NOx and extremely low levels of particulate. If everyone followed the rules, the case could be made that these newer engines shouldn't even be required to undergo emissions testing as the air coming out of the exhaust is almost breathable.

But removing EGR and DPF systems from trucks means you're running the emissions wide open once again, and we're back to pre-2002 levels. And taking a larger view, widespread EGR/DPF tampering is a step backwards for an industry and manufacturers that have taken great pains to show they are good environmental players. Although provincial environment ministries have dropped the ball on this issue, there are some indications that they are starting to pay attention, and that enhanced fines and beefed-up enforcement cannot be very far off.

45. NRC Issues Report On How to Cut Vehicle-Related Carbon Emissions By 80%

Cars account for almost a fifth of all of our emissions, so a drastic reduction is critical. But it's not enough to just make cars more efficient. It's going to take some revolutionary thinking. The good news is that cars and light trucks could be radically cleaner by 2050, even without major technological breakthroughs. The bad news: It won't happen without significant policy changes.

So says a big new report from the National Research Council that looks at ways to reduce U.S. petrol consumption and greenhouse gas emissions 80% by 2050. It finds that highly efficient vehicles combined with power from biofuels, electricity, or hydrogen could achieve the goal. But government will have to "overcome high costs and influence consumer choices" through strong fuel economy standards, increased support for R&D, subsidies, and information campaigns. "Increased efficiency is vital, but not sufficient to meet the 2050 targets."

Cars and light trucks contribute 17% of greenhouse emissions, and account for 50% of fuel consumption. The report says that increased efficiency is vital, but not sufficient to meet the 2050 targets. Vehicles would need to go 180 miles per gallon--an unrealistic number. So, business needs to develop alternative technologies.

The report explores the potential of biofuels, electricity, and hydrogen. It expects that hydrogen-powered vehicles will be cheaper than conventional cars and trucks by 2050 (partly because

they won't rely on expensive batteries). But building out a new fueling infrastructure will be costly. Using natural gas, meanwhile, could reduce petrol consumption, but isn't a long-term option to meet greenhouse gas goals.

The report assumes the alternatives are all likely to be more expensive than what we have now (taking everything into account)--even by 2050. So, government needs to offer "feebates" to people who buy higher efficiency models, while making dirtier fuel more expensive:

Several types of policies including a price floor for petroleum-based fuels or taxes on petroleum based fuels could create a price signal against petroleum demand, assure producers and distributors that there is a profitable market for alternative fuels, and encourage consumers to reduce their use of petroleum-based fuels. High fuel prices, whether due to market dynamics or taxes, are effective in reducing fuel use.

As for R&D, it recommends public investment in "fuel cells, batteries, biofuels, low-GHG production of hydrogen, carbon capture and storage, and vehicle efficiency," including demonstration projects once they have reached scale. It warns against promoting technology before it's "close to market readiness."

Finally, the report recommends de-politicizing decision-making. The committee suggests that an expert review process independent of the agencies implementing the deployment policies and also independent of any political or economic interest groups advocating for the technologies being evaluated be used to assess available data, and predictions of costs and performance.

The conclusions aren't particularly novel, or exciting to read. But, coming from a committee of well-respected experts, the 395-page report is comprehensive and trustworthy. It shows, as others have done, that the future isn't hopeless--but also that it won't happen on its own.

46. US Truckers Considering Natural Gas Over Diesel Say Transition Costs Still Too High

The alternative fuel industry faces a Catch-22: Manufacturers are pressuring their distribution partners to ship their products using natural gas trucks because they're far less expensive to run than diesel fuel trucks. However, the distributors are pushing back, arguing three major reasons that natural gas trucks are still too expensive to adopt.

First, natural gas trucks cost distributors an extra \$40,000 to \$80,000 per truck over typical diesel trucks, which begin at about \$100,000. Some federal and state incentive programs are in place to help shipping companies' transition, but those amounts have so far proven insufficient for many shippers. They still expect to bear most of the costs.

Second, shippers stand to incur costs when refueling since natural gas fueling stations are still so few. Truckers lose precious time and burn extra fuel when they have to go out of their way to find natural gas fueling stations.

Third, there is no market yet for used natural gas trucks. Recovering the extra cost of a liquid natural gas or compressed natural gas truck is dubious at this early stage of the industry.

Manufacturers are focused on the fuel savings. Natural gas trucks run about \$1.50 per gallon cheaper than diesel, and experts say the return on investment could be achieved in about two

years for a truck that runs at least 80,000 miles a year. But once the cost of modifying fueling stations and repair shops is factored in, the equation becomes more complex.

Major natural gas suppliers have committed to building a network of natural gas stations along U.S. highways, but they won't go through with it unless they're sure that a sufficient number of trucks will regularly use the stations.

The major suppliers, which include Royal Dutch Shell, T. Boone Pickens' Clean Energy Fuels and China's private ENN Group, are aware that not all truck industries are alike. Waste management companies, for instance, have been much faster about adopting alternative fuel trucks because their routines involve nightly return to a base to refuel. Distribution truckers, on the other hand, travel for long distances over days or weeks with access to mostly diesel fuel stations.

President Barack Obama wants to begin a federal incentive program that would help pay for the new trucks. Big natural gas-producing states such as Pennsylvania, West Virginia and Texas already offer subsidies to get shippers to transform their fleets, as does California with its environmentally conscious programs. But the incentives don't cover enough, and in times of fiscal uncertainty, trucking companies fear they'll be stuck with a huge bill.

47. Automobile Industry Petitions Supreme Court to Hear Lawsuits Challenging E15

Automobile and engine manufacturers have petitioned the U.S. Supreme Court in an effort to overturn Environmental Protection Agency waivers that allow an increase in the ethanol content of gasoline (*Alliance of Automobile Manufacturers v. EPA*, U.S., No. 12-1167, 3/26/13). The manufacturers said they should have standing to challenge two EPA Clean Air Act waivers approving model year 2001 and newer vehicles to use gasoline containing up to 15 percent ethanol (E15) because they are "objects of the relevant statutory regime."

The petition was filed March 26 by the Alliance of Automobile Manufacturers, Association of Global Automakers, Inc., National Marine Manufacturers Association, and Outdoor Power Equipment Institute.

The U.S. Court of Appeals for the District of Columbia Circuit had dismissed challenges to E15 brought by engine manufacturers, petroleum refiners, and food producers in August 2012 for lack of standing. The manufacturers are seeking review of that decision. "The panel majority's holding that the engine manufacturers lack Article III standing failed to recognize that engine manufacturers are the intended beneficiaries of the statutory scheme, as that scheme is explicitly concerned with preventing harmful effects to engine emissions systems produced and warranted by the engine manufacturers," the automobile manufacturers said. "The majority likewise erred by disregarding virtually all of the evidence of engine harm in the record."

Automobile manufacturers argued in their Supreme Court petition that the D.C. Circuit ignored evidence that E15 could shorten the life of engines and cause nitrogen oxides emissions in excess of federal standards, even in engines approved by EPA to use the fuel.

EPA granted two partial Clean Air Act waivers in 2010 and 2011 approving use of E15 in model year 2001 and newer cars and trucks. Prior to that, gasoline could contain no more than 10 percent ethanol. The industry groups challenged EPA's waivers, but that lawsuit was dismissed by the D.C. Circuit for lack of standing in a 2-1 decision in August 2012. The court denied requests to rehear the lawsuits on January 15th.

Federal appellate courts have split over whether prudential standing issues can be raised in lawsuits by third parties or by the court itself when it is not addressed by federal agencies. That split needs to be resolved by the Supreme Court, the automobile manufacturers said. EPA had not challenged the industry groups' standing in that lawsuit. Instead, the standing issues were raised by Growth Energy, an ethanol trade association that had intervened on behalf of the agency.

Food producers and petroleum refiners filed a similar petition with the Supreme Court on February 27th seeking review of the D.C. Circuit decision. That petition also challenged the D.C. Circuit's decision to dismiss the lawsuit on standing grounds. It was filed by the Grocery Manufacturers Association, American Petroleum Institute, American Meat Institute, National Chicken Council, National Council of Chain Restaurants of the National Retail Federation, North American Meat Association, National Pork Producers Council, National Turkey Federation, and Snack Food Association. The industry groups argued that regulated parties should have standing to challenge EPA regulations that impose "substantial new burdens on those industries."

48. Los Angeles Retains Notorious Rankings for Worst Smog, Traffic

Los Angeles, the nation's second-largest city, again topped the charts for ozone pollution, and finished fourth for particulate pollution such as dust and soot, in the American Lung Association's latest annual national air quality report card. The farming town of Bakersfield, California, was rated No. 1 for particulates.

The greater Los Angeles area has ranked every year but one since the association's first report in 2000 as the city with the worst levels for ozone, a key component of smog formed when sunlight reacts with hydrocarbon and nitrous oxide emissions. A major source of ozone pollutants is tailpipe emissions from automobiles, which in turn account for Los Angeles' No. 1 ranking this year as the nation's most traffic-clogged city, according to a separate annual study released on the same day.

Honolulu dropped from first to second place in traffic congestion, followed by San Francisco at No. 3, the traffic-data company Inrix, based in Seattle, reported. Inrix also found road and highway congestion in the Los Angeles area was back on the rise in early 2013 after two straight years of decline, a likely reflection of an improved economy.

Los Angeles has roughly 10 times more roads than Honolulu, but the Inrix study provides a comparative gauge of travel time it calls the "gridlock index," which measures the intensity of traffic congestion to local drivers as it occurs. According to Inrix, the average Los Angeles motorist wasted 59 hours last year in jammed traffic, compared with 50 hours for the average Honolulu driver.

In terms of air quality, California as a whole dominated the list of the most polluted U.S. cities, accounting for seven of the top 10 for ozone and eight of the top 10 for annual levels of particulate pollution, the American Lung Association said. Nearly 90 percent of Californians, or 33.5 million people, live in areas plagued by unhealthy air, especially in Los Angeles, the so-called Inland Empire region east of the city, the state capital of Sacramento, and the agricultural heartland of the San Joaquin Valley, the group's study found. Those residents are at greater risk for asthma attacks, heart attacks and premature death, the association said.

However, many California cities have shown steady progress on improving air quality, particularly the Los Angeles region, whose ozone levels have fallen by 36 percent since the organization's first State of the Air report card in 2000. The region's annual particle pollution has dropped by 43 percent in that time and is now close to meeting the federal year-round standard for particulates.

The U.S. cities ranked as having the cleanest air in the latest report were Ames, Iowa, for ozone and Cheyenne, Wyoming, for annual particulate pollution.

49. Levels of Diesel Exhaust around Port Of Los Angeles Coming Down

New data from four air quality monitoring stations in and around the Port of Los Angeles show concentrations of elemental carbon in the Port area air fell in 2012 to the lowest levels since the Port began collecting data in 2005. Elemental carbon is used as an indicator of diesel particulate matter, or DPM, which is the soot produced by the combustion of diesel fuel.

For calendar year 2012, elemental carbon was down by 72 percent in Wilmington compared to calendar year 2006, which was the first full year of monitoring data collected. The San Pedro monitoring station also showed a significant decrease of 61 percent. These drops in elemental carbon happened even as cargo volumes at the Port have rebounded – in 2012 the Port handled 1.7 percent more cargo than in 2011, but elemental carbon at both the Wilmington monitoring and San Pedro stations were 39 and 18 percent lower, respectively, than in 2011.

Concentrations of another key air pollutant related to diesel exhaust, PM_{2.5} met federal and state standards for the fifth straight year. In addition to port and industry initiatives, state air quality regulations also have helped reduce emissions from the big diesel engines that power much of the goods movement that flows through the San Pedro Bay port complex, the nation's largest trade gateway in terms of containerized cargo.

Since 2005 the Port has operated four air quality measurement stations: one in San Pedro, another in Wilmington, and two inside the Port complex, including one in the middle of port operations. The stations are strategically located to measure air quality both in the port complex and in the communities downwind of the Port, where air quality is affected by emissions from the ships, trucks, terminal equipment, harbor vessels and train locomotives that move cargo through the nation's largest container port.

The State's restrictions on the sulfur content of fuel used in vessels and equipment operated at the port, the Port's Clean Truck and Alternative Maritime Power programs, and the San Pedro Bay Vessel Speed Reduction program are among the key measures the State and the Port have used to tackle vessel emissions. The Port has also spent millions of dollars retrofitting cargo handling equipment and harbor craft engines with pollution control devices, and pioneering the use of alternative fuels and power systems.

The air quality monitoring stations measure, in real time, ambient concentrations of several key air pollutants, including two sizes of particulate matter (PM₁₀ and PM_{2.5}). In addition, twenty-four hour integrated samples of particulates are collected on filters every third day for detailed chemical analyses, which cannot be done with real-time monitors. Those analyses include measuring the amount of elemental carbon in the filters.

Each station also collects wind speed, wind direction, and temperature data so that the air pollutant data can be used in models that track the movement of pollutants. The real-time data

can be viewed at caap.airsis.com and past filter-based data back to 2005 can be viewed on the Port's website (www.portoflosangeles.org/environment/air_quality.asp).

The Port of Los Angeles is America's premier port and has a strong commitment to developing innovative strategic and sustainable operations that benefit the economy as well as the quality of life for the region and the nation it serves. As the leading seaport in North America in terms of shipping container volume and cargo value, the Port generates more than 830,000 regional jobs and \$35 billion in annual wages and tax revenues. A proprietary department of the City of Los Angeles, the Port is self-supporting and does not receive taxpayer dollars.

50. Jury Finds Exxon Liable For \$236.4 Million in U.S. Pollution Suit

A New Hampshire jury has found Exxon Mobil Corp liable for \$236.4 million in a civil lawsuit that charged the oil company had polluted groundwater in the state with a gasoline additive, MTBE, used to reduce smog in the 1970s and 1980s. Following a three-month trial, jurors deliberated less than two hours before finding that the world's largest publicly traded oil company acted negligently in contaminating the groundwater with the additive MTBE, said Jessica Grant, a lawyer who represented the state.

Originally filed in New Hampshire court in 2003, the state charged that Exxon and other major oil companies knew that MTBE was likely to contaminate groundwater and was more difficult to clean up than other pollutants. Some damages from the suit will help pay for the costs of testing and cleaning affected water supplies.

The U.S. Environmental Protection Agency today considers MTBE a potential human carcinogen, though much of the research on the chemical has focused on the health effects of inhaling it rather than drinking it. New Hampshire banned MTBE in the state in 2007.

Exxon was the only one of the 22 original defendants in the original suit to go to trial. Other defendants either had the suits against them dismissed or agreed to settlements. Those included Canada-based Irving Oil Co, which agreed to pay \$57 million last year, and Venezuela's state-owned Citgo Petroleum Corp, which struck a \$16 million agreement as the trial began.

The three-month trial on the suit, filed in state court, was moved to the state's federal courthouse in Concord to accommodate the large number of witnesses, lawyers and exhibits. The jury found that MTBE contamination had caused \$816 million in damages in the state. Exxon's market share of 29 percent was used to compute damages, Grant said.

51. Metro Vancouver to Crack Down On Diesel Trucks

Metro Vancouver is developing a program to crack down on older diesel trucks, which are responsible for most of the diesel pollution in the Lower Mainland, officials with the regional authority said. A roadside testing program has shown that three quarters of all trucks with unacceptable diesel emissions are model years 2007 and older.

"We did find it was a small number of vehicles -- the gross emitters -- that are emitting really large amounts and if we can address those then that will take care of a chunk of the problem," said Heather Deal, Metro's Environment Committee Chair.

Metro Vancouver used a remote sensing vehicle to test emissions from nearly 12,000 vehicles over a 55-day period last year.

Diesel trucks are not subject to the scrutiny other vehicles get through the AirCare program, but Deal said this would soon change. "[We have] come out in favor of testing those trucks [and] cracking down on some of those vehicles. [People] are breathing these fumes and we know that they are very bad news in terms of health," Deal said.

Officials say they will develop a program that will include roadside testing, scrapping programs, retrofits and fees, with an emphasis on truck owners buying newer vehicles that meet modern emission standards. The program is expected to be fully operational in two years, officials say.

52. U.S. Drivers Buying Diesels - Registrations Rise 24.3 Percent between 2010 and 2012

Once a fuel reserved only to heavy-duty trucks, diesel has begun to gain ground also among U.S. automobile drivers in recent years. Clean diesel registrations increased by 24.3 percent in the U.S. from 2010 through 2012 following similar trends of double-digit diesel car sale increases throughout the country, according to data compiled by R.L. Polk and Company.

Registrations of diesel cars and SUVs increased from 640,779 in 2010 to 796,794 at the end of 2012. During this same period, hybrid car and SUV registrations increased from 1,714,966 to 2,290,903, accounting for an even bigger increase of 33.58 percent. To put these figures into perspective, the total car and SUV registrations in the U.S. increased by just 2.75 percent during the same period.

The national registration information includes data for all types of passenger vehicles – cars, SUVs, pickup trucks and vans – from all 50 states and the District of Columbia from January 1, 2010 through December 31, 2012.

At the moment, there are over 6.65 million diesel passenger vehicles registered in the U.S., while the total number of registered hybrids exceeds 2.29 million. It's an interesting statistic, since there currently are 27 diesel models available in the U.S. market, compared to 46 hybrids.

Diesel passenger vehicle sales are expected to increase significantly, as the numbers of new diesel vehicles that will launch in the U.S. will more than double in the next two years, reaching 10 percent of the U.S. market by 2020.

The U.S. states with the most diesel registrations are Texas, California and Florida.

53. EPA Finds Keystone XL Pipeline Analysis by State Department Not Sufficient

The Environmental Protection Agency again is raising objections to the proposed Keystone XL pipeline that would carry oil from western Canada to the Texas Gulf Coast. Despite more than four years of study, the State Department's analysis of the project's environmental impact is "insufficient," according to the EPA.

In a letter to the State Department, the EPA urged State to conduct a more thorough analysis of oil spill risks and alternative pipeline routes, as well as greenhouse gas emissions associated with the \$7 billion pipeline. The concerns are similar to objections the EPA raised about the project in 2011. The State Department has authority over the pipeline because it crosses a U.S.

border. A draft report in March by State said the project would not create significant environmental impacts.

The State Department said that officials have long planned to conduct additional analysis and will incorporate comments from the public and other federal agencies into a final environmental report expected this summer.

The EPA's tough stance signals that unless the State Department addresses its concerns in a final review, it could create more hurdles for a \$5.3 billion dollar project which has been pending for more than four years.

Backers say the project would boost North American energy security and provide thousands of construction jobs. Opponents argue that it would lead to higher releases of greenhouse gases.

The EPA said it was concerned about carbon emissions from the oil sands that are energy-intensive to produce, and about the safety of transporting Canadian crude via pipeline following a high profile spill in a Michigan river in 2010. There was a reminder of the threat last month when an Exxon Mobil pipeline spilled thousands of barrels of Canadian crude in Arkansas, but the EPA letter did not mention that incident.

The agency was also concerned about the State Department's conclusion that the climate would not be affected by approval of the line because rail would be a major transport alternative. "This analysis should include further investigation of rail capacity and costs, recognizing the potential for much higher per barrel rail shipment costs," the letter said.

The Obama administration is expected to make a final decision on the line late this year.

The EPA said the State Department should estimate the social cost of emissions from the pipeline including damage to agriculture, human health and property from climate change. The request came despite an almost 20 percent reduction in the EPA's estimate of how much carbon dioxide would be released from the oil sands crude carried by the pipeline over its 50-year life, to 935 million metric tons.

An interagency Obama administration group has put the social cost of carbon emissions at \$5 to \$65 dollars a ton. If the emissions of the oil sands are not reduced, that means emissions from the Keystone pipeline could cost between nearly \$5 billion to more than \$60 billion over 50 years.

Once the final review is released, the EPA will have another three months to raise further objections if it is still not satisfied.

The State Department is in charge of determining whether Keystone should get a presidential permit because the pipeline would cross the national border. President Barack Obama is expected to weigh in on the decision.

54. Justices Reject Challenge to EPA Air Pollution Rule

The Supreme Court has rejected a challenge by the oil lobby disputing an Environmental Protection Agency air pollution rule. Various industry groups, including the American Petroleum Institute, originally challenged the 2010 regulation, which set a tighter Clean Air Act standard for

short-term spikes in nitrogen dioxide pollution near roads. The Supreme Court's decision not to take the case means the rule remains intact.

The agency said the new rule was justified due to scientific data that showed the health risks, particularly to those suffering from asthma.

The Court of Appeals for the District of Columbia Circuit upheld the rule in a July 2012 ruling.

The American Petroleum Institute sought high court review, claiming the EPA justification for the rule was based on a "purely hypothetical threat to the public health." The group's lawyers asked the court to limit EPA's authority so that the agency can only consider "actual or reasonably anticipated" health threats.

The Obama administration said in court papers that the appeals court decision was consistent with Supreme Court precedent.

55. Supreme Court Asked To Hear EPA Greenhouse Gas Challenge

Top industry groups and a dozen states have asked the Supreme Court to review a lower court decision upholding the Obama administration's plan to limit greenhouse gas emissions generated by power plants and vehicles. The parties are challenging a 2012 decision by the D.C. Circuit Court of Appeals that upheld rules issued by the Environmental Protection Agency (EPA).

The petitioners attacked the rules on various grounds, but all argued that the agency should not use the Clean Air Act to regulate carbon emissions. "EPA's ill-founded regulations represent a sweeping expansion of its regulatory power under the Clean Air Act and would impose new requirements on potentially millions of stationary sources across the country," the American Chemistry Council (ACC) said. The ACC was joined by other industry associations including the American Petroleum Institute, the National Association of Home Builders and the National Association of Manufacturers.

The U.S. Court of Appeals for the District of Columbia Circuit, which ruled in favor of the EPA last year, denied the group's request for a rehearing in December, prompting the ACC and other organizations to turn to the Supreme Court.

The petitioners said the EPA incorrectly used the Prevention of Significant Deterioration (PSD) program of the Clean Air Act to regulate greenhouse gases from power plants. They said the program only applies to six other kinds of air pollutants.

Another association, the Energy-Intensive Manufacturers Working Group on Greenhouse Gas Regulation, also took issue with the EPA's use of the PSD to regulate greenhouse gases. "(The) petitioner submits it is not possible to find a regulatory structure less compatible with the regulation of carbon," the group wrote, adding that applying the PSD to carbon would result in massive numbers of facilities being regulated.

One petition focused on a core aspect of the EPA's greenhouse gas rules - the scientific "endangerment finding" that underpins its entire greenhouse gas program. Lawyers with the conservative Pacific Legal Foundation argued that the EPA failed to submit its "endangerment finding" for independent scientific review by the EPA's Science Advisory Board as required by the Clean Air Act.

Other groups that filed petitions include the Utility Air Regulatory Group, an association of electric utilities and electricity-generating companies; 12 states led by Texas; and the conservative Southeastern Legal Foundation, which represents Republican lawmakers Michele Bachmann and Joe Barton, among others.

56. Obama Would Increase Clean-Energy Spending; Energy Nominee Moving Forward

President Barack Obama proposed a dramatic increase in clean-energy spending as he sought to expand U.S. government support for electric cars, wind power and other "green" technologies despite persistent Republican criticism. The president would pay for the expansion in part by eliminating tax breaks and subsidies for oil, gas and coal industries. Previous efforts by Obama's fellow Democrats to repeal the \$4 billion worth of fossil-fuel subsidies have fallen short.

Obama's budget plan for fiscal 2014, which begins October 1, would boost clean-tech spending by 40 percent over current levels, marking one of the largest increases in a blueprint that otherwise would cut spending in a wide range of other programs, from environmental protection to retirement benefits.

The president's budget proposal stands a slim chance of becoming law in its current form.

Republicans who control the House of Representatives have criticized Obama's clean-energy initiatives as wasteful boondoggles, pointing to the high-profile bankruptcies of companies like solar-panel maker Solyndra that benefited from federal backing.

But the budget proposal signals that clean energy will remain a priority for Obama in his second term in office. "These increases in funding are significant and a testament to the importance of clean energy and innovation to the country's economic future," the administration wrote in its budget proposal for the coming fiscal year.

Obama has transformed the Energy Department from a low-profile agency largely focused on managing the nation's nuclear stockpile into a research and development powerhouse. The department has underwritten everything from automotive battery startups to research projects that aim to turn "biofuels" like algae into the gasoline of the 21st century, thanks to a \$35 billion boost for clean-tech and energy efficiency funding in the 2009 economic stimulus measure. The effort has not always panned out. Most recently, Fisker Automotive, a hybrid sports car maker that tapped nearly \$200 million in government loans, laid off most of its employees in a last-ditch effort to stave off bankruptcy.

But the administration can point to successes as well. Since 2008, the United States has nearly doubled its energy generation from wind, solar, geothermal and other renewable energy sources. Support for energy research could lead to breakthroughs in the years to come, the administration says.

While many government agencies would see minimal increases or spending cuts under Obama's budget proposal for fiscal 2014, the Energy Department would get an increase of 8 percent over current levels, to \$28.4 billion. It would boost spending on advanced vehicles by 75 percent in the coming year to \$575 million, and make vehicle research less subject to the whims of Congress by setting up a fund that would hand out \$200 million each year.

In an effort to make solar and wind power as affordable as conventional energy sources, the administration would spend 29 percent more than it currently does to integrate those types of energy into the national electric grid.

The budget would increase support for biofuels by 24 percent and boost funding for physics and other forms of basic science research by 5.7 percent.

It would set up a \$200 million competition to encourage state governments to boost energy efficiency, modeled on the administration's Race to the Top education program.

Energy Secretary Nominee Ernest Moniz easily cleared his first hurdle in the Senate, securing nearly unanimous support from the chamber's energy committee. With a vote of 21 to 1 in favor of the pick, Moniz's nomination will move on for consideration by the full Senate. It is unclear when that will take place, but Moniz is widely expected to be confirmed.

Moniz, a professor at the Massachusetts Institute of Technology, would replace Energy Secretary Steven Chu who announced earlier this year that he was stepping down.

Democrats and Republicans on the committee praised Moniz as an independent scientist with extensive knowledge of the Energy Department and its responsibilities.

Moniz served as an undersecretary of energy during the Clinton administration.

Moniz is director of MIT's Energy Initiative, which received funding from companies such as BP, Chevron and Saudi Aramco for academic work on projects aimed at reducing climate-changing greenhouse gases.

57. EPA Voids Certificates of Over 70,000 Small Recreational Vehicles from China

The U.S. Environmental Protection Agency (EPA) has announced that it is withdrawing approval of the import and sale of up to 74,000 gas-powered on- and off-road motorcycles and all-terrain vehicles from China. The agency believes that it received either incomplete or falsified certification information.

EPA issued the vehicle certificates from 2006 to 2012 to two companies which operate as Snyder Technology, Inc. and Snyder Computer Systems, Inc. (doing business as Wildfire Motors Corporation). As a result of a lengthy investigation, the agency believes that the applications for the certificates contained misleading information and must be voided.

All vehicles imported into or manufactured in the United States are required to have certificates of conformity. Manufacturers or importers must submit an application to EPA that describes the vehicle and its emission control system. It must also provide emissions data demonstrating that the vehicle will meet federal emission standards for certain pollutants, including oxides of nitrogen (NOx), carbon monoxide (CO), and total hydrocarbons (HC)--all of which can harm public health and the environment. These pollutants can contribute to soot (fine particles) and smog (ground-level ozone), which are associated with asthma and heart attacks, increased emergency room visits and premature death.

In the cases of Snyder and Wildfire, EPA believes the manufacturers failed to accurately test the emissions from their own products, all of which were imported from China. Without proper

emission controls, these vehicles can emit substantially more pollution than allowable under Clean Air Act standards.

The EPA's action impacts the companies that manufactured and imported these vehicles. A consumer who owns a model that was covered by these voided certificates is not responsible for these companies' wrongdoing and can continue to use the vehicle.

58. UPS To Expand Natural-Gas Truck Fleet

United Parcel Service Inc said it will buy about 700 liquefied natural gas (LNG) vehicles and build four refueling stations by the end of 2014, as the logistics and courier services company ramps up its natural gas investments. UPS said that with natural gas prices 30-40 percent lower than imported diesel, and with U.S. production gearing up, it is investing more aggressively in natural gas infrastructure.

The company now has more than 1,000 natural gas vehicles on the road across the world. Once the new project is completed, UPS will have one of the biggest LNG truck fleets in the world, the company said.

Greenhouse gas emissions from natural gas trucks are about 20 percent lower than those of diesel trucks. That has been a talking point for the White House, but truckers say the cost of vehicles that run on the cheap and cleaner-burning fuel is still too high for a timely payback on such an investment.

UPS said that, beyond favorable fuel cost and domestic resource access, the trucking industry cites 25 percent less carbon-dioxide emissions from using natural gas.

59. New York AG Urges Supreme Court to Reinstate Rules Cutting Interstate Air Pollution

Leading a coalition of 10 states and 5 cities, New York Attorney General Eric T. Schneiderman has announced the filing of a court brief urging the U.S. Supreme Court to allow the Environmental Protection Agency to take prompt action to reduce the amount of air pollution that is currently allowed to cross state lines.

The filing is in support of a request by the federal EPA and a group of public health and environmental organizations for the Court to review and reverse a lower court decision that invalidated an agency rule requiring substantial cuts in the interstate transport of pollution.

"The health of millions of New Yorkers continues to be harmed by soot, smog and other air pollution, a large portion of which blows in from states to our south and west," Attorney General Schneiderman said. "We have no way of controlling the amount of the dirty air that flows into New York from out-of-state power plants and we need federal action to stop this pollution. Our coalition is urging the Supreme Court to review this matter and reinstate sensible and legal EPA rules that will help stem the tide of interstate pollution - and protect New Yorkers' air and lungs."

The federal Clean Air Act confers dual responsibility on the EPA and the states to improve and maintain air quality both in-state and in downwind states. When states' efforts to address interstate air pollution are inadequate, the Act specifically requires EPA to address the interstate transport of air pollution.

In July 2008, the U.S. Court of Appeals for the D.C. Circuit issued a decision supporting the position that EPA must reduce the interstate flow of air pollution that would enable downwind states, such as New York, to timely meet air quality standards under the Clean Air Act. The Court then sent the prior rule back to the Agency to comply with this mandate. In August 2011, EPA finalized the "Transport Rule," an air pollution regulation that would reduce the amount of sulfur dioxide (SO₂) and nitrogen oxides (NO_x) air pollution emitted by power plants in 28 states that blows into other states. By 2014, this rule, and other state and federal actions, would reduce power plant emissions of SO₂ by 73 percent and NO_x by 54 percent, from 2005 levels.

SO₂ and NO_x are air pollutants that can travel hundreds of miles after they are emitted, with significant consequences for New Yorkers. According to the American Lung Association, in 2012, over 3.2 million residents of the state live in counties where levels of soot and smog pollution endanger health. New York City was ranked by the Association last year as 15th among the 25 U.S. cities most polluted by smog.

By controlling cross-state movement of these pollutants, EPA's Transport Rule would offer swift and substantial benefits. EPA projected that the Rule would yield up to roughly \$17 billion in annual benefits and prevent approximately 2,000 premature deaths a year in New York alone by 2014. Nationally, EPA expected the Rule to yield \$120 to \$280 billion in annual benefits in 2014 -- exceeding the rule's estimated \$2.4 billion total annual cost of compliance by over 50 to 110-times. Many of these annual benefits relate to improved public health -- including preventing 13,000 to 34,000 premature deaths, 19,000 hospital and emergency room visits and 400,000 cases of aggravated asthma in 2014.

Nonetheless, in August 2012, a panel of the same D.C. Circuit court invalidated the Transport Rule. That court also denied, on January 24, 2013, petitions from New York and other states and cities for a rehearing by the full court.

EPA and the American Lung Association and other public health and environmental organizations have petitioned the Supreme Court to review and reverse the D.C. Circuit's decision. Today's filing to the Supreme Court by Schneiderman's coalition is in support of those petitions.

In addition to New York, the states joining in the filing are Connecticut, Delaware, Illinois, Maryland, Massachusetts, North Carolina, Rhode Island, Vermont and the District of Columbia. The joining cities are Bridgeport, Chicago, New York, Philadelphia, and the Mayor and City Council of Baltimore.

ASIA-PACIFIC

60. Only 2 Out Of 190 Cities Had Low Level of Pollution in India

India's high economic growth has given its cities a major health concern ---rising air pollution. It is no more a concern for big cities alone. Smaller towns are getting affected at a much faster pace, says latest report of Central Pollution Control Board. Data for 2010 shows that smaller cities such as Solapur in Maharashtra, Rajkot in Gujarat, Yamunanagar and Faridabad in Haryana, Ghaziabad and Meerut in Uttar Pradesh, Paonta Sahib in Himachal, Vijaywada in Andhra Pradesh and Nagaon in Assam have followed the footprints of bigger cities when it comes to air pollution.

Delhi is no longer ranked as the most polluted city in any of the three parameters of pollutants -- sulfur dioxide (SO₂), nitrogen oxide (NO₂) and particulate matter (PM) ---measured. Within two years Delhi has been replaced by Gwalior in case of PM and Howrah for NO₂. In 2008, Chandni Chowk in Delhi was top ranked for them.

The Capital is not losing its crown because its air is getting cleaner. Rather, the rise of particulate matter pollution in smaller cities was faster than Delhi.

Only two cities ---Malapuram in Kerala and Madurai in Tamil Nadu ---of the 190 cities monitored for air pollution across India could claim to have clean air in 2010, the report said. All other cities have either high or critical level of one of these pollutants, mostly PM. In fact, 99 % of 400 locations under evaluation in 2010 reported high or critical levels of PM. In 2008, the percentage was around 70%.

Anumita Roychowdhury of the Centre for Science and Environment pointed out that in majority of the cities air pollution had increased at a rapid pace. "The cities earlier with low level now have moderate levels and those with moderate have high or critical levels of particulate matter," she told reporters.

The trends in India's air pollution has been reported in studies with recent Global Burden of Diseases (GBD) report stating that air pollution was the fifth biggest reason for deaths in India.

Aaron Cohen, who headed the GBD expert group on air pollution, described the situation in India as "grave" and said that that air pollution causes about 20% of lung cancer and six percent of high blood pressure deaths in India.

The CPCB report shows Delhi's satellite towns ---Ghaziabad, Noida and Faridabad ---are following the Capital's footsteps with particulate matter pollution sky-rocketing in the last four years. In fact, Ghaziabad has more particulate pollution than Delhi, the feat it achieved between 2008 and 2010. Noida and Faridabad are behind Delhi but are fast catching up.

Roychowdhury said most Indian cities have failed to invest in its infrastructure and public transport leading to vehicular congestion causing higher air pollution, a view concurred in the CPCB report.

Monitoring of pollutants at 450 locations in 190 cities by the Central Pollution Control Board (CPCB) indicate at the deteriorating quality of air pollution. Not even a single city has low levels of sulfur dioxide, nitrogen oxide and particulate matter (PM) ---the three pollutants measured. High air pollution can cause breathing problems leading to cardiac attacks and even gene mutation in children.

More than half of the cities have critical levels of PM and another 49 % between moderate to high. Nitrogen oxide ---derivative of vehicle and industrial emissions ---is rising with half of the cities recording critical levels, from about 20 % a decade ago.

61. Additional \$ 5000 Mn Subsidy to Be Given To Oil Companies

State-owned fuel retailers will get government's additional Rs 25,000 crore cash subsidy to cover for the revenue they lost on selling auto and cooking fuel below cost this fiscal year. The Finance Ministry has so far provided Rs 55,000 crore to Indian Oil Corp (IOC), Bharat Petroleum Corp Ltd (BPCL) and Hindustan Petroleum Corp Ltd (HPCL) to cover for part of the

revenue they lost on selling diesel, domestic LPG and kerosene at government controlled rates which are way below the cost.

"Another Rs 25,000 crore is likely to come next month," Oil Secretary Vivek Rae said.

The three firms are together projected to end the 2012-13 fiscal with an under-recovery or revenue loss of Rs 161,343 crore on sale of diesel and cooking fuel. Of this, about Rs 60,000 crore is to be made good by upstream firms like ONGC.

After accounting for the Rs 25,000 crore expected, the total government cash subsidy would come to Rs 80,000 crore.

"There (would) still be Rs 21,000 crore-odd uncovered under-recovery which will be carried forward in the next fiscal," he said.

Speaking at the National Editors' Conference, Oil Minister M Veerappa Moily said the government is committed to making available essential fuels, particularly cooking fuels to the common man at affordable prices.

"The retail selling price of diesel, PDS kerosene and domestic LPG are being modulated to insulate the common man from the impact of rise in international oil prices and domestic inflationary condition," he said.

The under-recoveries incurred as a result are being subsidized by the government, with the support of upstream oil & gas companies.

In order to reduce under-recovery and restrict the impact on the consumers, the government has decided to stagger the increase of price of diesel in the range of 40-50 paise per liter per month; sell diesel to bulk consumers at non-subsidized market determined price; and restrict the supply of 14.2-kg domestic LPG cylinders to 9 per consumer per annum.

"Despite these measures, the under-recoveries currently are Rs 8.64 per liter for diesel, Rs 33.43 per liter for kerosene and Rs 439 per cylinder for domestic LPG," he said adding the oil marketing companies are currently losing Rs 407 crore per day on fuel sales.

62. IOC Raises Diesel Prices

Indian Oil Corp, the country's biggest refiner, raised diesel prices by about 1 percent recently in line with the flexibility given by the government, it said in a statement. The three state-run fuel retailers -IOC, Bharat Petroleum Corp (BPCL.NS) and Hindustan Petroleum Corp (BPCL.NS) tend to move their prices together.

In January the government allowed fuel retailers to raise the price of subsidized diesel by 1 U.S. cent a liter every month and asked bulk buyers to pay market rates.

(It deregulated gasoline prices in June 2010.) In Delhi, diesel will now cost 48.67 rupees per liter as charged by IOC.

63. Diesel Vehicle Sales Likely To Be Negative In Q4

Sale of diesel vehicles, which has been growing at a fast clip over the past year, fell 5 per cent in February, compared to the same period last year. According to senior executives of major automobile companies, diesel vehicle sales are likely to be negative in the current quarter.

Passenger car sales in the domestic market hit a 12-year low, declining by 25.71 per cent to 158,513 units in February as high interest rates and rising fuel costs continued to keep consumers off showrooms.

Mayank Pareek, chief operating officer (marketing & sales) of Maruti Suzuki India Limited (MSIL), said, "There has been some moderation in sales growth of diesel vehicles. While diesel vehicle sales at Maruti Suzuki increased by 54 per cent and 60 per cent in December and January, the growth rate tapered off to 22 per cent last month." Sales of petrol vehicles, too, which account for over 60 per cent of production for Maruti Suzuki, dropped by 21 per cent in February, compared to the 12 per cent fall registered in December 2012.

Maruti Suzuki has been clocking strong sales growth of diesel vehicles on the back of higher demand for Swift, Dzire and Ertiga. According to industry estimates, diesel vehicle sales declined to less than 40 per cent during October-December 2012 from a peak of 57 per cent in the previous quarter. Interestingly, the decline has happened after diesel price was raised by Rs 5 a liter in September 2012.

R C Bhargava, chairman, MSIL, said, "There are little signs to show that growth would be more than five-seven per cent in the coming fiscal." The company has a combined order backlog of 83,000 units of these three cars.

Diesel demand had previously been growing rapidly since the government decontrolled petrol in June 2010, leading to frequent price rises. After the decontrol, petrol became more expensive by 26 per cent compared to diesel. Now, petrol is 40 per cent costlier than diesel. The price differential between the two fuels (which was even higher earlier) has been driving demand for diesel cars in the domestic auto industry.

"Before a price rise of around Rs 5 on diesel late last year, the monthly growth on diesel consumption this year was around 13 per cent. Now, diesel decontrol may pull down this growth," said a senior petroleum ministry official.

The government is executing a phase-wise decontrol of diesel prices since January 17, to eliminate under recovery (the losses incurred by selling the fuel below the market price) by oil marketing companies (OMCs). The partial decontrol will happen through an increase of 45-50 paise a month, till the entire loss of OMCs is wiped out.

The overall under-recovery of OMCs projected during the current financial year is Rs 1, 60,000 crore. Diesel accounts for 60 per cent of the revenue loss on sale of the three subsidized products — diesel, kerosene and domestic LPG.

64. India Can Cut Emissions Through Better I&M

India can significantly cut down on vehicular emissions if it adopts a stringent and robust vehicle inspection-and-maintenance (I&M) program, says a recent study by consultancy firm AT Kearney in collaboration with the Confederation of Indian Industry. A clear cut I&M regime along with structured recycling programs, and organized fleet-modernization drives can lead to "13-18

million tons of CO₂ abatement, about 0.5 million-tons reduction of combined HC, NO_x, and CO emissions, and 10-15 million kg reductions of PM emissions," estimated the report.

The auto industry has, for a long time, pressed for a structured I&M regime in India which would not only take polluting older generation vehicles off the roads but also encourage the sale of new generation higher technology new vehicles.

Of course adopting a structured regime for I&M won't come cheap but its savings spin offs will be substantial. " While investments of Rs 8000-10,000 crore might be required to establish I&M centers across the country, effective I&M practices can improve fuel economy and eventually lead to Rs 2000-3000 crore net cost savings for the country," said the report.

A structured maintenance regime including the systematic recycling of vehicles can also maximize the recovery of scrap material at the end of their useful lives, said the report. This in turn will save resources and energy and result in 6-8 million tons of CO₂ reduction. Along with increased use of greener vehicle technology alongside improved mobility infrastructure, better management of in-use vehicles can lead to an overall 80-100 million tons reduction in CO₂ emissions over the base projections for the year 2020, said the report.

However for the entire effort to be effective the "implementation will require a collaborative effort from the government, industry, and end users," said the report. The net annual cost for the entire effort is pegged at Rs 8,000-12,000 crore (net of all taxes, subsidies, and duties). "While some of this can be passed on to consumers, the government must also do its part by offering tax breaks, subsidizing green technologies, and investing in infrastructure improvements," it added.

65. Air Pollution Turning Charminar Black

The 400-year-old Charminar -the most recognizable symbol of Hyderabad -and other ancient monuments within the 300 meter heritage zone in the area are turning black due to pollution and their plasters are peeling off due to constant vibrations caused by passing vehicles, is the considered opinion of conservation architects and environmentalists.

Conservationists blamed the government for failing to protect the Charminar precincts, a key requisite for acquiring UNESCO's world heritage status. They have urged the government to immediately implement the long-pending pedestrianization project, which involves traffic management and development of environs to conserve the heritage identity of the precinct. "The archaeology department and the GHMC are solely responsible for the bad state of monuments and their failure to educate the government on the importance of taking immediate steps to protect the structures," said L Panduranga Reddy, noted historian of Hyderabad.

Over the past five years, the Charminar precincts, home to several ancient structures like Mecca Masjid, Jama Masjid, Char Kaman (the four arches) and the Badshahi Ashoorkhana, have recorded the highest pollution figures, next only to Punjagutta, records from Andhra Pradesh Pollution Control Board reveal.

Experts say the measurable total particulate suspended matter (TSPM), respirable suspended particulate matter (RSPM) and oxides of sulfur and nitrogen are all posing huge threats to the ancient structures.

"The dust forms a layer after accumulating over a period of time. This is causing blackening of the surface. The organic matter that settle on the structure along with the dust leads to moth formation when it rains," Suryanarayana Murthy, a conservation architect said.

In 2011, Charminar was the most polluted area, but its pollution level slid only slightly to take the second spot in 2012. The TSPM recorded in 2010 was 267.5 which shot up to 287 in 2012.

The heritage precinct of Charminar comprises many historic structures dating back to the period Mohammed Quli Qutub Shah, the founder of Hyderabad. Oldest structures in the area include the Jama Masjid, Mecca Masjid, Char Kamans (the four arches) and the Badeshahi Ashoorkhana, all in a 300 meters radius. The Unani Hospital, Pathargatti and Sardar Mahal are other important expansive structures in the precinct, while the Laad Bazaar is a recognized heritage stretch.

Architects say high levels of the TSPM are the biggest threat to structures, particularly monuments. Murthy said the formation of the layer happens much faster on structures with a rough surface, as in the case of Mecca Masjid, when compared with structures with a smooth and plastered surface like Charminar.

"It may take about eight months to one year for a layer of 1 mm to form over the surface of Charminar. But it happens faster on structures like Mecca Masjid where the rugged stone is exposed, warranting frequent attention," Murthy explained.

Environmental scientist and executive director at the Delhi-based Centre for Science and Environment (CSE), Anumita Roychowdhury, said that suspended particles coated with sulfur compounds has an abrasive impact on a building when they become chemically active. A report from CSE in 2010 categorized coarse particle levels (RSPM or PM10) in Charminar as critical, exceeding, the ambient standards on most days. High levels of PM10 are a major threat to humans besides having a corrosive effect on monuments.

Conservation architects also fear another acute threat, particularly to plastered monuments Vibration. Vehicles plying in the close vicinity can produce the levels of vibration that can result in plaster peeling off and a study conducted by NGRI in the last decade had aptly highlighted the threat. The study was carried out after a large chunk of plaster had fallen off the Charminar in 1998.

Construction activity within 100 meters of the Charminar, is also posing a big threat to the structure's stability, as secret expansion of either a temple or a police station is against the Monuments Act, which bars any construction within the zone.

66. Plan to Give Hong Kong World-Class Air Quality in 7 Years

Top officials have unveiled a seven-year plan to cut Hong Kong's notorious roadside air pollution, while admitting some of the targets might be hard to meet. Billed as an air-quality roadmap to 2020, the plan says that if all measures are fully introduced, roadside pollution will begin to drop in the next two to three years, and see significant improvement in four to five. But the officials admitted that the level of nitrogen dioxide, the dominant pollutant, will remain almost double the new standards to be introduced next year despite a 40 per cent drop.

Pending legislature approval, a new set of air-quality objectives will be introduced next year to replace those in use since 1987. Hong Kong will use air quality standards set by the World

Health Organization as a reference for its own objectives, the government said in a statement. The new air quality targets and monitoring index will be unveiled next year, and the government will review its goals at least once every five years. A health-based air pollution alert system modeled on that used in Canada will be introduced at the same time.

Chief Executive Leung Chun-ying has made cleaning up the city's skies a priority with air quality in Hong Kong worsening since 2007 and failing to match New York and London. The Chinese city has never met its air quality targets since they were adopted 26 years ago, according to a government audit in November.

"The ultimate objective is to balance development against our latest air quality objectives by 2020," Wong Kam-sing, secretary for environment, said at a press conference. "We can say that we're prepared to deploy a lot of resources into this." In January, Leung said the city will offer HK\$10 billion (\$1.3 billion) in subsidies to replace old diesel vehicles and limit their life-span to battle smog that's responsible for more than 3,000 premature deaths a year.

"Our goal is for Hong Kong to be among the best in the world in understanding air quality so that we can continue to fight air pollution aggressively," Environment Secretary Wong Kam-sing said. He was joined at a press conference by Transport Minister Anthony Cheung Bing-leung and senior officials from the bureaus for development and food and health in a move Wong said showed co-operation and commitment across government.

Cheung, who oversees public and private transport operators -a key target of many measures said his bureau aimed to improve air quality but it needed to be balanced with operators' needs. The measures include phasing out old diesel commercial trucks, retrofitting buses with emission controls and cleaner fuel for ships.

The plan projects that by 2020, the concentration of carcinogenic respirable suspended particles at the roadside will drop by 25 per cent from 60 micrograms per cubic meter of air in 2011 to 45 micrograms -below the new tightened standard. Officials warned that nitrogen dioxide levels would still exceed the new standard despite falling 40 per cent to 75 micrograms. Undersecretary for the Environment Christine Loh Kung-wai said the unique character of the city, with its high population and building density, made it difficult to tackle a nitrogen dioxide problem that also plagued London. Loh said rectifying it might require tougher measures. "We might have to expand the pedestrianized areas or divert some traffic. But we are still exploring these and that's why they are not in the plan now," she said.

There were 175 days of very high pollution in 2011, more than twice the figure from 2007, the government said in an audit report in November. Very high pollution is indicated by an index number of more than 100, which triggers a government warning for people with heart or respiratory illnesses to avoid prolonged stays in heavy-traffic areas.

Among the measures proposed to fight air pollution in Hong Kong are the following:

- Retrofit 1,400 franchised buses with selective catalytic reduction devices by 2016 to control harmful diesel-engine emissions
- Mandate a fuel switch for ocean-going vessels berthing at Hong Kong and explore the feasibility of extending the switch to Pearl River Delta ports

- Update air-quality objectives next year and introduce a new health-based air-pollution alert system
- Collaborate with Guangdong to cut emissions from factories in the delta region
- Strengthened emission controls for petrol and LPG vehicles
- Low-emission zones for franchised buses

67. Marine Diesel Must Be 10 Times Cleaner By 2014

Over 15,000 diesel-powered vessels could be forced to use fuel with 90 per cent less sulfur, after a trial found the cleaner alternative had no impact on vessels' mechanics or consumption, under a government proposal. However, some operators fear that the cleaner diesel will push up their running costs -despite government assurances to the contrary.

The proposal will be tabled to the legislature this year and will force operators of vessels, including ferries, high speed boats, barges, tug boats and cross border vessels, to use diesel containing no more than 0.05 per cent sulfur from 2014.

The cap is 10 times stricter than the current 0.5 per cent limit on sulfur in marine diesel. However, the upgraded fuel still has 50 times more sulfur than the Euro V diesel being used for road transport. That diesel only has 0.001 per cent sulfur.

In a paper submitted to lawmakers recently, environment officials said a trial completed in January this year found the cleaner fuel would not damage older engines. The trial, conducted by University of Hong Kong specialists, also confirmed there was no significant change in fuel consumption or power output after the switch.

Officials said there would not be a substantial difference in costs, as their most updated figures showed the low sulfur diesel was just seven cents per liter more expensive. They quoted oil companies' forecasts that the price differential could be even narrower in the future.

Johnny Leung Tak-hing, general manager of Star Ferry, however, remained skeptical over the fuel costs. "The industry is worried whether the seven cents difference is true or not ... we hope the government can give us more guarantees and data to support their claims," he said.

Leung said the government had also tested local vessels on ultra-low sulfur diesel, which had a sulfur content of 0.005 per cent in 2001 but concluded that it was too expensive. The government at that time pledged the ultra-low-sulfur diesel would cost just 20 cents more per liter, but the difference rose to around HK\$1 eventually, he said. Officials said the fuel market was a free one and there was nothing the government could do to control price setting.

Leung also said some diesel vessel operators also wanted the government to subsidize those replacing old engines. "The road transport operators are given subsidies to replace their vehicles. But we have got not even a single cent," he said.

The Environmental Protection Department estimated that the switch could reduce sulfur dioxide emissions by 3,219 tons a year, representing a 19 per cent reduction of the marine sector's total emissions in 2011. The marine sector, including ocean-going vessels, has overtaken power

plants as the largest source of sulfur dioxide, nitrogen oxides and respirable suspended particles.

68. FedEx Express Launches Zero-Emission All-Electric Vehicle Fleet in Hong Kong

FedEx Express (FedEx), a subsidiary of FedEx Corp. and the world's largest express transportation company, has announced the expansion of its alternative-energy vehicle fleet with the introduction of 10 new all-electric commercial vehicles for use in Hong Kong. This is the first fleet of zero-emission all-electric vehicles for FedEx in Asia Pacific.

These 10 state-of-the-art electric vehicles will be deployed in Hong Kong in March 2013, joining the more than 650 alternative-energy delivery vehicles already in the FedEx global vehicle fleet. These electric and other alternative energy vehicles have made a significant contribution towards an earlier announcement by FedEx that it has surpassed its goal to increase the fuel efficiency of its vehicle fleet 20 percent by 2020. FedEx has also increased its original goal by 50 percent, now setting a target for 30 percent improvement in fuel efficiency for its global vehicle fleet by the original 2020 target date.

FedEx is looking to achieve its environmental goals through EarthSmart – the FedEx roadmap for operating in an increasingly sustainable way and engaging team members, customers, business partners, and a network of influencers to help reduce the environmental impact of its daily business operations.

FedEx currently has more than 650 alternative fuel vehicles in its global vehicle fleet, and will have approximately 200 all-electric vehicles by the end of its fiscal year 2013. In Asia Pacific, FedEx has two hybrid vehicles in Hong Kong already in operation since 2010 and teamed with General Motors in Japan in the test operations of a fuel-cell delivery vehicle for one year. FedEx announced in September 2012 that it had been working with Nissan to co-test the e-NV200 electric van in Japan and the U.K.

69. Report Finds Air Quality Poor in 90 percent of Chinese Cities

Nearly ninety percent of the cities in China suffer from heavy or severe air pollution, according to a new report by the School of Environment and Natural Resources of Renmin University of China. The report shows only 10.67 percent of the cities studied have good air quality, while 75.8 percent are heavily polluted and 13.52 percent are severely polluted. The report shows 13 percent of the 281 cities surveyed had "extremely bad" air quality and 75.8 percent had "bad" air quality from 2005 to 2010. The report finds PM10 (particulate matter less than 10 micron in diameter) and sulfur dioxide (SO₂) to be the main pollutants, after studying air quality statistics released between 2005 and 2010 of 281 Chinese cities. Overall, air conditions have been deteriorating, especially in big cities and where there is rapid economic development. As a result, more people are exposed to hazardous air around China.

The data gleaned by researchers did not include statistics of PM_{2.5} emissions, which are airborne particulates as small as 2.5 microns. "Due to statistical limitations, PM_{2.5} was not included, but we understand their importance," said Song Guojun, an author of the report, adding that the governments should first ensure their city's air quality meets PM₁₀ standards.

Baoshan in Yunnan Province, Chenzhou in Hunan Province and Chizhou in the Guangxi Zhuang Autonomous Region had the most days in which the air pollution index (API) was rated

Grade II or better, while Liaoyuan in Jilin Province had the fewest number of days to reach the Grade II standard. Grade II indicates that the daily API was between 51 and 100.

Ma Zhong, dean of the School of Environment and Natural Resources of Renmin University of China, thinks the situation should sound the alarm. "A city's air quality has to do with its economic growth and the efforts it puts into curbing pollution. It has been proven that air quality can be improved through appropriate measures. Those cities with fast economic growth and bad air quality need to reflect on that," Ma says.

Despite the problems, the report says there is much hope in reducing pollution. It suggests a standardized mechanism to monitor and evaluate air quality across the country.

70. Standing Committee Member Says China Must Reject Status Quo of Pollution

More needs to be done in China to control pollution, particularly from coal-fired power plants, vehicles, and industrial sources, a member of the Standing Committee of the National People's Congress said at a news conference March 9. "We have paid a heavy price, and now we have a consensus that this must stop," Xin Chunying said at the annual National People's Congress meetings, where environmental problems have been one of the top issues. "We must say no to the status quo."

Xin said economic development has created environmental problems over the past 30 years and enforcement of environmental protection regulations has been lax. Xin said companies for too long have "evaded responsibility" for environmental protection costs.

Xin said the Standing Committee will "seriously study" comments it has received from the public and institutions about proposed amendments to the Environmental Protection Law, which has not been updated since 1989. The text of the amendments has not been released publicly. A timeline for amending the Environmental Protection Law has not been announced, but it is expected to be one of the first laws the Standing Committee will tackle in the coming months. The Standing Committee, which has about 175 members, meets every two months to deliberate on laws and amendments to laws.

71. Pollution, Ecological Damage Cost China 3.5 Percent of GDP, Official Academy Says

Pollution and ecological damage cost China an estimated 1.539 trillion Yuan (\$247 billion), or about 3.5 percent of gross domestic product, in 2010, according to an academy under the Ministry of Environmental Protection. The figures, the first of their type reported since 2006, were compiled by the China Academy for Environmental Planning and reported March 25 by China Environmental News, the ministry's official news agency.

A summary of the findings on "green GDP"—a calculation of how much environmental damage costs the country—was posted on the academy's website in January. It indicated that the cost of "environmental degradation" increased from 511 billion Yuan (\$88 billion) in 2004 to 1.103 trillion Yuan (\$177 billion) in 2010. Economic losses from damage to forests, wetlands and grasslands and from mining accounted for 441 billion Yuan (\$70 billion), the summary said. A 2004 figure was not included. Annual costs of environmental remediation increased from 287 billion Yuan (\$46 billion) to 558 billion Yuan (\$94 billion) over the same period.

According to the China Environmental News report, the public release of “green GDP” figures had become controversial and was stopped in 2006, though data were still gathered by various agencies such as the National Bureau of Statistics and through several pilot projects throughout the country.

72. Chinese Ministry to Address Air Pollution with Special Focus on Three Regions

China's Ministry of Environmental Protection will work this year to control air pollution in particularly smoggy areas with a special focus on three regions, Vice Minister Wu Xiaoqing said on March 15th. The Vice Minister laid out several goals the ministry has prioritized at a news conference on the sidelines of the annual National People's Congress meetings in Beijing. Wu said China's rapid industrialization and urbanization has led to “accumulated environmental problems” such as heavy pollutant emissions, high energy consumption, and a coal-dominated energy system.

He singled out three areas for special attention—the Beijing-Tianjin-Hebei province region, the Yangtze River Delta region around Shanghai, and the Pearl River Delta region in south China's Guangdong province. Wu said the performance of officials in these three areas will be partly judged by how well they control fine particulate matter (PM-2.5, or particles less than 2.5 microns in diameter), which is damaging to human respiratory systems.

Wu said the ministry will release a policy on technology for reducing PM-2.5 and will mount a special campaign for handling regional air pollution problems. These three areas, along with Shandong province, will also be part of a pilot program for controlling coal consumption to be implemented this year, Wu said, adding that long-term coal consumption targets for these regions will eventually be set.

Wu also said the ministry is working to ensure that heavily polluting businesses disclose pollution information to the public. He said the ministry spent 9.7 billion Yuan (\$1.56 billion) on heavy metal pollution and treatment in the past three years and closed down more than 1,000 businesses with severe heavy metal pollution problems.

47. China's Environment Ministry Plans Emissions Caps for Industrial Facilities

China's Ministry of Environmental Protection has released a plan to limit air pollutants from certain industries in 47 major cities in 19 provinces. The plan will cover coal-fired power, iron and steel, cement, nonferrous metal, petrochemical, and chemical facilities, mainly in the Beijing-Tianjin municipality and Hebei province region, and also around the Yangtze River Delta near Shanghai, and the Pearl River Delta in southern China's Guangdong province, according to a March 5 notice on the ministry's website. The plan covers particulate matter, volatile organic compounds and soot, among other pollutant emissions.

The plan will impact existing facilities as well as new ones. Actual emissions limits for each industry have not yet been specified. The plan calls for the emissions limits to be adopted in major urban areas of the cities by 2015 and across all areas of the cities by 2020.

The ministry is requiring that environmental impact assessments for new projects in these cities take the new limits into account starting April 1, 2013. The new limits will go into effect July 1, 2014, for coal-fired power plants and Jan. 1, 2015, for the other types of facilities.

73. In China, Rising Public Anger over Secrecy on Environment

When China's environment ministry told attorney Dong Zhengwei he couldn't have access to two-year old data about soil pollution because it was a "state secret", it added to mounting public outrage over the worsening environment. Microbloggers, state media and even delegates to the recent session of the National People's Congress were already critical of the government for poor air and water quality. Now they are also expressing disquiet over the scarcity of information about the environment available to them.

For incoming President Xi Jinping, who formally took over at the end of the parliament session, the two-pronged challenge is to find the balance between growth and further degradation of the environment, and also to decide whether to level with citizens just how bad the problem is.

"The significance of this event goes far beyond just environmental protection," said Dong, in an interview with the press. "It concerns the problem China has had for many years -the issue of government transparency. (They) shouldn't use 'state secrets' as a shield when they're not in the right."

The environment has already been one of one of the most frequently raised issues at the annual parliament session and China's government has admitted it has a problem. "Our country, in a very short time over the past 30 years, has achieved brilliant economic achievements," Xin Chunying, vice-director of the NPC standing committee's working group on the legal system, told reporters. "But at the same time, we have paid a heavy price with the environment. This price must stop, it has to be reduced, we must say 'no' to the status quo."

China does not usually allow public scrutiny of governance, particularly on sensitive issues such as corruption and security. But public anger over the environment may force authorities to accommodate the public in small ways.

A choking smog in Beijing in January, far above hazardous levels, has been one of the most dramatic signs of China's environmental problems, but Dong is convinced that soil pollution is the country's "silent killer." About 40 percent of China's agricultural land is irrigated with underground water, of which 90 percent is polluted, according to Liu Xin, a food and health expert and a member of an advisory body to parliament, who was quoted in the Southern Metropolitan Daily.

Citing "state secrets", the environment ministry last month denied a request from Dong for information on data on soil samples that was collected in a national survey that started in 2006 and ended in 2010. The decision was perplexing to Dong, since he had been given signals that authorities would be accommodating on environmental issues.

He said after filing more than 10 lawsuits against other government departments in 2008, officials from the legislative affairs office of the State Council, or cabinet, pleaded with him to stop suing those agencies and "sue the environment ministry on the basis of the public's interest".

The government has caved in to public pressure for access to environmental information before. In early 2012, amid growing public outrage about air quality in the capital city, Beijing began announcing publicly the amount of tiny pollution particles in the air that measure 2.5 micrometers or less in diameter. "Before the release of PM 2.5, there was controversy, some people thought that releasing the information on air quality may lead to panic in the society,"

Yan Chengzhong, a Shanghai delegate, said on the sidelines of the parliament session, according to the Wen Wei Po newspaper. "But the facts proved this is not the case. 'Being unaware' would only cause people to panic."

And just last month, the government acknowledged for the first time that pollution had given rise to "cancer villages", admitting that cancer rates in villages near factories and polluted rivers were far higher than they should be.

But examples of the environment ministry's shortcomings abound.

Pan Zhizhong, a resident in Panguanying village in northeastern Hebei province, has led his village of 1,900 people in protesting against the construction of an incinerator plant since 2009. When Pan sued the Hebei Department of Environmental Protection in 2011, he was given access to the environmental impact assessment that the environment ministry claimed it had done in the village. Pan discovered that the assessment, carried out by the Chinese Academy of Meteorological Sciences, had names of people who had left the village two decades previously and even a person who had been dead for two years -all "expressing favor" for the project.

Pan surveyed 100 people in his village, showing them the purported environmental impact study. The majority of them gave him written statements that declared: "I've never seen this form," according to documents seen by reporters.

74. Residents Believe Guangdong Air Quality Worsening

A recent survey has found that nearly 50 percent of the urban residents in Guangdong province think the air quality in the urban areas is worsening. More than 38 percent of the urban residents said they feel sick or uncomfortable due to the poor air quality, according to the survey, which was released recently.

The survey, which was conducted by the Guangzhou Public Opinion Research Center in March, interviewed 2,000 urban residents in the southern province, which borders Hong Kong and the Macao special administrative regions. More than 50 percent of the interviewees in major cities in the Pearl River delta think air quality is getting worse, while over 45 percent of the residents in mountainous cities also said air quality has worsened. More than 48 percent of the urban residents in Guangdong also believe the air quality in the province's urban areas is getting worse. Only 16 percent of the interviewees think the air quality in urban areas is getting better, the survey said.

Guangzhou, capital of Guangdong province, and the Shenzhen special economic zone are the areas with the worst air pollution.

The rapid growing number of vehicles is thought to be the major reason behind the poor air quality. It is followed by industrial waste discharges, dust caused by major industrial and real estate construction sites, and smells from polluted rivers, garbage dumps, landfill sites and incinerators.

75. Official Says Japan, China, South Korea to Discuss China's Fine Particle Pollution

Environment officials from Japan, China, and South Korea plan to discuss ways to tame widening air pollution problems—notably fine particles originating in China—at their annual tripartite environmental ministerial meeting in May, a Japanese Ministry of the Environment

official confirmed on March 6th. The ministry spokesman said Vice Environment Minister Shinji Inoue on March 5th disclosed part of the tentative agenda of the meeting, to be held in Kitakyushu, in southwestern Japan.

In February, the Japanese ministry issued a guideline that warned of health risks when levels of fine particulate matter (PM-2.5, or particles smaller than 2.5 microns in diameter) exceed 85 micrograms per cubic meter an hour. Japanese officials have said pollution from China is being transported to Japan by winter trade winds.

Meanwhile, Chinese and Japanese officials met on February 22nd to discuss the problem, with both sides affirming the need for more cooperation on mitigation technology. The meeting in Beijing was attended by representatives of China's Ministry of Environmental Protection and the two Japanese ministries, as well as Japan's Ministry of Economy, Trade, and Industry. The Japanese officials expressed "sympathy and concerns" about the effects of the pollution on Chinese people, as well as on Japanese living in both China and Japan, where the pollution has been transported by winter trade winds, the officials said. Japan reportedly asked for information on what China is doing to reduce levels of particles and other air pollutants and offered to accelerate technological cooperation.

76. Chinese Ration License Plates in Effort to Curb Traffic Congestion, Air Pollution

The "Chinese dream" is to own an apartment, a car — and, increasingly, a license plate. As the world's biggest car market battles some of the world's worst traffic congestion and air pollution, license plate rationing has driven prices up to the point where a Shanghai plate costs nearly three times as much as a cheap Chinese car.

Scalpers throng the entrance of the auction house near Shanghai's Bund, where owners line up to register for the monthly Saturday municipal plate auction — Shanghai's largely unsuccessful effort to control the number of cars on the city's roads. The Bank of Shanghai has even set up a desk inside, just in case any of China's notoriously cash-rich car buyers, who frequently turn up at dealerships with pockets stuffed with renminbi, cannot quite manage the Rmb90,000 (\$14,500) likely to be needed to get one of the 9,000 plates in this month's auction.

"The price will just keep rising, so I want to get one as soon as possible," said Jin Xiaowei, a would-be car owner who said he has no hope of getting a plate unless he uses a middleman to bid for him. Shanghai is trying to crack down on middlemen, who often double as scalpers, hoarding and reselling plates on the secondhand market.

To make matters worse, many buyers say they cannot get a plate at all unless they pay \$80 to \$160 in commission to the middlemen. "I won't bid myself," Jin said. "The prices change dramatically in the last minute of the auction, and you cannot evaluate the price as accurately as the [professionals] do." "Car plate prices have recently gone beyond our imagination," state media quoted Jiang Ping, Shanghai's deputy mayor, as saying recently. "We need to take various means to bring them down."

At a time when air pollution and congestion are some of China's biggest political issues, several cities are considering ways to reduce the number of cars on urban roads, either through congestion fees, auctions or plate lotteries.

Beijing offers 20,000 plates a month by lottery, but some residents complain it is easier to win a fortune in the Chinese state lottery than to win the plate lottery. The southern city of Guangzhou

is running a one-year trial of a hybrid auction-lottery system, and Guiyang, the capital of Guizhou province in the southwest, has a limited lottery.

77. China's New Leaders Could Boost Domestic Auto Industry

China's government has kept a tight grip on the domestic auto industry for years, often rejecting companies' requests to expand and strictly limiting which alternative-energy technologies qualify for subsidies. But that may be about to change: The country's new leaders seem likely to take a more open and pragmatic approach to the industry.

China started shifting from a controlled economy to a market economy in 1978. Thirty-five years later, the government has maintained close ties with state-owned companies, including automakers, and continued to favor them over private businesses.

While letting state-owned automakers and their joint ventures with global brands build new plants, it remains reluctant to allow private companies to enter or expand in the domestic auto sector on the grounds that overcapacity would result.

For instance, the government vetoed the 2010 application of Sichuan Tengzhong Heavy Industrial Machinery Co., a private Chinese construction equipment maker, to acquire Hummer from General Motors and build Hummer vehicles in China. And Zhejiang Geely Holding Group Co., a private Chinese automaker, is still seeking government approval for Volvo Car Corp. to build plants in China more than two years after Geely bought the Swedish car brand from Ford Motor Co.

But now that China's leadership change has brought a new premier, president and ministers into power, private automakers in China likely will receive faster government approval to increase capacity.

Li Keqiang, the new premier, vowed this month to further shift China from a government-controlled economy toward a market-based one. He also urged the central government to cut red tape and stop interfering with the market.

At a recent economic forum in Beijing, China's minister of Industry and Information Technology said that government should tolerate --or even welcome --moderate overcapacity in the auto industry. The minister, Miao Wei, said that moderate production capacity would force enterprises to compete with one another. If goods are in short supply, enterprises would have no incentive to improve, he said.

Earlier, at another national meeting, Miao said his ministry and other government departments are looking to revise the policy for alternative-energy vehicle subsidies. China offers subsidies of as much as 60,000 Yuan (\$9,562) for an electric vehicle and 50,000 Yuan (\$7,968) for a plug-in hybrid in five cities: Shanghai, Hangzhou, Hefei, Shenzhen and Changchun. By contrast, traditional hybrids are entitled only to a subsidy of 3,000 Yuan (\$478). According to Miao, under the revised policy, government subsidy amounts will be based on vehicles' energy efficiency, not technology.

78. Under Mounting Pressure, VW Agrees To Recall Vehicles in China

Volkswagen Group has agreed to recall vehicles fitted with its direct shift gearboxes after coming under renewed pressure from a state-owned TV news show and China's product quality

regulator. In a program aired by China's Central Television (CCTV) to mark the World Consumer Rights Day, several owners of Volkswagen and Skoda cars complained about sudden acceleration or loss of speed, and also abnormal noises and vibrations.

Afterward, China's General Administration of Quality Supervision, Inspection and Quarantine urged the German auto giant to recall affected vehicles. That same day, Volkswagen and its two joint ventures in China issued a statement that it would recall the vehicles.

In China, several Volkswagen and Skoda models use six-speed and seven-speed versions of the gearbox, which also is known as a dual clutch transmission. Since 2011, Chinese consumers have filed many complaints about the malfunctioning transmission in their VW and Skoda models. Despite the complaints, the German automaker resisted the appeal from its customers in China and the Chinese media for vehicle recall.

The recall may cost Europe's largest carmaker more than \$600 million (3.7 billion Yuan). The recall of 384,181 vehicles, conducted by Volkswagen and its joint ventures, include the Golf, Magotan, Sagitar and Audi A3, China's quality inspector said on its website. While Volkswagen declined to comment on the financial toll, research firm LMC Automotive reportedly estimated the replacement costs will range from 3,000 Yuan (\$483) to 10,000 Yuan per vehicle.

The recall covers 21 types of vehicles including versions of the Scirocco, Bora, Touran, Octavia and Passat models produced as far back as 2008 and as recently as this month, according to the state inspector's statement.

For Volkswagen, which sold 4 of China's top ten selling cars last year, complaints about its gearbox system in China aren't new. China's quality inspector said it began investigating complaints related to faulty Volkswagen gearboxes in March 2012. Two months later, the company extended its warranty for the transmission system after several rounds of talks with the regulator, according to the statement.

A malfunction of electronics in the gearbox or inadequate pressure may result in the loss of power and present a safety threat, according to the regulator. Last May, Volkswagen spokesman Harthmuth Hoffmann said that the reported problems --noise, vibrations and failure to start in hot and humid weather --were "absolutely not a safety issue." More recently, Volkswagen said that although an electronic malfunction or a lack of oil pressure may result in a power interruption, steering and braking functions wouldn't be affected. That means that even if the car loses power on the road, the driver would be able to safely stop the car, it said.

China's quality regulator said it interviewed more than 3,000 consumers, received more than 10,000 defect reports, conducted 12 spot checks and held 7 hearings with automotive experts before concluding that the Volkswagen gearboxes were defective and posed a safety concern.

The move also comes after China introduced recall laws this year giving the watchdog broader powers to order investigations and impose fines on companies that fail to call back faulty products in a timely manner.

Volkswagen and its ventures sold 2.8 million vehicles in China last year, second only to General Motors among foreign automakers. The German company and its Chinese partners generated operating profit of 3.7 billion euros (29.7 billion Yuan) last year, up by 1.1 billion euros from the previous year.

Other German automakers have also faced scrutiny in the past week from CCTV, which said it found asphalt in Chinese-made models of cars made by Audi, BMW and Mercedes-Benz. Samples taken from vehicles showed traces of asphalt, a road-paving material also used for reducing vibrations, CCTV reported. Owners reported a pungent smell in their cars and physical symptoms such as dizziness and swollen fingers, according to the CCTV report. Representatives from all three companies said they have started investigations. Audi China spokesman Martin Kuehl said Audi has the same "strict standards" for all of its parts globally, while Daimler spokesman Senol Bayrak said all its vehicles manufactured in China use only imported vibration-damping materials that comply with existing regulations.

The three German luxury brands command about 74 percent of China's luxury segment, according to estimates from researcher IHS Global Insight.

In the same CCTV program which highlighted the problems with VW, consumers also complained about the rusty car body of the Tongyue compact sedan made by Anhui Jianghuai Automobile Co. (JAC), a state-owned Chinese automaker. The next day, JAC issued a statement pledging to recall the vehicle.

79. China Unveils Tougher Fuel-Economy Standards

China imposed long-debated stringent fuel-economy standards recently, making life tougher for cash-strapped small domestic brands that are already struggling amid a slowdown of the world's biggest auto market. The rules, jointly issued by five government bodies including the National Development and Reform Commission, would improve passenger cars' average fuel consumption to 6.9 liters per 100 kilometers (34.1 mpg) by 2015 and further to 5.0 liters (47.0 mpg) by 2020.

"That's going to be tough for everyone, especially those small players as they will have to use more fuel-efficient engines and invest in hybrid technologies," said Yale Zhang, head of Shanghai-based industry consultancy Automotive Foresight.

China passenger car fuel consumption stood at 7.8 liters per 100 kilometers (30.2 mpg) in 2009, said John Zeng, Asia Pacific director of consultancy LMC Automotive.

80. China to Continue Promoting 'New Energy' Vehicles

Although China has implemented policies since 2009 to promote the private use of hybrid, all-electric, and other alternative fuel vehicles, only about 4,400 of them have been sold to private owners out of 27,800 such vehicles in use at the end of 2012, the head of the Ministry of Science and Technology told a news conference on the sidelines of the annual National People's Congress meetings on March 7th. Wan Gang said private ownership "may grow more slowly because new energy vehicles need infrastructure, such as charging stations." Most of the so-called new energy vehicles are in public use, with about 80 percent of them in bus fleets. Wang projected that about 39,000 new energy vehicles will be on the road by the end of March "but still mainly in public transport."

A program of subsidies to support private purchases of the vehicles expired at the end of 2012. Up to 60,000 Yuan (\$9,600) per purchase was available from the central government. Local governments also offered various subsidies through the "Tens of Cities and Thousands of Vehicles" new energy vehicle program.

A new set of subsidy regulations will be announced in the second quarter of 2013, according to a March 7 state-run media report that attributed the information to Cao Guangyu, vice general manager of the China Shanghai International Auto City, which is directing new energy vehicle development in Shanghai.

Yan Aoshuang, head of the Beijing Science and Technology Commission, also said at the news conference that Beijing hopes to use advanced technology in preventing and controlling air pollution. She said the municipal government is formulating a final air pollution plan after releasing a draft plan for public comment Jan. 19 in response to growing public anger about severe air pollution. Yan said Beijing will attempt to promote the "transformation and upgrading of industrial development" through scientific and technological innovation as well as more use of public transportation and more sales of new energy vehicles.

81. Beijing to Exempt EV Buyers from Monthly License-Plate Lottery

Beijing residents who buy electric vehicles or plug-in hybrids will be able to get license plates without entering the city's monthly lottery, the state-owned Xinhua news service reports, citing a city official. New incentives will begin in the first half of this year, said Chen Guiru, deputy director of the Beijing New Energy Auto Development Center. The city also will introduce sales subsidies of as much as 120,000 Yuan (\$19,115) for EV and plug-in hybrid buyers.

According to Xinhua, the municipality hopes to create a fleet of 5,000 EVs and plug-in hybrids this year, including 3,000 taxis and buses plus 2,000 privately owned vehicles.

The city instituted the monthly license-plate lottery in January 2011 as a way to ease traffic congestion. Last month, one of every 77 applicants was awarded license plates in Beijing, Xinhua reported.

82. Pacific Push To Cut Diesel Reliance

Several Pacific Island Prime Ministers met in Auckland recently for a summit to drum up money to reduce the islands' dependence on diesel for energy. But the failed attempt to roll Australia's Prime Minister resulted in one last-minute no-show after the country's representative at the event, MP Richard Marles, quit his portfolios after publicly backing Kevin Rudd against Julia Gillard.

Mr. Marles was Australia's Secretary for Pacific Island Affairs and was scheduled to speak at the Pacific Energy Summit and moderate a session. Mr. Marles was one of five Labor ministers and frontbenchers to lose their portfolios after the botched leadership spill. Foreign Minister Murray McCall said Australia's High Commissioner might step in and he did not expect it to disrupt the meeting, which was organized and hosted by New Zealand and the European Union.

Most of the Pacific Island leaders arrived last week, before being taken by the air force to Tonga for two days of meetings. Mr. McCall said using the air force for the Tonga talks was appropriate given the EU had helped cover the costs for the leaders to get to New Zealand. "We felt it was appropriate for us to take care of the Tonga leg. There aren't that many flights to Tonga and there aren't that many seats available for the number of people we had to travel."

The summit is one of the largest international meetings to be held in New Zealand and tens of millions of dollars of donor and loan funding was expected to be announced. The EU alone is

expected to announce more than \$14 million for energy projects, and Mr. McCall said the summit was also to encourage more private sector investment.

He said many Pacific countries relied on diesel for more than 95 per cent of their energy needs, spending on average about 10 per cent of their GDP on importing it. About 80 renewable energy projects had been identified to help slash that back.

Others attending include Helen Clark, the head of the United Nations Development Program.

83. New Policy to Limit Fuel Subsidy in Indonesia

President Susilo Bambang Yudhoyono announced recently that the government would soon introduce a new economic policy to curb the ballooning fuel subsidy that for years has been mostly enjoyed by the rich instead of the poor. "There are already some options on the table on how to deal with the subsidy that we think are realistic, but I cannot disclose them right now because we will be finalizing everything over the next one or two weeks," Yudhoyono said in a press conference after meeting with members of the National Economic Committee (KEN) at his office.

According to KEN chairman Chairul Tanjung, the new policy will be announced at the end of March.

The President said that if such a measure was taken, the fuel subsidy amount would be significantly reduced within the next two years so that more government revenue could be used to finance development. According to the President, at present, the fuel subsidy mostly benefits the rich or those who own cars rather than the poor because the subsidy provision is based on commodities, rather than on recipients. "It is unfair because the larger part of the fuel subsidy is enjoyed by the middle class who own private vehicles. The subsidy failed to directly reach those on low incomes," Yudhoyono said.

Yudhoyono, however, ruled out the possibility of totally removing the fuel subsidy from the state budget as such a drastic measure would result in a sharp increase in inflation. The President also ruled out the possibility of raising the fuel prices.

In 2012, the government spent Rp 306.5 trillion (US\$31.8 billion) on energy subsidies (mostly for fuel), up 24.3 percent year-on-year. The total subsidy more than doubled the government's capital expenditure, which reached only Rp 140 trillion in the year. With the surge in fuel prices, and the surge in fuel consumption, the energy subsidy is expected to further exceed the allocation, this year.

Raising fuel prices, now about half of the market price, is politically sensitive in Indonesia, where people have been used to low fuel prices for decades. The government had prepared a number of plans to limit subsidized fuel consumption in the past, but none of them were ever implemented due to difficulties in controlling them. A government proposal to raise fuel prices in April last year was turned down by lawmakers following a series of violent protests throughout the country.

"The subsidy must not exceed the level of appropriateness because it could harm our fiscal situation and our economic policy in general," Yudhoyono said.

Chairul said the new policy would provide a better assurance that only the poor would be eligible to enjoy the subsidy. "Studies show that 70 percent of the fuel subsidy has benefited the rich with private cars. That means the fuel subsidy is not in line with the philosophy behind it, just as the President has said," he said. Chairul insisted that the new policy would not mean that fuel prices would rise. "KEN does not recommend fuel price hikes."

Chairul said that the new subsidy mechanism would be a bit more complicated than the scheme currently used in the fuel subsidy. "This is about willingness. Unconventional ways have always been rejected because they are difficult to implement," he said.

"I'm not saying that this would be without risks. The kerosene to gas conversion program, for example, was considered difficult to implement. Along with numerous incidents of gas explosions, many were pessimistic. But now you can see that everybody enjoys the program and we can save trillions of rupiah," Chairul said.

Meanwhile, Purbaya Yudhi Sadewa, a KEN member who was also present at the meeting with the President said that the committee would study a number of alternatives to curb the consumption of subsidized fuel over the next 10 days. Among the alternatives, according to Purbaya, were restricting private vehicles from using subsidized fuel and to develop and apply technology that could help limit the consumption

84. Worst Pollution This Year Envelopes Hong Kong

Hong Kong residents breathed in the worst air of 2013 recently, joining citizens in mainland China who have been choking on dangerously high pollution levels, and further undermining the city's role as an Asian financial center, Air pollution index readings hit their highest levels this year at roadside monitoring stations in Mong Kok and Central, home to financial institutions such as HSBC Holdings and Standard Chartered, recording "severe" levels of 205 and 210, respectively.

More than half of the 11 stations in areas with less traffic recorded "very high" levels between 103 and 140.

The situation was caused as pollutants, in particular nitrogen dioxide, became trapped within the city where skyscrapers packed together stop air from circulating, a spokesman for the Environmental Protection Department said.

People with heart or respiratory illnesses, the elderly and children were advised to stay indoors as the city's iconic harbor was shrouded in thick smog and the skyscrapers of Hong Kong Island were barely visible from Kowloon.

Hong Kong is seeing increasingly high pollution index readings this year due to the rising number of vehicles on the city's already congested roads, said Melonie Chau, Friends of the Earth's senior environmental affairs officer.

Air pollution in Hong Kong, a former British colony which returned to Chinese rule in 1997, is a major source of worry for local citizens and foreign businesses, which increasingly see it as compromising the quality of life. There were 322 premature deaths in Hong Kong in March as a result of adverse health effects due to air pollution, according to Hong Kong University's Hedley Environmental Index.

Surveys have continuously found that the city's pollution is hurting its competitiveness, undermining its role as a financial center as some executives relocate due to health concerns.

Hong Kong leader Leung Chun-ying has pledged to make improving air quality a priority. In his maiden policy speech in January, Leung proposed HK\$10 billion (\$1.29 billion) in subsidies to phase out over 80,000 heavy-polluting diesel vehicles, while fresh emission reduction targets have been set with neighboring Guangdong province - a major source of cross-border pollutants from tens of thousands of factories in the Pearl River Delta.

85. China to Spend \$16 Billion to Tackle Beijing Pollution Crisis

China will spend 100 billion Yuan (\$16 billion) over three years to deal with Beijing's pollution, an official newspaper has reported, as the government tries to defuse mounting public anger over environmental degradation. Beijing's government has pledged to improve sewage disposal, garbage treatment and air quality, as well as crack down on illegal construction, the China Daily newspaper said, citing a three-year plan.

Air quality in Beijing, a city of around 20 million people, has mostly stayed above "very unhealthy" and "hazardous" levels since the beginning of this year. Pollution was one of the key themes at the recent National Party Congress, where China's new leaders were confirmed. Many Chinese feel the government lacks bite when it comes to enforcing policies designed to protect the environment.

Beijing's plan includes laying or upgrading 1,290 km (800 miles) of sewage pipeline, building five garbage incineration plants, setting up 47 water recycling plants and upgrading 20 sewage disposal plants, said China Daily.

Beijing Mayor Wang Anshun called on the government to allow the private sector to participate in these investments.

The government also plans to curb illegal construction and land use, and will compile a list of illegal buildings for demolition next year, Beijing Deputy Mayor Wang Wei told China Daily.

Most of China's major cities are plagued by pollution of one sort or another. Earlier this month thousands of dead pigs were found floating in one of Shanghai's main water sources.

86. 'Green' Awareness Levels Drop In Beijing

The level of environmental awareness among Beijing residents has fallen for the third consecutive year, a new survey shows. Despite the frequent environmental protection debates and scandals, especially over water and air quality, environmental awareness of Beijing residents — not only general knowledge of environment issues but participation in them — failed to grow last year, according to a new survey by the education center under the Beijing Municipal Environmental Protection Bureau.

Local residents' environmental awareness in 2012 was 71.6 points out of a possible 100, compared to 72.2 points in 2011, 74.2 points in 2010 and 75.9 points in 2009.

Conducted in December 2012, the survey covered about 2,000 residents 16 and 60 years old who have lived in the city for at least two years.

"The environmental protection issue has been heatedly debated in recent years, but people's awareness has decreased since 2009," said Liu Jingqi, the survey's project director. "One of the reasons for the peak of people's awareness in 2009 and decrease afterwards was Beijing's hosting the Olympic Games in 2008, when government promotion greatly spurred people's consciousness," Liu said.

Though people are attaching more importance to air and water quality among all environmental issues recently, poor execution and action have contributed to decreasing environmental-protection awareness.

In addition, despite the fact that PM2.5, or particulate matter with a diameter smaller than 2.5 micrometers, has been hotly debated in recent years, the number of people knowing this term is relatively small among Beijing's 20 million residents. Only 24.2 percent of those interviewed said they had heard of the term PM2.5, and half of those who had heard of it did not know the term is related to air pollution, according to the survey results.

Zhou Rong, director of the Greenpeace climate and energy project in Beijing, echoed the center's conclusion. "Despite the intense promotion of the content and hazards of the fine particulate through the media in recent years, many of the public only have a general or even vague recognition of it without comprehensive understanding," she said.

87. China, India, Singapore Could Join New Arctic Circle Forum

China, India, Singapore and other countries far from the Arctic Circle could be part of a new global forum to widen the discussion about the fate of the planet's Far North, Iceland President Olafur Grimsson said recently. The non-profit forum, Arctic Circle, will hold its first meeting in Reykjavik, Iceland's capital, in October.

Such a gathering is needed, Grimsson said, because, while most countries have a stake in the melting of Arctic ice, only eight - Canada, Denmark, Finland, Iceland, Norway, Russia, Sweden and the United States - are members of the Arctic Council, an intergovernmental group set up in 1996. Some non-Arctic countries can observe the deliberations, but they have no formal voice on the Council about sustainable development and environmental protection in the region.

The Icelandic leader said he had discussions about the Arctic this year with officials from China, India and Singapore. The first agenda item of these discussions was when these countries would get a seat on the Arctic Council.

The Arctic Circle forum will be "an open, democratic tent where everybody who wants to participate will actually be welcome," Grimsson said at an event at the National Press Club. He said concerned citizens, representatives of non-governmental organizations, scientists, researchers can join governments and corporations to be part of this discussion. And while it may take a while for the Arctic Council to decide which countries might become permanent observers at its meetings, these same countries can send representatives to the Arctic Circle to make the case for inclusion.

He also mentioned that China and Iceland announced a new free trade agreement recently.

Arctic sea ice is a key indicator of climate change and a powerful global weather-maker. Last year, Arctic sea ice melted to its lowest levels on record, authorities have said. Besides making global sea levels rise and influencing world weather, the ice melt means new water routes are

opening between Europe, Asia and North America, a trend that will have a profound impact on global shipping.

Last year, as summer sea ice shrank, the first Chinese icebreaker made the trip from Shanghai to Iceland via the Northern Sea Route along the Russian coast. By mid-century, the quickest way to get goods from Asia to the U.S. East Coast might well be right over the North Pole, according to a University of California-Los Angeles study.

88. Australia Under Pressure to Tighten Diesel Standards

The rapid growth of diesel vehicles on Australian roads is becoming a health hazard and experts say very little is being done to address the problem. Diesel has long been linked to serious health issues including cancer and respiratory diseases, but despite the warnings, Australia lags behind Europe in curbing emissions from diesel vehicles.

The number of diesel vehicles on the road has more than doubled since 2005, led by European diesel passenger cars and the rise in popularity of SUVs and one-ton utes, which are predominantly sold in diesel form.

The European luxury cars have particulate filters that trap dangerous material inside vehicle exhausts, but many of the more popular Japanese utes and SUVs do not have this technology.

Health experts at a Senate hearing earlier this month said Australia had waited too long to adopt strict emissions laws and must address the "urgent problem" of diesel particulates.

A planned progression from Australia's current Euro 4 standard to the Euro 5 emissions standard will result in particulate limits dropping from 0.025g/km to 0.005g/km, but experts say the change could come too late.

Greens senator Richard Di Natale said emissions should be cut before the current deadlines. "It's not acceptable to be waiting around for years when we have the technology to do that straight away," he said.

A Department of Infrastructure and Transport spokeswoman said while government standards "do not mandate any particular technology", particulate filters could soon be necessary for all new cars. "We anticipate that virtually all diesel vehicles will require a particulate filter to meet the very stringent Euro 5 particulate emission limits," she said. "The Euro 5 standards will deliver an 80 per cent to 90 per cent reduction in the allowable level of harmful particle emissions compared to the current Euro 4 standards."

Australia will adopt the Euro 5 standard in November, less than a year before Europe adopts the Euro 6 standard. But manufacturers will be allowed to sell Euro 4 vehicles until November 2016, putting many Australian cars two generations behind European products.

"We know that the ultra-fine particles are a real problem ... an urgent problem, and we need to do more," Steve Hambleton, federal president of the Australian Medical Association, said.

89. China Climate Chief Says EU CO2 Crisis Will Not Hurt Domestic Plans

The crisis facing the European carbon market will not deter China from plans to establish its own emissions trading platform or its other climate pledges, the senior official responsible for

climate change said recently. Xie Zhenhua, vice-director of the National Development and Reform Commission in charge of climate policies, said efforts to cut greenhouse gas emissions were a "domestic requirement". They were, he said, designed to address longstanding inefficiency and environmental problems, and did not depend on other nations, or on the state of the economy.

"China has pledged these targets to the international community to deal with climate change and they will not change," he said at an event in Beijing. "Even if other countries say they will do nothing, we will keep to our strategy. No matter what happens to our economy, we cannot make any change."

The global financial crisis has saddled Europe's Emissions Trading Scheme (ETS) with a crushing oversupply of carbon credits and record low prices, but the EU parliament this week rejected proposals to bail the market out. (See story above) The ETS allows enterprises to meet their carbon reduction targets by purchasing carbon credits from the market, enabling them to keep emitting greenhouse gases. Many credits have been generated by low-carbon projects in China as part of a United Nations scheme known as the Clean Development Mechanism.

China is planning a similar domestic scheme in which carbon-intensive enterprises and industries can meet their own targets by acquiring the emission quotas allocated to other firms. Xie said China ultimately sought to link its carbon trading platforms with those elsewhere, but was focused now on domestic needs. "In the future we will establish a link, but in the next few years we first need to establish a carbon market according to Chinese conditions and the conditions of developing countries," he said.

He said China would learn from mistakes made in Europe, especially when it comes to prices, with Shanghai set to include a mechanism by which carbon credits can be taken off the market when supplies are too high and prices too low. Carbon prices on Europe's ETS were trading at an all-time low of 2.46 euros (\$3.21) per ton recently, down from 18 euros just two years ago. Xie said the problem was that the mandatory emission cuts in Europe had been set too low.

"Why have the prices gone from such a high to such a low? Because of the rate of emissions cuts," he said. "If it was higher, and if there were more pressures, the market would be much more active. It is probably related to the initial design of the exchange and the way emissions targets were allocated."

China is the biggest emitter of greenhouse gases on an aggregate basis, but levels are low in per capita terms.

Xie said China's pilot carbon market scheme was on track, with trading to begin in the southeastern city of Shenzhen in June and later in the business hub of Shanghai before year-end. But he said China would find it increasingly difficult to meet its 2020 climate change pledges. Problems, he said, would "get harder and harder and the costs will be higher and higher".

China has pledged to reduce 2011 levels of carbon intensity -- the amount of climate-warming carbon dioxide produced per unit of GDP growth -- by 40-45 percent by 2020. It has also vowed to increase the share of non-fossil fuel energy to 15 percent of its total energy mix by the same period and close vast swathes of inefficient industrial capacity.

90. Global Automakers Target Central, Western China for Growth

When Changan Ford Automobile Co. wanted to build an engine and a transmission plant next to each other, the local government here literally moved a small mountain to make it happen. This sprawling municipality is as hilly as San Francisco. So the Chongqing North Development Authority marshaled an army of bulldozers, backhoes and giant dump trucks to do some serious earth moving. "There was a 90-meter pitch from top to bottom. They took the mountain and pushed it down into the valley," says Gary Johnson, Ford Motor Co. vice president of manufacturing operations for Asia-Pacific and Africa, shaking his head in amazement as he recalls the massive scale of the eight-month project. "Unbelievable."

If it takes moving mountains to move into markets such as Chongqing, so be it. Automakers, urged on by China's national and local governments, are eager to expand in the markets of central and western China.

After a decade and a half of soaring car sales in the wealthy eastern provinces along China's coast, growth in China has slowed to a single-digit rate. Future growth will be in the hinterland, auto executives interviewed during this month's Shanghai auto show agreed.

The government has long urged automakers to go west, in hopes of fueling economic development in those largely rural regions. Now automakers are taking that admonishment to heart for their own reasons. "The government is steering everyone to go west. That works well for us," said David Schoch, Ford executive vice president of Asia Pacific.

Consider Chongqing, located at the convergence of rail lines and highways in central China. "In Chongqing, all transportation systems come together," said Ford CEO Alan Mulally. "It's such a gateway." Chongqing is about the same distance from Shanghai as Des Moines, Iowa, is from New York. It's also home to more people -- 5 million in the city proper -- than Los Angeles. But in China, it's generally agreed that a city needs a minimum of 10 million people to qualify as a so-called Tier 1 city, such as Shanghai, Beijing or Guangzhou. Chongqing's size marks it as just a Tier 3 city.

The 400,000-unit Chongqing engine plant starts production this summer. By the time the transmission plant opens in 2014, Ford will operate five plants here with its Chinese partner, including three assembly plants with capacity to build 767,000 vehicles per year. It will be Ford's largest manufacturing complex outside its southeast Michigan base.

Ford isn't the only carmaker looking west in China these days. China's dominant foreign players, Volkswagen and General Motors, have embarked on western strategies. Chrysler Group, Volvo, Nissan and Suzuki are building plants in western cities. Automakers are also adding dealerships in the region as fast as they can.

Analysts have forecast China's light-vehicle sales at 30 million units in 2020, up from 19.1 million last year and larger than the 2012 U.S. and European markets combined. By 2020, western China's share of total sales is expected to rise to 26 percent, up from 18 percent in 2011, predicts IHS Automotive. The prosperous coastal region's market share will decline to 43 percent, from 60 percent. "The coastal region will still have the highest passenger vehicle sales by volume, but its market share will be down significantly," wrote Lin Huaibin, IHS Automotive's sales forecast manager in China.

Two years ago Volkswagen unveiled its "Go West" strategy, a key part of its plan to spend \$12.8 billion (79 billion Yuan) through 2015 to expand production in China. In March, VW said it was building five more assembly plants and two component plants in China. Three of the assembly plants and both component plants start production this year. The expansion will allow Volkswagen to boost annual production in China to 4 million units by 2018, up from 2.6 million today.

VW already has an assembly plant in the western city of Chengdu, which also is home to a plant run by Toyota Motor Corp. and China's FAW Group. This year VW will add a plant in Urumqi, in Inner Mongolia, north of Tibet.

GM plans to build four assembly plants in China by 2015. GM China chief Bob Socia said the plants would boost GM's China production by 30 percent, to 5 million units. GM didn't say where the new plants will go. Until now, the automaker has relied on its manufacturing hub in Liuzhou, where a GM joint venture produces inexpensive Wuling-brand microvans, to spearhead its push west. With a starting price of 31,000 Yuan (\$5,000), the Wuling Sunshine microvan was China's top-selling light vehicle last year with sales of 524,000 units, LMC Automotive data show.

Whether or not they're adding factories away from the coast, automakers are adding dealerships in western China, and in the Tier 2-5 cities that dominate China's interior, at a breakneck pace. Those markets are seen as ripe. In Tier 1 cities there are 128 vehicles per 1,000 residents, data from BMW show. The ratio drops to 54 per 1,000 in Tier 3 cities and 28 per 1,000 in Tier 4 cities. Key developments include:

- SAIC-GM-Wuling -- the partnership that sells the Sunshine microvan -- plans to have 1,100 dealerships in western China in 2017, up from 800 today. Now Shanghai GM is starting to sell Buicks and Chevrolets in the area. "By 2017 we plan to have 1,700 dealerships in western China, compared to about 1,000 today," Socia said. Cadillac expects to have 200 stores in China by the end of the year, up from 150 today. "Our coverage is getting wider," said Kevin Chen, general director of Shanghai GM's Cadillac division. "We are expanding into Tier 3 and Tier 4 cities."
- Soh Weiming, VW China's executive vice president of sales and marketing, called Tier 3 and 4 cities the automaker's "bread and butter."
- Audi will add one dealership per week until it has 500 stores, up from 300 at the end of last year, said Luca de Meo, Audi's board member in charge of marketing and sales. "We are still not active in half of China's 363 cities with over 1 million inhabitants," de Meo told Automotive News in Shanghai.
- BMW also is eyeing the smaller cities in the interior. "We want to increase our competitiveness in the Tier 1, 2 and 3 cities and enter into the Tier 4 and 5 cities," said Karsten Engel, CEO BMW Group Region China.
- Ford is expanding its dealer network from 540 this year to 680 by 2015, with many of the new locations in western cities.
- Jeep, which sold 46,000 units in China last year, is "absolutely" seeking dealerships in Tier 3 and Tier 4 cities, Jeep President Mike Manley told reporters at the Shanghai auto show. By the end of the year, Jeep hopes to have 200 stores in China, up from 160 now.

Jeep's SUVs are well suited for China's interior, where motorists often contend with poorly maintained roads. "We are targeting on markets where there is a predominance of SUVs, and where they forecast growth of SUVs," Manley said. That's already happening: SUVs this year have been China's fastest-growing segment.

Ford is struggling to keep up. Demand for the Kuga, introduced earlier this year, is soaring. During a tour of Changan Ford Assembly Plant 2 in Chongqing, it becomes apparent that production is humming. "We have lifted production volumes and sales forecasts for the Kuga three times since we launched it six weeks ago," says Marin Burela, president of Changan Ford. The plant "is essentially working seven days a week around the clock."

91. Chinese Car Makers Turn to Hybrids, Hope for Beijing Backing

China is warming to gasoline-electric hybrid cars as it tackles an addiction to fossil fuels, and local car makers are finally heeding the call and entering a niche 'green' market dominated by Japanese rivals such as Toyota Motor Corp.

Some automakers like state-owned SAIC Motor Corp and Brilliance Auto are developing the fuel-saving technology pioneered by Toyota on its Prius model two decades ago, and BYD Co, a Chinese battery and automaker part-owned by a Warren Buffett company, will unveil a "self-developed" gasoline-electric car technology at the Shanghai auto show.

Throwing more subsidies at conventional hybrids could help kick-start China's so-called 'new-energy' car policy, which has failed to gain traction. The policy aims to put half a million new-energy vehicles - defined as all-electric battery vehicles and heavily electrified "near all-electric" plug-in hybrids - on the road by 2015 and 5 million by 2020. Last year, just 12,791 such vehicles were sold, according to the China Association of Automobile Manufacturers data, and industry experts reckon China has little hope of hitting those objectives unless the government redefines new-energy cars and embraces conventional hybrids and other alternative energy technologies.

"After all these years, people now realize that all-electric battery cars are unlikely to become mainstream over the next 10 years," said Peter Huang, associate director at IHS Automotive.

Looking to wean China off fossil fuels and clean up its polluted air, Beijing has offered generous purchase incentives on new-energy cars in a 3-year program that ended last year. As it comes to renew the program, which industry insiders expect in the coming weeks, the government is thought likely to increase subsidies for hybrids. In the previous program, Beijing offered a 3,000 Yuan (\$490) rebate to drivers buying a new gas-electric hybrid car, way below the 60,000 Yuan handouts on all-electric battery cars.

"The government has to change the policy. What has happened is they can't spend the money budgeted for all-electric cars because few people are buying them. People are not motivated to buy hybrids either as the subsidies are far from enough," said a state-owned auto company executive, who didn't want to be named because of the sensitive nature of the matter.

Jochem Heizmann, CEO of Volkswagen Group China, said "There's a discrepancy between the (Chinese) government's goals and actions. Over the next 10 years, plug-in hybrids have much better prospects to achieve a certain volume than (purely) electric cars.

"The problem is that special infrastructure has to be organized in some public areas. For private individuals it's really difficult to use the electric car. It will take a long time to get to a certain volume (with battery-powered cars)," he told reporters in Shanghai on Friday.

Chinese media have reported that Miao Wei, head of the Ministry of Industry and Information Technology, told delegates at last month's National People's Congress that the new-energy car rebate program would likely include 16 categories based on a vehicle's fuel efficiency - raising industry hopes that the government is ready to boost subsidies for conventional hybrids. "China's hybrid vehicles have been gradually maturing and mainstream products have achieved 20 percent savings on fuel. Conventional hybrids are thus ready, and cleared the threshold for country-wide promotion," state media reported Miao as saying at a Congress session.

Some media said other ministries had not yet been won over to the merits of adopting conventional hybrids aggressively.

"I haven't heard anything definite, it's all very complicated," said an official at the semi-government China Automotive Technology & Research Center (CATARC), a body that helps set vehicle standards and technical regulations, as well as product certification and industry planning.

The city of Guangzhou, a key industrial hub in southern China with a population of 12.7 million, decided last year to offer a 10,000 Yuan rebate to anyone buying a gas-electric hybrid car.

The application of hybrid technology - propelling a vehicle by coupling a gasoline engine with an electric motor - began with Toyota in the 1990s, and has since been taken up by many automakers. Hybrids are particularly popular in the United States and Japan. Toyota alone has sold more than 5 million hybrids since launching the Prius in 1997.

Among China's leading carmakers, SAIC has said it will launch the Roewe 550 hybrid in the coming months, adding to its Roewe 750 hybrid which hit showrooms in 2011 and which is priced from 236,800 Yuan. Brilliance Auto is set to mass produce its FSV, a so-called 'mild hybrid' car that uses stop-start technology - where the gasoline engine stops when the car is at a standstill and re-starts when the driver steps on the gas pedal. To date it has sold several hundred FSVs to fleet operators in Dalian and other cities. Great Wall Motor Co is also expected to put its first 'green' car, a cross-over hybrid, on the market in China next year.

"We have been focusing mostly on hybrids because battery technology is not mature and the cost is too high," said Judy Zhu, a spokeswoman for SAIC.

Whatever Beijing decides on incentives for conventional hybrids, non-Chinese manufacturers will benefit, too. Toyota last year more than quadrupled sales of its hybrids in China to around 17,000 cars, some made locally and others brought in from Japan. Beyond the Prius, Toyota has a hybrid Camry that it builds in China. Volume sales are relatively low as the hybrids are pricey, with the Prius, for example, starting at \$37,200 due to high taxes on imported cars in China. To bring prices down, Toyota plans to produce key hybrid parts such as the electric motors and batteries in China by 2015.

Japanese rival Honda Motor Co sold only 540 hybrid cars in China last year, but plans to start producing certain hybrid models in China as early as next year.

92. China's BYD Mulls Leaner, Greener

BYD Co, one of the better known Chinese brands thanks to a stake held by billionaire U.S. investor Warren Buffett, may stop making conventional gasoline-fuelled cars within two years and focus on 'new energy' battery models as part of a "re-birth plan" to arrest a slump in sales. Shares in BYD, which once harbored long-term ambitions to be as big as Toyota Motor Corp, have tumbled by almost three quarters since a late-2009 peak, as net profit crumbled to just 81.4 million Yuan (\$13.15 million) last year from 3.8 billion Yuan four years ago.

Now, the \$7.7 billion company is poring over internal plans to radically adjust and possibly streamline its business - which sprawls across batteries, cellphone assembly, solar panels, LED light bulbs, and electric and gasoline-powered cars and buses.

At the heart of the 're-birth' is a plan to ditch gasoline-fuelled cars, and maybe offload its solar panel business, and concentrate on new greener battery technologies, said two senior BYD executives, who asked not to be named as the plans have not been finalized.

"We're trying to reposition ourselves around what we do best" - producing advanced but affordable iron-phosphate lithium-ion batteries, one of the executives said. BYD is a world leader in rechargeable batteries.

It's a bold move, and not without risk. But the executives said BYD, based in the southern industrial city of Shenzhen, recognizes it needs to find an edge in its business, which has suffered as auto sales, which accounted for around half the company's revenue, slumped. BYD last year sold 457,700 cars.

The executives said BYD would likely in future only design 'green' electrified cars, phasing out selling gasoline cars over the next couple of years. The migration of the product line-up will likely start late this year, they said, leaving BYD with a range of conventional gasoline-electric hybrid cars similar to Toyota's Prius - combining a turbo-charged gasoline engine with an electric motor propulsion system.

That technology could shave up to a fifth off fuel costs, though the cars could be priced 20,000 Yuan (\$3,200) above similar conventional gasoline-powered cars, the executives said. Some of the new hybrids and other models could hit U.S. showrooms by as early as 2016.

A smaller part of the new line-up will see pricier all-electric battery cars, as well as heavily electrified, so-called 'plug-in' electric hybrid cars. Both these green technologies are promoted by China's central government through generous purchase incentives as an industrial policy.

The main risk in promoting gasoline-electric hybrids is that the government currently does not recognize them as a 'new energy' car, so BYD hybrids would not benefit from the generous handouts that an electric battery car buyer would enjoy - such as a 60,000 Yuan rebate on purchase. Buyers of hybrids and other cars with small, fuel-efficient engines can currently get a subsidy of 3,000 Yuan.

Beijing's 3-year program to promote new-energy cars with incentives ended last year. BYD and others hope the government will broaden the definition of new-energy cars to include gas-electric hybrids as and when the program is renewed.

The 're-birth' plan follows a series of setbacks at BYD, which has more than 150,000 employees. "The last three years have been tough and painful at times. Everybody beat us up," said one of the executives. "A lot of long-term investors and friends of the company lost patience with us."

BYD consistently over-promised and failed to deliver on many objectives it set itself. Its e6 all-electric battery car - an image builder as a green company - was intended for private use in China and the United States, but never quite caught on. Now, the executives said BYD is pushing the e6 only as a taxi or rental car, and plans to launch two or three new all-electric battery cars in the coming years.

The company also stumbled in its gasoline car business, once a cash cow, as it sought to expand sales too fast without improving vehicle quality, and brought in too many inexperienced dealer operators to spur sales.

The executives said BYD's new direction would be more "measured". One said BYD had been too concerned in the past with volume and growth, at the expense of quality. Now, the executive said BYD Chairman Wang Chuanfu spends more time guiding and pressing managers to improve, and invest in, quality. BYD's initial vehicle quality, as measured by U.S. consultant J.D. Power, is "below industry average" in China, as are all local manufacturers, but it has "dramatically improved quality," said Jacob George at J.D. Power in Shanghai, predicting the firm's initial quality rating could rise above the industry average at least by 2018.

93. Great Wall Motor Recalls Diesel Vehicles

Privately-owned Chinese carmaker, Great Wall Motor Co., Ltd., will recall nearly 14,000 defective diesel vehicles, the country's consumer quality watchdog said Saturday.

Haval H6 cars produced between Nov. 22, 2011 and Nov. 6, 2012, will be recalled, according to a statement from the General Administration of Quality Supervision, Inspection and Quarantine.

The vehicles' power steering pumps may not work properly due to flaws with their some bolts, the statement said. The company will replace the flawed parts for free.

The auto maker is headquartered in the city of Baoding in north China's Hebei Province.

94. Indus Towers Says 20% of Its Sites Are Diesel Free

Telecom mast operator Indus Towers said 20,000 of its sites across 15 circles or 20 per cent of its network is diesel free and it aims to make another 10,000 sites diesel free in the current fiscal. "On 20,000 sites across 15 circles, there is no diesel use. Battery power is used as a backup on these sites," Indus Towers Chief Executive B S Shantharaju told reporters. He added when the Green Sites project was launched, it was decided to run telecom network operations without using diesel as power backup and without compromising on the network uptime. Shantharaju said as a result of the initiative, there has been a 15 per cent decline in diesel use in the last three years, while its operations have grown over 35 per cent during the same period.

Apart from not using diesel at these sites, the company has also deployed other technological solutions, including temperature controlled telecom equipment, to allow heat transfer which reduces energy consumption and carbon emissions. The company also has around 900 sites, which run on solar power.

95. With Eye on Karnataka Assembly Polls, Moily Pauses April Diesel Price Hike

Yielding to political compulsions, the UPA has for the first time deviated from its oil sector reforms agenda, keeping in abeyance the nominal monthly increase in diesel price in April. According to India Express, sources said the petroleum ministry last week stopped state-run oil marketing companies (OMCs) from raising the price of diesel while allowing them to lower that of petrol by Re 1 a liter — even though the under-recovery on diesel stood at Rs 6.48 per liter.

A key official said Petroleum Minister Veerappa Moily personally ordered that the price of diesel be raised only after May 5, the date Karnataka — Moily's home state — goes to polls. However, the official said, the increase was unlikely to happen before May 10 — the day Parliament's budget session ends, and two days after the counting of votes in Karnataka.

The price of diesel was left untouched during the first half of the budget session, and raised marginally only on March 22, after Parliament went into recess. Moily's instruction goes against the January 17 decision of the Cabinet Committee on Political Affairs to empower the OMCs to raise diesel prices in small doses every month until the subsidy is eliminated.

Moily made the announcement himself, and diesel became dearer by 45 paise each month over the next three months. Sources said any move to cover for the April postponement in May too would go against the CCPA order, as the increase would then breach the mandated 45-50 paise ceiling.

96. Delhi Metro Helps Reduce Vehicular Air Pollution, Indicates Research

The Delhi Metro has not only reduced travel time and made commuting more hassle-free but has also helped in bringing down the pollution level in the Capital. The Centre for Development Economics at Delhi School of Economics has come up with a research paper claiming that the Delhi Metro has resulted in reduced levels of two important vehicular pollutants - nitrogen dioxide (NO₂) and carbon monoxide (CO).

The research found that the level of CO in the area around ITO, a busy intersection in Delhi, has fallen by at least 35 per cent.

The research paper prepared by Deepti Goel in association with Sonam Gupta from Food and Resource Economics Department at University of Florida in the US was presented at a seminar at Indian Statistical Institute recently.

"Looking at each extension of the rail network as a separate event, it has resulted in three to 47 per cent reduction in NO₂ concentration, and a 31 to 100 per cent reduction in CO concentration," Goel said.

"We quantified the effect of the Delhi Metro on air pollution. We used hourly data on four criteria pollutants from 2004 onwards.

Both NO₂ and CO are important constituents of vehicular emissions and our findings are suggestive of the diversion effect of the Delhi Metro," she said.

CARIBBEAN

97. Jamaica Gasolene Retailers Association Welcomes Low-Sulfur Diesel

President of the Jamaica Gasolene Retailers Association (JGRA), Derrick Thompson, has welcomed Energy Minister Phillip Paulwell's announcement that low-sulfur diesel will soon be available in Jamaica. Paulwell made the announcement in his recent contribution to the 2013 Budget Debate, saying the low-sulfur diesel will be introduced to the motoring public at retail stations as of June 24th.

"This fuel is very important. One of the challenges we have is the complaints from motorists of the high sulfur content that is damaging their engines. At least this will provide renewed confidence in the purchase of diesel," Thompson said.

Thompson said that this fuel will be important to the gasoline retailers, as motorists will be able to hold on to their diesel engines longer. He added that the JGRA had been contemplating phasing out diesel across the island. However, Thompson said the introduction of low-sulfur diesel will result in a price increase.

Low-sulfur, or ultra-low-sulfur diesel, is a cleaner fuel as it has been refined so that its sulfur content is lower than normal diesel fuel. Paulwell acknowledged that there have been calls from the motoring public as well as from fuel retailers for this product on the market.

The minister also mentioned the importance of Petcom as a strategic asset in the marketing of petroleum in Jamaica and that two of Petcom's retail stations, at Dunrobin in St Andrew and Portmore Parkway in St Catherine, have been prepared for the low-sulfur diesel's arrival. Once it becomes available it will be available for purchase from these petrol stations and will be retailed from others shortly after.

Thompson also said that with the introduction of this fuel there will be less sulfur dioxide (So₂) hitting the atmosphere and therefore it should be healthier for the environment. Sulfur, a natural part of the crude oil from which diesel is obtained, is one of the key causes of soot or other particulates in diesel. Soot is primarily responsible for some diesel engines' noxious black exhaust fumes. The move to low-sulfur diesel is aimed at lowering diesel engines' harmful exhaust, thereby improving air quality.

MIDDLE EAST

98. Jerusalem Considering an Air Pollution Master Plan

On 31/1/2013 the Jerusalem City Council approved for public hearing a master plan to reduce air pollution from transportation in the city, to be implemented in stages until 2020. The plan consists of three main components:

1. Enhancing public transport to the city:
 - A. "Park & Ride" areas will be established at the three main entrances to the city. Shuttles running frequently from these designated areas will transport commuters to major destinations in the city.
 - B. The high-speed train line between Tel Aviv and Jerusalem now under construction (the trip will take 28 minutes compared to the current commuter drive of an hour and a half) will eventually connect the city of Modi'in. In addition,

approved plans call for the extension of Jerusalem's light rail line (electrically powered) by four additional light rail lines linking the city's major neighborhoods.

2. Non-motorized travel: Jerusalem's existing bike paths will be linked to create a city-wide network of bicycle paths. Bike rental stations located throughout the city will be established, and the option for rental bicycles fitted with electric engines is now being reviewed.

3. Clean zone: central Jerusalem will be defined as a Clean Zone restricting access, to heavy vehicles (buses and trucks). Beginning in 2015 only heavy vehicles meeting Euro 4 standards and above will be allowed access. The second stage calls for Euro 5 starting from YEAR 2020. The program also includes a series of additional measures such as providing clean car parking benefits, preference to suppliers competing in municipal tenders that operate low emission vehicles, and more.

The plan was prepared by a team of consultants led by Avi Moshel, Dr Elia Ben-shabat, Dr Rachel Adam, Lior Shmueli, Sharon Achdut, and Gilad kozikaro.

A public hearing for the plan has been set for May 2, 2013.

99. Tel Aviv Strikes Agreement with Main Public Bus Company to Curb Diesel Emissions

On February 26th, Tel Aviv's municipal government announced that it had reached an agreement with the city's main public bus company to curb diesel emissions. About 80 percent of nitrogen oxides and particle emissions in Tel Aviv-Jaffa come from transportation fumes, led by buses, the government said.

The municipality said it met with Dan Bus Cooperative executives to brief them on a plan to add business licensing conditions that would restrict the entry of older, more polluting buses into bus terminals and Dan garages throughout Tel Aviv. It said the parties also agreed to establish a joint committee of environmental professionals to generate a broader program for reducing air pollution from bus exhaust. The government said it plans to form similar expert teams with representatives from other bus companies operating in the city.

"The plan to restrict the movement of polluting vehicles in the city is an additional step that can significantly reduce air pollution," Tel Aviv-Jaffa Mayor Ron Huldai said in a statement, noting that Tel Aviv's air quality has improved dramatically in recent years.

100. Air Pollution Threatens Health and the Environment in Cairo

The average Cairene inhales more than 20 times the acceptable level of air pollution every day, according to the World Health Organization. That means that every Cairo resident's daily air pollution intake is akin to smoking a pack of cigarettes. Industrial plants — especially factories that burn mazut, a heavy, low-quality fuel used in generating plants — are the biggest culprits, as they emit large amounts of greenhouse gases that feed global warming. With much of Egypt being desert, seasonal sandstorms also contribute to lower air quality, and the growing number of vehicles adds to the problem.

Aliya Abdel Shakour, who heads the Air Protection Advisory Unit at the National Research Center, says air pollution can be defined as the introduction of chemicals, particles or biological materials into the atmosphere in a high concentration, over long periods of time. Pollution eventually affects the health of humans.

Winds pass through the Western and Eastern deserts so fast that they can carry significant amounts of dust and sand over long distances, covering Egypt's cities in a yellow haze. "These dust storms usually contain silica, sulfate and carbonate molecules, which clog people's sinuses and can be extremely uncomfortable," Abdel Shakour says.

The scientist explains that natural air pollutants present a huge challenge to scientists, because they cover huge spaces and are mostly uncontrollable. "However, planting tall, sturdy trees in residential areas can act as an efficient wind and sand breaker," she adds.

The growing number of cars, factories and power plants, and the use of old heating methods such as burning coal and wood are considered to be the main man-made sources of air pollution. Cairo has more than 2 million vehicles, which release tons of sulfur, carbon dioxide and other pollutants daily, according to a 2011 study by the Central Agency for Public Mobilization and Statistics.

Car exhaust fumes contain worrying levels of heavy metals that have been proved to cause cancer.

"We shouldn't be proud of all the cement and steel factories established by Western countries in Egypt over the past two decades," says Abdel Shakour, who says these highly polluting industries have ruined the health of workers and nearby residents.

Although applying environmentally friendly processes to factories is costly, it remains a much cheaper option than getting rid of the pollution emitted by unclean factories. "Under the supervision of the Environment Ministry, Law 4/1994 obliges any factory to conduct an environmental impact assessment even before it's established," says Abdel Shakour. "Many international standards have been imposed to guarantee the factories' commitment to health and safety principles, and a lot of local plants have recently started applying them." But the reality is that despite promising new measures to hold the industry accountable for air pollution, the Environment Ministry fails to enforce the laws.

Yasser Hassan Ibrahim, who heads the National Research Center's air pollution department, says gases, aerosols and dust particles are the main culprits. He says that air pollution is one of the main causes of heart and lung diseases. "In addition to causing heart and lung diseases, the particles carry different sorts of heavy metals like lead, zinc, nickel and cadmium, which infiltrate the lungs and increase the risk of cancer," he adds.

Until the 1970s, air quality inside homes and work environments was neither particularly studied nor a subject of concern. But the outbreak of diseases caused by exposure to asbestos — minerals with insulation capacities and a resistance to heat and chemicals that made them extremely useful in construction — led to increased awareness about indoor air quality. Indoor air can be of extremely low quality and detrimental to human health, causing a wide range of illnesses, including pneumonia, respiratory problems, allergies and infections.

Heating or boiling food, keeping children in rooms with newly painted walls, and having floor coverings containing formaldehyde — an extremely toxic and volatile organic compound that is

a known carcinogen — can pose many serious health issues, Abdel Shakour says. “Also, using chlorine, ammonia and other chemicals to clean the floors and walls in the bathroom and spraying insecticide inside the home are also very dangerous,” she adds.

Allergies, asthma, itchy eyes, coughing and runny noses aside, the specific health effects of poor indoor air quality depend on what contaminants the air contains, and on how long and to what extent people are exposed.

Most people ignore the fact that household dust consists of a wide variety of organic and inorganic particles that collect in homes, and that most of the dust is shed skin cells, which explains why the dustier rooms in a house are the ones used most regularly. This dust can also be composed of fabric fibers from clothes, sand and soil particles, plant and insect particles, and many other components.

“Houses need to be properly ventilated, especially the children’s rooms,” Abdel Shakour says.

Mohamed Abdel Meguid Halawany is a 40-year-old welder. He has been suffering from severe asthma attacks for more than 10 years. “Doctors told me that my work environment is unhealthy and is causing my chronic disease. Unfortunately, I can’t leave my job, as I have a big family. I will have to work until I die,” he says.

Dr. Ahmed Hany Belal, a doctor specializing in heart and chest conditions, outlines the main diseases that spread because of high pollution rates. “In general, respiratory diseases are mainly transferred from one person to another by droplet infection, especially in crowded places like schools and offices. Of course, air pollution leads to bronchial congestion and increases the tendency of chest patients to have severe asthma attacks, even if their cases are stable,” he says.

He adds that it is vital that people know the importance of keeping patients in a separate room.

“It’s time to stop the bad hugging and kissing habits we have in our Arab countries. Also, the patient must be alert to some symptoms, like coughing, chest muscles pains, breathing difficulties, fever or weight loss, and must go and see the doctor immediately,” Belal says.

Belal warns of the dangers of using air conditioners without washing filters and having the required regular maintenance checks. Air conditioners and fans can transmit legionella bacterium, which causes pneumonia. “Raising awareness is our only way to salvation,” says Ibrahim. “It was scientifically proven that air pollution isn’t regional, but a global phenomenon that can spread over extended perimeters and harm thousands of people. Thus, burning large amounts of garbage in one city can not only affect surrounding cities, but also surrounding countries as well.”

He believes environmental issues must be included in schools’ educational curricula to raise children’s awareness about, and dedication to, the environment. Imposing laws isn’t the appropriate solution, he says, because there are many air pollution regulations that simply aren’t implemented.

A 2002 World Bank report estimated that environmental damage caused by pollution costs Egypt US\$2.42 billion each year. The country’s gross domestic product was worth just under \$230 billion in 2011.

GENERAL

101. International Shipping 'Impacting On Air Quality'

The international shipping industry must work to cut pollutants and improve air quality, a report from the European Environment Agency has found. Shipping is "currently one of the most unregulated sources of air pollution", the EEA argued, and is responsible for a significant amount of coastline contaminants.

Air quality within 400km of coastlines is severely impacted by sea freight, with around 70 per cent of global shipping emissions reaching this area. This is even higher in European waters, the research said. In and around busy ports, almost 80 per cent of the nitrogen oxide and sulfur dioxide originates from ships.

Only 3.3 per cent of global carbon dioxide emissions were related to national and international shipping in 2007. However, it is projected emissions from the sector will grow by as much as four per cent per year over the next decade. The researchers suggested cutting fuel consumption would be the most effective way to improve air quality and reduce pollutants. They highlighted a study that found a ten per cent reduction in speed could cut energy demand by 19 per cent.

EEA executive director Jacqueline McGlade commented: "We need initiatives that protect the environment as an overall system. The choice between either clean air or mitigating climate change is a false dichotomy -Europe needs both."

She added: "By avoiding unnecessary movement of goods and improving transport efficiency, we can address both air pollution and greenhouse gas mitigation together."

102. Air Pollution Linked With Thickening of the Arteries, Cardiovascular Problems

Air pollution has been linked to heart attacks, strokes and atherosclerosis ("hardening of the arteries"), thanks to research published in PLOS Medicine.¹ The study found that high concentrations of fine particulate air pollution (PM2.5) were linked with faster thickening of artery walls. The thickening was found in the inner walls of the carotid artery. This is the main blood vessel providing blood to the head, neck and brain.

The team also found that reductions in particulate levels were linked to a slower progression of blood vessel thickness. Blood vessel thickness is a symptom of atherosclerosis, and is present throughout the body even for people without obvious symptoms of heart disease.

"Our findings help us to understand how it is that exposures to air pollution may cause the increases in heart attacks and strokes observed by other studies," said Sara Adar, John Searle Assistant Professor of Epidemiology, University of Michigan School of Public Health.

¹ Adar SD, Sheppard L, Vedal S, Polak JF, Sampson PD, et al. (2013) Fine Particulate Air Pollution and the Progression of Carotid Intima-Medial Thickness: A Prospective Cohort Study from the Multi-Ethnic Study of Atherosclerosis and Air Pollution. PLoS Med 10(4): e1001430. doi:10.1371/journal.pmed.1001430

The research was conducted by a team led by Adar and Joel Kaufman, Professor of Environmental and Occupational Health Sciences and Medicine, University of Washington. The researchers investigated 5362 people aged between 45 to 84 years old from six U.S. metropolitan areas as part of the Multi-Ethnic Study of Atherosclerosis and Air Pollution (MESA Air). They took ultrasound measurements of blood vessels 3 years apart. All participants in the study had no known heart disease. The researchers found that on average, the thickness of the carotid vessel increased by 14 μm each year. Thickening of the inner two layers of this key blood vessel, which supplies blood to the head, neck and brain, occurred more quickly following exposure to higher concentrations of fine particulate air pollution. The researchers said the thickness of the carotid artery is an indicator of how much atherosclerosis is present in the arteries throughout the body.

"Linking these findings with other results from the same population suggests that persons living in a more polluted part of town may have a 2 percent higher risk of stroke as compared to people in a less polluted part of the same metropolitan area," Adar said.

In response to the findings, Nino Kuenzli, of the University of Basel in Switzerland, said in a news release that the study "further supports an old request to policy makers -- namely that clean air standards ought to comply at least with the science-based levels proposed by the World Health Organization."

103. Decarbonisation Alarmingly Slow, Warns IEA

The International Energy Agency (IEA) has released Tracking Clean Energy Progress 2013 at the fourth Clean Energy Ministerial in New Delhi. The report examines the latest global development and deployment of 11 clean energy technologies and end-use sectors, and it provides specific recommendations to governments on how to scale up deployment of these key technologies.

Each technology and sector is tracked against interim 2020 targets in the IEA 2012 Energy Technology Perspectives 2°C scenario (ETP 2DS), which lays out pathways to achieving a sustainable energy system by 2050. The report also introduces the IEA's Energy Sector Carbon Intensity Index (ESCI), which shows the carbon emitted for each unit of energy used and provides a cumulative overview of progress in the energy sector since 1970.

Stark messages emerge:

- Progress has not been fast enough; the world is not on track to realize the interim 2020 targets in the ETP 2DS.
- The global energy supply is not getting cleaner. Coal technologies continue to dominate growth in power generation, and the dependence on coal for economic growth is particularly strong in emerging economies.
- Large market failures are preventing the adoption of clean energy solutions.
- Considerable energy efficiency potential remains untapped.
- Policies need to better address the energy system as a whole.
- Energy-related research, development, and demonstration (RD&D) needs to accelerate.
- More effort is needed in industry, buildings, and systems integration.
- Public investments in energy RD&D must at least triple; the energy share of research budgets remains low.

- The poor quality and availability of data are serious constraints in tracking and assessing progress.

In addition, the ESCII data shows that the carbon intensity of the global energy supply has barely changed in 20 years. The amount of carbon dioxide emitted for each unit of energy supplied has fallen by less than 1% since 1990, largely because coal technologies continue to dominate growth in power generation.

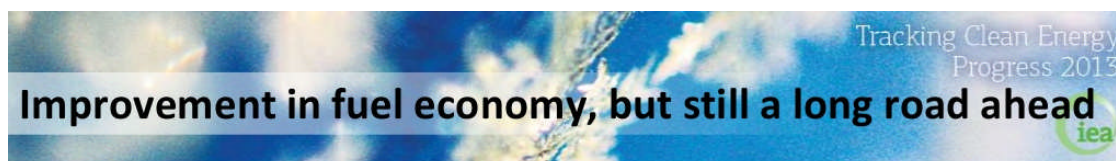
Alongside these grim conclusions, there is positive news:

- Renewable power technologies continued to grow in 2012. Mature technologies—including solar photovoltaic, onshore wind, biomass, and hydropower—were the most dynamic and are largely on track to meet their 2DS targets.
- The costs of most clean energy technologies fell more rapidly than anticipated.
- Many countries, including emerging economies, introduced or strengthened energy efficiency regulations in 2012.
- A window of opportunity is opening in transport: sales of hybrid-electric vehicles passed the 1 million mark, and fuel economy improvements are accelerating where implementation of fuel economy standards and other policy measures has been scaled up.

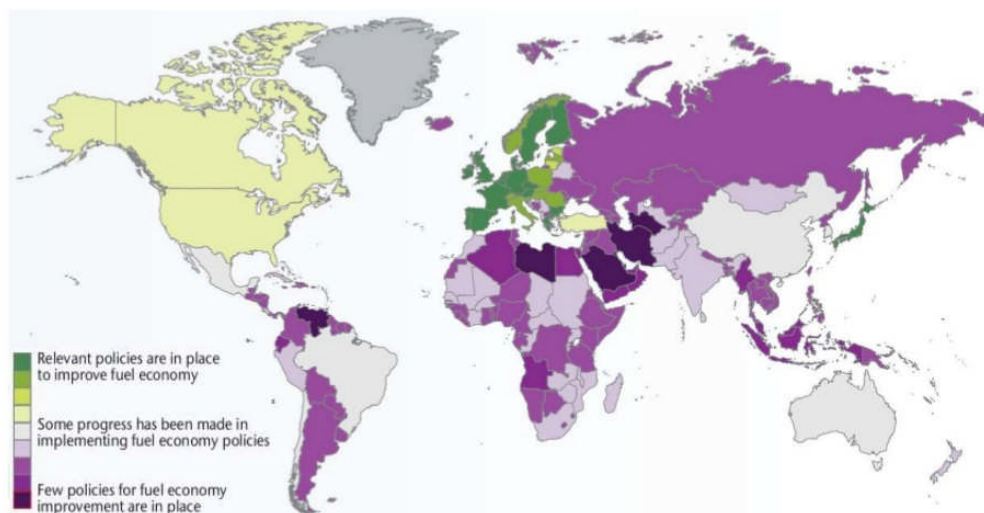
The report makes several high-level recommendations for governments to accelerate the deployment of clean energy technologies:

- Make more ambitious efforts to deepen international collaboration on clean energy deployment.
- Set clear and ambitious clean energy technology goals, underpinned by stringent and credible policies.
- Reflect the true cost of energy in consumer prices and implement long-term, predictable policies that will encourage investors to switch to low-carbon technologies.
- Ensure that policies address the entire energy system and take a long-term view.
- Implement stronger economic incentives and more ambitious regulation to unleash the potential of energy efficiency.
- Accelerate RD&D support, enhancing investment in RD&D for new clean energy technologies and doubling its share in public budgets.

Specific policy recommendations for each of the 11 clean energy technology and end-use sectors are also included in the report. The IEA fuel economy readiness index is a scoring system combining countries' implementation of four key policies to incentivize fuel economy: fuel tax, CO₂-based vehicle purchase taxation, labeling schemes, and fuel economy standards for light duty vehicles and heavy duty vehicles. Global results are summarized in the figure below.



Fuel economy readiness index status, 2012



Fuel economy is improving, but significant potential remains globally.

© OECD/IEA 2013

Coal power continues to dominate growth in electricity generation. And about half of new capacity, found chiefly in the developing world, uses obsolete and inefficient technology. Nuclear power is not being deployed quickly enough and uncertainty remains over carbon capture and storage, notes the report.

But it does provide some good news. Sales of electric and hybrid vehicles are increasing and the advanced biofuels sector grew its capacity by a third in 2012. More countries are also improving the energy efficiency of buildings and appliances.

Photovoltaic capacity rose by 42% last year, with wind power growing by 19%. A separate assessment released the same day by the Global Wind Energy Council (GWEC) foresees a slight downturn this year, followed by a recovery in 2014.

104. Toyota Hybrid Sales Pass 5 Million Mark

Toyota Motor Corp has sold more than 5 million gasoline-electric hybrid vehicles as of the end of March since they first went on sale in 1997, the automaker has announced. Its Prius series accounted for about 70 percent of that, making it the most popular hybrid model in the automotive industry.

Globally, Toyota sold 1.2 million hybrid vehicles in 2012, the first time it sold more than 1 million hybrids in a single year.

Helped by government subsidies and tax incentives, about 17 percent of the vehicles sold in Japan in 2012 were hybrids. Toyota and Lexus, its luxury brand, sold 678,000 hybrids, accounting for three-quarters of the total hybrids sold.

In the United States, Toyota sold about 327,000 hybrids. Hybrid accounted for roughly 3 percent of the total sales, with two of every three hybrids sold being a Toyota or Lexus.

Toyota sold just 17,300 hybrids in China, the world's biggest auto market, in 2012, accounting for about 2 percent of its total sales there.

Hybrids are still not as popular in some major markets such as Europe, where diesel engines remain strong. They still lag in emerging markets, where hybrid vehicle prices are expensive because they are imported or assembled locally but using mostly imported parts.

105. Climate Scientists Try To Explain Warming Slowdown; Oceans Seem Likely Cause

Scientists are struggling to explain a slowdown in climate change that has exposed gaps in their understanding and defies a rise in global greenhouse gas emissions. Often focused on century-long trends, most climate models failed to predict that the temperature rise would slow, starting around 2000. Scientists are now intent on figuring out the causes and determining whether the respite will be brief or a more lasting phenomenon.

Getting this right is essential for the short and long-term planning of governments and businesses ranging from energy to construction, from agriculture to insurance. Many scientists say they expect a revival of warming in coming years.

Theories for the pause include that deep oceans have taken up more heat with the result that the surface is cooler than expected, that industrial pollution in Asia or clouds are blocking the sun, or that greenhouse gases trap less heat than previously believed. The change may be a result of an observed decline in heat-trapping water vapor in the high atmosphere, for unknown reasons. It could be a combination of factors or some as yet unknown natural variations, scientists say.

Weak economic growth and the pause in warming are undermining governments' willingness to make a rapid billion-dollar shift from fossil fuels. Almost 200 governments have agreed to work out a plan by the end of 2015 to combat global warming.

Greenhouse gas emissions have hit repeated record highs with annual growth of about 3 percent in most of the decade to 2010, partly powered by rises in China and India. World emissions were 75 percent higher in 2010 than in 1970, UN data show.

A rapid rise in global temperatures in the 1980s and 1990s - when clean air laws in developed nations cut pollution and made sunshine stronger at the earth's surface - made for a compelling argument that human emissions were to blame.

The IPCC will seek to explain the current pause in a report to be released in three parts from late 2013 as the main scientific roadmap for governments in shifting from fossil fuels towards renewable energies such as solar or wind power, the panel's chairman Rajendra Pachauri said. According to Pachauri, temperature records since 1850 "show there are fluctuations. They are 10, 15 years in duration. But the trend is unmistakable." The IPCC has consistently said that

fluctuations in the weather, perhaps caused by variations in sunspots or a La Nina cooling of the Pacific, can mask any warming trend and the panel has never predicted a year-by-year rise in temperatures.

A section of a draft IPCC report, looking at short-term trends, says temperatures are likely to be 0.4 to 1.0 degree Celsius (0.7-1.8F) warmer from 2016-35 than in the two decades to 2005. Rain and snow may increase in areas that already have high precipitation and decline in areas with scarcity, it says.

Pachauri said climate change can have counter-intuitive effects, like more snowfall in winter that some people find hard to accept as side-effects of a warming trend. An IPCC report last year said warmer air can absorb more moisture, leading to heavier snowfall in some areas.

A study by Dutch experts this month sought to explain why there is now more sea ice in winter. It concluded melted ice from Antarctica was refreezing on the ocean surface - this fresh water freezes more easily than dense salt water.

Concern about climate change is rising in some nations, however, opinion polls show. Extreme events, such as Superstorm Sandy that hit the U.S. east coast last year, may be the cause. A record heat wave in Australia this summer forced weather forecasters to add a new dark magenta color to the map for temperatures up to 54 degrees Celsius (129F).

New Study Points to Oceans

Climate change could get worse quickly if huge amounts of extra heat absorbed by the oceans are released back into the air, scientists said after unveiling new research showing that oceans have helped mitigate the effects of warming since 2000.

Experts in France and Spain said recently that the oceans took up more warmth from the air around 2000. That would help explain the slowdown in surface warming but would also suggest that the pause may be only temporary and brief. "Most of this excess energy was absorbed in the top 700 meters (2,300 ft.) of the ocean at the onset of the warming pause, 65 percent of it in the tropical Pacific and Atlantic oceans," they wrote in the journal *Nature Climate Change*.

Lead author Virginie Guemas of the Catalan Institute of Climate Sciences in Barcelona said the hidden heat may return to the atmosphere in the next decade, stoking warming again. "If it is only related to natural variability then the rate of warming will increase soon," she told the press.

Caroline Katsman of the Royal Netherlands Meteorological Institute, an expert who was not involved in the latest study, said heat absorbed by the ocean will come back into the atmosphere if it is part of an ocean cycle such as the "El Nino" warming and "La Nina" cooling events in the Pacific. She said the study broadly confirmed earlier research by her institute but that it was unlikely to be the full explanation of the warming pause at the surface, since it only applied to the onset of the slowdown around 2000.

Some governments, and skeptics that man-made climate change is a big problem, argue that the slowdown in the rising trend shows less urgency to act. Governments have agreed to work out, by the end of 2015, a global deal to combat climate change.

Guemas's study, twinning observations and computer models, showed that natural La Nina weather events in the Pacific around the year 2000 brought cool waters to the surface that

absorbed more heat from the air. In another set of natural variations, the Atlantic also soaked up more heat.

"Global warming is continuing but it's being manifested in somewhat different ways," said Kevin Trenberth, of the U.S. National Center for Atmospheric Research. Warming can go, for instance, to the air, water, land or to melting ice and snow. Warmth is spreading to ever deeper ocean levels, he said, adding that pauses in surface warming could last 15-20 years. "Recent warming rates of the waters below 700 meters appear to be unprecedented," he and colleagues wrote in a study last month in the journal *Geophysical Research Letters*.

106. Scientists Find Antarctic Ice Is Melting Faster

The summer ice melt in parts of Antarctica is at its highest level in 1,000 years, Australian and



British researchers have reported, adding new evidence of the impact of global warming on sensitive Antarctic glaciers and ice shelves. Researchers from the Australian National University and the British Antarctic Survey found data taken from an ice core also shows the summer ice melt has been 10 times more intense over the past 50 years compared with 600 years ago.

"It's definitely evidence that the climate and the environment is changing in this part of Antarctica," lead researcher Nerilie Abram said.

Abram and her team drilled a 364-metre (400-yard) deep ice core on James Ross Island, near the northern tip of the Antarctic Peninsula, to measure historical temperatures and compare them with summer ice melt levels in the area.

They found that, while the temperatures have gradually increased by 1.6 degrees Celsius (2.9 degrees Fahrenheit) over 600 years, the rate of ice melting has been most intense over the past 50 years. That shows the ice melt can increase dramatically in climate terms once temperatures hit a tipping point. "Once your climate is at that level where it is starting to go above zero degrees, the amount of melt that will happen is very sensitive to any further increase in temperature you may have," Abram said.

Robert Mulvaney, from the British Antarctic Survey, said the stronger ice melts are likely responsible for faster glacier ice loss and some of the dramatic collapses from the Antarctic ice shelf over the past 50 years.

Their research was published in the *Nature Geoscience* journal.

107. Air Pollution Scourge Underestimated, Green Energy Can Help: U.N.

Air pollution is an underestimated scourge that kills far more people than AIDS and malaria and a shift to cleaner energy could easily halve the toll by 2030, according to U.N. officials. Investments in solar, wind or hydropower would benefit both human health and a drive by almost 200 nations to slow climate change, blamed mainly on a build-up of greenhouse gases in the atmosphere from use of fossil fuels, they said.

"Air pollution is causing more deaths than HIV or malaria combined," Kandeh Yumkella, director general of the U.N. Industrial Development Organization, told a conference in Oslo trying to work out new U.N. development goals for 2030. Most victims from indoor pollution, caused by wood fires and primitive stoves in developing nations, were women and children.

He suggested that new U.N. energy goals for 2030 should include halving the number of premature deaths caused by indoor and outdoor pollution.

A 2012 World Health Organization (WHO) study found that 3.5 million people die early annually from indoor air pollution and 3.3 million from outdoor air pollution. Toxic particles shorten lives by causing diseases such as pneumonia or cancer.

"The problem has been underestimated in the past," Maria Neira, the WHO's director of public health and environment, told reporters. Smog is an acute problem from Beijing to Mexico City. The data, published as part of a global review of causes of death in December 2012, were an upwards revision of previous figures of 1.9 million premature deaths caused by household pollution a year and 1.3 million outdoors, she said. The revision reflects better measurements and changes in methods, such as including heart problems linked to pollutants, she said. The numbers cannot be added together because they include perhaps 500,000 from overlapping causes.

"Still, it means more than 6 million deaths every year caused by air pollution," she said. "The horrible thing is that this will be growing" because of rising use of fossil fuels.

By comparison, U.N. reports show there were about 1.7 million AIDS-related deaths in 2011 and malaria killed about 660,000 people in 2010.

Solutions were affordable, the experts said. "If we increase access to clean energy ... the health benefits will be enormous. Maybe the health argument was not used enough" in debate on encouraging a shift from fossil fuels to renewable energies, she said.

Almost 200 governments have agreed to work out by the end of 2015 a deal to combat climate change. But negotiations have stalled, partly because of economic slowdown and divisions between nations about how to share out the burden of cuts.

Yumkella also urged the world to build 400,000 clinics and medical units in developing nations by 2030 as part of U.N. energy and health goals. Vaccines, for instance, are often useless without refrigeration, which depends on electricity.

The United Nations has previously urged 2030 targets for universal access to energy, doubling the global rate of improvement in energy efficiency and doubling the share of renewable energy in global consumption.

108. Environmental Groups Pressure U.N. Body for Carbon Aviation Deal

Environmental groups have urged the United States to back a global deal to curb carbon emissions produced by planes, noting that global aviation emits more of the greenhouse gas than all but six of the world's nations. The groups, alarmed at scant progress toward an agreement within a United Nations aviation body, presented a petition with more than 60,000 signatures recently to a representative of the U.S. State Department.

The petition asked U.S. Secretary of State John Kerry to secure agreement under the International Civil Aviation Organization (ICAO) for a market-based approach to curb heat-trapping emissions produced by planes. Environmental groups, such as the Environmental Defense Fund and the Natural Resources Defense Council, want Kerry to honor a statement he made while still a U.S. senator that nations must forge an international agreement on aviation emissions.

Kerry did not attend a meeting of high-level negotiators from 17 countries from March 25 to March 27 at ICAO's Montreal headquarters but his climate change envoy Todd Stern represented the State Department. The high-level group is attempting to devise a plan that would avert the reinstatement of an unpopular European Union law requiring all aircraft that land at or take off from EU airports to pay for emissions through the bloc's Emissions Trading Scheme (ETS).

The United States, China, India and Russia all lobbied fiercely against the EU law's planned implementation date of 2012. The countries won a one-year reprieve from Europe, where officials were worried about touching off a trade war.

In November the European Commission said its agreement to freeze the law for a year was intended to spur the creation of a less contentious global alternative at ICAO. Since then ICAO's working group has considered various market-based measures to address emissions, such as mandatory carbon offsetting and a global carbon cap-and-trade system.

But so far, delegates have not advanced a plan, and concluded the recent meeting with a draft of general principles to discuss at a later meeting. Countries seem to be deadlocked over the geographic scope of a global mechanism over how to charge for carbon emissions related to international flights.

A U.S. proposal for curbing aircraft emissions would exclude time spent flying over international waters. The EU, on the other hand, wants to apply a carbon charge to emissions released over international airspace.

U.S. airlines want any market-based mechanism delayed at least for the rest of the decade, instead preferring to focus on improving "technology, operations and infrastructure".

109. Report: EVs to Make Up Only 2% to 10% of World's Cars by 2035

According to a new report from the Institute for Energy Efficiency (IEE), even by 2035, electric vehicles will make up no more than 30 million of the 261 million light-duty cars, trucks and vans on the road, or about 12 percent of the world's fleet -- and that's a best-case scenario. IEE puts its mid-range scenario at 25 million EVs by 2035, adding up to one in ten vehicles on the road.

But its most conservative (that is, pessimistic) scenario puts EV penetration at only 5 million vehicles, or about 2 percent of the world's fleet by then.

Battery technology advances are the key variable separating IEE's low-adoption and medium-adoption scenarios. In fact, IEE names its mid-range, 25 million EV scenario the "Advanced Battery scenario" to distinguish it from its low-range case, which it derives from the U.S. Energy Information Administration (EIA)'s Annual Energy Outlook (AEO) 2012.

The Advanced Battery scenario "shows the importance of the initial purchase price (influenced by battery costs), and the value of having enhanced vehicle utility through range extension and reduced charge time," the report states, indicating three critical battery technology features that need to be improved, in terms of energy storage capacity, power capacity, and of course, cost. While range extension and cost factors rely on improvements in battery technology and vehicle engineering, charging time is more a matter of building the fast-charging infrastructure to "refuel" EVs at a speed approaching the time it takes to fill a gas tank.

IEE's high-range EV adoption scenario takes fossil fuel prices into account, by presuming a rise from about \$145 a barrel for the mid-range case to more than \$200 per barrel by 2035, and comes up with a slight bump from 25 million to 30 million vehicles. "It is interesting to note that High Oil price alone does not induce that many more consumers to purchase electric LDVs," the report stated, largely because initial price remains the most important variable for car buyers.

About 31 percent of U.S. greenhouse gas emissions can be tied to the burning of fossil fuels in the transportation sector," the report notes. About 60 percent of that is made up of light-duty vehicles, which make up only 1 percent of electric powered transportation today (electric buses, trains and trolleys make up the vast majority of today's "EV" fleet).

As part of its role as a nonprofit research arm of the utility trade group Edison Electric Institute, IEE's report also adds up the electric generation required to power all these new plug-in vehicles, as well as a greenhouse gas footprint of what's expected to be the power mix by 2035.

All in all, the low-case scenario leads to a 33 terawatt-hour electricity consumption increase in 2035, but reduces vehicle emissions by about 9 million to 22 million metric tons of CO2 equivalent; the medium-case scenario boosts power consumption by 112 terawatt-hours and reduces vehicle emissions by about 41 million to 94 million metric tons of CO2; and the high-case scenario increases EV power consumption to 147 terawatt-hours and reduces CO2 emissions by 51 million to 116 million metric tons.