BEST WISHES TO ALL FOR A SAFE AND HEALTHY AND ENVIRONMENTALLY SUCCESSFUL NEW YEAR
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EUROPE

1. Air Pollution Ranked As Top Health Risk Factor in Europe

A new global review of the burden of disease shows outdoor air quality has been recognized as a top level risk for public health. The new rankings are taken from the 2010 Global Burden of Disease (GBD) assessment, which is released in a special issue of the leading British medical journal, The Lancet. The project was completed by 450 experts in a consortium of five partners, including the World Health Organization, and led by the Institute for Health Metrics and Evaluation (IHME). The study shows exposure to air pollution as one of the top ten risk factors for health globally. It is ranked 11th for countries of Western Europe, 14th for Central Europe and 15th for Eastern Europe, which includes Russia.

“Everyday exposure to outside air pollution in Europe is now recognized as one of the big factors affecting our health,” says Anne Stauffer, Deputy Director of Health and Environment Alliance (HEAL). “For the first time, the Global Burden of Disease assessment has ranked an environmental factor among the more widely discussed ‘life-style’ risk factors, such as tobacco and alcohol.”

The Health Effects Institute, an independent, non-profit research institute based in the US, played a lead role in preparing the air pollution analysis. President, Dan Greenbaum said: “Outdoor air pollution now ranks among the top global health risk burdens because earlier assessments reported much smaller figures.” He says that better modeling of population exposure and more detailed analysis of the relationship between outdoor levels of air pollution and effects on mortality and ill-health have played an important role in the revisions.

In Western Europe, the new rankings show exposure to “ambient particulate matter pollution” in eleventh position. This is below top risk factors such as tobacco, alcohol, lack of physical activity and some aspects of diet but above factors such as “diet high in processed meat”, “diet low in vegetables” and “drug use”.

The analysis shows over 430,000 premature deaths and over 7 million years of healthy life lost in Western, Central and Eastern Europe in 2010 from exposure to fine particulate matter (PM 2.5), with 166,000 premature deaths in Western Europe, 95,000 deaths in Central Europe, and 169,000 deaths in Eastern Europe, which includes Russia.

The Global Burden of Disease Study 2020 began in 2007 and is the most comprehensive effort since the GBD 1990 to produce complete and comparable estimates of the burden of diseases, injuries, and risk factors for the years 1990, 2005, and 2010 for 21 regions covering the entire globe. It is significantly broader in scope than previous versions, including 235 causes of death, 67 risk factors, and improved methods for the estimation of mortality and disability.

Overall the study results reveal substantial shifts in the burden of disease from premature mortality to morbidity and disability as well as from communicable, maternal, neonatal and

2 Western Europe category includes 17 EU countries: Austria, Belgium, Cyprus, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, Netherlands, Portugal, Spain, Sweden and the UK. Central Europe includes 7 EU countries: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia and Slovenia. Eastern Europe includes 3 EU countries: Estonia, Latvia and Lithuania.
nutritional conditions to non-communicable diseases. This shift in population health towards more life years with chronic, non-communicable disease is likely to imply heavier health care costs and productivity losses.

2. Traffic Pollution Still Harmful To Health in Many Parts of Europe

Transport in Europe is responsible for damaging levels of air pollutants and a quarter of EU greenhouse gas emissions. Many of the resulting environmental problems can be addressed by stepping up efforts to meet new EU targets, according to the latest report from the European Environment Agency (EEA).

The EEA’s annual report under the Transport and Environment Reporting Mechanism (TERM) assesses the environmental impact of transport across Europe. There have been some improvements over recent years, although these can be partly attributed to reduced economic activity during the recession. As the economic climate improves, the new EU transport targets should focus efforts to further reduce environmental impacts, the report says.

Although air pollution has decreased over the last two decades, it is still a major problem in many areas. ‘Euro standards’ for vehicles have not succeeded in reducing real NO2 emissions to the levels set out in the legislation although they have made substantial improvements to air quality overall.

Increasing transport of goods is also leading to poor air quality. Freight was one of the main causes of the high levels of NO2. Increased shipping over the last two decades has also meant that emissions of acid rain-causing sulfur oxides have only decreased 14% since 1990, despite major efficiency improvements.

Jacqueline McGlade, EEA Executive Director, said: “One of the big challenges of the 21st Century will be to mitigate the negative effects of transport – greenhouse gases, air pollution and noise – while ensuring positive aspects of mobility. Europe can take the lead by intensifying its work in the area of technological innovation in electric mobility. Such change could transform inner city living.”

Other trends and findings

- People living near busy roads across Europe are still particularly exposed to excessive air pollution levels. Harmful nitrogen dioxide (NO2) levels above legal limits were registered at 44 % of roadside air monitoring stations in 2010. Particulate matter (PM10) levels exceeded limits at 33 % of these sites. These pollutants can affect the cardiovascular system, lungs, liver, spleen and blood.
- Europe needs to further reduce the energy consumed by transport, since it was only 4.3 % lower in 2011 than its peak in 2007. Energy use in some transport modes has been strongly influenced by economic fluctuations in recent years. Freight transport demand is particularly sensitive to economic fluctuations. After a sharp drop between 2008 and 2009, it grew 5.4 % in 2010.
- Passenger transport demand fell almost 1 % between 2009 and 2010. This seems to go against the long-term trend, as passenger transport demand has increased steadily across the EU since records began in the mid-1990s. Private car use has stayed more or less steady, the report says, despite the economic downturn and wide fuel price fluctuations over the last decade.
In some cases, prices may be influencing people to make choices which are damaging for the environment. Buying a car has become steadily cheaper in real terms since the mid-1990s, the report notes, while train travel and passenger transport by water has become more expensive. Nonetheless, new cars are becoming more fuel-efficient. The average car sold in 2011 was 3.3% more efficient than the average sold the year before.

The transport sector has to reduce carbon dioxide emissions by 68% between 2010 and mid-century to meet the EU target. Greenhouse gas emissions from transport fell by 0.4% between 2009 and 2010, and early estimates show a similar decrease between 2010 and 2011.

Noise is another impact from transport which can cause serious health problems. The report finds that in Europe’s biggest cities, three of every five residents are exposed to harmful levels of traffic noise. Even in the countryside, 24 million Europeans are exposed to damaging traffic noise at night. This can cause both physical and psychological problems.

While emissions from combustion engines are regulated, emissions of particulate matter stemming from the mechanical wear of brakes, tires and road surfaces are not, the agency noted.

To achieve the EU target of a 10% share of renewables in transport fuels, greater support is needed in the form of fiscal incentives, infrastructure deployment and energy labeling of vehicles.

3. EC Proposes ETS Exemption for Non-Internal Flights

International flights to and from Europe could be exempt from the EU emissions trading system (ETS) until UN talks on a global carbon reduction deal in autumn 2013, climate commissioner Connie Hedegaard has announced. If a deal is not reached at ICAO the current ETS rules for all flights into and out of Europe will “automatically” resume, Ms. Hedegaard warned.

European airlines cautiously welcomed the proposal but a coalition of environmental groups reacted more skeptically, saying the EU had made a concession to reluctant non-EU countries that was "bigger than necessary".

The surprise announcement followed a meeting of the International Civil Aviation Organization (ICAO) at which it was decided to set up a high-level policy group on global market-based measure to cut airlines emissions. The group will recommend one market-based measure. It will report back to ICAO in March and in June 2013, with a deadline for making a decision on its proposal penciled in for the ICAO general assembly in September or October.

Commissioner Hedegaard said the establishment of the policy group was a "long sought-for opportunity", but added that "a lot of tough negotiations lie ahead". "In order create a positive atmosphere around these negotiations… I have recommended to member states that the EU stops the clock when it comes to enforcement of [ETS aviation rules for international flights to and from Europe] until after the ICAO general assembly next autumn," she told journalists.

4. Parliament, Council Approve Deal on Motorbike Emissions

The European Parliament approved an EU agreement to cut pollutant emissions from motorbikes, three-wheelers and quads in a recent plenary. The deal with member state
negotiators was reached in September. It requires new types of heavier two, three and four-wheeler to meet the Euro 4 emission standard from 2016, and a year later for existing vehicles.

The Euro 4 standard will also have to be met by new types of lighter vehicles (moped, light trikes and light quads) from 2017. This is because part of the agreement between the Council, Parliament and Commission is that a Euro 3 stage will first be introduced for these vehicles in 2014. This will be an amendment of the existing Directive, changing the current hot-start test to a weighted cold-start one without changing the limit values.

Stricter Euro 5 pollution limits will apply to all new types of ‘L-category’ vehicles from 2020, with a 2021 deadline for existing types.

The plenary session also approved a separate deal to simplify the regulatory regime governing air pollutants from agricultural and forestry tractors, while maintaining manufacturers’ flexible compliance regime.

At the meeting of the Council of the European Union on 7 December 2012, the new Regulation for the type-approval of motorcycles, mopeds and other L-category vehicles was adopted, following the first-reading agreement with the European Parliament. The L-category covers powered cycles, 2- and 3-wheel mopeds, motorcycles, motorcycles with sidecars, tricycles, light and heavy on-road quad bikes, ATVs, side-by-side buggies and light and heavy ‘quadrimobiles’ (sometimes called microcars) including separate sub-categories of trikes and quadrimobiles for passenger carrying and for commercial applications.

By 31 December 2016, the Commission has to evaluate air quality and the share of pollutants produced by L-category vehicles and report to the Council and the European Parliament on the enforcement of a Euro 5 emissions standard (defined in the regulation) as from 2020.

The Regulation also included 2 stages of OBD requirements with specific threshold limits, and evaporative emissions limits. At Euro 4 these are SHED test limits of 2000 mg/test THC applicable to categories L5e-A, L6e-A and L7e-A. At Euro 5, the range of categories to which evaporative emissions limits apply is extended, the SHED test limit reduces to 1500 mg/test and for some classes permeation test limits of 1500 mg/m2/day are added for fuel tanks and 15000 mg/m2/day for fuel tubing.

The UK abstained from the Council vote. The UK and Bulgaria stated that “The United Kingdom and Bulgaria regret that in introducing the Euro 5 stage of emissions restrictions without evidence of proportionate benefits, the principles of Better Regulation and evidence-based policy-making have not been followed.”

5. Tajani Outlines Vision for Greener Vehicles

The European Commission plans to launch a "broad" consultation on post-2020 policy for controlling CO2 emissions for passenger cars and light commercial vehicles, it said in a recently unveiled action plan. The commission says it will propose goals for 2025 and 2030 by the end of 2014. This may lead to a move from mass-based to footprint-based CO2 targets, which some argue would promote lighter, more fuel-efficient vehicles.

The idea is supported by climate commissioner Connie Hedegaard, NGOs and some parts of industry. At a recent event in the European Parliament, aluminum trade association EAA said
mass-based targets were "unfair and short-sighted" and urged MEPs and member states to introduce a footprint parameter.

The action plan, unveiled by industry commissioner Antonio Tajani, takes into account recommendations made last year by the CARS 21 high-level group on the competitiveness of the automotive industry. It confirms policy announcements made by the commission, such as next year’s Clean Power and Transport package and charging standards for electric cars.

Guidelines to member states on financial incentives for cleaner vehicles are also due within weeks. They were requested by the car industry this summer. The alternative fuels strategy is also listed as one of the plan’s actions.

The 1996 directive on weights and dimensions will also be revised at the beginning of 2013 to help make trucks more aerodynamic.

The plan confirms that energy efficiency and alternative powertrains will be one of the focuses of EU’s Horizon 2020 innovation program. The European Investment Bank is also likely to provide research funding.

Plans to require fuel consumption meters in cars would be tabled to 2014. The commission opened consultation on this a year ago, also proposing new air pollution limits and mandatory gear shift indicators for vans. An unpublished impact assessment, produced in the summer, concluded that these proposals should go ahead but the commission is wary of introducing further costs for manufacturers, noting a continuing fall in vehicle sales.

European carmakers’ association ACEA said it supported a number of the plan’s actions, such as making clean vehicles an investment priority and carrying out a fitness check of EU legislation on type-approval.

Greenpeace said the plan failed to acknowledge measures announced in a 2010 policy paper on clean and efficient vehicles, such as a strategy to lower carbon emissions from trucks and a review of EU rules on CO2 labeling for cars.

6. Auto Industry Apparently Dodges Tougher EU Emission Rules

New European Union emissions rules for vehicles have been put on hold or are being delayed, EU sources and campaigners have told the press, citing pressure from the auto industry. The downgrading of green priorities is another example of policy falling victim to industry arguments against environmental regulation, a trend marked by recent concessions to airlines.

A recent plan week to prop up the European auto sector made no mention of carbon regulations for heavy goods vehicles or carbon dioxide labeling to guide consumer choice, which had been flagged previously. An October draft of the autos action plan, intended to make the industry competitive, innovative and sustainable, showed a section on tackling heavy goods vehicles’ emissions and carbon dioxide labeling was crossed out.

Labeling on a vehicle’s CO2 emissions and a strategy for reducing truck emissions are also missing so far from the European Commission’s 2013 published work program.

Climate Commissioner Connie Hedegaard had vowed at the start of her term in office in 2010 to tackle standards she saw as too lax and she pressed ahead with proposals to tighten 2020
vehicle emissions targets published in June. The 2020 targets were expected to be supplemented this year with a policy document on how to follow them up. That step is not now expected until the first part of next year, an EU source told reporters, speaking on condition of anonymity.

Some sections of industry say regulatory certainty is crucial to business planning. Others have pressed for delay. For example, Daimler AG said it was too early to set goals beyond 2020 because it was unclear how big a role electric vehicles would play in cutting carbon. "A revision with a concrete 2025 target should be made not before 2016/2017," Hartmut Baur, senior manager for environment, energy and transport policy at Daimler, previously told reporters.

Some environmental campaigners argue more ambitious green goals are crucial to Europe retaining its competitive edge in vehicle innovation, as Asian and U.S. carmakers strive for less polluting fuel-efficient vehicles. "European carmakers will only be competitive if they deliver on environmental technologies. This isn't going to happen without regulation," Greenpeace EU Transport Policy Director Franziska Achterberg said. Greg Archer of campaign group Transport & Environment said: "Smart, green regulation has driven innovation in the European automotive industry and contributed to its global leadership ... Delaying and weakening regulations to improve fuel economy puts that competitive advantage at risk."

7. German Industry Body Seeks More "Supercredits"

German car manufacturers are seeking to widen a loophole in EU regulations that would allow them to produce more cars with carbon emissions above a 2020 EU target. A proposal from German automakers' body VDA would allow them effectively to add on around 10 grams of carbon per km to an EU target to cut vehicle carbon emissions, campaigners say.

EU car manufacturers are divided over how a 2020 EU target to cut carbon emissions to an average of 95 grams per km should be shared out across the European industry. VDA wants a larger number of "supercredits", which allow manufacturers to produce more cars that exceed the EU target if they also make very low emission cars, such as electric or hybrid vehicles. The German industry group is seeking to increase the number of supercredits by, for instance, allowing vehicles with slightly better emissions than the minimum set by the European Commission to qualify for supercredits, and getting rid of a cap of 20,000 registrations per manufacturer.

The precise implications of supercredits depend on many variables and they could lead to increased uptake of very low emission vehicles, as well as allowing the continued production of more heavily polluting ones.

Campaigners accuse VDA, which represents brands like Volkswagen and BMW, of seeking to defer compliance with EU targets and of making them less ambitious. "The cumulative supercredits proposed by the VDA would increase the target by at least 10 grams," Franziska Achterberg, EU transport policy adviser at Greenpeace European Union, said.

European Climate Commissioner Connie Hedegaard has sought to limit the number of supercredits, while Energy Commissioner Guenther Oettinger has taken up the carmakers' argument. According to publicly available minutes of a Commission meeting in July, Oettinger said the cap of 20,000 registrations "seems too low, particularly for high volume manufacturers".
Daimler AG is among those who have encouraged more supercredits. "Supercredits for vehicles with very low CO2 emissions are a positive incentive for the manufacturers, which does not cost the taxpayers anything and would be applied consistently across the EU," Hartmut Baur, senior manager, environmental, energy and transport policy at Daimler AG, said earlier this month.

8. European Parliament Says Shale Gas Needs Regulation, Not a Ban

EU politicians rejected a ban on shale gas, while calling for a robust regulatory regime to address environmental and other concerns, in a series of votes recently in the European Parliament.

A shale gas revolution has swept the United States, lowering gas prices and helping to displace more polluting coal. Europe is looking on with interest, if not envy, as the United States moves towards energy independence and gets an economic boost from cheap fuel. But the prospect of extensive shale gas development in Europe is complicated by land ownership rules, higher population density and environmental concerns about the fracking process used to extract natural gas from shale.

Fracking, or hydraulic fracturing, involves pumping water containing chemicals into shale rock formations at high pressure and critics say it risks contaminating aquifers as well as potentially causing earth tremors.

Although the recent votes rejected a call for a ban on new fracking activity, saying European Union member states had the right to explore their reserves, they also took a cautious line. Votes on two separate reports struck out sentences pushing for swift shale gas development. The rejected lines included one that shale gas could "play a critical role" in the transition to low-carbon power generation and another on supporting "a high level of sustainable shale gas production".

The European Commission is expected next year to deliver a framework on managing the risks and addressing shortcomings in relevant EU regulation. "Studies carried out indicate that there are a number of uncertainties or gaps in current EU legislation," Environment Commissioner Janez Potocnik said in a statement. "Addressing health and environmental risks will be of paramount importance for the industry to gain broad public acceptance."

The parliamentary votes are not binding, but are a political signal to Commission law-drafters.

Shale gas supporters welcomed them, while environmentalists and Green politicians praised the mood of caution, but had wanted a ban.

The two resolutions take a slightly different tone on this issue. Unsurprisingly, the resolution on environmental risks puts more emphasis on the need to apply the precautionary principle, while the other one, put forward by the parliament’s industry and energy committee, points out the benefits in terms of energy security.

The commission’s environment department is conducting an in-depth analysis of gaps in EU law. Several studies from the EU’s Joint Research Centre are also expected.

The resolution on the environmental aspects of shale gas calls for a ban on the use of fracking in sensitive areas, for example near sources of drinkable water. Other recommendations on water management and operators’ liability were also adopted.
Some MEPs pointed out that shale gas could contribute to Europe’s reindustrialization provided environmental and health risks are tackled. But energy commissioner Günther Oettinger countered however that shale “should only be used as a new extra tool in the EU’s energy tool box and should not replace investments in renewables, energy efficiency and the internal energy market”.

**9. Greener Vehicles Rule Change Planned in London Congestion Charge Scheme**

More than 19,000 motorists who avoid London's congestion charge because they drive greener vehicles have been warned they may have to pay in future. Transport for London (TfL) has proposed abolishing the Greener Vehicle Discount which applies to cars with emissions of less than 100g per km of CO2. Motorists currently eligible for the discount will be granted a two-year "sunset period" before they are made to pay the full congestion charge.

Proposals are subject to consultation.

The congestion charge has to deter driving to some extent to keep congestion down and so has to keep up with the changing motoring landscape. So as the manufacturers improve engine technology and embrace cleaner technology more cars become exempt. That means more small cars like the Fiat 500 - which enjoyed the exemption - have come into town for free. That means congestion increases. So the mayor has tightened the restrictions again. That will leave some very annoyed small car owners even though they have a two-year "sunset period".

And by tightening the CO2 restrictions, no diesel model cars on the market will be exempt.

The congestion charge for cars entering the central London zone currently stands at £10 - or £9 for drivers who are registered to pay via an automated payment service. Under the plans, the penalty for not paying the charge will also rise from £120 to £130.

TfL said from July 2013 electric vehicles and cars that comply with much tighter emissions standards would receive an Ultra-Low Emission Discount, earning free entry into the congestion charge zone. After 2015, the current Greener Vehicle Discount would be scrapped.

Nick Fairholme, TfL’s director for congestion charging, said: "We are really keen to hear what Londoners and motorists have to say about the proposed changes to the congestion charging scheme. "The proposed changes will make the scheme greener and more efficient.”

Green Party London Assembly Member Jenny Jones said it was an overdue but welcome first step. She said: "The Mayor should use this opportunity to set up a very low emission zone, starting with a £25 charge for the most polluting diesel cars."

The 12-week public consultation closes on 8 February 2013.

**10. EU Energy Chief Backs New Renewable Goal Post 2020**

The European Union needs new binding goals on renewable energy and on cutting carbon emissions to succeed green policy targets that expire in 2020, the EU's energy chief said, omitting any mention of replacing the current energy savings target. His comments added to a debate about whether the three existing green goals should be followed by another three, with
some EU nations and industry opposing what they see as too much regulation. Oettinger also cited the need for a carbon-cutting goal, but he did not mention energy savings.

He was addressing the launch of a partnership to unite firms supporting the continued use of gas as a flexible, transition fuel to complement renewable energy, which is intermittent. The founding members of the partnership are Alpine Energy, a subsidiary of Spanish builder FCC, Dong Energy, First Solar, GE Energy Germany and Royal Dutch Shell.

Like the EU member states, they are divided over how many targets the bloc needs after 2020. Denmark's Dong Energy backs a more ambitious version of the existing three 2020 targets - a 20 percent cut in carbon, a 20 percent share of renewables in the energy mix and a 20 percent improvement in energy savings. But Shell cautioned against too much regulation.

Oettinger has said the bloc needs to establish the rules for 2030 before the end of the current Commission's mandate in 2014. Debate is expected to intensify over the coming weeks, closely linked to the arguments about how to support the EU's Emissions Trading Scheme (ETS) for carbon allowances.

Recently, EU carbon allowances were trading at around 8 euros per metric ton. That compares with a record low of 5.99 euros in April and levels above 17 euros a metric ton early in 2011. Oettinger reiterated his view that the carbon market needed long-term reforms to make it able to respond to economic shifts, such as the recession which has led to a huge surplus of permits.

The European Commission will present in November its vision for short-term and long-term carbon market reforms. A short-term fix, known as backloading, would temporarily remove some of the surplus. Longer-term solutions, about which Oettinger has been more enthusiastic in public, include steps such as permanently removing allowances. Both elements would need the approval of member states, but backloading could be agreed quickly under fast-track EU process.

A stronger ETS is also necessary to justify investment in carbon capture and storage (CCS) technology, which many argue is essential if gas is to retain a role beyond the short term. Environmental groups have argued continued investment in gas is a mistake that will hobble the shift to renewable fuel and that CCS technology is not the answer.

11. Surrey Residents Fume over Diesel Trucks

Surrey residents raise a stink over diesel trucks in their neighborhood. Over one hundred South Surrey residents took to the streets recently to raise the alarm about diesel trucks rumbling through their neighborhoods.

Protesters say they are concerned about safety and health risks, such as carcinogenic fumes that may be emitted from diesel trucks. They also allege that Ministry of Transportation guidelines recommend houses be set back 150 meters from a diesel truck route. However, homes along the heavily travelled route were developed as little as ten meters from the road.

12. Cypress Car Road Tax Bill Sent Back For Fine Tuning

The House finance committee recently decided to send back to the government most of the provisions of a bill amending road taxes after objections were raised over how it was to be
implemented. The plenum is due to vote on one of the bill’s provisions soon, under which all new vehicle owners will pay €150 to register their vehicle irrespective of its age, type and origin.

Changes are not retroactive and apply to vehicles registered after the law is passed and published in the government gazette.

The bill had also proposed that vehicle owners of cars, vans and the up-to-now exempt buses pay an annual road tax based on their vehicles’ carbon dioxide emissions and not engine capacity, as they do now.

But stakeholders disagreed with the bill during a House committee discussion.

- The used cars’ association had suggested connecting registration fees for new vehicles to carbon dioxide emissions instead of having a standard fee for all cars, and introducing a 5.0 per cent hike in road licenses across the board to recover lost income.
- Used cars’ sellers had asked for a transition period for any stock they have left when the law passes, a request which the head of road transport department said “is not unfair”. But, the head of the finance committee said that sellers of new cars should also be given a transition period.
- The owners of tourist buses, meanwhile, complained about having to pay road tax which their representative said would be bad for tourism because it would increase their expenses.

Cyprus needs to harmonize its legislation with the European Union’s directives but the finance ministry has previously told the House that they would lose about €7 million from the registration fees changes. They would earn €3.8 million next year instead of the €11 million current registration fees would fetch. But the finance ministry has still not completed a study on the road taxation system geared at recovering income losses, the finance committee has been told.

Parliament has given the ministries of finance and communications some two months to agree on the bill’s remaining terms before discussing it again, and voting.

Under the proposals as they currently stand, road license fees will be tiered and range from €20 to €1,300 depending on carbon dioxide emission levels. Any car emitting over 100 grams of carbon dioxide per kilometer will pay a road license while cars emitting over 256 grams of carbon dioxide per kilometer will get maximum charge.

13. Mediterranean Capitals’ Pollution Has Far-Reaching Effects on Air Quality

New research has modeled the impacts of Athens and Istanbul in the eastern Mediterranean, on local and regional air quality. Results indicate that the impacts of megacity pollution vary significantly according to the time of year and that air quality improvements will require coordinated efforts within the eastern Mediterranean region and beyond.

Megacities (cities with more than 10 million inhabitants) and large urban agglomerations are concentrated sources of pollution and the impacts of emissions on local and regional air quality are attracting increasing attention. Air pollution is a concerning environmental issue in the

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The eastern Mediterranean region, which experiences high levels of ozone and particulate matter, damaging to both human health and the environment. The region is also sensitive to the effects of climate change, which could exacerbate problems of pollution and poor air quality.

Modeling the impacts of emissions from the megacity of Istanbul and from the Athens urban region on air quality has not been possible until recently. However, recent developments in emission inventories from these cities have enabled this study to model air quality in the region.

The researchers, working as part of the EU CityZen project, coupled the Weather Research and Forecasting Model (WRF-ARW) with the US EPA Community Multiscale Air Quality model (CMAQ) to quantify the impacts of human-generated emissions from each of the megacities on local and regional air quality. A range of pollutants were considered, including ozone, carbon monoxide and fine particulate matter (PM2.5).

In both the Greater Istanbul Area and Greater Athens Area areas, PM2.5 decreased by a factor of about 2 to 3 from the urban area to the rural suburbs. The results demonstrated that contributions from both areas to surface ozone and PM2.5 are generally higher in the winter than in the summer. For example, emissions contribute to PM2.5 levels inside the city by up to 75% in winter in both cities, but in the summer contribute only 50% to PM2.5 for Istanbul and about 40% for Athens. This is mainly because urban emissions increase in winter by a larger proportion than regional background emissions.

In winter, both cities have a larger impact northwards owing to prevailing winds from the south. Istanbul’s winter pollution affects the Black Sea and Athens’s, the North Aegean Sea. In summer, the impact is more southwards, with Istanbul’s emissions flowing over the Marmara Sea, towards the Aegean Sea, and Athens’s emissions having a clear effect on the South Aegean.

The study also explored the effects of country-based mitigation policy using a policy scenario for 2030 from the EU CityZen project that mitigated the impacts of several pollutants on climate, health and the environment. This indicated that mitigation of emissions at a country-level could not suppress ozone levels, due to ozone’s complex chemical response to reductions in NOx. However, levels of other primary pollutants may fall. For example, in winter the model predicted that carbon monoxide levels would be reduced by 2% for the entire eastern Mediterranean region and PM2.5 would fall by 10% regionally, due to combined efforts by the countries inside the region.

This significant impact of national mitigation at the regional level and evidence for the long-range transport of pollutants highlights the importance of coordinated mitigation efforts across the region and beyond.

14. Campaigners Criticize DEFRA Plans To Reduce Releases of Air Quality Statistics

Clean Air London’s Simon Birkett has criticized the department for environment, food and rural affairs (DEFRA) for its plans to streamline annual statistical releases on air quality. Responding to the proposals on behalf of his campaign organization Clean Air London on 23 November, Birkett criticized DEFRA for “systematically hiding important information about air pollution in London and elsewhere”. 

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Each year DEFRA currently releases provisional (2 February) and final (26 April) ‘Air quality statistics in the UK’ reports for the previous calendar year, as well as a summary of the data submitted to the European Commission for the previous calendar year on 28 September entitled ‘Air pollution in the UK’. The department also annually releases statistical information on emissions and sources of air pollution on 15 December and 14 February for the previous calendar year.

However, DEFRA is proposing to streamline these statistical releases on air quality in order to “provide a more coherent service to users” and opened an informal consultation on the issue which ended on 23 November. These proposals include reducing the number of pollutants included in the national statistical releases, scrapping February releases for the previous calendar year and scrapping the December emissions release.

In response to DEFRA’s proposals, Birkett criticized DEFRA’s two-week informal consultation period for being too short and undermining the importance of the issue: “Clean Air London (CAL) objects strongly to this important consultation being held ‘informally’ with just two weeks to comment.” Birkett stated: “CAL recommends that the current system of main and supplementary releases should remain intact.”

He added: “CAL disagrees strongly with the proposal to ‘rationalize the existing publications on emissions of air pollutants in order to focus on the key pollutants of public interest [as judged by the Government]’ (page 3). The purpose of a statistical release should be to clearly and accessibly present the full range of data, therefore allowing the public and NGOs to make up their minds as to where their own interests lie.”

15. Palm Oil Faces Major Tax Increase in France

The French senate's social affairs committee has called for a major hike in palm oil taxation as part of discussions on next year's budget for the social security system. An amendment from socialist senator Yves Daudigny adopted recently by the committee would treble the tax to €300 per ton of palm oil from 2014. The aim is to encourage the food industry to use healthier oils with less saturated fat.

The measure, dubbed the 'Nutella tax' in France because of its impact on major brands such as the popular chocolate hazelnut spread, would also help reduce palm oil's environmental impact in producing countries such as Indonesia, although this environment aspect is not explicitly stated in Mr. Daudigny's amendment.

The Malaysian Palm Oil Council said it was "deeply concerned" with the French senator's proposed tax increase. "The proposal is based on inaccurate claims that palm oil is bad for health and nutrition, and that Malaysia does not respect the environment," the organization said in a statement. "Contrary to senator Daudigny's comments, every nutritional and food expert concludes that palm oil is in fact free of dangerous trans fats, free of genetically-modified organisms and contains valuable vitamins," the organization added.

France consumes about 126,000 tons of palm oil each year. This means that the proposed tax increase would generate about €40m.

Another vote on the amendment is expected soon in the senate. An agreement on the entire budget proposal must also be reached before the revised text is sent back to the lower house of parliament for a final reading.
**16. Climate Change Likely To Cost Europe €350bn per Year**

Climate change is likely to cost Europe €350bn per year by 2080, assuming a global temperature rise of over 4°C by the end of the century, the European Environment Agency has predicted in a report. The 4°C scenario is what scientists believe will happen if the pledges made by countries as part of the UNFCCC negotiations remain unchanged. A World Bank report also recently warned about the impacts of this scenario globally.

The EEA report gathers data generated by the ClimateCost Project. It follows other projections on the impact of climate change, focusing on regional differences within Europe. EEA projections are based on one of the IPCC's emission scenarios, the A1B scenario, which foresees a balanced energy mix with both fossil fuels and a range of renewable energy sources. Costs under this scenario would increase from €100bn to €350bn per year by 2080 across the European region.

Annual costs due to coastal floods are expected to reach €25bn, with Belgium, Denmark, the Netherlands, Portugal and the UK being the most vulnerable. Meanwhile, Belgium, Ireland, Italy, the Netherlands and the UK are seen bearing the brunt of costs from river floods, estimated at €98bn by 2080.

The agency also looked at an alternative scenario (E1) based on more ambitious mitigation efforts. This would cut the climate bill to just over €200bn a year by 2080.

The report will feed into next year’s comprehensive climate adaptation strategy for Europe. A consultation on the strategy closed at the end of August. In July, member states were reminded to quickly adopt national adaptation plans. Only about half of them currently have such plans, according to the commission.

Italy, which is currently drafting its plan, estimates it will have to spend a minimum of €40bn on adaptation over the next 15 years. In a letter sent to commissioners Heddegard and Potočnik, the country’s environment minister said that investments in adaptation should be excluded from the EU Stability Pact’s limit on government deficits.

**17. Last Decade Was Warmest On Record in Europe**

European temperatures in the last decade were 1.3 degrees Celsius above the pre-industrial average — the warmest since records began — according to new research by the European Environment Agency (EEA), the EU’s climate advisory body. Their report finds that since 2002, rainfall has decreased in southern Europe, while increasing in the north, and there have been more extreme weather events. Meanwhile, the Greenland ice sheet, Arctic sea ice and many European glaciers are melting.

The EEA’s report, 'Climate change, impacts and vulnerability in Europe 2012’, says that accelerating climate change impacts will vary across the continent, with the Mediterranean hit by heat waves, while northern Europe suffers coastal and river floods. Heat waves have increased in frequency and length over the last decade causing tens of thousands of deaths, according to the report. Several major droughts have been recorded in recent decades.

At the same time, global sea levels have risen by 3mm a year in the last 20 years, up from 1.7mm during the 20th century, an increase that is transforming Europe’s coastal regions.
18. Air Pollution in Prague Starts Exceeding Yearly Quotas

PM-related air pollution has exceeded the yearly quota in some parts of Prague, mainly due to motor vehicles exhaust fumes, which leads to increased numbers of the diseases of lungs and the cardiovascular system and consequently to a higher death rate, according to Miroslav Suta, from the Environment and Health Centre.

He said low-emission zones that limit the entrance of high-emission motor vehicles would help Prague. “These zones have proved themselves mainly in Germany and Denmark, but they are also established in several other countries. Prague has decided to have a feasibility study made,” Suta said. He said the Prague City Hall set up a working group for the zones in the spring, but it has not met since.

Prague already has zones from which trucks above 3.5 and six tons and buses are banned.

Suta said a portion of Prague’s inhabitants breathe PM-polluted air due to heavy road traffic more often than the permissible 35 days a year. The situation in Prague exceeds World Health Organization (WHO) recommendations as well as domestic levels.

Czech politicians asked the European Commission for an exception, but the validity of the exception granted already expired in June 2011, Suta said.

Prague also crosses the permissible levels of nitrogen dioxide. Unless the Czech Republic negotiates new conditions in Brussels, it will face sanctions.

According to the State Health Institute, some 6400 people died prematurely of air pollution-related diseases in the Czech Republic last year.

19. Official Figures Show Automakers on Track to Meet EU's 2012 CO₂ Targets

Few if any automakers are likely to have to pay premiums for excess carbon dioxide emissions from private cars during the first year of mandatory limits in the European Union, according to a European Environment Agency (EEA) report and a European Commission regulatory decision published on December 11th. Of the manufacturers that sell more than 100,000 cars per year in the European Union, only Romanian carmaker Dacia and Japan's Mazda risk missing the target in 2012, when a mandatory limit first applies, according to the data contained in both documents.

Under a 2009 regulation (Regulation (EC) 443/2009), automakers are required to reduce the carbon dioxide emissions of passenger cars sold in the European Union to 130 grams per kilometer on average. The limit is phased in through 2015, when all cars must comply.

In 2012, 65 percent of manufacturers’ fleets must have emissions below the threshold. The proportion of the fleet that must comply rises to 75 percent in 2013, 80 percent in 2014, and 100 percent in 2015. Automakers that exceed the limit must pay to the European Commission, the European Union's executive arm, a premium rising on a sliding scale from €5 to €95 ($6.50 to $123) per new car registered per g/km above the limit.

The Commission decision published on December 11th recorded manufacturers’ emission levels in 2011 in preparation for calculation of premiums that might apply in 2012. The Commission
decision was based on verified data provided by EEA. Excess premiums for 2012 will be known when data become available in 2013.

According to the EEA report, among the 20 highest-volume manufacturers, Citroen, Fiat, Peugeot, Seat, and Toyota already meet their 2015 obligation, and most manufacturers already comply with their 2013 and 2014 targets.

Most smaller-scale and niche manufacturers have been allowed derogations from the regulation, but Maserati and Rolls-Royce, which do not have derogations, could face excess premiums for emissions that significantly exceed their target values. However, the two companies sold only 1,330 and 409 vehicles respectively in 2011, according to the data.

EEA said most car companies have significantly reduced their fleet average emissions since the adoption of Regulation (EC) 443/2009. Many manufacturers cut their fleet average carbon dioxide emissions by introducing more diesel cars and reducing the number of petrol vehicles, and in some cases by reducing engine capacity, EEA said.

20. New Rules on Cleaner Marine Fuels Will Deliver EU Health Benefits

New environmental rules on marine fuels will substantially reduce air pollution and its impacts on human health. Air pollutants from maritime shipping are transported over long distances and as a result contribute increasingly to the air quality problems in many European cities. Without any action, sulfur emissions from shipping in EU sea areas would exceed those from all land-based sources by 2020. The revised legislation will put an end to this trend reducing not only sulfur emissions but more importantly particulate matter, marking a clear step forward in protection of people’s health and the environment.

The Directive entering into force is guided by standards developed at the International Maritime Organization (IMO). It progressively reduces the maximum sulfur content of marine fuels from the current 3.5% to 0.5% by January 2020. In some very fragile ecosystems such as the Baltic Sea and the North Sea including the English Channel, the maximum sulfur content will be reduced to 0.1%, in 2015.

As an alternative to low sulfur fuels, ships can opt for equivalent compliance methods such as exhaust gas cleaning systems or LNG-powered ships. Current EU transport funding instruments, such as TEN-T and Marco Polo Programs, as well as the European Investment Bank (EIB) give financial support to green maritime-based projects. Furthermore, the Commission has launched activities that encourage the use of marine LNG as ship fuel. It will also continue to implement medium- and long-term measures to promote green ship technology, alternative fuels and the development of green transport infrastructure in the context of the Sustainable Waterborne Transport Toolbox, jointly with industry and Member States.

This Directive is the latest element of the EU policy framework on air pollution which has been developed over the last 30 years. The European Commission is currently carrying out a comprehensive review of the policy framework with a view to updating it in 2013.

By 18 June 2014 at the latest, Member States will have to amend their existing legislation on the quality of marine fuels to align it with the new Directive. The Directive provides legal certainty for the required investments by ship owners, port operators and refineries. From 2015 onwards, Member States are asked to ensure that ships use fuels with a sulfur content of not more than 0.10% in the Baltic Sea and the North Sea including the English Channel. Equivalent
compliance methods, such as exhaust cleaning systems, are accepted. From 2020 onwards, ships operating on all other European Sea areas will have to use fuels with sulfur content below 0.50%.

21. Professor Williams Notes That EU Vehicle Emission Regulations ‘Flawed’

King’s College environmental science professor Martin Williams says that EU vehicle emissions regulations have not done enough to improve air quality. EU diesel vehicle emission standards have “failed” during the past two decades. The standards, starting with the introduction of Euro 1 in 1992 and most recently the Euro 5 in 2009, have gradually placed higher limits on emissions from diesel vehicles. But Professor Williams, from the Environmental Research Group at King’s College London, said that EU standards had not done enough to reduce levels of nitric oxide and nitrogen dioxide emissions from vehicles.

Speaking at the Institute of Air Quality Management (IAQM)’s Dispersal Model Users Group (DMUG) conference on 5 December, Professor Williams’ said: “In the last 20 years, vehicle emissions regulation in the EU has failed – it has been shown to be flawed.” However, he added: “There is a group in Brussels looking at better ways of dealing with this (diesel emissions) so it could improve.”

His comments come less than a week after an EC official said the new Euro 6 Standards and state-of-the-art filters for diesel cars coming into force in 2014 would help local authorities meet air quality limits.

Also speaking at the conference was Tim Murrells from energy and environment consultants Ricardo-AEA, who said: “There hasn’t been a decline in NOx (nitric oxide and nitrogen dioxide) emissions from diesel cars.” He added: “We have no idea how Euro 6 is going to perform – only time will tell.”

The Euro 6 Standard will require diesel vehicles to have diesel particulate filters (DPFs) or other emissions limiting equipment fitted in order to limit nitric oxide and particulate matter emissions to meet EU limits.

Professor Williams also spoke about the problem of DPFs and their possible legal impact on vehicles passing MOTs in the UK. “Diesel particulate filters (DPFs) are an issue – there are questions about the legality of them and this is a potential problem. I am not sure if cars will be able to pass MOTs (without DPFs) and so forth – that is a matter for lawyers to argue.”

Currently, diesel cars have to pass an emission test as part of an MOT to make sure limits are not being breached. DPFs are not required to pass an MOT and it is not currently illegal to have them removed as long as emissions do not breach acceptable limits.

Many types of diesel vehicles have already had DPFs fitted following the Euro 5 Standard coming into force in 2009. However, with the emissions limits due to tighten further when Euro 6 comes into force in 2014, enhanced DPFs and similar technology will be needed in order to keep diesel emissions within EU limits.

Professor Williams also said that local authorities lacked the power and understanding to cut emissions in Air Quality Management Areas across the UK. Local authorities establish AQMAs in specific places where air quality readings are not meeting national standards. The local
authority then puts together an Air Quality Management Action Plan to improve the air quality in that area.

Professor Williams said: “Many Air Quality Management Areas (AQMAs) have declared little improvement in air quality. This is maybe not surprising as local authority influence is limited – what can they meaningfully do?

“A lot of the lack of action at local level is because of the lack of understanding of the problem.” He added: “Many, or perhaps even most, AQMAs are so small and cover tiny areas – a holistic management approach would be better.”

22. European Commission Seeks Input on Revision of EU Air Quality Strategy

An upcoming review of the European Union’s air quality legislation is necessary because EU countries only partially meet currently mandated standards and the bloc needs to align its objectives with the recently revised Gothenburg Protocol, the European Commission said in a consultation document published on December 10th. The review, to be published in late 2013, will likely result in the revision of two important EU air quality laws and could include the setting of air quality goals for 2020, 2025, and 2030, according to the consultation paper.

The laws likely to be revised as part of the review are the Ambient Air Quality Directive (2008/50/EC), which requires EU countries to limit in air the presence of pollutants such as carbon monoxide, ozone, and fine particles, and the National Emission Ceilings Directive (2001/81/EC), which establishes national ceilings for the emissions of substances that cause problems such as acid rain, including sulfur dioxide and nitrogen oxides.

The Commission said responses to the consultation paper can be submitted through March 4th and should address how to achieve three broad objectives: ensuring that EU countries comply with current air quality legislation; aligning EU legislation with the revised Gothenburg Protocol; and considering “interim objectives” for 2025 and 2030 on the way to achieving the EU's overarching goal of “levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment.” That overarching goal, stated in multiple EU documents including the Seventh Environment Action Program, lacks a specific target date.

On the Gothenburg Protocol, which is part of the international Convention on Long-range Transboundary Air Pollution, the Commission said that “current EU air quality legislation may no longer be sufficient to ensure fulfillment of the EU's new international commitments.” The Gothenburg Protocol was revised in May with tighter national emissions targets to be met by 2020 for a number of substances, including sulfur dioxide, nitrogen oxides, and volatile organic compounds, and the addition of fine particles and black carbon to the list of substances subject to national emissions ceilings under the convention.

The Commission's environment department is consulting on whether to regulate black carbon through national caps on the pollutant; the commission has asked whether black carbon should be regulated and whether caps for the pollutant should be set as part of a revised National Emission Ceilings (NEC) directive.

The EU’s commitments under the revised Gothenburg Protocol mean it must set ceilings for fine particulates (PM2.5) under the NEC directive. But the upcoming revision of the directive “could go further”, the consultation documents note. The consultation asks whether other new
pollutants should be included in the NEC directive. Action on methane, which contributes to the formation of ground-level ozone, is also being considered as part of the directive’s revision.

On noncompliance with current standards, the Commission said EU member states are struggling to meet limits for fine particles, nitrogen oxides, and ground-level ozone in particular. A revised enforcement strategy could include the reduction of “governance inefficiencies,” targeting of economic sectors in which limited progress to reduce air pollution has been made, and measures to cut traffic emissions, especially from diesel vehicles, the Commission said.

New provisions could be set in the NEC Directive requiring member states to “take explicit account of existing and projected air quality non-compliances when developing emission reduction plans”, the consultation document states.

Controversially, the consultation asks whether existing limits for pollutants for which there is widespread non-compliance, such as nitrogen dioxides, should be weakened. It also asks whether deadlines for the attainment of these targets should be delayed. The consultation also asks if existing targets for ground-level ozone should be made binding, at the current level or at a more stringent level.

Other measures mooted in the consultation include setting more stringent standards for road vehicles after 2020 and extending emission control areas for ships to new areas like the Irish Sea and the Gulf of Biscay.

A ban on burning agricultural waste and stricter regulation of smaller-scale combustion installations are also mentioned in the consultation.

23. Heavy Metals Compliance Deadlines in LRTAP Treaty Eased

The Executive Body of the Convention on Long-range Transboundary Air Pollution (LRTAP) has amended the protocol on heavy metals to extend compliance deadlines for industry, the second major change to the convention in six months aimed at attracting Russia, Ukraine, and other countries to join Europe and North America in tackling air pollution. The amendments to the heavy metals protocol were approved on December 13th at a meeting in Geneva. Parties will be asked to ratify the amendments after a legal review.

“The problem is that more mature countries that have been doing this for some time … already have fairly advanced industries that have applied these techniques or will soon do so. But of course the timetable for non-parties—Eastern European countries—with more emerging air pollution systems still have some way to go,” Martin Williams, chairman of the Executive Body, told reporters. “So the issue was about getting a timetable for the application of these techniques that would be acceptable to Eastern European countries whose legislative timetables are a bit longer than some others.”

The convention was agreed to in 1979 among the countries of Europe, the United States, Canada, and the Soviet Union, but Russia and other Eastern European states following the collapse of Communism did not ratify its protocols and began actively participating only a few years ago.

The amendments to the heavy metals protocol put in place new, stricter limits on emissions of cadmium, lead, and mercury from various sources, including cement kilns, coal-combusting facilities, refineries, iron and steel production, and others. It also offers longer compliance time
frames that will allow more time for implementing best available techniques, particularly for existing sources.

“In principle, we didn't have to [take into account] the interests of non-parties like the Russian Federation and Belarus and Ukraine,” Williams said. “But since the main goal is to bring these countries on board, we spent a lot of time making sure the amended protocol was acceptable to those countries. And since that activity was part of the reason for taking time over the amended text, then I sincerely expect these countries to sign up in due course.”

The Gothenburg Protocol as amended in May is undergoing a legal review and will soon be available for countries to ratify. The heavy metals protocol will now undergo such a review before being made available for ratification in the coming year.

24. Air Pollution Causing 6-9% of Adult Deaths in London

A London Assembly report on air pollution has flagged up a statistic that up to 9% of deaths in London can be attributed to man-made airborne particles. The Public Health Observatory looked at all causes of adult mortality, according to 2010 figures, and worked out how much was down to long-term exposure to fine particulates in the air (known as PM2.5, different from another form of particulate pollution, PM10). In the City of London it was 9%, Kensington and Chelsea and Westminster 8.3%, going down to 6.3% in Bromley and Havering. Even this is higher than the England average of 5.6%.

The Mayor’s office told the BBC:

Air quality is undoubtedly a serious health issue, but this report presents complex statistical data in an overly simplistic and alarmist manner.

Of course, we all have to die of something, but airborne particles can contribute to heart and lung problems and possibly breast cancer and diabetes. We already know that air pollution causes 4,000 of us to die prematurely each year. The report also highlights that the issue of air pollution is quite tricky: some hybrid buses generate more PM emissions than normal diesel buses, which is the point we threw our hands in the air and muttered something about not being able to win.

When it comes to how we get around, it seems we are ditching cars more. The census revealed that London is the only region in England and Wales where the number of cars and vans is lower than the number of households, and the Assembly’s report predicts the number of journeys taken by private vehicle to drop from 43% in 2006 to 37% by 2031. Now, if we can just find the all-round cleanest method of public transport…

25. London Businesses Asked to Phase out Diesel Vehicles

A new report from the London Assembly’s Health and Environment Committee shows the health impacts of pollution within the city. Pollution, mainly produced by diesel vehicles, has been linked to respiratory problems, breast cancer, and diabetes, and has recently been found to contain nitrogen dioxide and other particulate matter which are carcinogenic.

The news has led them to urge businesses to phase out all diesel-powered vehicles from their fleets, and instead investing in electric vehicles or developing more efficient distribution methods.
The study backs up another recent report which found that pollution causes around 4,000 deaths a year in London, and adds £20 billion a year in extra health care costs. (See above.)

Murad Qureshi, the chair of the Health and Environment Committee, told BusinessGreen, that the adverse health effects that pollutants cause will also affect businesses due to the increased number of absences for sickness.

Qureshi is a strong supporter of Mayor Borris Johnson’s recent proposal to replace existing Greener Vehicle and Electric Vehicle exemptions from the congestion charge with a new Ultra Low Emissions Discount (ULED) from July next year. There are currently no diesel cars available to buy that would be eligible for the new ULED.

**26. High Air Pollution Levels Recorded In Northern Ireland**

Air pollution reached high and moderate levels in a number of areas in Northern Ireland recently, according to the country’s Department of the Environment (DoE). Specifically, the department reported a spike in monitored levels of particulate matter on 11 December in Armagh, Strabane and Newry.

This was due to a combination of cold temperatures and low wind, which is fairly common in the winter months and can result in an increase in monitored particulate levels, according to the DoE. The DoE believes the spike may have been due to many households in the affected areas using extra heating, or in some cases burning coal, in order to keep warm.

High levels of particulate matter can worsen the symptoms of lung or heart disease, and an update was published on the DoE website about the spike in levels for residents in the affected areas with respiratory, heart or similar health problems.

Air pollution levels in the UK, including particulate matter, are monitored using the index approved by the Committee on Medical Effects of Air Pollution Episodes (COMEAP). This system uses a 1-10 index, with monitored levels of air pollution from 1-3 considered ‘low’, 4-6 ‘moderate’, 7-9 ‘high’ and pollution levels reaching 10 considered ‘very high’.

Levels of particulate matter monitored in Armagh, Strabane and Newry reached as high as 7 on the DoE’s index, and were therefore considered to be ‘high’. Moderate levels between 4 and 6 were also measured on the same day in Ballymena, Belfast, Lisburn and Derry/Londonderry areas.

Particulate levels are monitored on the index as a mean reading from the last 24 hours, with the latest figures are updated on the DoE’s Northern Ireland Air website.

Dan Kennedy, head of air and environmental quality at the DoE in NI, said: “First of all it has been particularly cold this week with very little wind – there was a spike in lowland valleys where there was no wind, cold weather and people using more heating. Sometimes people will be burning coal to heat their homes.”

He added: “We released a number of weather reports last year as well, as we are required to inform residents about air pollution under EU air quality directives.”

Asked whether there was a plan to deal with spikes in particulate levels in the winter months, Mr. Kennedy said: “We have policies in place – there’s the UK air quality strategy for 2011 and there
are a number of local authorities with action plans – they have the power to put policies in place with regards to tackling air pollution.”

The DoE in NI also published the Air Pollution in Northern Ireland 2011 report earlier this year, which includes a map of the AQMAs in place in the country. This report names Canal Street in Newry as the only monitored site in NI to exceed the annual mean EU particulate matter limit value in 2011 on more than the 25 permitted occasions during the year.

However, the DoE believes the measurements for particulate matter in this particular site in Newry may be “artificially high”. The report states: “As reported in previous years, there is concern about the location of Newry Canal Street. It is situated in a corner formed by two adjoining buildings, and it is feared that wind vortices can form in the corner, blowing dust into the sampling inlet and leading to artificially high PM10 measurements. (This site is not used for monitoring compliance with the Air Quality Directive.)”

A statement from Newry and Mourne district council – one of the areas in which high levels of particulate matter were monitored – said: “Newry City is set in the basin of a valley and is subject during cold calm periods, as currently being experienced, to episodes of poor air quality. The pollution is a combination of emissions from traffic passing through the city and emissions from heating systems of local housing. Within the city we have a network of monitoring sites where nitrogen dioxide and PM10 (particulate matter) is monitored. It is from the results of this monitoring that DoE NI issued their recent press statement.”

The statement continued: “Through a process of assessing local air quality the council has already identified exceedances of the air quality objectives for nitrogen dioxide (annual mean objective) and PM10 (daily mean objective). The council has designated Newry urban center as an Air Quality Management Area (AQMA) for nitrogen dioxide and is to expand this to include PM10. We have an agreed Action Plan for the existing AQMA.”

The council’s Action Plan includes strategies such as constructing dual carriageways at traffic bottlenecks, enhancing rail services and plans to improve household energy efficiency by encouraging the use of oil and natural gas for fuel instead of coal.

27. Swedish Agency Proposes Road Map to Zero CO₂ Emissions by 2050

Sweden’s Environmental Protection Agency (EPA) has proposed a series of measures to reduce the country’s net carbon dioxide emissions to zero by 2050. The 2050 Zero Emissions Road Map was presented to parliament on December 11th and also sent to interested groups for comment.

The 2050 target can be reached, the document said if new technology is speedily adopted in the transportation, mining, iron and steel, cement, chemical, and paper and pulp industries. At the same time, it said, the amount of land set aside for carbon-consuming forests and fields should be substantially increased.

It said emissions standards for new vehicles should be strengthened and expanded and that “sector-specific” road maps should be introduced for high-emitting industries such as mining, iron and steel, and cement. The road map called for increased investment in research and innovation and suggested that the purchase of emissions allowances in other countries may ultimately be needed to achieve the target. Sweden’s current target is to reduce greenhouse gas emissions 40 percent by 2020 compared to 1990 levels.
In response to a court order, the U.S. Environmental Protection Agency (EPA) has finalized an update to its national air quality standards for harmful fine particle pollution (PM2.5), including soot, setting the annual health standard at 12 micrograms per cubic meter. By 2020, ninety-nine percent of U.S. counties are projected to meet revised health standard without any additional actions.

EPA's announcement has no effect on the existing daily standard for fine particles or the existing daily standard for coarse particles (PM10), which includes dust from farms and other sources, both of which remain unchanged.

"These standards are fulfilling the promise of the Clean Air Act. We will save lives and reduce the burden of illness in our communities, and families across the country will benefit from the simple fact of being able to breathe cleaner air," said EPA Administrator Lisa P. Jackson.

Fine particle pollution can penetrate deep into the lungs and has been linked to a wide range of serious health effects, including premature death, heart attacks, and strokes, as well as acute bronchitis and aggravated asthma among children. A federal court ruling required EPA to update the standard based on best available science. Today's announcement, which meets that requirement, builds on smart steps already taken by EPA to slash dangerous pollution in communities across the country. Thanks to these steps, 99 percent of U.S. counties are projected to meet the standard without any additional action.

It is expected that fewer than 10 counties, out of the more than 3,000 counties in the United States, will need to consider any local actions to reduce fine particle pollution in order to meet the new standard by 2020, as required by the Clean Air Act. The rest can rely on air quality improvements from federal rules already on the books to meet this new standard.

The standard, which was proposed in June and is consistent with the advice from the agency's independent science advisors, is based on an extensive body of scientific evidence that includes thousands of studies – including many large studies which show negative health impacts at lower levels than previously understood. It also follows extensive consultation with stakeholders, including the public, health organizations, and industry, and after considering more than 230,000 public comments.

By 2030, it is expected that all standards that cut PM2.5 from diesel vehicles and equipment alone will prevent up to 40,000 premature deaths, 32,000 hospital admissions and 4.7 million days of work lost due to illness.

Because reductions in fine particle pollution have direct health benefits including decreased mortality rates, fewer incidents of heart attacks, strokes, and childhood asthma, the PM2.5 standards announced today have major economic benefits with comparatively low costs. EPA estimates health benefits of the revised standard to range from $4 billion to over $9 billion per year, with estimated costs of implementation ranging from $53 million to $350 million. While EPA cannot consider costs in selecting a standard under the Clean Air Act, those costs are estimated as part of the careful analysis undertaken for all significant regulations, as required by Executive Order 13563 issued by President Obama in January 2011.
The Clean Air Act requires EPA to review its air quality standards every five years to determine whether the standards should be revised. The law requires the agency to ensure the standards are "requisite to protect public health with an adequate margin of safety" and "requisite to protect the public welfare." A federal court required EPA to issue final standard by December 14, because the agency did not meet its five-year legal deadline for reviewing the standards.

EPA carefully considered extensive public input as it determined the appropriate final standard to protect public health. The agency held two public hearings and received more than 230,000 written comments before finalizing today's updated air quality standards.

Individual states will be responsible for deciding how to cut emissions of the fine particulates.

"More mothers like me will be able to rest a little easier knowing that our children and our children's children will have healthier air to breathe for decades to come," EPA Administrator Lisa Jackson, who has two sons with asthma, told reporters in a conference call about the rules.

Industry groups and some lawmakers have complained that the soot standards are too costly. The standards "impose significant new economic burdens on many communities, hurting workers and their families," a group of senators said in a letter to Jackson. The American Petroleum Institute, an industry group, said it feared the new rule "may be just the beginning of a 'regulatory cliff'" including forthcoming EPA rules on smog and greenhouse gas emissions.

Environmentalists and health groups applauded the soot rules, which federal clean air laws require to be reviewed every five years. Carol Browner, who served as EPA administrator from 1993 to 2001, said American innovation has found ways to meet pollution standards while contributing to new technology and jobs. "We don't have to choose between a healthy economy and healthy air and lungs," she said. "We can have both."

An American Petroleum Institute official opposed the new standards. "We support keeping the standards where they are, not only because there is no compelling evidence for changing them, but because our current emission control programs implementing the existing standards are working and continue to reduce pollution levels," said Howard Feldman, API regulatory and scientific affairs director.

"With the control measures already proposed or being implemented under the current regulations, we could expect to reduce particulate pollution by more than 1 million tons annually—about 20%—in the next couple of years, and make steady progress further reducing the number of Americans living in areas exceeding the current standards," he maintained.

EPA has found that PM concentrations under the National Ambient Air Quality Standards fell by 27% nationwide from 2000 to 2010, Feldman said. "As a result, more than three fourths of Americans today live in areas where air quality meets or exceeds today's standards," he said.

Benefits of tightening the existing standards would be questionable, according to Feldman. "When PM standards were proposed in 2006, EPA reviewed thousands of studies," he said. "It decided not to change the annual primary PM 2.5 standard due to the uncertainty of the science."

EPA reviewed 300 new epidemiological studies in its latest proposal, he continued. "The results of these studies are mixed; some show adverse effects and others do not," Feldman said.
“What’s puzzling is that EPA’s own analysis supporting its new proposal failed to adequately address the possibility that health impacts observed in some of the epidemiological studies could be traced to another cause or causes.”

The proposed regulation potentially could adversely affect exploration and production, as well as refining, operations, he warned. “We’re telling EPA that it shouldn’t tighten standards now when we’re trying to add jobs and produce more energy,” Feldman said. “Clearly, the major areas where our industry operates would be affected. It would be more difficult to get permits.”

The new standards came after a poll found that nearly two-thirds of American voters are demanding stronger protections against one of the most dangerous and pervasive pollutants around: soot.

The American Lung Association released results from a national survey of 942 registered voters, finding that support for these clean air protections is broad and deep, with strong majority backing even after hearing balanced messages on both aisles of the debate.

The polling specifically found that 62 percent of voters favor the proposal, compared to 30 percent who oppose it. Nearly 40 percent of voters strongly favor the standards, while only 20 percent expressed strong opposition.

In a press release, Peter Iwanowicz, American Lung Association Assistant Vice President, said:

This poll affirms that the public is sick of soot and wants EPA to set more protective standards. The public also does not buy the arguments being made by big polluters and their allies in Congress that this is not the right time to update soot standards and that doing so would be bad for the economy. They believe we can have clean air and a robust economy.

Earthjustice’s David Baron said:

This poll shows that Americans strongly support clean air. Now is the time for the EPA to deliver on this charge by adopting stronger limits on deadly soot pollution. Americans need and want safeguards that will keep our lungs healthy and our parks clean.
29. Lowering PM$_{2.5}$ Linked to Increased Life Expectancy in the United States

In recent years (2000–2007), ambient levels of fine particulate matter (PM$_{2.5}$) have continued to decline in the United States as a result of interventions, but the decline has been at a slower rate than previous years (1980–2000). Whether these more recent and slower declines of PM$_{2.5}$ levels continue to improve life expectancy and whether they benefit all populations equally is unknown. To answer this question, the authors assembled a data set for 545 U.S. counties consisting of yearly county-specific average PM$_{2.5}$, yearly county-specific life expectancy, and several potentially confounding variables measuring socioeconomic status, smoking prevalence, and demographic characteristics for the years 2000 and 2007. They then used regression models to estimate the association between reductions in PM$_{2.5}$ and changes in life expectancy for the period from 2000 to 2007.

The results show that a decrease of 10 μg/m$^3$ in the concentration of PM$_{2.5}$ was associated with an increase in mean life expectancy of 0.35 years (SD = 0.16 years, $P = 0.033$). This association was stronger in more urban and densely populated counties.

Therefore, the authors conclude that reductions in PM$_{2.5}$ are associated with improvements in life expectancy for the period from 2000 to 2007. Air pollution control in the last decade has continued to have a positive impact on public health.

The study appears in the December 3, 2012 online edition of the journal Epidemiology.4

“What this means is that even if particulate pollution has been declining in recent years at a slower rate, even if we have already done a lot of cleanup, still continuing to clean is important,” said the senior author, Francesca Dominici, a professor of biostatistics at the Harvard School of Public Health. “Our paper is strong evidence that additional investment in cleaning the air is beneficial.”

The research expanded on a 2009 study published in the New England Journal of Medicine by some of the same authors (Pope, Ezzati, and Dockery) that found that reduced air pollution was associated with increased life expectancy in 211 urban counties. This new study looked at more recent data, more than two-and-a-half times as many counties, and included both rural and urban areas. The findings showed that there’s a stronger association between declining air pollution and increased life expectancy in more urban, densely populated areas than in rural areas. The results also suggested that reduced levels of air pollution may be more beneficial to women than to men.

As to why there was a stronger association between reductions in fine particulate matter and improvements in life expectancy in urban areas, the researchers speculated that the composition of the particulates there may be different from that in rural areas.

“Since the 1970s, enactment of increasingly stringent air quality controls has led to improvements in ambient air quality in the United States at costs that the U.S. Environmental Protection Agency has estimated as high as $25 billion per year. However, the extent to which more recent regulatory actions have benefited public health remains in question. This study

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provides strong and compelling evidence that continuing to reduce ambient levels of PM2.5 prolongs life," said senior author Francesca Dominici, professor of biostatistics at HSPH.

30. Senate Democrats Push EPA to Move Quickly On Sulfur in Gasoline

More than a dozen Senate Democrats have urged the Obama administration to reduce the amount of sulfur in gasoline over the objections of the oil industry and many congressional Republicans. The so-called Tier 3 emissions standards _ which would force refiners to reduce gasoline sulfur limits from 30 parts per million to 10 parts per million _ have been stalled at the Environmental Protection Agency. But in a letter to President Barack Obama, Sen. Kirsten Gillibrand, D-N.Y., and 12 colleagues ask for the emissions standards to be moved off the back burner and “promptly” adopted.

“Tier 3 will substantially reduce harmful pollutants that are responsible for health-related ailments such as heart attacks, premature death, asthma attacks and other chronic lung diseases,” the senators told the president. At the same time, the standards “will also result in significant economic benefits.”


Reducing the sulfur content of gasoline allows catalytic converters to work more effectively, ultimately causing cars to emit fewer smog-forming emissions. For automakers, the change would allow the construction and use of cleaner combustion engines — giving them new ways to meet other environmental mandates.

But oil refiners say they would bear the brunt of such a change — with some of the extra costs passed on to consumers. It is unclear exactly how much the change would cost, given dueling economic assessments by the EPA, American Petroleum Institute and the manufacturers of emission control systems. An API-commissioned study said refiners would see manufacturing costs rise by up to 9 cents per gallon. But EPA officials have testified that the actual cost increase could be just a penny per gallon.

Like the Senate supporters, advocates of the emissions standards say the short term increase in gasoline prices would be outweighed by cuts in health care costs tied to a reduction in respiratory illnesses. A Navigant Economics analysis estimates health savings of $5.2 billion to $5.9 billion annually by 2020.

Advocates also insist that cutting sulfur emissions - instantly curbing pollution from cars on the road - is the most effective smog-cutting tool available. A National Association of Clean Air Agencies (NACAA) study said a 10 parts per million standard would immediately axe 260,000 tons of nitrogen oxide emissions. “We know of no other single strategy for (nitrogen oxide) that will achieve as significant, timely and cost-effective emissions reductions,” the senators said.

API officials have questioned the extent of air quality benefits from the EPA proposal and said the new requirements could actually boost greenhouse gas emissions from refineries that would need to install new energy-intensive equipment to strip out sulfur. The prime way for stripping sulfur from gasoline is to install hydrotreaters, which refiners say can significantly boost greenhouse gas emissions at their facilities because the equipment is so energy intensive.
Automakers say they are willing to follow new national standards modeled after California’s updated Low Emission Vehicle rules across the United States. That would spare the car companies from having to start selling vehicles with different emission controls in California and the 12 other states, such as New York, plus the District of Columbia that follow California’s tailpipe rules. And automakers say it could lighten the current burden of certifying all vehicles twice -- once to satisfy the EPA and again to sell a car in California.

But to meet California standards nationwide, automakers say, the sulfur content of gasoline must drop. The alliance wants the Obama administration to lower the cap on sulfur in gasoline to 10 parts per million, down from 30 parts per million now. Refiners balk at the cost and say proponents of the change haven't made their case.

The cost of meeting the tougher standards nationwide would be about $150 per vehicle, according to an analysis commissioned by NACAA. But upgrading a refinery can cost hundreds of millions of dollars, and the oil industry, a potent political force in Washington, doesn't want to pay.

The American Petroleum Institute says cleaner fuel would add as much as nine cents to the price of a gallon of gasoline, though studies by the EPA, state regulators and the alliance have put the price tag closer to a penny a gallon.

Oil companies say the EPA hasn't proved cleaner fuel would make new emissions systems in cars more effective but the NACAA analysis indicates substantial benefits for both existing vehicles as well as the new cars.

**31. GE To Buy 2,000 Ford Plug-In Hybrid Vehicles**

General Electric Co will buy 2,000 plug-in hybrid vehicles made by Ford Motor Co for its corporate fleet, the companies announced recently. As part of the deal for the Ford C-Max Energi vehicles, the automaker said it would jointly market GE's alternative fuel infrastructure technology, including charging stations and natural gas fueling stations, to its commercial buyers. The agreement is Ford's largest plug-in electrified vehicle fleet sale to date.

GE, the largest U.S. conglomerate, has set a target to convert half of its global fleet to alternative fuel vehicles. The purchase from Ford brings the number of such vehicles in GE's fleet to more than 5,000, compared with its goal of 25,000.

In May, GE Chief Executive Officer Jeff Immelt said people might be disappointed in the adoption rate of electric vehicles, but his company would continue investing in battery technology to reflect its confidence in them. Electric vehicles carry an expensive battery and typically cost more than a conventional vehicle of similar size. Sales of such vehicles thus far have been modest and below some initial expectations.

GE and Ford also said they would work with researchers from Georgia Institute of Technology to study GE employee driving and charging habits, with the goal of improving all-electric driving and charging performance. Study findings will be shared with commercial customers to provide insights and help facilitate deployment of electric vehicles in their own fleets.

The C-Max Energi, which sells for nearly $30,000 after a federal tax credit, went on sale last month. It can drive about 21 miles in all-electric mode before a gas engine kicks in and gets the equivalent of 100 miles per gallon as rated by the U.S. Environmental Protection Agency.
32. Green Groups Slam Keystone Pipeline, March around White House

Hundreds of people who worry that oil that would be carried by the Keystone XL pipeline will accelerate climate change marched around the White House recently, hoping to revive a movement credited with slowing down the permit process for the crude oil project. The protesters chanted "Hey, Obama! We don't want no climate drama" and said they hope President Barack Obama's election-night promise to address climate change means he will reject the pipeline. It needs a presidential permit to cross into the United States from Canada.

"We're interested in sending a clear message to Obama," said Molly Pugh from nearby Alexandria, Virginia, marching with her husband and 2-year-old daughter, who rode in a stroller. Pugh said she was deeply disappointed that Obama failed to talk about climate change during the recent presidential election campaign, addressing it only in his acceptance speech.

Sunday's protest drew far fewer people than a rally a year ago against TransCanada Corp's project, when thousands linked arms and encircled the White House. Keith Bockus was at that protest, and hopes that Obama will block the pipeline in his second term now that he no longer faces the pressures of another election. "I have five grandkids. I used to worry just about them. Now, I worry about my son and daughter too," Bockus said, explaining why he took a red-eye bus from Hubbardston, Massachusetts, to get to Sunday's event.

Organizers said they were pleased by the crowds, which they estimated at 3,000 people, particularly since they arranged the protest only 10 days ago. They said they are working on a larger protest set for President's Day on February 18. "It's no longer sort of a rag-tag bunch of kids - it's the very heart of the environmental movement," said Bill McKibben, president of 350.org, who helped lead the protest.

McKibben and other environmentalists argue crude extracted from the Canadian oil sands sends too much carbon dioxide into the atmosphere. Pipeline proponents argue the project will create thousands of jobs and reduce U.S. dependence on oil imports from the Middle East.

The pipeline was designed to extend 1,661 miles from Hardisty, Alberta, to Port Arthur, Texas, picking up oil from the booming Bakken region of North Dakota and Montana along the way.

Obama put the pipeline on hold in January, citing the need to review environmental concerns with a portion of the route in Nebraska. TransCanada changed its route and reapplied for the permit. Nebraska's state government is expected to approve the new route by the end of the year, and Keystone proponents have urged the Obama administration to grant the permit soon afterward. The State Department has said it does not anticipate concluding its review of the project before the first quarter of 2013.

33. Top Senate Lawmakers See Chance to Revamp U.S. Energy Policy

The United States needs to update its energy policy to reflect the boom in natural gas and oil production that has boosted manufacturing jobs, said the top Democrat on the Senate energy committee recently. Ron Wyden, who is in line to take over the panel's gavel in January, said he sees the opportunity for "transformative energy policy" to both spur jobs created by the newfound wealth of energy while also protecting air and water from pollution.
But Wyden and Lisa Murkowski, the top Republican on the committee, who spoke at an event held by CQ Roll Call, provided few details on the shape new energy legislation would take. But they stressed they wanted to work together on legislation that would strike a balance between economic development and job creation, and environmental protection. "We feel really strongly about checking the gridlock at the door, working together on, in particular modernizing our energy policy," said Wyden, who represents Oregon and has a long history of working with Republicans on thorny issues including taxation and health care.

Congress has not had a comprehensive energy bill since 2007, well before the widespread use of hydraulic fracturing or "fracking" technology to blast free natural gas and oil trapped in shale rock. Those abundant supplies have put the United States in line to become the world's largest oil producer by 2017, overtaking Saudi Arabia and Russia, the International Energy Agency said recently.

The production boom now supports a total of 1.7 million jobs, a number that could swell to almost 3 million by 2020, forecaster IHS Global Insight has said.

President Barack Obama's administration is studying whether more environmental regulations are needed for fracking, and whether to end the industry's tax breaks - two developments that could curb production.

Murkowski has been working on a long-term energy blueprint for about a year, and has been talking with Wyden about her ideas. In May, she said it could include legislation to increase oil and gas production, improve energy efficiency, update the transmission and storage grid, and reduce the uncertainty in short-term tax incentives for wind and solar power. "I want this to be a proposal of good ideas and direction," Murkowski said, saying she likely would not unveil the plan before January.

Wyden, who is also on the Senate finance and budget committees, said he wants the legislation to include measures to respond to coastal states' desire to get a piece of the tax revenues the federal government gets from offshore drilling projects.

Wyden said he hopes Congress will extend a wind production tax credit to preserve jobs in the sector.

He said he believes tax reform talks will focus on putting renewable energy and fossil fuels on a "level footing," although he acknowledged that tax breaks for all types of energy will likely be "ratcheted down" as Congress looks for ways to cut the federal deficit.

Both Wyden and Murkowski were skeptical about the political odds for a new tax on carbon emissions, an idea which has received considerable focus from both environmental groups and moderate Republicans. Recently, conservative advocacy group Americans for Prosperity said House Republican leaders had signed a pledge to oppose a carbon tax.

34. GM Aims To Build 500,000 Electric-Technology Vehicles A Year

General Motors Co aims by 2017 to build up to 500,000 vehicles a year that include some form of electric power in the engine, including cars like the Chevrolet Volt plug-in hybrid, according to a top executive. GM has made rolling out cars with electrical technology -- including its eAssist system that boosts fuel efficiency in gasoline-powered cars -- a central part of its global strategy,
global product development Chief Mary Barra told reporters. That would be slightly more than 5 percent of GM's global sales last year of about 9 million.

The forecast includes plug-in hybrids; pure electric vehicles like the Chevy Spark EV that will go on sale next summer; and eAssist system, which GM offers on several vehicles, she said. GM introduced the Volt in the fall of 2010.

So far this year, GM has sold more than 50,000 vehicles that include electrification technologies in the United States, with eAssist accounting for slightly more than half that total. Barra did not break down how much of GM's target would be cars that do not include a gasoline engine, but she said plug-in technology will remain central to GM's strategy. "A major focus for GM's electrification strategy will center on the plug," she said. "We have every intention of maintaining our leadership position in plug-in vehicles."

Barra said GM is not turning its back on traditional hybrid or hydrogen fuel-cell vehicles.

GM plans call for its eAssist system, which boosts fuel efficiency as much as 25 percent in some gasoline-powered vehicles, to be on "hundreds of thousands" of vehicles annually by 2017, she said.

Barra said the Spark EV minicar, which will take on Nissan Motor Co.'s Leaf, will be a global vehicle, launching first in select markets in the United States and South Korea before moving to other countries. GM will sell the car, rather than limiting access to lease deals, she added.

The EV's battery will be made by A123 Systems Inc., which filed for bankruptcy last month.

The rollout of the Spark continues GM's push to seize the mantle of "greenest automaker in the world" from Toyota Motor Corp, which makes the popular Prius hybrid car. Toyota also sells a plug-in version of the Prius as well.

Chief Executive Dan Akerson has driven GM more aggressively toward EVs. Efforts have centered on rolling out the plug-in technology in a broader range of vehicles to recoup its investment in the money-losing Volt. In August 2011, GM said it would build a Cadillac ELR luxury coupe based on the Volt's plug-in hybrid technology. In October, the company said the ELR will begin in late 2013 at the same plant that makes the Volt.

GM, like other automakers, also needs more fuel-efficient cars as the industry pushes toward more stringent U.S. requirements that will be in place by 2025.

Ford expects hybrids, plug-in hybrids and EVs will account for as much as a quarter of its global sales by 2020. GM's smaller rival said in August it was accelerating development of its hybrid and electric vehicles by bringing design and production of key parts in-house.

The No. 2 U.S. automaker, which has launched the Focus EV and C-Max Energi plug-in hybrid car this year, said it will spend $135 million to design parts for its next wave of EVs and double its battery testing capabilities by next year.

President Barack Obama's administration has been a strong proponent of electric vehicles like the Volt and set a goal of reaching 1 million battery-powered vehicles on the road by 2015. Analysts are less optimistic as prices remain high for EVs, and driving range and wide availability of public battery charging stations remain the chief concerns for consumers. Lux
Research estimates the number will actually be fewer than 200,000, and Boston Consulting Group has predicted EVs and plug-in hybrids will make up only 5 percent of the market within eight years.

However, Elon Musk, the CEO of electric carmaker Tesla Motors Inc., said recently that Obama's re-election would likely mean a continuation of the U.S. government's policy promoting EVs. He said he would back any efforts to boost federal tax credits for electric cars to as much as $10,000 from $7,500 now and added Tesla would install fast-charging stations on major U.S. routes by the end of next year.

35. As U.S. Hesitates, California Pours Billions into Green Energy

California, long the national leader in clean energy policy, is poised to double down on its investments in the sector, with billions in new subsidies set to flow in over the next few years. California voters recently directed some $2.5 billion to energy conservation programs with the approval of Proposition 39, which closes a corporate tax loophole, allocates about half of the new revenue to environmental goals for five years, and which passed with more than 60 percent of the vote.

In addition, the state will soon begin selling “carbon allowances” as it implements a cap-and-trade program to reduce greenhouse gasses. Revenues from those sales, which could reach $11 billion a year by 2020, will also be used for clean energy development.

The new programs come on top of a solar power subsidy program, now in its fourth year, which has driven a widespread adoption of rooftop solar systems around the state. And an aggressive effort to require electric utilities to use renewable sources for one-third of their output has also given the sector a big financial boost and spurred the construction of several massive solar power plants throughout the state.

"We put our money where our mouths are," said Mary Nichols, chair of the California Air Resources Board, the agency charged with implementing the state's cap-and-trade system. "We back up what we do in regulation by shifting subsidies from things that pollute and are inefficient to things that are more efficient and make our state more resilient," she said.

California has long been a bellwether for efforts by states and local governments eager to address climate change. In 2006, Governor Arnold Schwarzenegger signed into law a bill that requires the state to reduce greenhouse gas emissions to 1990 levels by 2020. That law survived a challenge at the polls two years ago, when Californians overwhelmingly defeated an oil industry-backed measure to roll it back. Supporters of policies that address climate change view state efforts as critical after a bill to establish a federal cap-and-trade system to curb carbon emissions died in the U.S. Senate in 2010.

President Barack Obama has promised more assistance for renewable energy in his second term, but the congressional support he needs to extend or renew tax breaks for the industry is far from guaranteed.

Prop 39 backers spent more than $31 million to promote the initiative, $29.6 million of which came from its sponsor, billionaire hedge fund manager Tom Steyer. It received almost no opposition, and, despite the millions spent on advertising, garnered less attention than other initiatives on state taxes, political contributions and genetically engineered foods. Although existing law requires that a portion of the funds from Prop 39 go toward schools, the rest of the
money is "up for grabs," said Anne Smart, director of energy for the Silicon Valley Leadership Group, which worked to pass the initiative.

Specific provisions allow for the creation of "new private sector jobs improving the energy efficiency of commercial and residential buildings" and job training "on energy efficiency and clean energy projects," which could encompass a wide range of beneficiaries.

Many observers expect programs resulting from the passage of Prop 39 will work like the California Solar Initiative (CSI), the key state incentive for solar energy systems. With a budget of $2.2 billion over 10 years, CSI's total funding is about the same as the Prop 39 fund. The program, which began in 2007, has created an industry of solar rooftop installers and is on track to reach 1,000 megawatts of installations by the end of 2012, approximately the equivalent of half a nuclear power plant. Homeowners are given partial funding for their solar systems, and state incentives have decreased over time as the costs of systems have fallen.

The money raised by Prop 39 also has the potential to be combined with another new source of clean energy cash - the roughly $1 billion the state expects to raise over the next fiscal year as the state's pioneering carbon market opens. The carbon market, part of California's response to global warming, caps the amount of carbon emitted by industries each year and lets companies buy and sell permits to pollute. The state is the primary seller of permits, which could raise $50 billion over eight years. State law requires the revenue be spent on environmental projects, but details have not been ironed out yet.

Decisions on how the money from Prop 39 is doled out now moves to the state legislature with the first hearing to be held in early January in a committee led by state Senator Kevin De León, who co-chaired the campaign to pass the initiative.

36. NY Mayor Cites Climate Stance in Endorsing Obama

Climate change was catapulted to the forefront of the U.S. general election after New York's independent mayor threw his weight behind Democratic President Barack Obama, citing his stance on climate change. After refusing to endorse any presidential candidate in the last election in 2008, New York City Mayor Michael Bloomberg, a former Republican, endorsed the re-election of Obama because he believed he would adopt policies to tackle climate change and his Republican challenger Mitt Romney would not.

The high profile mayor was speaking just days after former hurricane Sandy slammed into the eastern seaboard of the U.S. killing more than 80 people and leaving millions without electricity.

"Our climate is changing. And while the increase in extreme weather we have experienced in New York City and around the world may or may not be the result of it, the risk that it might be -- given this week's devastation -- should compel all elected leaders to take immediate action," he wrote in an opinion piece for Bloomberg News, which he owns.

The endorsement is unlikely to sway the vote in the Democratic-leaning city of New York, but it has put the climate change issue in the national spotlight as media attention has been focused on disaster recovery in the eastern United States. So far, the issue of climate change has scarcely played a part in the closest presidential contest for decades, an omission that has drawn ire from environmental groups.
Bloomberg cited Obama administration regulations to curb heat-trapping carbon dioxide and other emissions from cars and power plants as signs of leadership on the issue, although he expressed his general disappointment with Obama's performance the past four years.

Bloomberg, a billionaire, donated $50 million of his money to green group the Sierra Club for their campaign to replace one-third of coal-fired power plants with cleaner energy and launched a plan for the city to cut its carbon emissions 30 percent by 2030.

Bloomberg said he would have endorsed Republican candidate Mitt Romney if the former Massachusetts governor had supported some of his previous positions, such as his stance on climate change. In his op-ed, Bloomberg applauded Romney's initial decision in 2003 to sign on to the Regional Greenhouse Gas Initiative (RGGI), a cap-and-trade program to cut electricity sector emissions in 10 northeastern states of which New York is a member. "Since then, he has reversed course, abandoning the very cap-and-trade program he once supported. This issue is too important. We need determined leadership at the national level to move the nation and the world forward," Bloomberg wrote.

"One sees climate change as an urgent problem that threatens our planet; one does not. I want our president to place scientific evidence and risk management above electoral politics," he wrote.

37. Obama Sees Second-Term Focus on Climate Change

President Barack Obama said he plans to work with Congress in his second term to curb human-aggravated climate change, but not at the expense of the U.S. economy. "I am a firm believer that climate change is real, that it is impacted by human behavior, and carbon emissions," Obama said at a televised news conference the day after his reelection. "And as a consequence, I think we've got an obligation to future generations to do something about it."

Without specifying what actions he would take, Obama said he would speak in the coming months and years to get bipartisan support for tackling the problem of rising global temperatures.

Obama pointed to his administration's tightened fuel efficiency standards on cars and trucks and the increased use of renewable energy in the United States as moves that will limit the amount of carbon dioxide emitted into the atmosphere. In the next several weeks, he said, he plans "a wide-ranging conversation with scientists, engineers and elected officials to find out what ... more can we do to make short-term progress in reducing carbons."

Noting that it is unclear now what Democrats or Republicans are prepared to do to ease the climate problem, and that regional differences complicate the situation, Obama said any serious solution would require "some tough political choices." "I think the American people right now have been so focused, and will continue to be focused, on our economy and jobs and growth that ... if the message is somehow, we're going to ignore jobs and growth simply to address climate change, I don't think anybody's gonna go for that," he said. "I won't go for that." He said Americans would support "an agenda that says we can create jobs, advance growth and make a serious dent in climate change and be an international leader."

The issue of climate change was largely absent from the presidential campaign, where Obama talked about an "all-of-the-above" energy strategy that includes fossil fuels such as coal, petroleum and natural gas - big emitters of greenhouse gases - in addition to renewables like solar and wind power. Republican nominee Mitt Romney mocked Obama's stance on climate
change, telling his party's convention in Tampa in August, "President Obama promised to begin to slow the rise of the oceans and to heal the planet. My promise is to help you and your family."

However, in the last days of the campaign, Obama picked up an endorsement from New York City Mayor Michael Bloomberg, whose city was battered by Hurricane Sandy. (See above.) Bloomberg said he favored the Democratic president, in part, because Obama "sees climate change as an urgent problem that threatens our planet."

After Obama's news conference, Bloomberg issued a statement saying he will support Obama as the president seeks bipartisan ways to reduce carbon emissions. "Whether or not Hurricane Sandy resulted from climate change, there is no doubt that the threat of increasingly intense storms should spur Washington to make the issue a top priority," Bloomberg said. Extreme storms like Sandy, along with more intense droughts, wildfires and floods, are projected by some as results of climate change, though climate scientists generally decline to attribute individual weather events to global warming.

### 38. IEA Says U.S. To Overtake Saudi as Top Oil Producer

The United States will overtake Saudi Arabia and Russia as the world's top oil producer by 2017, the energy agency said recently, predicting Washington will come very close to achieving previously unthinkable energy self-sufficiency. The International Energy Agency (IEA) said it saw a continued fall in U.S. oil imports with North America becoming a net oil exporter by around 2030 and the United States becoming almost self-sufficient in energy by 2035. "The United States, which currently imports around 20 percent of its total energy needs, becomes all but self-sufficient in net terms - a dramatic reversal of the trend seen in most other energy importing countries," it said.

The forecasts by the IEA, which advises large industrialized nations on energy policy, were in sharp contrast to its previous reports, which saw Saudi Arabia remaining the top producer until 2035.

"Energy developments in the United States are profound and their effect will be felt well beyond North America - and the energy sector," the IEA said in the annual long-term report, giving one of the most optimistic forecasts for U.S. energy production growth to date. "The recent rebound in U.S. oil and gas production, driven by upstream technologies that are unlocking light tight oil and shale gas resources, is spurring economic activity - with less expensive gas and electricity prices giving industry a competitive edge," it added.

IEA Chief Economist Fatih Birol told a news conference in London he believed the United States would overtake Russia as the biggest gas producer by a significant margin by 2015. By 2017, it would become the world's largest oil producer, he said.

This could have significant geopolitical implications, if Washington feels its strategic interests are no longer as embedded in the Middle East and other volatile oil producing regions. Analysts ask whether an energy independent United States would still be prepared to safeguard major trade routes around the world, such as the Strait of Hormuz in the Middle East.

The United States will rely more on natural gas than either oil or coal by 2035 as cheap domestic supply boosts demand among industry and power generators, the IEA said.
Birol said he realized how optimistic the IEA forecasts were given that the shale oil boom was a relatively new phenomenon. "Light, tight oil resources are poorly known ... If no new resources are discovered (after 2020) and plus, if the prices are not as high as today, then we may see Saudi Arabia coming back and being the first producer again," he said.

The IEA said it saw U.S. oil production rising to 10 million barrels per day (bpd) by 2015 and 11.1 million bpd in 2020 before slipping to 9.2 million bpd by 2035. Saudi Arabian oil output would be 10.9 million bpd by 2015, the IEA said, 10.6 million bpd in 2020 but would rise to 12.3 million bpd by 2035.

That would see the world relying increasingly on OPEC after 2020 as, in addition to increases from Saudi Arabia, Iraq will account for 45 percent of the growth in global oil production to 2035 and become the second-largest exporter, overtaking Russia. OPEC's share of world oil production will rise to 48 percent from 42 percent now.

Russian oil output, which over the past decade has been steadily above Saudi Arabia, is predicted to stay flat at over 10 million bpd until 2020, when it will start to decline to reach just above 9 million bpd by 2035. "Russia, which remains the largest individual energy exporter throughout the period, sees its revenues from oil, natural gas and coal exports rise from $380 billion in 2011 to $410 billion in 2035," the IEA said.

The U.S. oil boom would accelerate a switch in the direction of international oil trade, the IEA said, predicting that by 2035 almost 90 percent of oil from the Middle East would be drawn to Asia. The report assumes a huge expansion in the Chinese economy, which it saw overtaking the United States in purchasing power parity soon after 2015 and by 2020 using market exchange rates. Chinese real gross domestic product is expected to increase by 5.7 percent annually between 2011 and 2035.

A rise of 1.8 billion in the world's population to 8.6 billion would lead to a spike in global oil demand by more than a 10th to over 99 million bpd by 2035, keeping pressure on oil prices, the IEA said.

The agency's central "New Policies" scenario, which assumes a range of measures are taken to curb oil consumption in Europe, the United States, China and elsewhere, sees the average import cost of oil rise to just over $215 per barrel by 2035 in nominal terms, or $125 in 2011 terms. If fewer steps are taken to promote renewable energy and curb carbon dioxide emissions, oil was likely to exceed $250 per barrel in nominal terms by 2035 and reach $145 in real terms - almost level with the record highs seen four years ago.

The share of coal in primary energy demand will fall only slightly by 2035.

Fossil fuels in general will remain dominant in the global energy mix, supported by subsidies that, in 2011, jumped by almost 30 percent to $523 billion, due mainly to increases in the Middle East and North Africa.

39. Natural Gas Drillers Target US Truck, Bus Market

Touting natural gas as a cheaper, cleaner-burning alternative to gasoline and diesel, drillers, public utilities and government officials are trying to boost demand for natural gas buses, taxis, shuttles, delivery trucks and heavy-duty work vehicles of all sorts, while simultaneously encouraging development of the fueling infrastructure that will be needed to keep them running.
The economics are compelling. Natural gas costs about $1.50 to $2 per gallon equivalent less than gasoline and diesel. That can add up to tens of thousands of dollars in savings for vehicles that guzzle the most fuel. So, fleet managers are taking notice. Companies as diverse as AT&T, Waste Management and UPS are converting all or parts of their fleets to natural gas, as are transit agencies, municipalities and state governments.

Waste Management, the nation’s largest trash hauler, has committed to replacing 80 percent of its fleet with trucks powered by natural gas. The company’s district manager in southwestern Pennsylvania said about half of his fleet of 100 trucks now run on the cheaper fuel. They are quieter and less expensive to maintain, he said, and “we are looking at a 50 percent reduction in our (fuel) cost.”

Driller EQT Corp. opened its own natural gas filling station outside Pittsburgh in summer 2011, using it to refuel its trucks while also making it available to the public. It’s now doing about 1,000 fill-ups a month — and only half involve EQT vehicles. Other users include City of Pittsburgh trash trucks, shuttles run by the University of Pittsburgh Medical Center, a taxi service and a handful of consumers.

EQT wasn’t sure how the station would be received. “We didn’t have commitments at all beyond our own vehicles. It was really a guess of what we think we could do,” said an EQT vice president focused on market development. “We had people who, at the beginning, said, ‘No, we’re not interested.’ Today they actually own a vehicle that’s natural gas. I think having the physical asset sitting there has helped it become real for people.”

Natural gas vehicles aren’t new. But the drilling boom — spurred by new technology that unlocked vast reserves of natural gas in deep rock formations like the Marcellus Shale underneath parts of New York, Pennsylvania, West Virginia and Ohio — created a gas glut that depressed prices. That, in turn, has made natural gas more attractive as a transportation fuel.

Partly because of a lack of fueling infrastructure, gas isn’t expected to grab significant market share from petroleum anytime soon. Only a tenth of 1 percent of the natural gas consumed in the United States last year was used as vehicle fuel, according to the U.S. Department of Energy. Of more than 250 million vehicles on the road today, perhaps 125,000 are powered by natural gas.

But energy companies see potential. Chesapeake Energy Corp., the nation’s No. 2 producer, has been especially aggressive about targeting transportation. The Oklahoma City-based driller invested $150 million in Clean Energy, a company backed by Texas investor T. Boone Pickens that’s building a nationwide network of liquefied natural gas refueling stations for long-haul truckers. Chesapeake also teamed up with General Electric on “CNG in a Box,” a compressed natural gas fueling system for retailers; announced a partnership with GE and Whirlpool to develop a $500 appliance that would allow consumers to refuel their natural gas-powered cars at home; and has been working with 3M to design less expensive tanks. “It’s simply a matter of time before the U.S. meaningfully shifts from transportation systems built around consuming high-priced oil to consuming low-priced domestic natural gas,” Chesapeake CEO Aubrey McClendon wrote to investors this year.

States are also promoting natural gas as a transportation fuel. Nearly two dozen state governments have formed a consortium to add natural gas-powered vehicles to their fleets, an
effort launched by the governors of Oklahoma and Colorado that attracted more than 100 bids from dealerships last month.

Separately, the Pennsylvania Department of Environmental Protection is dangling $20 million worth of incentives to goose the market for medium- and heavy-duty natural gas vehicles. The three-year program, which launches on December 1st and is funded by a state fee on drillers, aims at putting 600 to 700 new natural gas-powered trucks and buses on the road in its first year. State officials also hope to use the grant program to spur a network of new filling stations. Pennsylvania has only 14 publicly available stations, and more places to fill up could help stoke consumer demand.

Conventional gasoline engines are becoming more efficient, however, and consumers might balk at spending more on a natural gas-powered car. Plus, the United States has less than 600 natural gas filling stations available to the public, compared with 160,000 gas stations.

The only factory-made, natural gas-powered passenger car available to U.S. consumers is the Honda Civic Natural Gas. While Honda expects sales to top 2,000 this year, that’s a fraction of the number of gasoline-powered Civics it moves in a single month.

For now, the gas industry is concentrating on heavy trucks and buses, vehicles that ply a regular route and return to the same base to fill up.

40. Vehicle Importers from China Settle Clean Air Case

Two now-defunct vehicle importers have agreed to pay a $50,000 civil penalty to resolve a federal case in which they were accused of importing and selling vehicles and engines from China that did not meet Clean Air Act emissions standards. Between 2006 and 2011, Yuan Cheng International Group Inc. and NST Inc., both based in Montclair, Calif., imported 17,521 recreational vehicles, highway motorcycles and non-road spark ignition engines that did not have Environmental Protection Agency (EPA) emissions certifications as required under the Clean Air Act, the agency said.

The two companies and their executives, John Cheng and Jenny Yu, will pay the $50,000 jointly, the EPA said. They might have been forced to pay more, but the Justice Department determined Mr. Cheng and Ms. Yu — husband and wife — had a limited ability to pay a civil penalty, it said.

In fall 2010, NST paid the State of California $250,000 to resolve a similar complaint, the EPA said.

41. New Connecticut Program To Cut Diesel Emissions

The state of Connecticut is making $360,000 in grants available to replace on-road, heavy-duty diesel trucks with new, low-emission trucks. The Department of Energy and Environmental Protection unveiled the program recently. It is being funded with proceeds from a federal court decree involving an environmental enforcement matter. The judge in the case required that the money be spent to reduce air pollution.

The grants will be limited to 25 percent of the cost of the new truck, before tax. They will be made available to municipalities, organizations, businesses and individuals, with funding for municipal projects a priority.
All applications must be submitted to the agency by December 14th.

The replacement vehicles will not be limited to new diesel-powered trucks. However, they must meet the latest federal emissions standards.

42. EPA Weighs Automakers' Call to Reject California 'Clean Car' Rule Waivers

EPA is weighing domestic and foreign automakers' request to reject California's application for Clean Air Act waivers to implement its “clean car” rules, saying plans to impose a strict zero-emission vehicle (ZEV) mandate beyond model year 2017 vehicles and a tight particulate matter (PM) standard in model year 2025 vehicles are infeasible.

Several other states are looking to adopt California's rules under an air law provision that allows California to seek waivers to set more stringent mobile source rules than the federal government, and for other states to then adopt those rules. Before California can implement such regulations, it must win EPA approval for a waiver from a Clean Air Act prohibition that generally bars states from setting stricter vehicle emission controls than the agency.

In recent comments to EPA, attorneys for the Alliance of Automobile Manufacturers and Association of Global Automakers urge the agency to reject the California Air Resources Board's (CARB) pending request for waivers to implement the ZEV rules for 2017 and later vehicles, and also to reject CARB's request to implement low emission vehicle (LEV) rules imposing the strict PM limit on model year 2025 vehicles.

The automakers are not, however, requesting that EPA reject pending waiver requests for California's greenhouse gas (GHG) tailpipe standards for 2017-2025 model year vehicles, which are the results of a national agreement reached between the Obama administration, CARB and the industry. California's rules closely mirror EPA's and the Department of Transportation's fuel economy and GHG rules for 2017-2025 model year passenger vehicles.

CARB's ZEV regulation requires that between 2018 and 2025, automakers ramp up sales of ZEVs each year, and that by 2025 there will be more than 1.4 million ZEVs on the road, representing 15.4 percent of new vehicle sales in that year. ZEVs are considered full battery-electric cars and hydrogen fuel-cell vehicles. However, under the rule CARB awards partial credit for sales of plug-in hybrid electric vehicles.

The industry argues CARB's ZEV rules applying to post-2017 model-year vehicles are infeasible because it is highly unlikely the required electric vehicle and fuel-cell vehicle infrastructure and level of consumer demand for ZEVs will be sufficient in either California or in states that adopt California's rules (under Section 177 of the Clean Air Act) to support the sale requirements mandated under California's regulations.

"Further, neither California nor the Section 177 States have demonstrated that consumers in the Section 177 States are likely to purchase ZEV vehicles in quantities remotely approaching those mandated," the attorneys wrote in an October 19th letter to EPA. "To the contrary, evidence . . . suggests that consumer willingness to purchase advance technology vehicles varies widely from State to State. The Section 177 States lag California substantially in this regard. Finally, the sales volumes required in California for [model year] 2018 and beyond are likely to substantially exceed market demand." EPA "should therefore deny, at the present time, California's waiver request for the ZEV program for these model years," the attorneys argue.
EPA should also require CARB to submit a new waiver application for the ZEV provisions as they are not “within the scope” of an existing waiver for CARB’s current ZEV rules, they say.

CARB, EPA and the industry should instead implement a review of the ZEV program over the next several years, similar to the mid-term review process adopted under the federal GHG and corporate average fuel economy (CAFE) regulations for 2017-2025 model-year vehicles, according to the automaker attorneys. Under this approach, California could then amend its ZEV program for model-year 2018 through 2025 vehicles “to provide sales requirements that are feasible in light of the results of its mid-term review (which, due to the lead-time requirements, would need to be completed by June 30, 2015),” the letter states.

If EPA officials do not believe they can deny the waiver in total, the industry requests that the agency “at least defer a waiver decision for model-year 2021 and beyond and that a mid-term review of the ZEV standards for these model years be conducted.”

The industry attorneys also ask EPA to reject the waiver request for California’s milligram per mile (mg/mile) PM standard in the state’s LEV program. “Based on our best knowledge of PM measurement and vehicle PM control technology, our members see no way to both measure and meet this standard,” the industry attorneys write. “While we recognize that the proposed standard will not begin for another 11 years after these regulations become final, we do not believe that setting a standard that is completely unachievable today is appropriate, nor do we believe that EPA should issue a waiver for these standards at this time,” the attorneys say.

43. Few Groups Challenge EPA Vehicle GHG Rule as Lawsuit Deadline Passes

Only a few petroleum and manufacturing industry and other groups have filed lawsuits over EPA’s final greenhouse gas (GHG) rule for model year 2017-2025 passenger vehicles by the December 14th deadline for filing legal challenges; the auto sector -- which largely supports the rule -- is not pursuing a lawsuit over it. Automobile dealers also opted against challenging the final rule in court, even though the dealers had been among the most vocal critics of the rule by warning it would drive up the purchase price of cars.

Both the model year 2012-2016 and 2017-2025 joint EPA/Department of Transportation (DOT) rulemakings stem from an agreement between the Obama administration, auto companies, and California on setting first-time vehicle GHG limits. Even those automakers that did not sign on to the pact, including Daimler and Volkswagen, say they have no plans to sue over the new rule.

Additionally, biofuel groups and the natural gas vehicle industry did not pursue a challenge despite earlier indications that they would do so.

Still, the agency does face a handful of lawsuits filed in recent days by non-auto industry groups in the U.S. Court of Appeals for the District of Columbia Circuit. The American Petroleum Institute (API), the National Association of Manufacturers (NAM) and the National Oilseed Producers Association (NOPA) jointly filed a December 14th legal petition over the rule, the final day to file a challenge to the regulation which was published in the October 15th Federal Register.

The Utility Air Regulatory Group filed a separate petition on December 13th and the New Mexico-based company Plant Oil Powered (POP) Diesel Fuel Systems, Inc. had filed the first challenge to the rule on October 23rd. The D.C. Circuit has consolidated all of the cases.
Additionally, on December 17th states including New York and California filed a motion to intervene on EPA's behalf to defend the rule, which the agency issued along with fuel economy rules by DOT that will result in requirements that vehicle fleets achieve a 54.5 mile-per-gallon average in 2025.

API in its comments on the proposed version of the rule questioned incentives “that appear to reflect an attempt to pick winning and losing technologies in the marketplace, an action which would potentially limit consumer choice and increase social costs.” API opposed EPA's plan to allow incentives for electric vehicles, plug-in hybrid electric vehicles and fuel cell vehicles, all of which would use less gasoline than conventional vehicles. API also opposed EPA's decision not to calculate upstream GHG emissions that would address the GHGs created when power is produced to run electric vehicles.

NAM and API also raised concerns in their comments -- echoed by UARG's petition -- that the rule is based on an “invalid” finding that GHGs endanger human health and the environment. These groups also oppose EPA's use of the vehicle rules as a trigger for imposing GHG requirements at stationary sources, a trigger they unsuccessfully challenged in GHG litigation decided in the agency's favor earlier this year by the same court.

NOPA joined API and NAM in a September challenge in the D.C. Circuit to EPA's “Step 3” of its tailoring rule -- which left statutory thresholds for GHG permits unchanged. That case, API, et al. v. EPA, appears to be similar to the new challenge.

UARG in its petition said the rule has “potential implications” for utilities because of the way EPA has set the vehicle rules as a trigger for stationary source GHG permit requirements.

The new challenge comes as the full D.C. Circuit weighs a request that it reconsider its three-judge panel's June 26 ruling upholding GHG's regulatory program in its entirety, including the original tailoring rule, the endangerment finding and the trigger. The court is expected to soon respond to the petition to rehear its holding in Coalition for Responsible Regulation, et al. v. EPA.

**44. EPA Says 1 in 4 New Vehicles Meets 2016 GHG Emission Standards Today**

Apparently, meeting future emission standards shouldn’t prove too hard for auto manufacturers because according to an Environmental Protection Agency official, one-quarter of all new vehicles today already meet federal emission standards that won’t come into effect until 2016. Jeff Alson, senior policy advisor at the EPA Office of Transportation and Air Quality, said during an event at the agency’s Ann Arbor test facility that nearly 90 new models sold today either meet 2016 emission targets or can meet them simply with air condition improvements and no powertrain changes.

Alson commented that vehicle manufacturers’ progress in the fields of fuel efficiency and CO2 emissions are “on a pace that none of us would have predicted a few years ago”. "The big improvements and innovation in fuel economy for the conventional gasoline vehicles have made (selling electric vehicles) a much tougher challenge," Alson told reporters.

However, none of the gasoline-powered models, which account for half of that fleet, would meet the much stricter 2025 standards. Only 25 out of the 90 models, all of them hybrids, all-electric and fuel-cell-powered, which make up only 3 percent of today’s total U.S. market, would meet the 2025 target.
The government projects that the use of new technologies and lightweight materials, such as magnesium and aluminum, which will enable manufacturers to achieve the 2025 CAFE target will raise the price of new cars by an average of US$2,000. The National Automobile Dealers Association (NADA) estimates that, if enforced, the new standards will result in a US$5,000 hike in the average price of new vehicles, making them too pricey.

The annual Fuel Economy Guide released on December 6th jointly with the Department of Energy (DOE), provides fuel economy estimates for more than 1,000 vehicles and lists the most and least fuel-efficient cars, providing an estimated annual fuel cost for each vehicle. The estimate is based on the vehicle's miles per gallon rating and national estimates for annual mileage and fuel prices, EPA says.

EPA says the 2013 guide “for the first time” includes “a second top ten list of most efficient vehicles -- separating advanced technology vehicles from conventional gasoline and diesel vehicles” designed to illustrate the benefits of EVs and plug-in hybrid electric models. The agency says the advanced technology vehicles “are the most fuel-efficient and lowest-emission vehicles available today and are becoming more common. . . . At the same time, consumers may still look up the conventional gasoline and diesel models that offer superior fuel efficiency.”

**45. EPA Transportation Chief Vows to Oppose Oil Industry Attack on RFS**

EPA’s top transportation official is vowing to oppose the oil industry’s attack on the renewable fuel standard (RFS), including calls for lawmakers to repeal the program, saying Congress should ignore the push to scrap the RFS because the program is creating economic benefits through investments in advanced fuel production facilities.

Chris Grundler, recently tapped as director of the agency’s Office of Transportation and Air Quality (OTAQ), defended the RFS at a December 13th Clean Air Act Mobile Sources Technical Review Subcommittee (MSTR) meeting in Washington, D.C. At the same event, he said the agency will “very soon” issue a proposed rule designed to curb fraud in the RFS compliance credit market — a problem the program’s critics have seized on to bolster their calls for total repeal.

Grundler recently became permanent director of OTAQ, after serving as acting director since October following the departure of former OTAQ chief Margo Oge. Grundler said he wants to meet with MSTR more often to discuss emerging issues before problems arise.

The RFS sets annual mandates for volumes of renewable fuel to be blended into gasoline, and several fuels can qualify under the program including conventional biofuels such as corn ethanol, and advanced biofuels known as cellulosic ethanol, which is produced from waste cellulose as opposed to grains such as corn.

Critics of the program say the production mandates are unachievable as the production capacity is either far below EPA’s targets or does not exist. Refiners say this forces them to pay millions of dollars in alternative compliance methods, such as purchasing renewable identification numbers (RINs) to meet the mandates. The American Petroleum Institute (API) and others are pursuing several lawsuits challenging EPA’s annual RFS targets.

API recently switched from calling for fixes to the RFS to pushing for outright repeal, saying it made the change in position due to recent examples of fraud in the RFS coupled with EPA’s
decision to reject requests to waive the standard for one year to alleviate high corn prices prompted in part by corn diverted to ethanol production.

EPA will oppose the oil industry’s attacks on the RFS production goals that were set in the 2007 energy law, he said. “We are going to oppose it,” he said. “We are going to implement [the program] as best we can.”

Grundler also said he took comfort in statements from senior Republican lawmakers in recent weeks saying that RFS repeal legislation is unlikely because the lawmakers “won’t get to it” in the next year. Biofuel advocates say senior Republican staff and members of the House Energy & Commerce Committee are signaling that legislative debate over reforming the RFS is highly unlikely in 2013, saying there appears to be little interest among GOP leadership in moving a comprehensive energy bill next year.

Grundler also said the RFS has “unleashed” a great “entrepreneurial spirit,” spurring many new advanced biofuel and conventional biofuel plants to open, and EPA will work to continue that momentum.

Still, the new OTAQ chief will have to resolve a growing backlog of RFS petitions from biofuel firms, seeking the agency’s approval of new feedstocks and processes to qualify under specific feedstock requirements under the RFS, including life-cycle greenhouse gas requirements. The backlog is being blamed by advanced biofuel supporters as a key concern that could impede the production of cellulosic ethanol and other new fuels.

Grundler said “[w]e are overwhelmed” by the “backlog of 30 petitions” that his office is struggling to review and approve. He was not sure how long it will take to reduce the petition backlog, briefly mentioning the tough budget environment as also becoming a factor in how quickly the agency can proceed. He remained positive, however, saying the backlog was partly a result of the “entrepreneurial spirit” the RFS has unleashed.

EPA’s most recent petition decision was a determination published in the December 17th Federal Register that ethanol produced from grain sorghum qualifies as a renewable fuel under the RFS because it meets a qualifying mandate to emit at least 20 percent fewer greenhouse gases (GHGs) over its lifecycle than conventional petroleum. The decision followed a multi-month review of comments and concerns raised by stakeholders in an EPA notice of data availability it issued in May 2012, requesting comment on its evaluation of sorghum ethanol’s lifecycle GHGs to qualify under the RFS.

Grundler also said the economic opportunity that the RFS creates has also had the adverse impact of spurring some bad actors to try and manipulate the system, referring to recent cases of RIN fraud. EPA has entered settlement agreements with 30 oil and refining companies to resolve alleged civil Clean Air Act violations from the companies’ use of fraudulent RINs. The settlements include almost $4 million in penalties from the companies for purchasing the credits. The companies involved in the settlements inadvertently purchased RINs not knowing they were allegedly produced fraudulently by two biodiesel producers. EPA is pursuing enforcement actions, along with criminal prosecution, against the two producers for allegations of fraud in the RIN market. More than 47 million fraudulent RINs were involved in the RFS violations, which observers say have had a chilling effect on the RIN trading market. The fraud has also created huge uncertainties for the RFS program as a whole, according to counsel tracking the issue, and prompted calls for lawmakers to scrap the RFS.
Grundler told the panel that the “good news” coming from the cases of RIN fraud, is the “bad guys got caught.” However, the “bad news” is that bad actors “generated counterfeit RINs,” and “in the biodiesel space where RINs are valuable,” the fraudulent credits “froze the market” forcing small producers out of business. Grundler said the agency would be coming out with a rule “very shortly” to address RIN fraud, with “the hope” it will restore market liquidity by spurring third-party verification of RINs.

The RIN rule as under development would establish criteria for creating quality assurance programs (QAPs) to be implemented by refiners on a voluntary basis in order to demonstrate due diligence in evaluating RINs before they are purchased. By using an EPA certified QAP, the obligated parties receive an “affirmative defense,” freeing them from EPA enforcement action if the RINs they purchased were later determined to be fraudulent.

API had pressured EPA to release the rule before the end of the year so it could benefit from the affirmative defense in purchasing RINs for the 2013 compliance year. EPA released a draft QAP last month to allow third-party verifiers to develop products oil companies can use to assure the RINs are valid ahead of the rule’s publication.

Grundler told the MSTR federal advisory subcommittee, which includes API members Marathon Oil and Chevron, that third-party verification may drive up the cost of RINs in the new compliance year. The oil companies may “pay a little more for these quality assurance RINs,” but the obligated parties receive the assurance of an affirmative defense, said Grundler.

46. Court Dismisses 2011 RFS Lawsuit

A federal appeals court has rejected the oil industry’s lawsuit filed earlier this year challenging EPA’s 2011 renewable fuel standard (RFS) as time-barred because the 60-day window to sue over the RFS expired last year, though the court is allowing a related suit to proceed in which the sector is challenging EPA’s denial of an administrative petition to reconsider the RFS.

The suit in the U.S. Court of Appeals for the District of Columbia Circuit is among a series of legal and other challenges facing the RFS, with the American Petroleum Institute (API) and others calling for repeal of the standard. Critics say the RFS sets unachievable cellulosic ethanol production mandates. While several cellulosic production facilities are nearing completion, the fuel is not currently available in the United States, forcing refiners to pay millions of dollars in alternative compliance methods, such as purchasing credits to meet the mandate.

API has another suit pending in the D.C. Circuit over EPA’s 2012 RFS cellulosic ethanol blending mandates. At December 10th oral arguments in that case, judges hinted they could side with the sector, but appeared to struggle with what remedy they could give the industry.

“I would be uncomfortable sending anything back to the agency and say try again,” said Judge Brett Kavanaugh during oral arguments, as he raised questions over what relief the court could grant the group.

Judge Janice Rogers Brown asked if petitioners wanted the court to “vacate” the 2012 mandate, given that “we are almost at the end of 2012.” API attorney Robert Long acknowledged during arguments that seeking vacatur puts the court in a “difficult place” as the end of the year is looming, leaving little time for it to act.
Kavanaugh said that the court should establish “parameters” if judges decided to rule for industry and send the rule back to the agency, though he did not specify what parameters a revised rule would have to meet.

Separately, API in July filed a lawsuit over the 2011 RFS. API did not sue when EPA issued the final 2011 RFS cellulosic ethanol mandate in December 2010. Instead, the group petitioned the agency for administrative reconsideration of the rule -- a petition EPA rejected in May. API's lawsuit over the 2011 RFS challenged both the EPA rejection of the petition as a final agency action, and also the original 2011 RFS rulemaking from December 2010.

The agency in filings with the court had asked it to dismiss the part of the suit that challenged the 2010 rulemaking, saying it was time-barred because the Clean Air Act only gives groups 60 days after issuance of a final rule to file a legal challenge. In a December 17th order the D.C. Circuit agreed with EPA and dismissed the 2011 RFS suit to the extent that it challenged the December 2010 rulemaking. “The petition for review is untimely as to those standards, because it was filed in this court on July 24, 2012, beyond the 60-day period provided” by law, the court said in the suit, API v. EPA.

47. AAA Calls for Suspension of E15 Gasoline Sales

Leading road travel group AAA called on the U.S. government to suspend the sale of gasoline with a higher blend of ethanol fuel, the latest opposition against increasing the use of biofuels in transport. A lack of public awareness about the risks of using 15 percent ethanol, known as E15, in older cars could cause problems for motorists, according to an AAA study. The current standard is 10 percent, or E10.

The Environmental Protection Agency approved E15 in 2011 for cars and light trucks made since model year 2000, spurring opposition from auto-makers, service station owners and oil refiners who fear it may damage older engines, leaving them exposed to legal action from motorists.

Only about 5 percent of the 240 million light duty vehicles on U.S. roads today are approved by manufacturers to run on the E15, AAA said. E15 is barred from use in light equipment or older vehicles.

Biofuels makers sought the higher blend as a way to satisfy the federal Renewable Fuels Standard (RFS), which requires the use of 13.2 billion gallons of ethanol in fuel this year, rising to 15 billion gallons annually from 2015. Currently only about ten stations in the United States offer E15, but AAA wants the suspension before next year, when the rising RFS mandate could force refiners and fuel blenders to increase the share of ethanol or face fines.

Governors of four poultry-raising states this year asked EPA for relief from the mandate, saying the corn crop is too small to use 40 percent of it making biofuels. Food makers, automakers and oil refiners also opposed it in court, though they lost.

48. EPA Urged To Modify Ethanol Analysis to Aid Compliance with GHG Limit

The ethanol industry is urging EPA to revise its analysis of ethanol's lifecycle greenhouse gas (GHG) emissions to account for new production efficiencies that are reducing the fuel's GHGs, which could help corn-ethanol plants to comply with a statutorily required 20-percent GHG reduction without having to install costly new controls to cut GHGs.
"Major advancements in the science of lifecycle [GHG] analysis have occurred" since EPA finalized an expanded renewable fuel standard (RFS) almost three years ago, according to a Nov. 30 letter the Renewable Fuels Association (RFA) sent to EPA. "[I]mproved modeling and better data show that the corn ethanol process is more efficient and producing less GHG emissions today than EPA assumed would be in the case in 2022," RFA says.

"Accordingly, we encourage EPA to initiate a process to revise its lifecycle GHG analysis of corn and sugarcane ethanol to better reflect the current state of the science and data," the group says. If EPA were to revise the analysis and credit corn and sugarcane ethanol with greater GHG reductions than current estimates, it might make it easier for the fuel to meet the 2007 energy law's mandate for alternative fuels to cut GHGs compared to conventional oil.

The lifecycle analysis is designed to determine whether ethanol meets a mandate in the 2007 energy law that for corn ethanol to qualify under the RFS it must emit at least 20 percent fewer GHGs over its lifecycle than conventional petroleum. Congress also mandated that EPA consider the international indirect land use impacts biofuels would cause. As a result of the requirement, ethanol plants that were not exempted from the mandate would likely have to use natural gas or other more advanced energy sources for producing ethanol from corn to meet the GHG goal.

RFA, however, wants EPA to reexamine how it calculates lifecycle GHGs from corn and sugarcane ethanol and apply a new measure that would no longer require new technologies identified in the 2007 law.

New ethanol plants must go through a lengthy petition process to ensure the energy used at the plant to produce biofuel is effectively measured and accurately reflects the GHG reductions required to comply with the RFS. The 2007 RFS requires advanced biofuels to meet a 50 percent GHG reduction threshold to qualify under the program, and cellulosic ethanol must meet a 60 percent GHG reduction level compared to fossil fuels to qualify.

"If EPA updated its lifecycle analysis and found that average corn ethanol results in greater than 20% GHG savings today, corn ethanol producers seeking to expand capacity would not need to implement the 'advanced technologies' or file a petition for a new pathway," says RFA.

"Over the past three years, important new information has become available regarding ethanol plant energy use and related GHG emissions," RFA says, citing a new methodology developed by Argonne National Laboratory. "Three new versions of Argonne National Laboratory’s Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model have been released since EPA published its final rule in March 2010," RFA says. "GREET 1.8d, released in August 2010, significantly revised ethanol plant energy use based on an extensive peer-reviewed and published survey of ethanol plants conducted by the University of Illinois at Chicago. The GREET modeling shows significant lower use of thermal energy than EPA assumptions from two years ago the letter explains. "These values (based on real-world data) are considerably lower than EPA’s final rule assumptions regarding 2022-era natural gas use by dry mill ethanol plants," says the RFA letter.

"Additionally, a key assumption in EPA’s analysis of ethanol plant energy use was that it would take until 2022 for 70% of dry mill plants to adopt corn oil extraction technology," the letter explains. “However, it is estimated that roughly two-thirds of the dry mill industry has already adopted corn oil extraction technology today,” according to RFA. Nevertheless, revised
assumptions reflecting the technological improvements are “not reflected in EPA’s lifecycle analysis,” the group says.

Land-use changes, or LUC, as a result of ethanol production -- such as land converted for ethanol production in lieu of other uses -- also do not take into account new information in light of EPA's previous findings. LUC are defined as direct and indirect changes to land for the harvesting of a crop to support a qualifying biofuel mandate, taking in account the effects on deforestation and other impacts raising the GHG footprint of a fuel. “While predictive land use change (LUC) analysis remains highly uncertain, the methods and data associated with LUC estimation have substantially improved since EPA finalized the [2007 law's RFS],” the letter reads. “These improvements have resulted in corn ethanol LUC emissions estimates that are much lower than EPA’s estimate for the RFS2.”

49. U.S. Launches New Project to Develop Electric-Vehicle Batteries

The Obama administration has launched a fresh $120-million research project, aimed at developing cheaper batteries for electric vehicles, a sector that has faltered despite billions of dollars of prior government investment. The Energy Department will dole out the money over five years to establish a research hub for batteries and energy storage, backed by five national laboratories, five Midwestern universities and four private firms.

The four companies joining the project are Dow Chemical Co, Applied Materials Inc., Johnson Controls Inc. and Clean Energy Trust.

During the Obama administration's first term, jump-starting advanced battery manufacturing was a major national initiative, which saw the Energy Department plow $2 billion of grants into 29 battery makers to build or update plants. But the industry was hobbled by overcapacity, limp demand for electric vehicles and high-profile bankruptcies, including the collapse of government-backed battery maker A123.

Led by the Argonne National Laboratory near Chicago, the new research hub will combine several independent research programs into a single coordinated effort “to push the limits on battery advances,” the department said. Besides working on batteries for electric vehicles, the project will also tackle energy storage for the electric grid, officials said.

Many Republicans have attacked the Obama administration's direct investment in clean energy companies, arguing that the government should not be in the business of picking winners and losers in the private sector. However, government investment in energy research and development still has broad bipartisan support in Congress.

50. Office of Naval Research Looks to Replace Diesel with Solar Power

The Office of Naval Research (ONR) is looking to the sun for energy in an effort to help Marines do away with diesel-guzzling generators now used in combat outposts, officials have announced. The Renewable Sustainable Expeditionary Power (RSEP) program seeks to create a transportable renewable hybrid system that can provide Marines with electricity for a 15-day mission without relying on fuel resupply convoys that often become targets for adversaries.

“This program takes on a number of power-related challenges and ultimately will allow the Marine Corps to take a big step toward its goal of using fuel only for mobility purposes by 2025,” said H. Scott Coombe, product manager for RSEP, a collaboration between ONR’s
ONR has enlisted the help of three industry teams—led by Raytheon, Battelle and Emcore—that have developed concepts for hybrid systems that use sunlight, heat and fuel to create electricity. One option is to combine a Stirling engine with a solar concentrator resembling a satellite dish that can harness the power of 1,000 suns. Another is to use powerful solar cells to collect sunlight in conjunction with an efficient solid oxide fuel cell.

These systems must be smart enough to independently switch back and forth from solar when the sun is out to fuel at night or when there is heavy cloud cover. They also have to be compact enough to fit on a small trailer towed by a Humvee so they can be hauled to forward positions. So far, solar concentrators have been too large to carry around the battlefield.

Researchers expect a successful product will reduce fuel needs by 40 percent for expeditionary power systems, with a continual output of 3 kilowatts. It also will be much quieter than current systems and have the potential to use biofuels.

RSEP is a five-year Future Naval Capabilities program. ONR will evaluate the industry teams each year and could keep working with one or more of the industry products or continue to explore other options for renewable power sources.

“We're going to learn a lot from all the different approaches and make sure we capitalize on all the successes and lessons learned going forward,” Coombe says.

51. Traffic-Related Air Pollution Linked to Autism

Autism is a heterogeneous disorder with genetic and environmental factors likely contributing to its origins. Examination of hazardous pollutants has suggested the importance of air toxics in the etiology of autism, yet little research has examined its association with local levels of air pollution using residence-specific exposure assignments. Therefore, the objective of this study was to examine the relationship between traffic-related air pollution, air quality, and autism.

This population-based case-control study includes data obtained from children with autism and control children with typical development who were enrolled in the Childhood Autism Risks from Genetics and the Environment study in California. The mother's address from the birth certificate and addresses reported from a residential history questionnaire were used to estimate exposure for each trimester of pregnancy and first year of life. Traffic-related air pollution was assigned to each location using a line-source air-quality dispersion model. Regional air pollutant measures were based on the Environmental Protection Agency's Air Quality System data. Logistic regression models compared estimated and measured pollutant levels for children with autism and for control children with typical development.

A total of 279 children with autism and a total of 245 control children with typical development were included in the study.

Children with autism were more likely to live at residences that had the highest quartile of exposure to traffic-related air pollution, during gestation (AOR, 1.98 [95% CI, 1.20-3.31]) and

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5 Heather E. Volk, PhD, MPH; Fred Lurmann; Bryan Penfold; Irva Hertz-Picciotto, PhD; Rob McConnell, MD Arch Gen Psychiatry. 2012 ;():1-7. doi:10.1001/jamapsychiatry.2013.266.
during the first year of life (AOR, 3.10 [95% CI, 1.76-5.57]), compared with control children. Regional exposure measures of nitrogen dioxide and particulate matter less than 2.5 and 10 μm in diameter (PM2.5 and PM10) were also associated with autism during gestation (exposure to nitrogen dioxide: AOR, 1.81 [95% CI, 1.37-3.09]; exposure to PM2.5: AOR, 2.08 [95% CI, 1.93-2.25]; exposure to PM10: AOR, 2.17 [95% CI, 1.49-3.16]) and during the first year of life (exposure to nitrogen dioxide: AOR, 2.06 [95% CI, 1.37-3.09]; exposure to PM2.5: AOR, 2.12 [95% CI, 1.45-3.10]; exposure to PM10: AOR, 2.14 [95% CI, 1.46-3.12]). All regional pollutant estimates were scaled to twice the standard deviation of the distribution for all pregnancy estimates.

The authors conclude that exposure to traffic-related air pollution, nitrogen dioxide, PM2.5, and PM10 during pregnancy and during the first year of life is associated with autism. Further epidemiological and toxicological examinations of likely biological pathways will help determine whether these associations are causal.


Europe, China, and India should learn from U.S. experience that suggests access to “cheap gas” can lead to reductions in coal use, carbon dioxide emissions, and electricity prices, even as carbon capture and storage technology appears unlikely to have a major global impact any time soon, the head of the International Energy Agency said on December 18th. “The U.S. experience suggests that a more efficient gas market, marked by flexible pricing and fueled by indigenous unconventional resources that are produced sustainably, can reduce coal use, CO2 emissions and consumers’ electricity bills, without harming energy security,” said Maria van der Hoeven, IEA executive director. “Europe, China and other regions should take note.”

Van der Hoeven made her comments in launching the agency's new Medium-Term Coal Market Report 2012, which projects that coal’s share of the global energy mix will continue a “relentless” rise, especially in China and India, and by 2017 will nearly overtake oil as the world’s top energy source.

The report said the agency expects coal demand to increase in every region of the world in the next five years except in the United States, “where coal is being pushed out by natural gas.”

In May, the agency released emissions data showing that U.S. carbon dioxide emissions fell 430 megatons, or 7.7 percent, since 2006, the largest reduction of all countries or regions. It attributed the reduction to lower transport-sector oil use linked to efficiency improvements, higher oil prices and the economic downturn, and a substantial shift from coal to gas.

Van der Hoeven said that in 2011 global coal use increased 4.3 percent, supplying around half of the global primary energy demand increase. She said that despite an international focus on climate policy and sustainability, global annualized coal use will continue to increase. As a result, the report projects that, although coal's growth rate will slow from the last decade's “breakneck pace,” global consumption by 2017 will reach 4.32 billion tons of oil equivalent (btoe), compared with around 4.4 btoe for oil.

The report said China and India will represent around 100 percent of the global coal demand increase in the next five years, with China leading the world in demand while India will become the largest seaborne coal importer and second-largest consumer, surpassing the United States.
Meanwhile, as U.S. coal demand declines sharply, more U.S. coal is going to Europe, where low CO2 prices and high gas prices are increasing the competitiveness of coal in the power generation system, IEA said. However, it said this trend is close to peaking, and it projects 2017 coal demand in Europe to drop to slightly above 2011 levels, due to increasing renewable energy generation and decommissioning of old coal plants.

Van der Hoeven said carbon capture and storage technology “has been knocked off the political table as an issue” and has consequently not progressed as much as expected. The agency said CCS is unlikely to be available by 2017, so energy-related emissions will continue to rise substantially.

53. Quebec Amends Cap-and-Trade Rules to Harmonize with California's System

Quebec's government has finalized amendments to its cap-and-trade regime for greenhouse gas emissions to fully harmonize it with California's system and those of future partners in other jurisdictions. The regulatory amendments clear the way for Quebec to participate fully in the development of an extensive North American carbon market through the Western Climate Initiative (WCI), according to Quebec Sustainable Development, Environment, Wildlife, and Parks Minister Yves-Francois Blanchet.

The amendments to the Regulation Respecting a Cap-and-Trade System for Greenhouse Gas Emission Allowances authorize the linkage of Quebec's carbon dioxide market with California's. They also clarify the use of offset credits and extend the cap-and-trade system to include voluntary projects by industries not currently covered by the system, including residual materials, agriculture, and destruction of ozone-depleting substances.

The Quebec cap-and-trade regulation, which was adopted in December 2011 and takes effect on January 1, 2013, applies to industrial facilities emitting 25,000 metric tons or more of carbon dioxide-equivalent annually. By 2015, the requirements also will apply to companies that import or distribute fuels used in the transportation and building sectors and whose combustion produces greenhouse gas emissions of 25,000 metric tons or more annually. The Quebec government considered 2012 a transition year to allow industries to familiarize themselves with the regime.

Finalization of the amendments followed meetings in Quebec City on Dec. 11-12 with California Secretary for Environmental Protection Matthew Rodriguez and California Air Resources Board Chairman Mary D. Nichols as part of the annual meeting of the WCI's board of directors, Blanchet said. Quebec and California officials had lengthy discussions on environmental issues, including ways to broaden the continental scope of the cap-and-trade system, he said.

Nichols said the California air board, in response to Quebec's regulatory changes, will now ask Gov. Jerry Brown (D) to review the proposed linkage of the two systems, as required under the state's recently adopted Assembly Bill 1532.

54. NRDC Says Court Erred In Denying Bid to Regulate Diesel PM Under RCRA

Environmentalists are urging an appellate court to reverse a lower court ruling that rejected their argument that diesel particulate matter (DPM) generated by locomotives should be regulated by federal waste law in a novel case that industry groups say could open the door to federal courts winning broad authority to regulate any engine.
In a Nov. 19 brief to the U.S. Court of Appeals for the 9th Circuit, environmentalists charged that a district court erroneously rejected its claim that DPM is a regulated "waste" and adopted an argument not made by defendants that the air act preempts the waste law.

"If the district court is right, then appellants must suffer lifetimes of increased cancer risk without a remedy. We will show that the district court got it wrong and that the facts of this case fit within [the Resource Conservation and Recovery Act (RCRA)]," the Natural Resources Defense Council (NRDC), which is representing the environmental appellants, said in the brief.

The case, Center for Community Action and Environmental Justice, et al., v. Union Pacific Railroad Company, et al., marks a novel effort by environmentalists to regulate DPM under RCRA given the absence of options under the Clean Air Act.

The issue is important for environmentalists, particularly in cases involving low-income communities near transit facilities, after the World Health Organization's International Agency for Research on Cancer announcement earlier this year that upgraded its classification of diesel engine exhaust to "carcinogenic to humans."

The decision is already driving indications that EPA may reconsider its cancer classification of the substance -- a move that could in turn lead to stricter air rules to curb diesel exhaust -- though many in industry are urging policymakers to encourage installation of new, cleaner-burning engines.

But industry defendants in the case have warned that if environmentalists win on the merits, it would allow EPA and states to regulate DPM under RCRA, as well as providing courts broad authority "to regulate any engine that produces particulate emissions incident to combustion of fuel: not merely diesel locomotives, but all cars, trucks and other fuel-powered engines engaged in 'commercial operations' or 'community activities'," they said in their motion to dismiss.

"That, assuredly, was not Congress's intent" when crafting the two laws at issue in this case.

In the pending case, Center For Community Action & Environmental Justice, East Yard Communities For Environmental Justice and NRDC filed suit in October 2011 to target 16 rail yards throughout California that they said are threatening the health of nearby residents because the DPM emissions from the locomotives on the sites qualifies as a waste that requires control under RCRA as it contains hazardous substances in solid form, including arsenic and cadmium.

They also argued that they brought the citizen suit because the state of California had declined to regulate the rail yards as indirect sources of emissions, and had instead crafted voluntary agreements that had not adequately reduced exposure risks of nearby communities. Emissions from the rail yards are largely unregulated by the air act and an EPA rule to require cleaner locomotives will not fully take effect for decades, they said.

The groups pointed to data showing higher incidence of asthma, cancer and other diseases in populations that reside near the rail yards. The suit sought abatement measures, such as electrification of major rail lines, use of cleaner yard equipment, idling limits and reconfiguring sites to move pollution areas away from homes and schools.

But U.S. District Court for the Central District of California Judge S. James Otero in a May 29th decision granted industry's motion to dismiss the case. Otero held that diesel exhaust "is not a
discarded solid or hazardous waste” and that environmentalists’ arguments that DPM meets the RCRA definition of regulated “solid” stretches the boundaries of the term to a point where it retains little meaning, NRDC’s brief says.

Judge Otero also found that although Congress chose not to regulate indirect sources of air pollution -- such as a rail yard -- under the air act, the trains that service the rail yards are sources covered by the air law. Otero said “[t]hus, Plaintiffs’ allegation that Defendants’ rail yards are left wholly unregulated if the Court elects not to apply RCRA is disingenuous.” He added that “[r]egardless of the conflict between the [Clean Air Act] and RCRA as applied to this case, Plaintiffs have failed to state a RCRA claim because diesel exhaust is not a ‘solid or hazardous waste.’”

But in their November 19th brief, environmentalists say the Otero erred when he dismissed their argument over whether DPM meets RCRA criteria for regulated “solid wastes.” “The allegation that ‘DPM is comprised of solid particles that are part of the exhaust from diesel engines’ should be the start and end of the discussion whether DPM is a solid or not,” the brief says. “On a motion to dismiss, the District Court does not have the power to pick and choose which factual allegations to accept and which to reject, unless the allegations are merely conclusory.”

While the groups argued that DPM particles absorb a slew of compounds that are listed as RCRA hazardous substances, causing risks to humans once they settle to the ground nearby, “the District Court had the view that Appellants alleged ‘that Defendants, by burning diesel fuel, are creating waste in a gas form,’ although such allegations appear nowhere” in the facts of the case, the brief says.

Further, the groups argue in the brief, the district's court dismissal of the case is “puzzling” given that the judge rejected an industry argument that “because diesel fuel used in locomotives and trucks is not a solid waste under RCRA, whatever comes out of the smokestacks cannot be regulated under RCRA.”

Courts have long held that a waste can be hazardous even if its source is not, precedent that was recognized by Judge Otero, the environmentalists note in their brief. “Whether diesel fuel is a waste when used to fuel Appellees’ locomotives is simply not relevant to the question of whether RCRA applies to the toxic emissions from those locomotives. In sum, the District Court's rejection of Appellees' arguments that aerosolized matter is not a solid and that DPM is not a waste makes the Court's holding that DPM is not a solid waste for RCRA purposes all the more puzzling.”

Environmentalists further contest the court's finding that a decision by the state of California to not regulate rail yards, but instead seek a voluntary agreement with operators in the state, does not exempt the sites from RCRA or air act citizen suits, as Otero claimed in his ruling. Neither, they say, do provisions of the Clean Air Act conflict with RCRA on provisions of the case.

"Appellants recognize that locomotive emissions are regulated by EPA under the CAA and diesel truck emissions are regulated by CARB under authority delegated by the CAA," environmentalists write in their brief. "Appellants do not allege that any emissions standards set under the CAA have been violated; contrary to the District Court's suggestion, we do not attempt to impose RCRA liability on individual truck drivers. Instead, Appellants seek to apply RCRA to rail yards that endanger public health." In this case, the brief continues, the two laws can "co-exist."
55. EPA Defends Cleaner Ship Fuel Emissions Rule Against Suit

Department of Justice (DOJ) lawyers on EPA's behalf are urging a federal district court to reject Alaska's lawsuit over a shipping air rule that will spur ships to use cleaner-burning fuel — a rule that stems from an international pact — with DOJ saying the suit is barred as courts must give deference to the Obama administration's foreign policy.

The suit comes as California Democrats in the House and Senate are urging appropriators against reviving a legislative rider to allow a form of emissions averaging to ease compliance with the standards. A House aide says that there is concern that appropriators may attach the measure -- which EPA strongly opposes -- to an upcoming appropriations bill to replace the existing continuing budget resolution, which expires in March.

In State of Alaska, v. Clinton, et al., now pending before the U.S. District Court for the District of Alaska, the state is asking the court to find unconstitutional EPA's imposition of an emissions control area (ECA) restricting sulfur content of fuel used by ships within 200 nautical miles of the U.S. coast. The agency issued a rule to create ECAs in order to meet the terms of a ship pollution treaty with many other countries.

The United States is a member of the International Maritime Organization (IMO) and a party to the International Convention for the Prevention of Pollution from Ships, known as MARPOL. ECA requirements are established under Annex VI of the MARPOL treaty. The U.S. government implements MARPOL obligations domestically through EPA regulations required by the Act to Prevent Pollution from Ships (APPS). Countries that are parties to the treaty agreed in 2008 to make updates to Annex VI to include creation of ECAs.

Alaska and the U.S. cruise line industry filed suit over EPA's rules to implement the ECAs, saying that the fuel sulfur limits will lead to fuel scarcity, pushing up the costs of passenger transportation and freight. The price hikes would be especially harmful for Alaska, which is economically dependent on both sea-borne freight and cruise lines, Alaska lawmakers have said -- though environmentalists have moved to intervene to defend EPA's rule.

Alaska says that EPA, the Coast Guard, the Department of Homeland Security and the State Department violated requirements in the Constitution that mandate the Senate ratify new treaty obligations with a two-thirds majority by acceding to the ECA, which the agencies established pursuant to negotiations in the IMO. Alaska argues that the tighter limits in the revised Annex VI treaty require ratification by the two-thirds Senate majority. DOJ on EPA's behalf, however, argued in a November 9th motion to dismiss the suit that the Senate already ratified the protocol creating Annex VI of MARPOL in 2006, and that the subsequent revisions to Annex VI do not require further Senate ratification. The Senate knew when giving its consent that a North American ECA was planned, DOJ says.

With respect to EPA's role in implementing the requirements of Annex VI, Alaska “incorrectly asserts that [EPA] was required to undertake notice and comment rulemaking to establish the geographic scope of the ECA. EPA, however, did not establish those boundaries; the MARPOL parties did when they adopted the ECA, and the Secretary of State then accepted the ECA as adopted,” the government argues.

DOJ says Alaska “has failed to meet the demanding standards for the extraordinary remedy of a preliminary injunction.” The state is seeking an injunction to avoid compliance with the fuel sulfur limits pending the outcome of the litigation, but the government says Alaska has failed to
demonstrate likelihood of success on the merits because all its claims should be dismissed, and
has failed to demonstrate the likelihood of irreparable harm. “Its alleged harm is entirely
economic, is largely speculative and is far too small to warrant an injunction,” the government
says, noting that Alaska will also enjoy health benefits from implementing the fuel requirements.

In a separate November 9th motion to dismiss environmentalists echo many of DOJ’s arguments.
However, they also note that since Alaska is challenging EPA’s Clean Air Act rule implementing
the ECA, even if the matter could be heard in a domestic court, the state's law suit would be late
and is filed in the wrong court. EPA published the implementing air rule April 30, 2010, and
under the Clean Air Act any challenge to it must be filed within 60 days, making Alaska's suit
more than two years too late, environmentalists say. Also, challenges to final EPA rules must be
filed in the appropriate court of appeals, not in a district court, they add.

Environmentalists and public health advocates note that shipping has been a major source of air
pollution, especially in coastal areas, producing high levels of sulfur dioxide, nitrogen oxides and
particulate matter. State air regulators, meanwhile, are pressuring EPA for more national
measures limiting emissions from mobile pollution sources, such as cars and shipping.

In a related development, California Democratic Sens. Dianne Feinstein and Barbara Boxer
along with Rep. Henry Waxman (D-CA) in December 4 letters to House and Senate
appropriators warn against inclusion of the ECA rider language in any future spending bill. In the
identical letters addressed to the chairmen and ranking members of the House and Senate
Appropriations Committees, the lawmakers say, “We understand that the Committee on
Appropriations is considering a legislative rider to establish a pilot program to allow averaging of
emissions over a ship’s voyage.” The letters cite written advice from the California Air
Resources Board (CARB), which states that, “Allowing for averaging of emissions over a
voyage could allow for significant increases in emissions in the waters immediately offshore
California' most densely-populated and polluted regions, leading to more health risks.”

In the lawmakers' letters, CARB is quoted objecting to allowing ships in port to claim credit for
emissions saved by using shore-based electricity. CARB says, “Allowing ships to ‘count’
emissions reductions from port power and other coastal measures would effectively ‘double-
count’ reductions that would be occurring anyway and so would allow for even greater
aggregate emissions.”

“We strongly oppose the inclusion of this legislative rider in any appropriations bill," the three
lawmakers write.

EPA air Chief Gina McCarthy has ruled out population-weighted emissions averaging --
supported by Alaska Sen. Lisa Murkowski (R) and the cruise line industry -- on the basis that it
would allow ships to burn high sulfur fuel off the coast of thinly-populated areas. This would
violate Clean Air Act mandates to protect all populations, including communities in remote areas,
McCarthy has said, and might lead to higher overall emissions.

56. EPA to Complete Rule on Sulfur Content for Some Types of Diesel Fuel

The Environmental Protection Agency intends to proceed with a rulemaking that would allow
petroleum refiners to produce higher sulfur diesel fuel for older locomotive and marine engines
beyond 2014 despite initial adverse comments. The agency will withdraw a direct final rule
allowing the higher sulfur content in diesel fuel. EPA intends to finalize the changes using a
proposed rule issued at the same time as the direct final rule. The proposal also would allow some home heating oils to qualify as renewable fuels under the renewable fuel standard.

EPA issued the changes as both a direct final rule and a proposed rule on October 9th.

EPA’s proposed rule would allow transmix processors to produce marine diesel fuel containing up to 500 parts per million of sulfur for use in older engines outside of the Northeast Mid-Atlantic Area and Alaska after 2014. In general, transmix is a mixture of finished fuels that no longer meets the specifications for a fuel that can be used without further processing. Transmix is made when petroleum products mix together during pipeline transportation, typically at the beginning and end of shipments of incompatible fuels in a single pipeline. It is generally segregated and reprocessed into gasoline or diesel fuel that can be used as transportation fuel.

The 500 ppm diesel fuel could only be used in older engines that can tolerate higher sulfur levels. EPA in 2010 had required new marine engines to use sulfur emissions control equipment that needs 15 ppm sulfur fuel to operate properly. However, that rule allowed the largest oceangoing ships to burn fuel containing up to 1,000 ppm sulfur.

EPA’s proposed rule would also allow heating oil produced from biomass to qualify as renewable fuels if producers can demonstrate their fuel has 20 percent less life-cycle greenhouse gas emissions than comparable petroleum products. Fuel oils used to generate process heat or power would not qualify as renewable fuels under EPA’s revised definition.

EPA’s direct final rule also included a provision to extend the transition period for fuels containing the marker solvent yellow 124. The marker is added to fuels to distinguish between different categories of the product. EPA said it received no adverse comment on that provision and that it will take effect on December 10th as scheduled.

57. Air Pollution Research Reveals Impact of Cars on Tampa Bay

A comprehensive study that investigated the sources and extent of nitrogen fallout on Tampa Bay shows that cars, trucks, and other mobile vehicles deposit four times more nitrogen oxide, or NOx, in Tampa Bay than power plants. Overall, power plants are the major sources of air emissions in the bay area. But mobile sources have a disproportionately large impact, because emissions from cars, trucks and boats are generated closer to the ground, and more of their emissions wind up in the bay. The tall stacks of power plants, on the other hand, send emissions higher into the atmosphere, where a substantial portion is carried outside the bay watershed.

The study, known as the Bay Region Atmospheric Chemistry Experiment, or BRACE, utilized computer modeling and extensive field sampling to measure nitrogen falling directly on the bay surface, as well as nitrogen falling on the watershed and carried to the bay in storm water. The study examined nitrogen carried in both rain (wet deposition) and dust (dry deposition).
TBEP sponsored the project, led by Dr. Noreen Poor, a noted air pollution researcher. Funding was provided by the Florida Department of Environmental Protection.

TBEP has pioneered scientific research showing the link between air and water quality. In addition to impacting human health, air pollution can contribute harmful nitrogen to water bodies. In Tampa Bay, direct and indirect atmospheric depositions comprise a whopping 57% of the total nitrogen loading to Tampa Bay each year.

In the last decade, upgrades at area power plants -- including the conversion of two coal-fired plants to natural gas -- have reduced NOx emissions by 95 tons. Additionally, new federal air quality regulations, including the Clean Air Interstate Rule, are projected to result in a 24% reduction of atmospheric nitrogen in the bay.

Conserving energy at home and in our offices, driving less and driving more fuel-efficient cars will help to further reduce airborne nitrogen pollution. According to the U.S. Environmental Protection Agency, driving a car is a typical citizen's most polluting daily activity.

58. Unequal Exposures Found to Airborne Particulate Matter Components

Growing evidence indicates that toxicity of fine particulate matter ≤ 2.5 μm in diameter (PM2.5) differs by chemical component. Exposure to components may differ by population. The authors investigated whether exposures to PM2.5 components differ by race/ethnicity, age, and socioeconomic status (SES).

Long-term exposures (2000 through 2006) were estimated for 215 U.S. census tracts for PM2.5 and for 14 PM2.5 components. Population-weighted exposures were combined to generate overall estimated exposures by race/ethnicity, education, poverty status, employment, age, and earnings. They compared population characteristics for tracts with and without PM2.5 component monitors.

Larger disparities in estimated exposures were observed for components than for PM2.5 total mass. For race/ethnicity, whites generally had the lowest exposures. Non-Hispanic blacks had higher exposures than did whites for 13 of the 14 components. Hispanics generally had the highest exposures (e.g., 152% higher than whites for chlorine, 94% higher for aluminum). Young persons (0–19 years of age) had levels as high as or higher than other ages for all exposures except sulfate. Persons with lower SES had higher estimated exposures, with some exceptions. For example, a 10% increase in the proportion unemployed was associated with a 20.0% increase in vanadium and an 18.3% increase in elemental carbon. Census tracts with monitors had more non-Hispanic blacks, lower education and earnings, and higher unemployment and poverty than did tracts without monitors.

Conclusions: Exposures to PM2.5 components differed by race/ethnicity, age, and SES. If some components are more toxic than others, certain populations are likely to suffer higher health burdens. Demographics differed between populations covered and not covered by monitors.

59. Shops’ Accused of Faking I/M Tests

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6 December 3, 2012 Environmental Health Perspectives, Michelle L. Bell and Keita Ebisu, School of Forestry and Environmental Studies, Yale University, New Haven, Connecticut, USA
Two Brooklyn motor-vehicle inspectors were busted for allegedly forging emission tests for diesel trucks, authorities have announced.

Mark Asselta, 46, owner of a Bushwick repair shop, and Shlomo Freedman, 54, owner of a South Williamsburg shop, were arrested and arraigned in Brooklyn Criminal Court after an undercover investigation by the state Attorney General’s Office. The men allegedly gave safety and emission certificates to diesel trucks they hadn’t even tested.

When undercover investigators drove a truck rigged to fail a test to each repair shop, the shops allegedly issued certification without performing any tests.

60. U.S. Says Climate Plan on Track, EU Says More is Necessary

The United States said recently that it is on track to meet its own target of cutting greenhouse gas emissions by 2020, a plan many scientists say is still too weak to avert damaging global warming. U.S. envoy Todd Stern defended President Barack Obama's environmental record following renewed criticism from the European Union and other delegates at a climate conference in Doha. He said the Democratic administration was making progress, despite Republican opposition, citing a study suggesting levels were heading lower, thanks partly to tougher standards for vehicles and more use of renewable energy.

"There is more that can be done but there has been a great deal already," Stern told reporters at the 200-nation summit focused on salvaging U.N.-led action to cut rising world greenhouse gas emissions. "We are making good progress and I think we are on track," he said of Obama's plan to cut U.S. emissions by at least 17 percent below 2005 levels by 2020 - Washington's contribution to global efforts to avert rising temperatures, floods, droughts, heat waves and mounting sea levels.

Obama's target works out as a cut of about 3-4 percent from 1990 levels by 2020. A study by the U.N. panel of climate scientists in 2007 indicated rich nations would have to cut emissions by 25-to-40 percent below 1990 levels by 2020 to avert a damaging rise in temperatures. Almost none have set such deep cuts.

An economic slowdown in the United States and a switch to natural gas from coal also have put Obama's targets more in reach.

European Climate Commissioner Connie Hedegaard said most focus in Doha was on a small group, led by the European Union and Australia, which aims to stick with the U.N.'s Kyoto Protocol for cutting emissions of industrialized nations beyond 2012. But those nations account for less than 15 percent of world emissions. Kyoto has been weakened by the withdrawal of Russia, Japan and Canada, who say an extension is meaningless since big emerging nations led by China and India have no goals. Washington never ratified Kyoto.

"It's also very important not to forget about the remaining 85 percent of emissions," Hedegaard told a news conference. "What are they doing?"

She said that China's per capita greenhouse gas emissions had risen to 7.3 tons per capita, almost level with those of the EU on 7.5. U.S. emissions per capita were far higher at 17.3 tons while those of Russia were 12.8 tons.
The EU itself was on target, she said for a promised cut at least 20 percent below 1990 levels by 2020. Experts say the EU's environmental performance was boosted by the collapse of Soviet-era smokestack industries in eastern European countries.

**ASIA PACIFIC**

61. Asian Cities' Air Quality Getting Worse, Experts Warn

Air pollution has worsened markedly in Asian cities in recent years and presents a growing threat to human health, according to experts at a recent conference. Clean Air Asia, a regional network on air-quality management, aggregated data from more than 300 cities in 16 Asian countries and found that levels of fine particulate matter — a key pollutant in terms of its impact on human health — were below targets recommended by the World Health Organization in just 16 cities, most of them in Japan.

Pollution levels in 70 percent of the cities, mostly in fast-growing, less developed countries like China, India, Bangladesh and Mongolia, exceed even the most lenient of several targets recommended by the W.H.O., the organization said. "The economic rebound in Asia following the global economic crisis of 2008 has accelerated sales of both passenger and freight vehicles as well as power generation," Sophie Punte, Clean Air Asia's executive director, said in a statement. This "is putting pressure on urban air quality in the region," she said.

The number of people living in cities in developing Asian nations is expected to swell by 1.1 billion over the next 20 years, making urban air pollution a particularly relevant issue for the region.

A study by the World Health Organization published in 2008 estimated that outdoor air pollution caused 1.3 million premature deaths worldwide per year, 800,000 of them in Asia.

Similarly, a report by the Organization for Economic Cooperation and Development this year warned that air pollution could become the biggest environmental cause of premature death by 2050 if action is not taken to improve air quality. The number of premature deaths from exposure to particulate matter is projected to reach 3.6 million a year globally by then, with most of the deaths occurring in China and India, the report said.

62. China Releases Air Pollution Reduction Plan, Vows PM2.5 Cut

The Chinese government plans to further cut emissions of pollutants in economically dynamic areas. According to the Ministry of Environmental Protection (MEP)'s plan for reducing overall air pollution for the 2011-2015 period, China will cut the PM2.5 intensity by at least 5 percent by 2015 in 13 major areas. It also made a commitment to reduce the intensity of PM10, sulfur dioxide (SO2) and nitrogen dioxide by 10 percent, 10 percent and 7 percent, respectively.

The plan, approved by the State Council on September 27th and just unveiled, is China's first comprehensive plan on reduction of overall air pollution.

The 13 major areas cover 14 percent of the nation's geographic area and 117 cities. They contribute 71 percent of the country's economy and account for 48 percent of the population. They also produce half the emissions in China of major pollutants such as sulfur dioxide and nitrogen dioxide.
For the Beijing-Tianjin-Hebei region, the Yangtze River Delta region and the Pearl River Delta region, the PM2.5 intensity will be cut by at least 6 percent, the plan said.

The 13 major areas produce nearly half of the nation's SO2, nitric oxide, smoke and dust.

For PM2.5 issues, the plan not only sets an improvement target, but also lays equal stress on treating primary and secondary pollution. Smoke, dust and VOC (volatile organic compounds) are also included in its emissions reduction agenda.

The State Council passed revised air quality standards that include indices for ozone and PM2.5 earlier this year and stipulated a deadline of January 1, 2016 for its implementation throughout the nation.

China's atmospheric environmental condition remains arduous, however, as 70 percent of Chinese cities fail to meet the new air quality standards, said Zhao Hualin, head of the MEP Department of Pollution Prevention and Control. "The starting point of the plan is to improve air quality and resolve the PM2.5 problem, an issue directly related to and most concerned by people," said Zhao, adding its fundamental goal is to protect people's health and ensure their environmental rights and interests.

Zhao proposed adding indices for PM2.5, carbon monoxide and ozone in monitoring sites of every city in China.

According to the plan, China will strive to reduce the amount of fine particles and pollutant in the air by strengthening controls over industrial waste treatment and auto emissions. China will vigorously develop city bus and rail transportation systems and explore ways of regulating vehicle totality and trips, promote upgrading of vehicle fuels, strict emissions of newly-produced cars and eliminate high-emission vehicles.

The plan meted out an "offset measure," stipulating that the newly produced emissions from new projects in a region must be offset by reducing a larger amount of emissions from other projects in the region.

Programs related to steel, cement and petrifaction will be strictly limited in the 13 major areas. It also urged curbing regional coal consumption and boosting regional cooperation in forming a joint defense against air pollution.

MEP also announced that it will spend 350 billion Yuan ($56 billion) by 2015 to curb air pollution in major cities. Local governments will fund most of the programs aimed at cutting the level of harmful particles in the air in 117 cities by at least 5 percent between 2011 and 2015, the Ministry of Environmental Protection said in a statement on its website.

Doctors warn that the tiny floating PM 2.5 particles, named for their less than 2.5 micrometer diameter, can settle in the lungs and cause respiratory problems and other illnesses. China began publishing data on the amount of such pollution earlier this year in an effort to address concerns from residents that pollution readings were grossly understated.

Chinese officials have acknowledged that the thick cocktail of smokestack emissions, vehicle exhaust, dust and aerosols that often fills the air in many cities is a growing concern to increasingly prosperous urban residents.
China has cited its ongoing reliance on heavy industry as the reason it failed to meet some of its 2011 air and water pollution reduction targets. PM2.5 intensity will be cut by at least 6 percent in the Beijing-Tianjin-Hebei region, the Yangtze River Delta region and the Pearl River Delta region, all of which are China's most prosperous areas. "This is a target that could be met as long as we work a little bit harder," Zhao Hualin, director of the ministry's pollution prevention department, told a news conference.

The plan also admitted some realistic problems, such as a relatively outdated environmental regulation system, lack of coordination between local authorities and the fact that most cities still lack an air pollution monitoring system.

Meanwhile, a set of concrete plans have been made to meet the air pollution reduction targets. China will further limit the number of industrial programs with high-energy consumption and pollution and further promote the use of clean energy. The consumption of coal energy will also be limited.

Meanwhile, gas pollution will be further targeted in the next three years and high-emission vehicles will be banished from the Beijing-Tianjin-Hebei region, the Yangtze River Delta region and the Pearl River Delta region.

Beijing started releasing PM2.5 data this year and the municipality plans to reduce major pollutant indexes, with PM2.5 falling to 60 micrograms per cubic meter in 2015, from the current level of 70 to 80 micrograms.

Shanghai and cities in Jiangsu and Zhejiang provinces started to use a new air quality reporting system on November 16th to provide more accurate readings. The new evaluation criteria takes the results of PM2.5, carbon monoxide and ozone into consideration in addition to figures for sulfur dioxide, nitrogen dioxide and PM10, while the old system monitored only the latter three.

It seems very unlikely that these targets can be met in view of the short time remaining but their publication does indicate an increasing priority for the government.

**63. Beijing: to Extend New License Plate Lottery**

Transport authorities have confirmed that Beijing will extend its license plate lottery policy for another year in order to ease the city's traffic congestion. Potential buyers will still be required to participate in a lottery next year in order to obtain new purchase permits and more specific measures are under discussion, said Li Xiaosong, deputy director of the municipal commission of transport.
Li made the remarks amid public doubt regarding the fairness of the policy, as many people who have attempted to obtain a license plate through the lottery have failed, while others who have won plates have not used them. Li said 173,000 new vehicles were registered through the lottery last year, 617,000 fewer than in 2010. The total number of Beijing-registered cars reached 5.18 million at the end of November.

The license plate lottery was launched by the municipal public security, human resources and social security bureaus and is supervised by officials and experts to ensure fairness and transparency, Li said, adding that every applicant has an equal chance of winning a new plate. The municipal government introduced a regulation in January 2011 that curbed the growth of new vehicle sales by capping the total number of cars that could be registered in 2011 at 240,000, about one-third of the number registered in 2010. The regulation requires potential buyers to participate in a lottery every month to get new purchase permits. Those who fail to win new plates are automatically entered in subsequent rounds.

Beijing also restricts private cars from being driven one day a week, based on the final digit of the car license plate. Traffic congestion has been a problem for many Chinese cities. The cities of Shanghai, Guangzhou and Guiyang have also capped passenger vehicle registrations through license plate lotteries and auctions.

**64. China’s GHG Emissions Target “Set to be Met”**

China’s targets for slashing greenhouse gas emissions and reducing energy consumption are within reach this year, a leading official told a UN climate conference in Qatar. The official also called on developed economies to honor funding pledges made to fight global warming. Carbon intensity, the amount of carbon emitted for each unit of GDP, is likely to drop by 5% in 2012, Xie Zhenhua, the country’s top climate-change official, said during UN climate talks in Doha, the Qatari capital, on Monday. There was also a marked fall in energy intensity - energy consumption for each unit of GDP - which dropped 3.4% from January to September this year, Xie said. With less than one month left in 2012, both figures indicate that China is likely to fulfill its goal, after failing to do so last year.

From 2011 to 2015, the country plans to cut its energy intensity by 16% and carbon intensity by 17% from 2010 levels. Emissions from the manufacturing sector are declining due to weak external and internal demand. GDP growth dropped to 7.7% from a year earlier in the first three quarters, from 9.3% in 2011.

However, action and policies on economic rebalancing and promoting energy efficiency have also taken effect. The past two years have seen more than 8 million kW of small coal-fired power generating capacity slashed, Xie said. On top of this, the capacity to produce 31.9 million metric tons of iron, 28.5 million tons of steel and 155 million tons of cement, have also been slashed.

Christiana Figueres, executive secretary of the United Nations Framework Convention on Climate Change, said that China has developed a good foundation for government policies and public support to address climate change. Figueres was speaking at the China Pavilion in the Qatar National Convention Center. The government has identified environmental, sustainable development as a priority and the public is aware of climate change issues, she said. About 97% of Chinese people think climate change is happening, she said quoting a recent survey conducted by the Center for China Climate Change Communication.
She also called on China to further rebalance its economy and play a leading role in realizing a "clean energy revolution", turning its high-reliance on fossil fuels to clean energy. If China continues, but also strengthens, the clean energy path it is already on and leverages pioneering technology from new energy systems, China will achieve an extraordinary success, she said. Little progress has been made during the first week of the latest round of talks about global climate change in Doha. The Doha conference must be an "implementation" conference, Figueres said. Works relating to both the second commitment period of the Kyoto Protocol, as well as issues such as adaptation, mitigation, finance and technology transfer need to be accelerated, she said. The Kyoto Protocol expires at the end of this month.

"The window to reaching 2 degrees Celsius target is very quickly closing for us. We do have the funding and the technology to close the gap. It's a matter of scale; it's a matter of speed; it's a matter of finance, and above all, it's a matter of determination," Figueres said. The target is an attempt to keep the average rise in global temperatures this century below 2 degrees Celsius.

At the 2009 Copenhagen talks, developed economies made a commitment to raise $100 billion per year by 2020 to help developing countries cope with climate change. "The Doha meeting must make a clear 2013-20 plan for providing the fund needed by the developing economies," said. "Real money should be given to the developing economies starting from 2013."

65. China Enacts Tougher Vehicle Recall Rules

The Chinese government recently released new regulations for vehicle recalls that impose harsher punishments for non-compliant automakers. Starting January 1, automakers will be fined 500,000 to 1 million Yuan ($80,000 to $160,000) if they fail to recall vehicles or inform vehicle owners about product defects in a timely manner.

Automakers also could be fined 1 percent to 10 percent of the sales value of the recalled vehicles. They could also have their vehicle production licenses revoked if they conceal product defects or defy the state product quality regulator's request to cease producing and selling defective vehicles.

The current recall regulations, which were enacted in 2004, impose a modest fine of 10,000 to 30,000 Yuan on automakers that fail to recall vehicles.

According to China's General Administration of Quality Supervision, Inspection and Quarantine -- China's quality watchdog agency -- more than 6.2 million vehicles were recalled from 2004 to 2011 by automakers operating in China.

66. Heavily Polluted Chinese City to Publish PM2.5 Data

Readings of PM (particular matter) 2.5 in the city of Lanzhou, one of China's most polluted, will be available for public scrutiny in December, according to officials. The capital city of Gansu province will conduct the PM2.5 monitoring according to new environmental air quality standards on December 1st. Lanzhou is among the first batch of 74 Chinese cities required by the Ministry of Environmental Protection to publish daily reports on PM2.5 by the end of the year.
The PM2.5 index is considered stricter than the PM10 standard previously adopted in China. It measures airborne particles smaller than 2.5 micrometers, which are more hazardous to people's health.

The data will be updated on government websites and via television and radio before the end of the year, the head of Lanzhou Environmental Protection Bureau, Pan En, told Xinhua. The move was hailed by local residents who have complained of air pollution in the northwestern city. "What matters is not the reading itself, but that its publication can at least put pressure on officials to do something to alleviate the pollution," said Pan Jiang, a local citizen.

The 74 cities include China's four municipalities, 27 provincial capitals, as well as cities in three highly urbanized and industrialized regions - Yangtze River Delta in the east, Pearl River Delta in the south and the northern Beijing-Tianjin-Hebei area.

With wealthy coastal cities like Shanghai, Guangzhou and Nanjing having launched their PM2.5 readings, less developed inland cities like Lanzhou are faced with obstacles in the enforcement of the new air quality standards.

Experts said on top of terrain and climate factors, Lanzhou's reliance on petrochemical industries and its winter heating have made the city's air pollution worse. A popular joke in Lanzhou said the air pollution has made the day dark as night and dyed the sparrows to the color of ravens.

In a World Health Organization (WHO) survey, published in 2011, the city was named China's worst for air pollution.

Officials said the decision to publicize PM 2.5 data came after the city launched a campaign to tackle air pollution involving 70 billion Yuan ($11.2 billion) of investment. The campaign has seen 363 coal-fired boilers updated to use cleaner gas as fuels, while 130 heavy-polluting factories are required to move out of the city proper within three years.

67. PM2.5 Kills Thousands in Major Chinese Cities, Researchers Say

An estimated 8,572 premature deaths occurred in four major Chinese cities this year due to high levels of PM2.5, a study has found. The report also said severe air pollution in Shanghai, Guangzhou, Xi'an and Beijing has led to a total economic loss of 6.8 billion Yuan ($1.09 billion).

The study by Peking University's School of Public Health and Greenpeace looked at the health and economic impact of PM2.5, particulate matter smaller than 2.5 micrometers in diameter. Modern toxicology research has shown that exposure to PM2.5 can lead to significantly increased death rates due to cardiovascular, cerebrovascular and respiratory diseases, as well as increased cancer risk.

The study, the first of its kind, was based on available data and took into account varying conditions in the four cities, such as temperature and humidity. In its conclusion, the report states that if the cities can effectively lower PM2.5 levels to meet the World Health

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6 This estimate is much lower than those contained in the new World Health Organization Global Body Burden of Disease study.
Organization's Air Quality Guidelines — 10 micrograms per cubic meter — such deaths would be reduced by more than 80 percent.

Of the four cities, Shanghai had the highest amount of deaths, although its PM2.5 concentration is not the highest, the study found. "The reason can be very complicated, but this phenomenon corresponds with research in other countries," said Pan Xiaochuan, a professor at the School of Public Health and lead author of the report. "There are three main factors. First, Shanghai is the most populous city. Second, people from the south and the north have different sensitivities to pollution. Third, PM2.5 in different places has different components whose effects vary."

The methodology adopted by the study is a widely applied standardized method in epidemiological studies of air pollution, authors said. "A mathematical model was developed based on PM2.5 laboratory monitoring values over the past three to four years in the four cities, as well as statistics from centers for disease control and prevention of deaths and their causes over the same period," said Li Guoxing, a lecturer at the School of Public Health and a co-author.

68. Cleaner Fuel Coming to Shanghai Next Year

Shanghai is expected to enjoy slightly clearer skies next year as vehicles use cleaner gas. China Petroleum and Chemical Corp, better known as Sinopec, will provide the new fuel and diesel that meets the Euro V emission standards at city gas stations by the National Day holiday next October. Zhang Yong, general manager with Sinopec's Gaqiao branch in Shanghai, said the state-owned producer "will contribute to the development of ecological awareness in Shanghai." Sinopec's Shanghai facilities have renovated their refinery equipment for the production of cleaner fuel.

The measure will decrease PM2.5 emissions, which are tiny particles harmful to health. Vehicles contribute about 25% of the PM2.5 sources, said local environment protection officials. Zhang Quan, director of the local environment protection bureau, said Shanghai has up to 230,000 vehicles viewed as highly polluting. Industry insiders said drivers may pay more for the new fuel.

The city now uses National IV emission standards - equivalent to Euro IV. Euro V fuel or liquefied gas vehicles emit about 30% less nitrogen oxides than their Euro IV counterparts, researchers found.

Meanwhile, city legislators remained concerned about emission goals as more vehicles will hit the roads. "If the vehicle using cleaner fuel can cut emissions, the rapid increase of new vehicle
numbers will offset that, and things could still get worse," said Zhu Lei, a local lawmaker. Also more vehicles with out-of-town plates are swarming to the city, causing further crowding, said Zhu.

Shanghai has more than 1.7 million private cars, and the number would surpass 3.3 million if steps, such as a plate auction, were not taken, officials said.

69. Chinese Government Offers Incentives to Domestic Electric-Vehicle Buyers

China's first indigenous purely electric supermini car hit the market recently as part of a government-sponsored project to encourage the use of energy-saving vehicles. Roewe E50 buyers in Shanghai could save around 100,000 Yuan ($16,000), thanks to government subsidies and an upcoming local policy waiving license plate fees, according to company sources.

The E50, a purely electric vehicle, is the result of three years' research and development by Shanghai Automotive Industry Corp, said Shen Ling, public relations manager of the company's new energy department. The car applies advanced energy-saving and safety technologies to ensure zero emissions, she said.

Although the new model officially retails at 220,000-240,000 Yuan, buyers may enjoy steep discounts as the government and automakers strive to promote new-energy vehicles. Under a central government notice, a rebate of up to 60,000 Yuan is offered on the purchase price to buyers of battery-powered cars, and the Shanghai municipal government is offering a subsidy of up to 40,000 Yuan.

A move which could give the sector a further shot in the arm is a policy due to be unveiled by the Shanghai authorities offering free license plates to owners of electric vehicles. According to Shen, the decision, which is subject to the approval of the National Development and Reform Commission, is likely to be implemented "very soon".

Other than government incentives, auto manufacturers are seeking to drum up buyers' interest with value-added services.

Meanwhile, SAIC is finalizing plans to offer discounts on group purchases by businesses, she added.

Shen said the company has set no sales targets for the new model. But SAIC chief engineer Ling Tianjun said in August that it expects to sell 1,000 vehicles next year.

The launch of the car on the retail market will be a step forward for new-energy vehicles in China, as the majority are currently owned by government bodies or used for public transportation.

China's strategy to develop new energy cars has gained ground on many fronts, according to Wang Tianwei, policy director of the policy coordination department of Jiading Auto City in Shanghai. On the policy front, the development of the electric vehicle industry has been a priority of the Ministry of Science and Technology for more than a decade. On the regulatory front, the Ministry of Industry and Information Technology and the National Development and Reform Commission have issued at least 20 regulations over the past decade to regulate and
promote the wider use of hybrid and electric vehicles.

The target was to make the country a world leader in electric vehicles by putting 500,000 on the road by 2011. But Wang said the deadline has been extended to 2015 as a result of technological constraints and a lack of policy coordination.

Battery performance remains the greatest threat to the credibility of electric vehicles in motorists' eyes. Wang said Chinese companies still lag far behind their competitors in the West in battery technology.

A study conducted by the United Nations Department of Economic and Social Affairs said China holds just 1 percent of the total patent registrations for lithium ion batteries, while Japan owns 52 percent and the United States has 22 percent.

The other common concern is a lack of recharging stations, he said. SAIC has set up 1,170 recharging stations in Shanghai, but most of those are in suburban areas.

70. Shanghai Updates Air Pollution Index

The Shanghai Environmental Protection Bureau has rolled out a new index for measuring air quality that recognizes three types of air pollution left out of the previous monitoring system. The launch of the Air Quality Index (AQI) will result in more days when the air is reported to be polluted and could lead to an improvement in local air quality by helping environmental authorities better trace the sources of pollution.

Shanghai, along with 24 cities in Jiangsu and Zhejiang provinces, began publishing the AQI as part of pilot program to comply with a new national standard on air pollution reporting, the Shanghai Environmental Protection Bureau said in a press release. The Ministry of Environmental Protection has ordered local governments to comply with the new standard before 2016.

The AQI gauges three types of air pollutants that weren't included in its predecessor, the Air Pollution Index (API). They are carbon monoxide, ozone and PM 2.5, which stands for particulate matter smaller than 2.5 microns in diameter. The other three are nitrogen dioxide, sulfur dioxide and PM 10.

Local chemical plants and automobile exhaust are two of the main sources of pollution in the Yangtze River Delta, said Zhuang Guoshun, director of the Center for Atmospheric Chemistry Study at Fudan University.

A haze settles over Shanghai. The city's air pollution is expected to remain at moderate levels. Photo: Cai Xianmin/GT
The city's new Air Quality Index (AQI) hit 195 recently, nearing the threshold for heavy pollution, before pulling back the following day.

A rise in PM 2.5 was the primary reason why the AQI jumped, said Wang Qian, a monitor with the Shanghai Environmental Monitoring Center. Because the particles of dirt and dust are small enough to travel deep into people's lungs, it is considered dangerous to people with respiratory conditions.

The main sources of PM 2.5 are automobile exhaust, chemical plants and roadway dust, Wang told the Global Times. The lack of wind failed to disperse the particles.

The monitoring center suggest residents check the hourly AQI and PM 2.5 readings on its website, rather than the daily readings, which are based on conditions over the previous 24 hours. If the PM 2.5 reading surpasses 150 micrograms per cubic meter in any given hour, residents may want to take precautions, according to the center's website.

Wang reminded residents who are prone to respiratory illnesses, such as children and the elderly, to cut back on outdoor activities when pollution levels are high.

Fu Qingyan, chief engineer at the Shanghai Environmental Monitoring Center, explained that the assessment results would be announced more often. "They will be updated once an hour, while the old system only gave results once a day," she said. "We'll offer more comprehensive assessment results as we've got a more stable system and more monitoring stations to collect data," Fu said.

In June, Shanghai became the first city in China to post readings for PM2.5 from 10 monitoring stations scattered across the city. But air quality assessments by the Shanghai authorities and by the United States Consulate General in the city showed a discrepancy because they used different standards, environmental officials said.

Qian Hua, director of the research institute of atmospheric environment under the Shanghai Academy of Environmental Sciences, said the difference in readings stemmed from the evaluation standards adopted by the two countries, which are at different stages of economic development and environmental protection.

The US consulate said its readings indicate air quality in the area surrounding its downtown offices, and are published to make health data available to the US community in the municipality. However, the 10 monitoring stations set up by the Shanghai Environmental Monitoring Center are in different districts, ranging from downtown areas to suburbs.

Zhang Xiangzhi, from the Jiangsu Environmental Monitoring Center, said the fact that 13 cities in Jiangsu, 11 in Zhejiang, and Shanghai had decided to update their system on the same day can better control air pollution in the Yangtze River Delta. "The problem of air quality is regional, and to gather assessment results in a relatively bigger area is believed to be useful in terms of joint prevention of air pollution," she said.

She said the new system, giving air quality readings from 13 cities in the province, means she will be able to see changes over a 24-hour period once she logs into the system. Zhang said she is not worried about potential complaints from people living in Jiangsu who might find they have a worse air quality reading after the update. "The whole purpose of updating the reporting
systems is to give the public a more comprehensive and concrete statement (of air quality),” she said.

Chengdu, capital of Southwest China’s Sichuan province, said it will update its air monitoring system from the Air Pollution Index to the Air Quality Index from next year.

71. China Cuts Petrol and Diesel Prices on Cheaper Crude

Beijing cut petrol and diesel prices for the first time since July, threatening to reduce processing margins for refiners in the world’s second-biggest oil-consuming nation. The maximum at which petrol can be sold to motorists falls by 310 Yuan (HK$385) a ton and diesel by 300 Yuan, the National Development and Reform Commission said on its website.

The pump price of 90-RON, China III petrol will decline 3.1 per cent to 9,730 Yuan a ton, or US$4.46 a gallon. The China III specification is similar to the Euro III fuel standard.

Brent crude has dropped 6.5 per cent since fuel prices were last revised in September.

The cut, which follows increases in August and September, may hinder efforts by mainland oil companies to curb losses from selling fuel at state-controlled prices. PetroChina, the nation’s second-biggest refiner, said it reduced its processing loss in the first nine months of this year by 11.5 billion Yuan from the same period last year to 30 billion Yuan. China Petroleum & Chemical (Sinopec), Asia’s biggest refiner, did not give a figure for its refining unit as it posted a third-quarter profit that beat analysts’ estimates.

Brent crude, the benchmark price for more than half the world’s oil, was at US$108.25 a barrel recently, compared with a high this year of US$128.40 on March 1.

Petrol and diesel costs are set by the NDRC under a system that tracks the 22-day moving average of a basket of crudes comprising Brent, Dubai and Indonesia’s Cinta. The government may revise fuel rates when the measure changes more than 4 per cent from the last adjustment. That figure was reached recently, the NDRC said in a separate statement.

72. Share of Imported Oil to Rise in China

A foreign oil tanker unloads at an oil terminal at a port in Ningbo, Zhejiang province. A researcher said that China, the second-largest economy in the world, will have to depend more on crude oil imports to fuel its economic development in the coming years.

Africa, South America, Caspian Sea to become larger sources of crude.
China will import about 60 percent of the 500 million metric tons of oil it uses next year, government officials announced recently. "The country's use of crude oil will continue to increase in the coming years but at a modest pace," said Gao Shixian, assistant director-general of the energy research institute of the National Development and Reform Commission.

This year, China is expected to import about 280 million tons of crude oil, or 57 percent of all of the oil it uses, according to an industrial report from China National Petroleum Corp's Economic and Technology Research Institute. Since China became a net importer of crude oil in 1993, it has gone from importing 6 percent of the oil it consumes to more than 50 percent in 2009.

"The relationship between China and the world in the oil industry will become even deeper," said Zhong Shan, vice-minister of commerce, during the first China International Oil and Gas Trade Conference, held in Shanghai recently. China is calling for greater cooperation with foreign companies that are engaged in oil and gas exploration. He added that emerging economies' increasing demand for crude oil, including China's, has helped bring stability to the global crude market.

In 2011, China, India, Brazil and Russia used 880 million tons of crude, a fifth of world consumption. China's share of the global figure was 11.4 percent, he said.

The country will continue to import increasing amounts of crude oil from Russia and the Middle East, said Li Li, senior analyst at the energy information consultancy ICIS C1 Energy. At the same time, it is now trying to find suppliers in other areas in the world, she said. And Africa, South America and the Caspian Sea are all expected to supply more to China in the future. "That's especially true for South America, which is the source of 10 percent of China's crude imports and is increasing its crude exports to China by 20 percent a year," she said.

73. Taiwan EPA Unveils New Rules for Managing Indoor Air Quality

The Environmental Protection Administration (EPA) has promulgated five rules and regulations under the Indoor Air Quality Management Act (室內空氣品質管理法), which came into force recently as the nation became only the second country in Asia to legally regulate indoor air quality. Initially put forward on November 23rd last year, the Indoor Air Quality Management Act has now been enacted, making Taiwan the second country after South Korea to set regulations for managing indoor air quality, the EPA said.

The act is an extension of the outdoor air quality management, based on the Air Pollution Control Act (空氣污染防制法), brought into public indoor spaces, the EPA said.

It said throughout a year of preparations, the administration organized several public hearings to gather opinion from various sectors on setting up five related regulations and rules. The EPA also held training programs for indoor air quality management personnel, who will play a decisive role in implementing indoor air quality maintenance and management plans.

Along with the enactment of the act, the EPA also promulgated the Indoor Air Quality Management Act Enforcement Rules, Indoor Air Quality Standards, Regulations Governing Dedicated Indoor Air Quality Management Personnel, Air Quality Analysis Management Regulations and the determination that describe violations to the act.
According to data provided on the EPA’s Web site, people in Taiwan spend about 80 to 90 percent of their time indoors. However, given the proliferation of air conditioning systems in homes and office spaces in the past two or three decades, the problem of “sick building syndrome” has occurred.

The EPA quoted the WHO definition of the syndrome as “an excess of work-related irritations of the skin and mucous membranes and other symptoms, including headache, fatigue and difficulty concentrating, reported by workers in office buildings,” and added that because Taiwan’s climate is often hot and humid — making it easy for mold or germs to grow — the routine cleaning of air conditioning systems is especially important.

In addition, the EPA said that indoor air quality is especially important for children, pregnant women, elderly people and people with chronic diseases, because they spend most of their time indoors. A WHO report also showed that children are more easily affected by poor indoor air quality than adults. Of the about 100,000 people who die of asthma each year globally, about 35 percent are children, according to the WHO report.

The EPA’s Air Quality Protection and Noise Control Bureau said although the act has already taken effect, the actual implementation would take place in stages. The first phase is set to focus on about 500 public places, including larger medical facilities, elderly care centers, central governmental agencies and transportation stations.

The air pollutants under regulation include carbon dioxide, carbon monoxide, formaldehyde and other volatile organic compounds, it added.

74. Thousands in Southern Taiwan Petition for Better Air Quality Control

Thousands of residents from southern Taiwan have petitioned online for the Legislature to pass an amendment to the Air Pollution Control Act to enable better air quality management. About 7,200 residents from Pingtung County and Kaohsiung City have joined the signature drive, which asks the Legislature to pass an amendment that requires the Environmental Protection Administration (EPA) to adopt a total volume control mechanism on air pollutants, according to Citizen of the Earth, Taiwan, and organizer of the petition.

The mechanism will help local government’s better control air quality, Wang Min-ling, deputy secretary-general of the environmental group, said at a press conference.

The petition also asks local weather channels to broadcast air quality daily to help citizens better prepare themselves for hazy days, she said.

The severity of air pollution in southern Taiwan is illustrated in a recent survey conducted between January and October this year, Wang said. The survey showed air monitoring stations in southern Taiwan recorded a high level on the Pollutant Standards Index more often than other areas of the country, Wang said.

In addition, EPA data showed that the density of airborne particles in Kaohsiung stood at 73.8 ug/m3 last year, compared to a nationwide average of 54.26 ug/m3, she said.

Official data also indicated that the density of ozone in the air was the highest in Kaoshiung and Pingtung in the whole country, measuring 33 parts per billion compared to the nationwide average of 29.07 ppb, she added. Hsieh Pei-ying, a Kaoshiung-based pediatrician, said a high
concentration of ozone can cause headaches, breathing problems, coughing, and impaired lung function. Hsieh added that air pollutants will also have a negative impact on pregnant women and may lower a child’s birth weight, for example.

The EPA responded to the residents’ call the same day, saying it hopes the amendment can be passed soon to enable total volume control on air pollutants. It added that data on the density of air particles and ozone, which is currently available on the EPA’s website, could be synced with the Central Weather Bureau by year-end to help local weather channels broadcast the information to the public.

75. MTR Orders 23 Diesel Locomotives from CNR Dalian

MTR Corporation has awarded China Northern Rolling Stock subsidiary CNR Dalian a contract to supply 23 830kW diesel locomotives, which will be used on engineering trains and rescue duties on MTR’s network in Hong Kong. The 80km/h CKD0A twin-cab units will comply with EU Stage IIIIB emissions standards and will be designed to operate within Hong Kong’s 70dB noise limit for diesel locomotives.

The first locomotive will be delivered in March 2014.

76. Hong Kong Government Audit Slams Air Quality Deterioration

The Hong Kong government’s audit commission recently found that Hong Kong has consistently failed to reach its goals on air quality since 1987, when they were first adopted. Last year, the report found, roadside concentrations of key pollutants exceeded the government’s air-quality objectives by up to 53%. Meanwhile, levels of nitrogen dioxide — a major indicator of roadside pollution — exceeded World Health Organization limits by 205%.

The report also found that last year—which clocked record-high roadside pollution levels—the average concentration level of nitrogen dioxide in Hong Kong was 279% higher than in Sydney, 47% higher than in London and 36% higher than in New York. Levels of “PM10,” larger particles of air pollutants, were 220%, 100% and 153% higher than those cities, respectively.

Since he was inaugurated in July, Chief Executive Leung Chun-ying has been moving more aggressively than his predecessor to confront the issue of air pollution, with his environmental secretary floating the prospect of a ban on old diesel vehicles last month. In September, the administration also tapped Christine Loh, a well-known green activist, to serve as undersecretary for environment.
“We will vigorously improve air quality and carefully consider public health when formulating clean-air policies,” Mr. Leung told lawmakers last month, including through possible efforts to “[make] polluters pay.”

The audit report noted that the World Health Organization has stated that air pollution can cause respiratory and heart diseases, as well as lung cancer. It also added that there is “growing public concern” over how Hong Kong’s air-pollution levels have deteriorated among locals.

The audit’s findings come as a new report from CPA Australia finds that Hong Kong is continuing to lose out to cleaner, greener rival Singapore among companies seeking to set up a corporate regional hub in Asia. According to the group’s survey, 59% of respondents said they believed international companies would prefer to set up their regional headquarters in Singapore, compared with just 22% who cited Hong Kong. Pollution ranked as the No. 3 reason why companies would decide against settling in Hong Kong, after high rental and living costs.

The unsatisfactory results came despite adopting, since 1997, 16 major emission control measures, including the replacement diesel fuelled vehicles with those powered by liquefied petroleum gas, the requirement that newly registered cars be greener models and the introduction of emission caps on power plants.

The commission also noted that the Environmental Protection Department had failed to achieve a performance target that the air pollution index not exceed the “very high” health risk level of 100 on any day of the year. However, the number of days with an API level over 100 showed an upward trend over the past five years, rising by 136 per cent from 74 days in 2007 to 175 last year.

And while the ambient air pollution was partly caused by the regional pollution in the Pearl River Delta, the report said roadside pollution – mainly caused by vehicle emissions – could be reduced by vigorous efforts by the government.

The report urged the government to give air quality improvement measures a higher priority to improve roadside pollution and to work closely with the Guangdong provincial government to improve regional air quality.

The administration has agreed with the assessment and says unequivocally that “the protection of health is the key guiding principle in the formulation of air-quality improvement measures,” and achieving the World health Organization guidelines on air quality is a long-term goal.

**77. PRD Regional Air Pollutant Emission Reduction Plan Approved**
The Hong Kong-Guangdong Joint Working Group on Sustainable Development and Environmental Protection (JWGSDEP) held its 12th meeting in Guangzhou on November 23rd and both sides endorsed a major air pollutant emission reduction plan for the Pearl River Delta (PRD) region up to 2020 and agreed on key environmental co-operation actions for 2013.

There has been close collaboration between the two governments and both sides agreed that concerted efforts in improving the environmental co-operation mechanisms, as well as expanding and deepening the areas of co-operation, have borne fruit. Setting emission reduction targets for 2015 and 2020 underscores the determination of the two governments to further improve air quality, and takes Hong Kong-Guangdong co-operation into a new phase. Both sides will implement emission reduction measures to bring continuous improvement to the PRD regional air quality.

Improving regional air quality was underlined as the focus of Hong Kong-Guangdong environmental collaboration at the JWGSDEP meeting. The two governments agreed to continue the implementation of emission reduction measures with a view to further improving regional air quality. Both sides reviewed the 2010 emission inventories and considered the level of emission reduction achieved. The meeting also endorsed the emission reduction plan for the PRD region up to 2020.

In respect of the next phase of the emission reduction plan, the two governments endorsed the emission reduction targets for 2015, and agreed to set emission reduction ranges for 2020. In devising the reduction targets, both sides have taken account of their respective 2010 pollution emission levels, different characteristics of emission sources, emission control and reduction measures that have been implemented and their effectiveness, as well as the reduction potential of various sectors. The two sides will carry out a review in 2015 to assess the state of socio-economic development at the time and progress made in emission reduction, with a view to finalizing the emission reduction targets for 2020.

To achieve the emission reduction targets set for 2015 and 2020, the two governments will implement additional reduction measures focusing on major emission sources with a view to bringing continuous improvement to regional air quality. Key emission reduction measures to be implemented by Hong Kong include:

- tightening of vehicle emission standards;
- phasing out highly polluting commercial diesel vehicles;
- retrofitting Euro II and Euro III franchised buses with selective catalytic reduction devices;
- strengthening inspection and maintenance of petrol and liquefied petroleum gas vehicles;
- requiring ocean-going vessels to switch to using low sulfur fuel while at berth;
- tightening the permissible sulfur content level of locally supplied marine diesel;
- controlling emissions from off-road vehicles/equipment;
- further tightening of emission caps on power plants and increasing use of clean energy for electricity generation; and
- Controlling VOC contents of solvents used in printing and construction industry.

The key emission reduction measures to be implemented by Guangdong include:

- requiring thermal power plants to install low-NOx and denitrification systems;
- promoting conversion of oil-fired generating units into gas generating units;
- enhancing RSP emission control at power plants;
- promoting the use of National IV standard motor fuels (including petrol and diesel) and tightening diesel vehicle emission standards;
- phasing out yellow-label vehicles (i.e. petrol vehicles of pre-National emission standard or below and diesel vehicles of National II emission standard or below);
- phasing out highly polluting industries with low energy efficiency;
- enhancing emission control on industrial boilers as well as for specific industries (including petrochemical, cement, ceramic, furniture manufacturing, printing, etc.); and
- Setting up a registration and reporting system on the usage and emission control of organic solvents at major enterprises with a view to strengthening control VOC emission control.

In addition, the JWGSDEP agreed on other key environmental co-operation areas of work for 2013, including promoting cleaner production, protecting the water environment, and managing the forestry and marine resources.

The JWGSDEP, co-chaired by the Secretary for the Environment of the Hong Kong Special Administrative Region (HKSAR) Government and the Director-General of the Environmental Protection Department of the Guangdong Provincial Government, was set up in 2000. The JWGSDEP discusses and carries out exchanges on matters relating mainly to environmental quality, natural resources, the ecological environment and sustainable development. Seven special panels have been set up under the JWGSDEP to take forward various co-operation initiatives.

In a special focus, the Hong Kong SAR government aims to have all ocean-going vessels switch to cleaner fuels when they berth in Hong Kong waters before 2015. The government has also made an appeal to the authorities in Guangdong province to enforce similar policies in the Pearl River Delta (PRD) region.

The clean fuel target is one of a series of pollutant emission reduction benchmarks announced recently by Wong Kam-sing, secretary for the environment. Andrew Lai Chi-wah, deputy director of environmental protection, noted that the SAR government has taken actions already, with an incentive scheme inaugurated in September, to reduce 50% of the port fees, including port facilities and light dues, for ocean going vessels - if they switch to low sulfur diesel while they're berthing in Hong Kong waters. Legislation to enact the policy is in the government's long term plan, Lai said.

In the meantime, Lai added, the SAR government has initiated discussions with Guangdong authorities and the Ministry of Transport to study the feasibility of a long term plan to make the waters of the Pearl River Delta region free of air pollutant emissions. Both the central government and the head of environmental protection of Guangdong offered "positive responses", Lai said.

78. Christine Loh Blames Poor Air Quality on Past Governments' Passivity

Previous governments have been too passive in updating the city's air quality standards, Undersecretary for the Environment Christine Loh Kung-wai told lawmakers recently. Speaking to the Legislative Council’s public accounts committee, she acknowledged that the city had yet to attain its 25-year-old air-quality objectives. Even so, she said the Environment Bureau was confident it could achieve the new, more stringent targets that will be in effect by 2014.
The committee hearing was a response to last month's scathing report from the Audit Commission, which criticized the government's pollution-cutting measures as ineffective, inadequate or stalled by red tape. It also doubted that the proposed new standards were tough enough.

Lawmakers asked officials why it had taken the government so long to amend the air quality objectives. They questioned the government's ability to reach the new targets, given its poor record. Loh replied: "It would be difficult for us to answer [why it takes 25 years to amend the objectives]. The two previous terms of government had a different set of priorities ... In the past, Hong Kong was quite passive in tightening air quality standards."

Deputy Director of Environmental Protection Andrew Lai Chi-wah said the government reviewed its air quality standards in 1997 and considered extending the objectives to cover fine particles. But the idea was shelved because of legal challenges in the United States that delayed Washington's implementation of new standards for airborne particles. Loh said it was necessary for Hong Kong to see how such cases worked out overseas before pushing ahead with its own amendments.

Anissa Wong Sean-yee, permanent secretary for the environment, said the bureau was confident it could hit the new targets if its suggested measures - such as retiring old and heavily polluting vehicles, and designating low-emission zones - were implemented.

People Power lawmaker Wong Yuk-man asked if the new air quality targets took account of emissions that will be generated by new infrastructure projects. A bureau official replied that the new projects' environmental impact assessments were tied to the new air standards.

Loh said people should think about the balance between the environment and development. "If the environmental impact assessment for the third runway did not go through, and if the Airport Authority could not come up with effective measures to make it go through, the whole city might have to reduce emissions drastically in other areas to make the third runway happen," she said.

79. Inter-Ministerial Committee Proposed To Prepare India's Vehicle and Fuels Roadmap

India's Petroleum and Natural Gas Ministry is seeking to set up an inter-ministerial committee (IMC) with representatives from the Ministry of Road Transport and Highways, the Ministry of Heavy Industries, Urban Development and Public Enterprises and the Ministry of Environment and Forests to draw up a roadmap to reduce vehicle pollution.

The Ministry has stated that with a time lag in implementation of sound vehicle inspection and maintenance, vehicle retrofit and retirement, garage certification and traffic management, mere improvement of fuel quality was not enough to achieve the desired results. "It is time to evolve an appropriate roadmap and supervise implementation of measures to reduce the pollution levels," it has stated in a note circulated among various stakeholders.

The note pointed out that as per the source apportionment studies conducted by the Central Pollution Control Board (CPCB) in six cities, vehicular emission is not the only major contributor to overall pollution as road side dust, construction activities, domestic combustion, use of diesel generator sets and biomass burning also contribute significantly to pollution levels going up.
The Petroleum Ministry said while the oil industry has kept its commitment of supplying BS-IV quality auto fuels to reap the full benefits of the upgraded fuel quality, a more important and immediate need was to ensure improvement in vehicle engine technology to reduce emission levels and deliver higher fuel efficiency.

"Measures like retro-fitment of pollution control devices in old vehicles, phasing out of old vehicles, mandatory periodical inspections and maintenance requirements are also requirement to be taken up simultaneously," it has stated.

It further pointed out that a decision had been taken to progressively expand coverage of BS-IV fuels in at least 50 cities by 2015. Inclusion of all state capitals and cities with population of more than one million and non-attainment cities will be emphasized, while selecting additional cities for implementation of BS-IV auto fuels.

80. India Tops China in Air Pollution Level Increase

There's just one area in which India has outrun China - air pollution. The rise in air pollution levels in Indian megacities between 2002 and 2010 has been much more than Chinese urban centers. It was also the highest among 189 cities analyzed by the Tel Aviv University, using NASA's high-tech aerosol monitoring satellites.

The study, using data from three different satellites, showed that particulate matter - caused by dust and vehicular emissions - increased by more than 10% in most Indian cities whereas the maximum increase of 5 to 10% was witnessed only in northern Chinese cities.

Bangalore, the 'Indian Silicon Valley', earned the dubious distinction of witnessing the second-highest increase (34%) in air pollution levels among 189 cities, after Portland in the US.

Other Indian cities that recorded a high increase in air pollution levels were Pune at 27%, Nagpur at 22%, Mumbai at 18%, Bhilai at 17.7%, Surat at 12.5% and Ahmedabad at 12%. However, Delhi and Kanpur recorded just 4.2% and 6.5% increase in particulate matter.

The data captured by satellites hundreds of meters above the ground show a different picture than information gathered through ground monitoring.
Also, high atmospheric aerosol concentration in space modifies cloud properties, leading to less rainfall, and dimming of solar radiation in cities. "Data show that solar radiation over big cities with high population concentration has reduced, causing its own health problems," the study said.

81. Rising Air Pollution in Delhi, But Government Slow To Respond

The India Gate monument in New Delhi is shown enveloped by a blanket of smog. Photograph: Manish Swarup/AP

The unexpected figure on the air pollution by the new Global Burden of Disease (GBD) count has shocked the officials at Centre for Science and Environment (CSE). The findings say that outdoor air pollution is one of the top ten killers in the world with 65 percent of the air pollution deaths occurring in Asia and close to quarter of this in India.

The legal limit for fine particle air pollution is 100 micrograms per cubic meter. In India, it is far above that. During festivals like Diwali it can rise to nearly 1,000 micrograms.

Delhi has seen an increase of 47% in the level of particulate matter less than 10 micron in size in the last decade, while the level of nitrogen dioxide has gone up by 57%. The level of particulate matter less than 2.5 micron in size has also exceeded the standard by 4-6 times. Though improvements in car and fuel technology have been made since 2000, increase in car numbers has nullified its effect. Delhi now has around 200 cars per 1,000 people as against 70-100 per 1,000 populations in Hong Kong and Singapore.

There should be restraint measures in Delhi by putting a check on the growing number of cars to check on pollution, suggests Rajendra Pachauri, head of the Intergovernmental Panel on Climate Change and director-general of the Energy and Resources Institute in New Delhi.

The Delhi government, on its part, has not been quick in immediately implementing measures under the five-year plan to improve the Capital’s air quality. A 10-point draft action plan has been prepared by the Delhi government and the CSE to meet the desired air quality in the Capital by 2017. A senior government official said that after minor correction, it will go to the Cabinet for approval and the plan will be implemented soon.

Global Burden of Disease (GBD) count, a global initiative involving the WHO, tracks deaths and illnesses from all causes across the world. According to Anumita Roychowdhury, CSE’s executive director-research and advocacy and head of its air pollution unit, there is a need for aggressive and most stringent action to protect public health risks to all, particularly children,

8 See story below.
elderly and the poor because no-one can escape toxic air. Toxic effects like cancer surface after a long latency period and therefore, exposure to air pollution will have to be reduced today to reduce the burden of disease, she said and added that high levels of carbon monoxide, ozone and benzene levels are also playing havoc.

82. ‘Dirty’ Diesel Drives Up Indian Insurance Premium Rates

As the Indian passenger vehicle market moves decisively towards diesel, the shift is leaving its mark on motor insurance premia as well. The premia differential between petrol and diesel vehicles has shot up to 20-22% in certain categories with insurers claiming higher usage, pricier spare parts and steeper maintenance costs as the reason for the higher insurance premium.

Diesel vehicles have always commanded higher motor insurance premium and the differential between petrol and diesel variants has traditionally been around 10-15%. But with diesel vehicles ruling the auto market, that differential has been on the rise. "With the arrival of new diesel models in the last couple of years, especially in the hatch back and mid-size segments, this (difference) has now moved up to 20% to 22% in the case of certain vehicles," said Vijay Kumar, head, motor insurance, Bajaj Allianz General Insurance.

KN Murali, senior vice president Bharti AXA General Insurance agreed, "In case of some models and in certain geographies, the premium differential can move up to 20%." Since diesel cars have higher usage and the cost of spare parts is higher than their petrol counterparts, this is reflected in the premium pricing. "Diesel cars have a higher claims ratio than petrol vehicles," added Murali.

Part of the reason why diesel commands a higher insurance premium has to do with the premium pricing of diesel vehicles. Typically the price differential between the petrol and diesel version of a hatchback model can range from Rs 50,000-70,000. And with car companies raising prices, the premia also goes up. But, said Rakesh Batra, India automotive sector national leader, Ernst & Young, "diesel technology, even in its latest avatar, does command higher maintenance cost. That's as true globally as it is in India. The engine configuration requires more frequent maintenance because it suffers greater wear and tear."

Insurers say the other aspect of diesel vehicles is that a significant number of them are in the people mover (cabs and tourist taxis) category so they clock higher mileage on a daily basis (50-100 km) when compared to petrol vehicles which run for about 15-30 km every day. "The probability of accidents is higher in the case of diesel cars as against petrol vehicles as the former run longer on the roads. As the risk is higher in this category, that gets reflected in the premia as well," said Murali.

The diesel-petrol differential is not the only fuel-led differential in motor insurance. With alternative fuels like CNG becoming popular, a premium differential is also emerging in CNG fitted cars as compared to petrol or diesel cars. "Many customers are retrofitting a CNG kit as the car turns slightly older," said Vijay Kumar. These kits are normally priced between Rs 40,000 and Rs 45,000 and when the motor premium comes up for renewal insurers charge an additional 4% on the value of the CNG kit (Rs 1,600-Rs 1,800) for such vehicles after deducting the no claim bonus. "As a category change and a modification has occurred in the vehicle, this results in an additional surcharge," said Tarun Kumar Singh, chief executive officer, of financial consultancy, Finexure Consultancy Services. "But what happens when the OEM supplies factory fitted kits on new vehicles? Not all CNG fitments are aftermarket options."
83. Pollution Control Body Supports Ban On Diesel Vehicles in Delhi

The Government has informed the Lok Sabha\(^9\) that Environment Pollution (Prevention and Control) Authority (EPCA) has recommended that there is a need to ban diesel vehicles in Delhi to prevent emission of high smoke particles. "The EPCA in a report in 2012 has stated that benefits of CNG transition are not visible due to growth in diesel vehicles, because diesel vehicles are known to emit higher smoke particles and Nitrogen Oxides than petrol cars," Environment Minister Jayanthi Natarajan said during Question Hour.

Earlier in 2007, the EPCA had expressed this concern in a detailed report filed by it in the Supreme Court titled "Controlling Pollution from the growing number of diesel cars in Delhi". "In the report, EPCA had recommended to the Court that there is a need to ban the use of diesel in cars in Delhi," the minister said. The Central Pollution Control Board had carried out a study in 2007 in six cities - Bangalore, Chennai, Delhi, Kanpur, Mumbai and Pune. "As per the studies, the ambient air quality data of these cities in respect of Particulate Matter revealed that contribution due to all vehicles is ranging from 2 per cent to 48 per cent," Natarajan said.

Government is taking several steps to control pollution caused by vehicles. These include implementation of Bharat Stage-IV emission standards for all category vehicles, reducing sulfur content in petrol and diesel, implementing pollution under control norms, promoting use of alternative fuels like CNG, electric vehicles, bio-diesel; building more by-passes to avoid unnecessary entry into the city, and strengthening mass transport system.

84. Diesel Consumption Goes Up By 15% in Delhi

Consumption of diesel in Delhi has surged by 15% while that of petrol went down by nearly 1.5% in 2011-12 compared to the year before, reflecting a growing preference for diesel cars in the city. As per the latest Delhi government statistics, consumption of diesel in the city was 9.34 lakh\(^{10}\) metric tons in 2011-12 as against 8.11 lakh metric tons in 2010-11. The increase of around 1.33 lakh metric tons of diesel in 2011-12 came when 5.05 lakh new vehicles were added to the city roads in the same period, taking the total to 74.38 lakh from 69.32 lakh in 2010-11. However, consumption of petrol went down to 8.13 lakh tons in 2011-12 as against 8.25 lakh tons in the year before which is a decline of 1.45 per cent.

Officials attributed the increase in diesel consumption to the rise in the number of diesel-run vehicles in the city.

The city had only 5.62 lakh vehicles in 1981. The total number of vehicles in Delhi is more than the combined total of vehicles in Mumbai, Chennai and Kolkata. On an average, over 1,000 vehicles are added to the city roads every day.

As per the figures, the consumption of CNG (Compressed Natural Gas) swelled by around 9% in 2011-12 as compared to its consumption in 2010-11. The city consumed a total of 6.49 lakh metric tons of CNG in 2011-12 as against 5.96 lakh metric tons in the previous year. In 2009-10, 5 lakh metric tons of CNG was consumed.

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\(^{9}\) Lower House of Parliament in India  
\(^{10}\) 100,000
The national capital consumed 7.31 lakh metric tons of cooking gas (LPG) in 2011-12 as against 7.09 lakh metric tons in 2010-11. The consumption of LPG in 2008-09 and 2009-10 was 6.42 lakh metric tons and 6.80 lakh metric tons, respectively.

However, the Rs 5 per liter hike in diesel prices in September appears to have helped the economy correct the trend of dieselization modestly. The country saw the lowest growth rate in 10 months in diesel consumption in October even as the share of diesel vehicles sales, which was rising sharply over a few quarters, remained stagnant in the month.

“There has been some moderation in sales growth of diesel vehicles post the hike in the price of diesel fuel,” said an executive of a leading passenger car manufacturer, requesting anonymity. “In the last fiscal, diesel vehicle sales grew 35 per cent to comprise 47 per cent of the passenger vehicle market. This proportion increased to 54 per cent in the first quarter and then to 57 per cent in the second quarter. The share remained stagnant in October,” the executive added. Data for November share is not available.

Incidentally, October also saw a 10-month low growth in diesel consumption. The diesel price rise of September came after a 14-month gap from the previous hike. “The bold step of increasing the price is bearing fruit by partially correcting the trend of dieselization of the economy,” said an official from an oil marketing company, who also did not want to be named.

In the passenger car segment, the moderation in sales of diesel variants has been sharper. “After the diesel price was raised, we noticed that the share of diesel-powered passenger cars in the segment declined to 47 per cent from the peak of 53 per cent registered in the first half of the fiscal,” said Sugato Sen, deputy director general, Society of Indian Automobile Manufacturers, an auto industry body.

According to data collected from the ministry of road, transport and highways and the petroleum ministry, passenger vehicles account for less than seven per cent of diesel consumed in the country. This, however, had risen of late due to the robust growth in the sales of diesel-run vehicles. While truckers account for around 38 per cent of diesel consumed in the country, the share of buses in diesel consumption stands at 10 per cent.

Before the price increase in September, industrial consumers had preferred diesel to the costlier, market-lined furnace oil. Industrial consumers had latched on to diesel to take advantage of its static price, fuelling demand for diesel to double digit growth for the past several months.

Diesel demand had been growing rapidly after the government decontrolled petrol in June 2010, leading to frequent price rises. When decontrol was done, petrol was expensive by 26 per cent compared to diesel. Now, petrol is 42 per cent costlier than diesel. The difference was even higher prior to the Rs 5 increase. Currently, diesel sells for Rs 47.15 per liter in the capital, while petrol is available at Rs 67.24.

An official at Hindustan Petroleum Corp Ltd said it was slightly early to say if the impact was solely because of the increase in diesel price. “If we see this happening for the next two-three months, we can call it a trend with greater certainty,” he said.

Diesel accounts for 60 per cent of the revenue loss on sale of the three subsidized products — diesel, kerosene and cooking gas. Currently, oil companies incur an under recovery of Rs 10.03
on every liter of diesel. In 2011-12, the under recovery on diesel alone was Rs 81,192 crore\textsuperscript{11} of the total Rs 138,541 crore. For the April-September period, diesel under recovery was Rs 52,711 crore, while the total under recovery on three subsidized products was Rs 85,586 crore.

85. Delhi Government Cracks Down on Polluting Vehicles

The Delhi government has launched a massive drive to crack down on motorists who do not have a valid pollution under control (PUC) certificate for their vehicles. The drive came amid widespread concerns over a drop in air quality that has been attributed for the smog cover which had recently blanketed the city for several days.

Thirty teams of the transport department's enforcement wing have been deployed to carry out a drive which will continue till November 23. All vehicles coming from Uttar Pradesh and Haryana would be checked at border posts so that no polluting vehicle can enter Delhi, officials said. If a motorist does not have a PUC certificate and if he is a first time offender, then a fine of Rs 1,000 will be imposed while the fine amount will be Rs 2,000 in case of second time offenders.

Besides checking PUC certificates, the enforcement teams will also check pollution levels of the vehicles. According to official figures, Delhi has over 60 lakh vehicles.

As per norms, the motorists have to get PUC certificates for their vehicles after every three months but for Euro-IV vehicles, a pollution certificate is required at a gap of one year. Officials said PUC certificate is must for all new vehicles, whose registration period has crossed one year.

Special stickers having tamper-proof holograms would be pasted on the vehicles after being checked by the enforcement squads, they said.

Currently, Delhi has 650 pollution checking centers from where motorists can get their PUC certificates. Getting a PUC certificate for two and three wheelers costs Rs 60 while for petrol vehicles (four-wheeler) the cost is Rs 80. The fee charged by the pollution checking centers for diesel vehicles is Rs 100.

Enforcement teams would impound vehicles fitted with unauthorized CNG kits, they said.

Chief Minister Sheila Dikshit, after a meeting on air pollution, had said that the government was contemplating a number of short and long-term measures to improve the air quality in the national capital.

86. Central Pollution Control Board Pushes For Ban on Diesel Cars in Delhi

Days after Chief Justice Altamas Kabir stressed the need to deal with the problem of smog in the Capital, the Central Pollution Control Board (CPCB) has requested the forest bench to take up for consideration a pending report by the Environment Pollution Control Authority (EPCA). The 2007 report recommended a ban on the use of diesel in personal transport vehicles in the Capital.

A bench presided over by Justice Aftab Alam, commonly referred to as the forest bench, told CPCB counsel Vijay Panjwani that his request would be considered during the next hearing.

\textsuperscript{11} Ten million
The report, which has also proposed a restriction on entry of diesel vehicles in the Capital from other states, stressed that the pollution caused by diesel cars in 2007 in Delhi was equivalent to adding “particulate emissions from nearly 30,000 diesel buses”. “EPCA is concerned that this increase in private diesel cars, encouraged by cheaper diesel fuel, is now threatening to negate the benefits of the compressed natural program in the city,” the report said.

With Kabir expressing concern over the rise in the level of smog, Panjwani had, on November 6, told the court that it was because of the increase in the number of diesel vehicles. Panjwani had also written to the registry to list the matter concerning the EPCA report before the forest bench. He mentioned the matter before the bench after it was not listed for hearing.

In its report, the EPCA had stated that diesel cars in the capital had increased by nearly 425 per cent in the last decade. The authority pointed out that the price of diesel was kept lower than petrol for the benefit of farmers and goods transporters. This had promoted the production of diesel cars by manufacturers.

On the government policy of providing subsidy on diesel, the EPCA said actions by the government had in fact “encouraged use of diesel without concurrent policies that would manage its pollution fall out”.

The authority added that India was allowing diesel vehicles without any policy framework. “Our diesel vehicles are more polluting. The cleanest diesel car is 50 per cent more polluting than its counterpart in Europe,” it said. The EPCA said it was concerned over the fact that diesel vehicles were contributing to pollutants which included respirable suspended particulate matter (RSPM) and nitrogen oxide (NOx) which were of most concern to the city.

The authority said while diesel had been banned from public transport, the specter of pollution “is making a comeback through personal transport and is threatening to nullify the air quality gains”.

**87. CM Sheila Dikshit Plans Higher Fines on Diesels to Clear Delhi Smog**

The smog cover over the Capital has brought bad news for diesel vehicle owners. The Delhi government is contemplating severe penalties on “polluting” vehicles as a short-term measure to clear the haze blanket. The decision to consider a higher fine for non-compliance to pollution norms was taken at a meeting attended by officials of Environment Pollution Control Authority (EPCA), meteorological department, state environment department and Delhi chief minister Sheila Dikshit.

While the finer details of the plan to check polluting vehicles are yet to be worked out, the meeting specified the main target of the drive - trucks, interstate buses and diesel cars, which are known to create more pollution than petrol and CNG vehicles.

The meeting was prompted by the recent, severe spells of smog over the city. Some of the other measures discussed during the meeting are: fines
and restrictions on the use of polluting diesel generators at social gatherings (including the NCR) and vigilant patrolling on five main entry points to the city - NH-8 border, NH-24 border, Singhu order, Tikri border and Badarpur border.

The officials will meet again soon and discuss in detail a proposal by the Centre for Science and Environment (CSE) before taking up the matter with the Union minister for environment and forest, Jayanthi Natarajan. The Delhi CM confirmed these developments to the press.

Dikshit said increasing the penalty was a part of a holistic solution to the pollution problem. "The CSE and other experts will put forward a proposal to us (on increased penalties) which we will take to the cabinet for a final decision after deliberation," she said. The pollution-related penalty at the time of the CWG was Rs.2,000, much above Rs.100 that a polluting vehicle is fined under the existing norms.

The CM said the city was choking under the impact of the smog which was triggered not only by the polluting vehicles but also by the smoke from the rice husk that was burnt in the neighboring states. "We don't have our own wind system. Once we have a detailed proposal, we will take up the issue with the Union environment minister. In our opinion, the neighboring states have to be treated as a single economic entity with unified tax code vis-a-vis fuel," she said.

EPCA chairman Bhure Lal said: "While there is already a cess on diesel vehicles, we need to think about a ceiling on such vehicles in Delhi or the entire NCR."

88. Why Not Green Levy on New Diesel Cars in Delhi, Asks Supreme Court

The Supreme Court has issued a notice to the central government on a plea seeking to impose environment compensation charge of 25 percent of the sale value on new private diesel cars in the National Capital Region (NCR). Besides this, the plea by amicus curiae Harish Salve has sought the levying of environment compensation charge respectively of 2 percent and 4 percent of the purchase value of all the existing petrol and diesel cars.

The apex court's forest bench of Justice Aftab Alam, Justice K.S. Radhakrishnan and Justice Swatanter Kumar issued the notice and asked the government to respond within four weeks.

The plea sought direction that an "environment compensation charge of 25 percent of the sale value of new vehicle is levied on the sale of each private diesel car to be collected by the dealers at the time of the sale". Besides this one-time environment compensation charge, the application sought "environment compensation charge amounting to 2 percent of the purchase value of a petrol car and 4 percent of the purchase value of diesel car be levied on all existing private cars in the NCR region to be collected annually by the insurance companies along with the premium amount".

Amicus curiae Salve said that the court should direct that insurance companies should ensure that the vehicles had a valid pollution under control certificate at the time of the renewal of insurance.
89. ‘Diesel SUVs Should Pay Rs 50,000 Higher’

In 2010, when the Kirit Parikh committee proposed an additional Rs 80,000 excise duty on diesel cars to reduce the subsidy burden on state-run oil retailers, the auto industry was up in arms saying higher taxes would affect technology and sharply hit sales. Three Union Budgets have been announced since then and the government has, so far, kept the industry’s wish intact with no extra levies.

Now, Parikh is back with a new plan. The chairman of the expert group for low carbon strategy for inclusive growth, Planning Commission, has proposed the re-introduction of a road tax system with an up to Rs 50,000 higher levy for diesel SUVs and Rs 10,000-20,000 on smaller diesel cars. If implemented, the new tax would also be applicable on diesel cars running on the road.

“We have already sent the proposal to the finance ministry. The alternative could be to abolish the existing one-time road tax, make it annual and apply a differential between petrol and diesel vehicles,” Parikh, who is also the chairman of Integrated Research and Action for Development, said. The new proposal may seem lower than the previous suggestion for an additional excise, but it actually works out to generate far more revenue for the government over a vehicle’s lifecycle.

This is because the road tax will be charged annually, whereas the excise would have been a one-time payout at the time of purchase. Siam vice-president and vice-chairman of Toyota Kirloskar Motor, Vikram Kirloskar, said such a move would not make sense.

90. Supreme Court Seeks CSE Opinion on Eco Levy for Diesel Cars

The Supreme Court has sought the Centre for Science and Environment’s (CSE) reply to a plea for levying “environment compensation charge” on all existing private vehicles and new diesel cars to control pollution in the National Capital Region (NCR). A three-judge bench headed by Justice Aftab Alam issued the notice to the Centre on a plea seeking the court’s intervention for controlling the “spiraling air pollution in NCR”.

The application, filed by senior advocate Harish Salve, who is assisting the court as amicus curiae in adjudication of matters related to pollution, pleaded that a fee of 25 per cent of the cost be levied on every new diesel vehicles which cause more pollution. The application also sought levying a 2 per cent fee on the cost of all existing petrol car and 4 per cent of the cost of all existing diesel cars, being used as private vehicles in the city.

In his application, Salve said the pollution levels in the NCR have spiked to unhealthy levels, especially after the onset of winter, and pose a serious health hazard. “These levels (of pollution) are unacceptable, because they are a clear health hazard. Already there is evidence of severe respiratory ailments afflicting people. The air is toxic. Nitrogen dioxide is a trigger for serious respiratory conditions and sudden death syndrome among infants,” the application said adding that roughly 1,400 new personal vehicles come on road daily.

Arguing that the city needed emergency-level action to reduce the rise in pollution, amicus sought levying of the environmental compensation charge on all private vehicles.
The Centre for Science and Environment (CSE) welcomed the apex court’s ‘positive response’
to the proposal to tax diesel cars. It said it supported the initiative to restrain diesel cars by
imposing strict fiscal measures to reduce toxicity of the air. “Higher taxes at the time of purchase
as well as annual taxes as proposed can help neutralize the cheap running costs. Urgent action
is needed to protect public health,” it added.

It said Delhi added roughly 1,400 new vehicles a day to its fleet, one-third of which were cars. It
said market share of diesel cars was more than 50 per cent of the sales, and added that diesel
cars were 15-20 per cent more fuel-efficient than petrol cars, but emitted harmful pollutants.
“Data from Automotive Research Association of India shows that comparable diesel cars emit
seven times more particulate matter, and 7.5 times more air toxins than petrol cars,” it added.

91. Smaller Cities Are New Air Pollution Hot Spots Says Anumita Roychowdhury

Air quality has deteriorated considerably over the last five to six years in all the big cities across
the country. This time the culprit is not large industries but road traffic, particularly diesel driven
vehicles. In an interview, Anumita Roychowdhury, executive director, Centre for Science &
Environment (CSE) discussed the problem of air pollution and its impact.

How has air quality changed over the years in Delhi and rest of the country?

Air pollution control is there in all mega cities in the country. But that was first generation action,
driven by Supreme Court orders. As a result air pollution stabilized, reduced between 1998 and
2006 and now we are seeing an increase again.

Particulate Matter 10 (PM10) levels are very high. These are particles released by burning
diesel. Ozone, air toxicity, PM10, PM2.5 are overall contributing to a deadly cocktail. There was
improvement but we have lost that improvement. Now even Tier II cities like Nagpur, Kanpur,
and Mysore are seeing rising pollution. Small cities are the new air pollution hot spots.

What are the main causes of pollution?

Vehicles contribute a lot since you no longer have power plants or manufacturing units in big
cities. Lack of public transport and congestion contribute to pollution and poor air quality.

The larger problem is that we are still using Euro 4 equivalent pollution norms called Bharat
Stage 4 in big cities (13 cities follow this). This was discontinued in Europe back in 2006. In
smaller cities we are implementing Euro 3 norms which are more than a decade old. Poor
technology and poor fuel quality are the contributing factors.

Does the problem amplify due to commercial vehicles plying through big cities?

Commercial vehicles plying on national permit use pollution standards of smaller towns. In Delhi
the worst pollution is at night, between 2:00 am and 4:00 am caused by trucks passing through
the city.

Rapid use of diesel is responsible for this. Diesel cars emit three times more nitrogen mono
oxide and nitrogen dioxide than petrol cars. PM emissions are also higher in diesel cars.
In June 2012 WHO classified diesel emission as class 1 carcinogenic, equal to tobacco. We are using diesel without proper checks in place. For example sulfur content of our diesel is very high. In Europe it is 10 parts per million in BS 3 (followed in our small cities) it is 350 parts per million and BS 4 it is 50 parts per million.

You need 10 parts per million sulfur content of diesel for the advanced pollution systems to be effective. In diesel vehicles oxidation catalysts are used, but they are only good for some gases and not sulfur pollution.

**What's the impact on health due to pollution?**

Pollution impacts respiratory and cardiac systems. Short term impact is on those already suffering from respiratory disorders like asthma. Long term exposure to polluted air leads to chromosomal changes leading to cancers and pre-mature deaths. It is not the industries but vehicles within nostril range that have a more adverse impact on health. According to a study by Health Effect Institute, US, people staying within 500 meters from a road are most impacted by vehicular pollution and that's 55% of Delhi's population.

The issue is that we are growing faster than our ability to solve problems. Our big cities have ambitious goals to set up efficient public transport, but there's no strategy to get there. We are too focused on building roads and flyover so that more cars can be used.

**92. Vehicles Drive Up Air Pollution Level in Chandigarh City**

The growing number of vehicles in the city may be proving to be a traffic hazard and causing shortage of parking space. However, there is another hazard, not visible to the eyes that is affecting the city: the pollution level in Chandigarh has been measured to be more than the permissible limit. The data by the Chandigarh Pollution Control Committee (CPCC) reveals that the air pollution level has been increasing over the past few years.

CPCC measures the pollution level at five locations in the city: Sector 17, Industrial Area, Punjab Engineering College, IMTECH, Sector 39, and Kaimbwala village. The aim is to cover residential, educational, commercial and industrial areas. The annual average of the pollution level compiled by CPCC indicates that the pollution level has been increasing over the past few years.

The permissible limit of respirable suspended particulate matter (RSPM) is 60 microgram per cubic meter (mpcm). However, in the year 2011, it was found to be 137 mpcm in Industrial Area, 103 mpcm at Kaimbwala, 91 mpcm at PEC, 90 mpcm at IMTECH and 87 mpcm in Sector 17. Similar was the case in 2010 when the RSPM was found to be 122 mpcm, 83 mpcm, 77 mpcm, 95 mpcm and 86 mpcm respectively at these places.

The level of RSPM and SPM was much higher between 2004 and 2006. A decline was witnessed in the later years. However, for the last two years, the pollution level is again on the rise. Member secretary of CPCC P J S Dadhwal says, “Though the condition in Chandigarh is better than many places, the pollution levels are higher than the permissible limits. Due to engines of vehicles becoming more sophisticated, the level of sulfur dioxide has declined and is much below the permissible limit. However, the level of RSPM and SPM is high. Since the city does not have any hazardous industry, one of the reasons for the increasing pollution level is the high number of vehicles.”
93. Japanese Trucks Exceed Nitrogen Oxide Emission Limits

About 60,000 large diesel vehicles around the country could be emitting more than three times the legal limit of nitrogen oxide due to a sudden deterioration of their exhaust purification systems caused by an unknown factor, the Environment Ministry has recently warned. The Environment Ministry and the Land, Infrastructure, Transport and Tourism Ministry are concerned about the situation and have set up a panel to cope with the problem caused by malfunctions in systems that break down nitrogen oxide in exhaust.

The emission control system, called urea selective catalytic reduction (SCR), breaks nitrogen oxide—a substance that causes photochemical smog—into substances such as nitrogen and water by spraying urea aqueous solution into exhaust. UD Trucks Corp., formerly known as Nissan Diesel Motor Co., led the world in 2004 in introducing the technology into products prior to the introduction of emission regulations in October 2005. As a decisive measure to cut back nitrogen oxide emissions, all four domestic large vehicle manufacturers now equip their vehicles with the system.

However, a test conducted by the Environment Ministry in fiscal 2010 for unrelated purposes on a truck equipped with the system, which was registered in August 2005 and had been driven about 320,000 kilometers, found nitrogen oxide in the vehicle’s exhaust was 2.86 times the legal limit set under the Air Pollution Control Law.

A survey in fiscal 2011 also found nitrogen oxide emissions from four examined vehicles were all beyond the regulated limit. Emissions from a local bus with a mileage of about 250,000 kilometers, for example, contained 3.35 times the legal limit of nitrogen oxide; emissions from a large truck that often uses expressways with a mileage of about 600,000 kilometers were 3.11 times the legal limit.

According to the ministry, there are about 2 million large diesel vehicles in the nation that are subject to restrictions on nitrogen oxide emissions. Of the 2 million, about 60,000 vehicles equipped with an early type of purification system are likely to be emitting excessive levels of the gas. The ministry said that although they are equipped with the urea SCR system, the vehicles have no diesel particulate filter.

Since the 60,000 account for only about 3 percent of all relevant vehicles, they cannot be considered to pose a large threat to humans or the environment. But the Environmental Technology Office at the ministry said urea SCR systems should be effective until vehicles are driven 650,000 kilometers, the distance used in vehicle endurance tests.

UD Trucks said it will take necessary measures once prime causes of the problem are identified.

The problem will be solved by changing the system’s catalyst, a procedure said to cost about 1 million yen per vehicle. It is also said to be difficult to add the filter post-construction due to structural limitations.
UD Trucks said it conducted a number of tests besides endurance tests required by the government when developing the system, but could not predict the functions would deteriorate so rapidly.

The two ministries set up a panel of experts in October to determine the cause of the deterioration in conjunction with UD Trucks. The panel plans to compile an interim report by March, and the Environmental Technology Office said it wants to come up with a countermeasure as soon as possible.

94. Group Disputes Metro Manila’s Air Pollution Report

Metro Manila residents are not breathing fresher air these days, an environmental group said, belying a government report that urban pollution has been gradually contained. On Sunday, Environment Secretary Ramon Paje said the average level of air pollution in the metropolis has declined by 21 percent overall in the first nine months of 2012. He said both the amount of total suspended particulates (TSP) and the level of particulate matter 10 microns in diameter or smaller (PM10) has decreased from 135ug/Ncm (micrograms per normal cubic meter) and 94µg/Ncm in the first quarter to 106ug/Ncm and 77µg/Ncm in the third quarter of this year, respectively.

But for the Kalikasan People’s Network for the Environment (Kalikasan PNE), Paje was misleading the public that air pollution in Metro Manila is decreasing because of government interventions such as deployment of anti-smoke belching units and intensified information drive. Clemente Bautista, national coordinator of Kalikasan PNE, said during the rainy season, dusts and other particulate matter in the air are flushed out and normally decrease during the wet months of May to September.

This resulted in better air quality in Metro Manila compared to other quarters of the year, which the group said is reflected in the past reports of the Environmental Management Bureau (EMB), an attached agency of the Department of Environment and Natural Resources (DENR).

The group said air quality in Metro Manila is worsening because of increasing pollutant emissions coming from motor vehicles, proliferation of construction of high rise building and low budget for controlling and managing pollution.

Motor vehicles are the number one source of air pollution in Metro Manila. Data from the Land Transportation Office (LTO) show that Metro Manila has more than 30 percent (1.2 million) of all vehicles registered in the country in 2001. For the period 1981 to 2001, car registrations have been increasing at an average rate of 4.4 percent annually. This trend continues as car ownership has increased dramatically in Metro Manila in recent years.

Respiratory diseases from air pollution cost the country P910 million each year, according to the 2006 Philippine Environment Monitor.

95. Singapore Parliament Passes Amendments to Road Traffic Act

Parliament has passed amendments to the Road Traffic Act, paving the way for stiffer penalties against vehicles that are illegally modified. The new bill will also allow for the introduction of a new scheme aimed at incentivizing motorists to buy cars with low carbon emissions.
Members of Parliament (MPs) who spoke on the bill welcomed the enhancements but wanted to see more done.

The number of illegal modification offences has tripled from about 2,500 in 2009 to 7,300 in 2011. Of these, offences relating to illegal modification of the exhaust system increased three-fold, from about 80 cases per month in 2010 to 250 cases per month this year. "Such illegal modifications to a vehicle’s exhaust system not only compromise vehicle safety and therefore the safety of other road users, but also result in excessive noise emissions and public nuisance," said Minister of State for Transport, Josephine Teo.

Under the enhanced penalty, the court can impound illegally-modified vehicles for up to three months. This is on top of a possible jail term for repeat offenders.

MPs noted that such a move will be painful for motorists of such vehicles, but they asked if workshops involved in such modifications should also face stiffer penalties. In response, Mrs. Teo said: "Not all types of modifications are illegal and so workshops that undertake modification works are not necessarily breaking the law. For example, if the vehicle is going to be used off the road at specialized race tracks, they could be legal."

She elaborated: "Currently, our enforcement regime targets owners of illegally-modified vehicles. One reason is they do not necessarily need to do the modifications in a workshop in Singapore. They could go elsewhere to get the modifications done, in which case enforcement against the workshops will not be terribly effective. It is better to enforce against the vehicle owners themselves. That is one reason we have targeted the owners as rather than the workshops."

"But nonetheless, we do agree that it is important to get the workshops on board as well, and so LTA (Land Transport Authority) is in the midst of reviewing the enforcement and legislation against workshops; for example, the closure of workshops may be an effective deterrent for them."

Mrs. Teo added the government is also taking a calibrated approach in enhancing the penalties.

She said that it is not the intention of authorities to go after motorists, but there needs to be a message sent - that illegal modifications are not acceptable, especially in cases where there are blatant violations or when offenders blatantly break the law.

One MP noted that Singapore could be more aggressive in promoting the green cause. Under the new Carbon Emission-based Vehicle (CEV) scheme, buyers of cars with low carbon dioxide emissions can enjoy rebates of between S$5,000 and S$20,000. Meanwhile, those who buy high carbon emission cars will be taxed between S$5,000 and S$20,000.

The CEV scheme will apply to all new cars, taxis and newly-imported used cars registered with effect from 1 January 2013. The CEV rebates will be implemented from 1 January 2013. The surcharges will only take effect six months later, from 1 July 2013, to give consumers and the motor industry more time to adjust.

Mrs. Teo said: “The scheme is designed such that the maximum price between a high and low emission car can be up to S$40,000, which is more than the open market value of a typical mid-sized car.” The existing buying pattern is definitely a reference point. The hope and the expectation is that certainly at the margins, vehicle buyers will consider moving from the band which causes them to be levied a surcharge into the neutral band, and for those who were
contemplating the purchase of a car that currently falls on the neutral band, to be incentivized by the existence of a rebate and modify their buying behavior accordingly.

"We have until the end of 2014 to observe the impact, which is when the scheme will be applicable up to. We plan to monitor particularly motorists' purchasing decisions before deciding whether to go further and if so, by how much.

96. No Shortage of Euro II Compliant Diesel, Lahore Court Told

THE Pak Arab Refinery Company (Parco) managing director has informed the Lahore High Court that there was no shortage of Euro II compliant diesel in the country and there would be no problem in its supply for new buses. The MD pointed out that Euro II compliant diesel was environment-friendly and refinery companies had endorsed this fact. The court was hearing a petition against import/purchase of 1,200 buses by Punjab government to be run on the said diesel. The court adjourned the hearing until December 6th and extended the stay against the opening of tenders for the purchase of the buses. Previously, the court had allowed the government to import only 100 buses for Metro Bus System (MBS), new name of Bus Rapid Transit System (BRTS). A private transport company of Gujranwala had filed the petition, contending that the government wanted to purchase 1,200 Euro II compliant diesel buses, which would be given to private bus operators on soft term loan basis.

Petitioner said the government would spend a huge amount of public money to purchase such buses which were to be run on the fuel called “Euro II compliant diesel” only. He said the required fuel was not available in Punjab. He pointed out that even oil refineries had no ability to produce this diesel in near future. He prayed that the government should be restrained from purchasing these buses.

97. MP Concerned About Ageing Car Fleet in New Zealand

The Kiwi tradition of keeping cars on the road for as long as possible could face a stiff challenge from the upcoming review of exhaust emissions. Tauranga MP Simon Bridges has asked his transport officials to look at reducing emissions from New Zealand’s ageing car fleet.

The Associate Minister of Transport told the Bay of Plenty Times that the average age of cars in New Zealand was around 13 years - the highest figure in the developed world and two years older than Australia’s average. On the basis that newer cars were not only safer but cleaner, Mr. Bridges said that one of the options was to review the composition of cars and possibly develop a policy to accelerate the scrapping of vehicles approaching the end of their life. "Newer cars have enhanced safety features and higher standards of emissions."

Another measure they could take was to clamp down on the practice by car and truck owners to tamper with emission control devices fitted to second-hand imports. Mr. Bridges said it was absolutely legal to attach other devices that got around these emission controls. "But there are some pretty strong arguments against this." The practice was linked to increasing the performance of car engines and getting more fuel economy from heavy vehicles.

He wants to take "broad look" at emission standards for vehicles already on New Zealand’s roads prior to the next review in 2014. Submissions to the last review, which led to improved standards for petrol vehicles being introduced earlier this year, would help "inform the review" for 2014. "I am interested in how we can improve vehicles without heaping a whole lot more costs on people."
Better vehicles resulted in less deaths and serious injury because newer cars had a higher range of safety features like electronic stability control. "It really makes driving much safer."

Meanwhile, the Government has amended the emissions rule for new vehicles entering the country after November 1 next year. The new rule which takes effect on January 1, will meet the world's best emission standards. It will mirror Australia's rules which adopted the current European standard that significantly reduced harmful emissions. Mr. Bridges said it will also introduced more recent standards from the US and Japan as alternatives.

The new rule clarifies that proof of compliance with emission standards cannot be shown by a simple emissions test. It will require documentation provided by an approved body.

98. GM Opens China Research Center to Focus on Electric Vehicles

General Motors has unveiled its latest global research center in China on Thursday, where it hopes to take advantage of the country's vast supply of engineering graduates to drive its development of a new generation of electric vehicles. China's auto market has grown rapidly - it has been the world's largest since 2009 - and one of the new center's primary roles is to ensure the requirements and preferences of consumers in China are integrated into GM's global product development.

But the new facilities in Shanghai - the GM China Advanced Technical Center - will look after not just China's auto market. It plans to develop an array of technologies and know-how for the global marketplace, alongside similar engineering centers in the United States, Germany and South Korea. "This center plays a critical role in GM's global R&D, engineering and design network," said Jon Lauckner, the U.S. car maker's global technology chief.

The decision to site a major upstream research facility in Shanghai was based in part on the relative abundance of engineering talent in China, which already produces more science and engineering graduates than any country, said John Du, a director of the new center. "There's tremendous people capability in China with more science and engineering graduates than the U.S., Japan, and Germany combined," said Du. "China now ranks first in the world in the number of PhD candidates, and these are talents we want to attract into the GM R&D and engineering workforce. Not just to develop product for China market."

The move is also consistent with a degree of division of labor GM has been promoting among its primary research facilities, said Yale Zhang, head of Shanghai-based consulting firm Automotive Foresight. One principal area of research the new tech center is likely to focus on, Zhang believes, is "new energy" - a Chinese code word for heavily electrified technology that powers all-electric battery cars and plug-in hybrid electric vehicles. "It makes sense because Northeast Asia - Japan, South Korea and China - is the world's major hub for advanced electric car battery research," Zhang said.

The launch marked the official opening of the second and final phase of the Shanghai center, which the company said will have styling, vehicle engineering, engine engineering, and vehicle communications research all under one roof. GM said up to 250 engineers, researchers and designers will eventually work at the sprawling campus.
The first phase opened in September 2011, and it has already started research in lightweight auto parts with a focus on magnesium and high strength steel, because China is a major producer of those materials and has ample supplies of both.

The center has also been testing new, "next-generation" battery technology for electric battery vehicles.

China is home to a large number of automotive parts producers, both indigenous and units of foreign suppliers, who are poised to play a bigger role in supplying more sophisticated components to auto makers around the world, including GM, Du said. "It makes sense for us to do vehicle development closer to our suppliers," he said.

Du, who heads the center’s Science Lab, which conducts advanced battery and lightweight materials research, said that in his field a presence in Asia was a must. "(Some of) the companies leading the world in battery development are based in Korea and Japan, so it makes sense for us to do this work in China with its close proximity to both of those countries and their leading edge suppliers in this field," he said. "Many of the best battery researchers and engineers are also located in Asia, and we’re recruiting them to work for GM."

99. Wind Power Expected to Reduce Severe Air Pollution in Mongolia

Ulan Bator, the capital city of Mongolia, has been rated the second most polluted city in the world by the World Bank. Air particle pollution is created when raw coal is burned by many thousands to stay warm in winter. Air pollution was linked to about ten percent of all deaths in the city of over one million residents. Coal power plants and dust also contribute to the very high air pollution levels.

Energy demand in Mongolia is rising by about ten percent each year. Continuing to burn raw coal, and using coal in power plants, is not going to work, so alternatives like wind power are being explored. (Over 80% of Mongolia’s power is now supplied by old coal plants built in the 1970s).

The Salkhit Wind Farm will be coming online soon and has a capacity of 50 MW. General Electric turbines will generate the power, which will meet five percent of the country’s total demand. Mongolia has good wind potential, large open spaces for installations and about 300 days of sunshine each year for solar power as well.

A 300 MW wind farm is being considered in the Gobi Desert, and if it becomes operational, it would meet about 30% of national demand, when there are sufficient winds.

Coal is abundant in Mongolia, so it may be difficult to transition away from it, but the public health and environmental costs are extremely high.

100. Report Says Air Pollution Affecting Children’s Health in Kathmandu

Air pollution in Kathmandu valley is found to have led to the growth of respiratory complications in children. Children in the capital were found suffering of throat infection, asthma, cough and cold, as problems relating to heart and lungs in the long-term, all attributed to increasing air pollution in the valley, according to a study by the Nepal Health Research Council.
The study was carried out among students of 10 to 15 years of age studying in seven different schools in the valley. Of the 801 children, who were studied as part of the research that lasted for a year, 30 per cent of them were found carrying respiratory problems owing to air pollution, it is stated in the study report released by the Council in the capital recently.

The students as well as their guardians and teachers were also part of the research, who answered a questionnaire and underwent medical examination.

Releasing the report, Lead Researcher of the Council, Dr. Krishna Aryal said the direct impact of pollution was seen in the respiratory system of children.

Smoke emitted by vehicles was found to be the main catalyst in the high rate of air pollution in the valley.

Chairman of the Council Dr. Chop Lal Bhusal said the study would help develop policy to minimize air pollution and to know the state of child health

101. Jakarta City Criticized For Poor Air Quality Control

The Jakarta city administration has placed more monitoring equipment into operation to receive better readings on air pollution levels. Each set of equipment costs Rp 3.6 billion (US$375,120). Maintenance checks on the devices are held every one to two weeks.

Environmentalists have expressed their disappointment over the city's poor air quality, saying that the city administration has been dragging its feet in issuing additional policies and enforcing existing laws. "The air quality has slightly increased, but the law enforcement to maintain it is still very poor," said the regional director for the Indonesian Forum for the Environment (Walhi) in Jakarta, Ubaidillah, recently. "The Jakarta administration needs to do more."

He added the city administration was lax in enforcing the laws, such as on vehicle emissions control (inspections), which according to the regional regulation, is a must every six months. "Emissions from motor vehicles contribute 70 percent to air quality degradation," he said. "But Walhi now sees that the enforcement of this no longer exists."

Ubaidillah said that the regional regulation obligated the city administration to enforce car-free days, which he said were working well, as well as checking vehicle emissions control every six months and providing 30 percent of the city's area for open green spaces. "Plantations are the best emission absorber," he said.

According to a report by the Community for Leaded Gasoline Eradication (KPBB) in July, research has shown that air pollution in Jakarta is relatively high in certain parameters. Although admitting that the air quality in some areas was below the central government's parameters, the community says that those numbers still exceed the standards issued by the World Health Organization (WHO). According to the WHO's air quality guidelines released in 2006, quality air should not exceed 50 ug/m3 in 24 hours for the particulate matter (PM10) parameter and remain below 100 ug/m3 in eight-hours for the Ozone (O3) parameter.

For Jakarta, the administration has set the number at 150 ug/m3 for the PM10 parameter. Hence, although the pollution level in the city is low in certain areas as per the agency's standard, other areas slightly exceed the WHO guideline numbers, which the KPBB says is still dangerous.
As a result, the KPBB said in the report that in a study from 2001 to 2010, citizens of Jakarta were proven to only enjoy fresh air for less than three months the whole period.

Meanwhile, head of the Jakarta Environmental Management Agency (BPLHD) Joni Tagor said that the city administration had been continuously monitoring air quality using equipment placed in four parts of Jakarta and concluded that the air quality in the city was still good. The automatic air quality monitoring equipment sets are placed in Kelapa Gading, North Jakarta; near Lubang Buaya, East Jakarta; at the Hotel Indonesia traffic circle, Central Jakarta; and in the Jagakarsa area, South Jakarta.

“The agency is now building one more set in the Kebon Jeruk area, West Jakarta, and is slated to start operating early next year,” Joni told The Jakarta Post. “The equipment is used to record air quality samples in the areas for us to study before deciding what to do,” he added.

Joni pointed out that the city administration’s 150 ug/m3 standard was “only following standards” set by the Environment Ministry regarding quality air.

“We keep studying data from the devices and checking the source of the pollution,” Joni said, adding that there were times when the agency could not do anything. “If the source comes from the sun, then we cannot do anything except warn society.”

102. Batam, Denpasar Win Awards for Clean Air

The Environment Ministry has given Batam, Riau Islands and Denpasar, Bali, the Langit Biru (Blue Sky) award for maintaining good air quality in their respective regions. Environment Minister Balthasar Kambuaya said at a recent award-presentation ceremony that Batam and Denpasar topped the list of major cities in terms of scores for emission levels, air quality, fuel quality and the ease of traffic.

The two cities were also recognized for their performance in monitoring air quality, reducing air pollution and raising people’s awareness about air pollution.

In the metropolitan city category, Medan in North Sumatra finished in third position, lagging behind Tangerang, Banten and South Jakarta. Fourteen cities made it onto the list in this category.

“I hope the winning cities can keep maintaining their air quality. In addition to that, they should also improve the quality of their water for the sake of the people,” Balthasar said.

Mayor of Medan Rahudman Harahap said that his city could perform better in reducing air pollution once the bus rapid transit (BRT) system in the northern side of the city, Belawan, was operational early next year.

A.A. Bagus Sudharsana, head of Denpasar Environmental Agency, said that the city earmarked Rp 2.5 billion (US$259,202) to pay the land tax for privately owned green space. “Most of the green spaces in Denpasar are private property. Therefore, we provide the incentive to ensure that the owners will maintain their lands as green spaces,” he said.

Balthasar hoped the award would encourage other local administrations across the archipelago to improve the quality of the environment. “Article 28 of the Constitution stipulates the right of
citizens to live in a decent environment. This means that all local administrations are obliged to realize that [condition]," the minister said.

The ministry also named Padang in West Sumatra and Pontianak in West Kalimantan as major cities with the worst air quality. Makassar in South Sulawesi and Central Jakarta are at the bottom of the list in the metropolitan category.

The ministry also announced that three cities in the country had alarming levels of carbon monoxide and nitrogen dioxide. Gorontalo, North Sulawesi and Banda Aceh, Nangroe Aceh Darussalam, respectively, recorded carbon monoxide concentrations of 12 µg/m³ and 16 µg/m³, surpassing the limit of 10 µg/m³. Samarinda, East Kalimantan recorded nitrogen dioxide concentrations of 180 µg/m³, far above the national standard of 150 µg/m³.

Khalisah Khalid of the Indonesian Forum for the Environment (Walhi) said that the air quality in big cities in Java Island had been on the decline in recent years due to increasing industrial activities. "We also found that bad air quality in Central Kalimantan and South Sumatra was due to a rising number of forest fires," she said.

For the award, Tangerang got 8.47 points, South Jakarta got 7.16 and Medan got 6.12 points. To determine the points, a team was assigned from March through October to conduct a direct evaluation on 44 cities across the archipelago. The team consists of representatives from the ministry, city administrations, police offices, transportation agencies and non-governmental organizations (NGOs).

The assessments process covered direct carbon emission checks on 500 vehicles for three days, roadside air quality monitoring, traffic performance monitoring in several artery roads, air quality monitoring, air pollution reduction efforts and people awareness.

The Langit Biru committee chairperson Sulistyowati said that motor vehicles and industrial activities were the biggest contributors to air degradation. "This award is to encourage cities to improve the management of air quality and apply sustainable transportation systems," she said.

Tangerang deputy mayor Arif R Wismansyah said that a clean air program in the city had been conducted since 2010. "One of the programs that we have done is methane gas processing at landfill sites. We have asked communities and schools for greater involvement in making the air cleaner by planting trees or by reuse and recycle programs," he said.

103. **New Observatories in Nepal and Bhutan Will Help Track Air Pollution**

The Himalayan countries of Nepal and Bhutan will, in 2013, have two permanent air monitoring observatories set up by the International Centre for Integrated Mountain Development (ICIMOD) as part of a program to reduce black carbon and other short-lived climate-forcing pollutants (SLCPs). There has been increasing international attention on SLCPs – small particles and gases like black carbon, methane, and ozone – because of their warming effect on climate. Acting in decades – rather than the centuries taken by greenhouse gases like carbon dioxide – SLCPs negatively impact human health and agricultural output quickly.

The Climate and Clean Air Coalition, launched by the United Nations Environment Program in 2011 to reduce SLCPs, has now grown to 33 member-countries.
“Some of the most important gaps (in atmospheric monitoring) are in the middle hill areas of the central and eastern Himalayas, in Nepal, Sikkim and Bhutan,” explained Arnico Panday, lead atmospheric scientist at ICIMOD. Panday said there is "very little ongoing monitoring" between the Indian Institute of Technology Kanpur's station, at 120 meters above sea level, and an observatory at the base of Mount Everest at 5,079 meters.

Data gathered from the two new observatories will help quantify emissions and track their geographic source. They are designed to function as education centers capable of enhancing technical expertise in the region.

ICIMOD has also partnered with the Institute for Advanced Sustainability Studies (IASS) in Potsdam, and over a dozen research institutes and universities in the Sustainable Atmosphere for the Kathmandu Valley (SusKat) initiative.

SusKat's monitoring stations will include one supersite with over 30 advanced instruments and four satellites at major passes leading into the Kathmandu valley. They will measure over 150 parameters on aerosols, gases and meteorology.

This is an "unprecedented campaign" for a city with no currently functioning air quality monitoring station, Maheswar Rupakheti, group leader for SusKat at IASS Potsdam, told SciDev.Net. Linking science with policy, SusKat will ultimately help identify measures best suited to the local political, socio-economic and physical context with the objective of mitigating health, climate and economic impacts of SLCPs. It will, for example, help determine if "removing all the motorbikes in the valley will cut down pollution by 5 per cent or 85 per cent," Panday said. "Or it will be possible to say how much of Kathmandu's air pollution comes from outside the valley."

**CENTRAL AMERICA**

104. **Costa Rica to Reduced Sulfur in Fuel 70%**

Earlier this year the Costa Rican Oil Refinery (RECOPE) fuels were found to have high content of components such as the MMT, a magnesium based chemical, benzene and lead, that have very detrimental effects on vehicle life as well as raising health concerns for the public. The College of Chemical Engineers and Related Professionals (CIQPA) conducted the study, which showed the problems are due to the high concentration of MMT that is added to gasoline to increase octane.

Other concerns indicated were the levels of sulfur causing The Minister of Environment and Energy to call for cleaner fuels. Costa Rica will decrease by 70% the amount of sulfur in diesel and gasoline distributed in the country from January 1 next year, announced the Ministry of Environment. Currently, the fuels used in the Central American country with 50 parts per million of sulfur, but the new government’s willingness to oblige distributors provide products with just 15 parts per million.

The Minister of Environment and Energy said that the decision “is great news for a country that has been calling for cleaner fuels.”

Continuing, the Minister of Environment and Energy explained that the state-owned Costa Rican Oil Refinery (Recope) submitted a proposal to lower the sulfur content and approved standards
make fuel from Costa Rica cleaner for Costa Rica meets standards of the most advanced countries of the European Union”.

The minister noted that the impact of the measure will be a better vehicle performance, less pollution in cities and countless health benefits.

Decreasing the amount of sulfur in fuel will be issued in the new Traffic Act, which came into effect a few weeks ago.

AFRICA

105. Namibia Motorists to Pay Carbon Emission Tax

Starting next year motorists should expect to pay the carbon dioxide (CO2) tax on vehicles and tires, following in the footsteps of South Africa, the first Southern African Customs Union (SACU) member country to implement the CO2 tax on vehicles, which it did in 2010.

Ministry of Finance representative Naomi Mujetenga said Namibia would for the next financial year impose the CO2 emission tax on all new and second hand vehicles.

An environmental tax would also be slapped on the non-energy saving light bulbs. “The collections will help strengthen the state’s capacity to fund environmental programs and other national development programs,” said Mujetenga during the environmental fiscal reform feedback meeting.

Treasury has been broadening and diversifying revenue streams, hence the introduction of environmental levies and taxes on vehicles for carbon emission on the basis of their carbon emission potential. Eventually the environmental levies would go on to be levied on things like bottles, plastic bags, cans and other environmental pollutant substances.

Mujetenga says through consultations it was decided to first commence with vehicles, tires and non-energy saving light bulbs.

The ministry is conducting an impact assessment of the proposed taxes on plastic bags, bottles and glasses and the results are expected in February 2013. All in all about 30 products are targeted for the environmental taxation, but Mujetenga says government would take into consideration the “ability to pay” to avoid placing an undue burden on consumers.

South African motorists are already forking out as much as N$25 000 on carbon emission taxes, in addition to the purchasing price on cars they buy. The engine size, the vehicle model and categorization determine the actual value of the CO2 tax. Vehicles with much higher carbon dioxide emissions are charged between 0.6 percent and 4.1 percent of the total price, with the percentages based on how much CO2 the vehicle emits.

The chairperson of the Environmental Investment Fund (EIF) and Environmental Commissioner, Teofilus Nghitila, said Namibia’s fragile ecosystem and vulnerability to climate change are the reason for the introduction of the levies. A recent projection by the University of Cape Town and the Intergovernmental Panel on Climate Change concluded that Namibia could lose a significant percentage of her annual total production value due to impacts of climate change.
“We therefore can no longer wait for the international community or those who are responsible for aggravating these impacts to provide resources to us,” Nghitila said.

**MIDDLE EAST**

106. **Saudi Arabia Raises Cleaner Diesel Output**

A huge increase in Saudi Arabia’s capacity to produce cleaner diesel will reduce its reliance on fuel imports from next year, making current suppliers of the fuel to find new buyers in an over-supplied Asian market, said experts.

The majority of new refineries and upgrade projects in the Middle East are designed to produce ultra-low sulfur diesel that meets European environmental standards, so they can export some of it to Europe or Asia. The multi-billion dollar investments are also likely to transform fuel trade flows in the Gulf as the extra capacity will allow Saudi Arabia to reduce its diesel imports and even become a net exporter in winter when its own fuel needs are lower.

Saudi Aramco’s Jubail joint venture with France’s Total, the first of a trio of 400,000 barrels per day (bpd) refineries due to open over the next five years, will refine Saudi heavy crude into fuels ranging from gasoil, including diesel, to gasoline and petroleum coke for domestic consumption and export.

Jubail alone is expected to increase Saudi cleaner diesel production capacity by around 176,000 bpd once it is fully operational, while two more projects are expected to boost Saudi diesel capacity by a total of 461,000 bpd by 2017.

Traders said Saudi Aramco Total Refinery and Petrochemicals Company (SATORP), the joint venture that owns the Jubail refinery, will also be offering cleaner diesel for export as early as the second quarter of next year.

“What we might see happen in the short term is Reliance shifting its barrels into tanks, which could depress margins, and eventually it might adjust its production to maximize gasoline or higher sulfur gasoil,” a source in India said.

“Saudi Arabia has been a substantial net importer of gasoil for several years, but as Jubail is commissioned in 2013, this trend should reverse itself by the end of the year if not earlier,” remarked Robert Smith, a consultant at FGE Energy.

The startup of the three refineries will nearly double Saudi diesel output, helping it become a net exporter in the cooler months. Its diesel imports will not stop completely, analysts say.

107. **First Iranian Diesel Car Planned to Hit Market By March 2015**

The first Iranian-made car powered by a national diesel engine will hit the market by the end of the Iranian calendar year 1393 (March 19, 2015), the Mehr News Agency quoted Iranian carmaker Iran Khodro’s managing director Javad Najmeddin as saying recently. The 1500CC national diesel engine has 110hp output and consumes 5.2 liters per one hundred kilometers. It reportedly meets euro-5 and euro-6 standards.

On October 30, ISNA reported that the first all-Iranian car will be supplied to the market by March 2014.
Iran Khodro and Saipa, the two key Iranian carmakers, have previously introduced a number of domestically-built cars namely Samand, Runna, and Tiba. However, this is for the first time that a car will be built on a platform which has been designed and developed through the use of Iranian expertise.

It is projected that 10-12 cars in different classes will be manufactured on the Iranian-made platform. Iran plans to manufacture at least three million cars by 2025 and export some one million sets, the Fars News Agency quoted Industry, Mine, and Trade Minister Mehdi Ghazanfari as saying on June 16. “Some 1.6 million cars were manufactured in the past calendar year and 55,000 cars were exported,” Ghazanfari said.

108. Iran Takes Steps to Manage Diesel, Other Fuel Supplies

Iran plans to ration diesel sales, mix gasoline with methanol to make it go further and accept only cash from domestic airlines for jet fuel, its oil minister said, as it seeks to manage stretched fuel supplies.

The value of the Iranian rial has dropped against the U.S. dollar this year as Western sanctions have slashed oil exports, making subsidized diesel smuggling more attractive, fuel imports more expensive and bank transactions difficult.

Since December 2010, Iran already has successfully cut demand for gasoline by introducing smart cards to control Iranian motorists' use of the heavily subsidized fuel.

Now owners of heavy goods vehicles too will soon have their diesel rationed, Oil Minister Rostam Qasemi was quoted as saying by Iranian oil ministry news service Shana, as Tehran tries to stem a surge in fuel smuggling across Iran's many borders. "The government pays huge subsidies to the energy sector, which has led to the sinister phenomenon of smuggling of oil products,” Qasemi said. With the diesel price set at 4,500 Iranian rials a liter, (about 15 U.S. cents at the open market rate), diesel costs less than bottled water in Iran, which has led to wasteful consumption and a surge in smuggling, he said.

"Low prices of fuel play an important role in rising smuggling, and that is why oil products distributor companies should enhance cooperation with security forces to curb oil products smuggling," he said at the launch of new cards that monitor how much cheap gasoline Iranians can put in their cars before having to pay higher prices.

Iran has reduced its gasoline use and increased its refining capacity in response to Western governments, which have blocked supplies to the country over the past few years to pressure Tehran over its disputed nuclear program.

With refinery capacity still falling short of domestic demand, Qasemi said gasoline could soon be blended with about 35 percent methanol to make it go further. "A new formula has been tested in laboratory and is expected to get necessary licenses for distribution in the near future," Shana quoted him as saying.

Iran's oil minister also said that airlines operating in Iran will now have to pay cash for jet fuel for domestic flights at a rate of 7,000 rials per liter. He called on Iranian airlines to settle their jet fuel bills in cash in late November.
109. Health Impact of Air Pollution in Tehran Assessed

The aims of the recent study\textsuperscript{12} were to provide quantitative data on the impact of air pollution on the health of people living in Tehran city, the most populated city of Iran. The approach proposed by the World Health Organization (WHO) was applied using the AirQ 2.2.3 software developed by the WHO European Centre for Environment and Health, Bilthoven Division.

Concentrations of ozone, nitrogen dioxide, sulfur dioxide and particulate matter of aerodynamic diameter $\leq 10$ mum (PM10) were used to assess human exposure and health impacts in terms of attributable proportion of the health outcome, annual number of excess cases of mortality for all causes, and cardiovascular and respiratory diseases. The annual average of PM10, SO2, NO2 and O3 in Tehran were 90.58, 89.16, 85 and 68.82 mug/m$^3$, respectively.

Considering short-term effects, PM10 had the highest health impact on the 8,700,000 inhabitants of Tehran city, causing an excess of total mortality of 2194 out of 47284 in a year. Sulfur dioxide, nitrogen dioxide and ozone caused about, respectively, 1458, 1050 and 819 excess cases of total mortality.

Results indicate that the magnitude of the health impact estimated for the city of Tehran underscores the need for urgent action to reduce the health burden of air pollution.

GENERAL

110. Outdoor Air Pollution among Top Global Health Risks In 2010

A new systematic analysis of all major global health risks has found that outdoor air pollution in the form of fine particles is a much more significant public health risk than previously known – contributing annually to over 3.2 million premature deaths worldwide and over 74 million years of healthy life lost. It now ranks among the top global health risk burdens.

The analysis – the 2010 Global Burden of Disease (GBD 2010) – was published on 15 December in a special issue of the leading British medical journal The Lancet. It applies consistent methods to the largest global database ever assembled to estimate risks of premature mortality and contributions to global health burden\textsuperscript{13} from a wide variety of risks: smoking, diet, alcohol, HIV AIDS, household and outdoor air pollution, and many more. For the first time it places outdoor air pollution among the top 10 risks worldwide and among the top five or six risks in the developing countries of Asia. It documents as well that household air pollution from the burning of solid fuels is responsible for a substantial burden of disease in low- and middle income countries.

This new analysis identifies especially high risk levels in the developing countries of Asia where air pollution levels are the highest in the world. Overall GBD 2010 estimates over 2.1 million premature deaths and 52 million years of healthy life lost in 2010 due to ambient fine particle air pollution, fully 2/3 of the burden worldwide. Among other risk factors studied in the GBD, outdoor air pollution ranked 4th in mortality and health burden in East Asia (China and North

\textsuperscript{12} Kazem NaddafiMohammad Sadegh HassanvandMasud YunesianFatemeh MomenihaRamin NabizadehSasan FaridiAkbar Gholampour, Iranian Journal of Environmental Health Science &Engineering 2012, 9:28, Published on: 2012-12-17

\textsuperscript{13} Global Health Burden is measured in terms of Disability Adjusted Life Years (DALYs) which can be defined as the number of healthy years of life lost from various risks.
Korea) where it contributed to 1.2 million deaths in 2010, and 6th in South Asia (including India, Pakistan, Bangladesh and Sri Lanka) where it contributed to 712,000 deaths in 2010. The analysis found that reducing the burden of disease due to air pollution in Asia will require substantial decreases in the high levels of air pollution in those regions.

“The study’s findings … suggest that a large burden of disease in many parts of the world is attributable to particulate matter pollution, which is substantially higher than estimated in previous analyses,” reported The Lancet (Lim et al 2012).

Earlier GBD assessments reported much smaller air pollution-related burdens of disease. Air pollution’s increased importance in this 2010 update results from two major factors:

- First, new global estimates of particulate air pollution exposure in both urban and rural areas, based on ground-level measurements and satellite remote sensing and global chemical transport models, were able to much better capture full population exposure.

- Second, a new detailed analysis of the relationship between outdoor levels of air pollution and effects on mortality and illness – based on the latest health effects research - resulted in significantly increased estimates of effects for each incremental increase in pollution.

Because exposure to air pollution affects cardiovascular disease and other leading causes of disease and death worldwide, the global burden of disease due to air pollution is substantial.

The 2010 GBD was produced by a rigorous scientific process involving over 450 global experts and led by the Institute of Health Metrics and Evaluation (IHME) at the University of Washington along with its partner institutions: the World Health Organization, the University of Queensland, Australia, Johns Hopkins University, and Harvard University. Its extensive analysis was subjected to detailed peer review to ensure the highest quality of analysis, and a consistent and comparable approach to ensure that the many risk factors could be assessed using the same techniques. Within the larger GBD project, the outdoor air pollution analyses were conducted by an international team led by Dr. Aaron Cohen of the Health Effects Institute and Dr. H Ross Anderson of St. Georges, University of London.

111. Evidence of Warming Climate ‘Unequivocal,’ IPCC Says in Leaked Draft

Evidence of a warming climate is “unequivocal,” the U.N. Intergovernmental Panel on Climate Change said in a leaked draft of the physical science section of its upcoming fifth climate assessment report. “New observations, longer data sets, and more paleoclimate information give further support for this conclusion,” the draft report said. “Confidence is stronger that many changes that are observed consistently across components of the climate system are significant, unusual or unprecedented on time scales of decades to many hundreds of thousands of years. Widespread warming is observed from the surface of the Earth throughout the troposphere and cooling is identified in the stratosphere.

The draft report, dated October 5th said it is “extremely likely” that human activities are responsible for more than half of surface temperature increase that has been observed since the 1950s. “There is high confidence that this has caused large-scale changes in the ocean, in the cryosphere, and in sea level in the second half of the 20th century,” the draft report said.
“Some extreme events have changed as a result of anthropogenic influence.”

“Extremely likely” in the IPCC's language means a level of certainty of at least 95 percent. The next level is "virtually certain", or 99 percent, the greatest possible certainty for the scientists. The IPCC’s previous report, in 2007, said it was at least 90 percent certain that human activities, led by burning fossil fuels, were the cause of rising temperatures.

“Globally averaged near surface temperatures have increased since the beginning of the 20th century and the warming has been particularly marked since the 1970s. Each of the last three decades has been significantly warmer than all preceding decades since 1850.”

The draft report was leaked by Alec Rawls, who participated in the report's expert review process. Rawls said in a statement that he leaked the report because he believes the report suggests the sun may play a larger role in climate change than scientists had previously suggested. Rawls said on his website that was “a killing admission that completely undercuts the main premise and the main conclusion of the full report, revealing the fundamental dishonesty of the whole.”

Scientists have disputed Rawls’s interpretation of the report's findings.

Steve Sherwood, director of the Climate Change Research Centre at the University of New South Wales and lead author of Chapter 7 of the report, called Rawls's interpretation of that section “completely ridiculous” in an interview with Australian national broadcast channel ABC. The report said greenhouse gases are “very likely” to have contributed between 0.6 degree and 1.4 degrees Celsius (1 degree and 2.5 degrees Fahrenheit) of warming between 1951 and 2010.

IPCC called the draft report's leak “unauthorized and premature” in a December 14th statement. “These drafts were provided in confidence to reviewers and are not for distribution,” it said. IPCC said the physical science working group is still assessing the 31,422 comments it received during an eight-week session that ended on November 30th. The working group will review and respond to the comments at a lead author meeting in Hobart, Tasmania, on January 13-19. It is still accepting peer-reviewed research for inclusion in the report until March 15.

IPCC's fifth assessment is scheduled to be released in 2013. The fourth assessment report was released in 2007. That report said global greenhouse gas concentrations had increased as a result of human activities such as the use of fossil fuels for energy and land-use changes.

The early draft, which is still subject to change before the final version is released, showed that a rise in global average temperatures since pre-industrial times was set to exceed 2 degrees Celsius by 2100, and may reach 4.8 Celsius.

The draft's scenarios forecast a rise in temperatures of between 0.2 and 4.8 Celsius this century - a narrower band than in 2007. But in almost all of the scenarios, the rise would exceed 2 degrees Celsius. Governments pledged in 2010 to try to stop global temperatures rising by more than 2 degrees, a threshold seen by scientists as the maximum to avoid more extreme weather, droughts, floods, and other climate change impacts.

Carbon dioxide concentrations in the atmosphere were the highest in 800,000 years, according to the draft report.
The draft also said that sea levels were likely to rise by between 29 and 82 centimeters by the end of the century - compared to 18-59 centimeters projected in the 2007 report. Rising sea levels are a threat to people living in low-lying areas, from Bangladesh to the cities of New York, London and Buenos Aires. They open up the risk of storm surges, coastal erosion and, in the worst case scenario, the complete swamping of large areas of land.

The IPCC carries weight because it brings together all scientific research on climate change and informs policymakers. Many countries want to study the final IPCC report before signing up to a new global pact to cut greenhouse gas emissions.

The draft included a possible future acceleration of ice loss from Antarctica and Greenland, which was omitted in 2007. It stopped short of including some research carried out since 2007 that suggested seas may rise by up to 2 meters by 2100.

112. Global Energy Demand Forecast to Increase 50 Percent by 2030

Global energy demand is expected to rise by 50 percent over the next 15 to 20 years, and climate change will exacerbate this demand, according to a report by the National Intelligence Council. Demand for food is expected to rise 35 percent by 2030, while demand for water is expected to rise by 40 percent, according to Global Trends 2030: Alternative Worlds. Nearly half of the world's population will live in areas with severe water stress by 2030, according to the report released on December 10th.

The National Intelligence Council, which is made up of 17 U.S. government intelligence agencies, supports the director of national intelligence.

Climate change will worsen the outlook for availability of food, water, and energy, the report states. Climate change will intensify the severity of existing weather patterns, with wet areas getting wetter and dry and arid areas becoming more arid, according to the report. Much of the decline in precipitation will occur in the Middle East and northern Africa as well as western Central Asia, southern Europe, southern Africa, and the U.S. Southwest, the report said.

Fragile states in Africa and the Middle East are most at risk of experiencing food and water shortages, but China and India are vulnerable to the volatility of key resources, according to the report.

The report is intended to document potential geopolitical changes and possible global scenarios over the next 15 to 20 years, which can be used to inform policy decisions by the White House and the U.S. intelligence community. In-depth research, detailed modeling, and a variety of analytical tools drawn from public, private, and academic sources were used to examine trends in globalization, demography, and the environment, according to the National Intelligence Council. Among its conclusions:

- The demand for food, water, and energy will increase substantially due to global population increase from 7.1 billion today to about 8.3 billion by 2030 as well as the consumption patterns of an expanding middle class.
- Limited natural resources, such as water and arable land, in countries that have disproportionate levels of young men, including Sub-Saharan Africa, South Asia, and parts of the Middle East, will increase the risk of intrastate conflict in these areas.
Policymakers and private sector partners will need to be proactive to avoid moving to a “world of scarcities,” the report states. Many countries will likely not be able to avoid food and water shortages without “massive help” from outside their countries.

The United States could become energy-independent by 2030 due to its status as the world’s largest natural gas producer and the expansion of its natural gas reserves as the result of hydraulic fracturing technologies. However, environmental concerns over hydraulic fracturing, especially pollution of water sources, could derail the United States on this front.

The report also said urbanization is expected to grow to almost 60 percent around the world by 2030. By then, majorities in most countries will be middle-class, not poor, which was the condition of most people throughout history, the report states. Every year, 65 million people are added to the world’s urban population, which is equivalent to adding five cities the size of London annually.

Additionally, Asia is set to surpass North America and Europe in global economic power.

Global scenarios depend on whether technological breakthroughs can be developed in time to boost economic productivity and solve problems caused by a growing world population, rapid urbanization, and climate change, the report said.

113. ExxonMobil Sees Gas Displacing Coal as World’s No. 2 Energy Source

Natural gas appears likely to supplant coal as the world’s second biggest energy source after crude oil by 2025, ExxonMobil Corp. said as it released its 2013 Energy Outlook. Demand for gas will grow by about 65% through 2040, with 20% of worldwide production occurring in North America, supported by growing supplies from shale and other unconventional sources, it said.

Today, the world consumes some 25 times the energy it used 200 years ago, William M. Colton, ExxonMobil’s vice-president of corporate strategic planning, said as he presented the forecast at the Center for Strategic and International Studies on December 11th. It took over 100 years from the first oil wells discovery until oil became the world’s No. 1 energy source he continued. Natural gas is poised to surge as modern renewables also grow. Other conclusions included:

- North America will change to a net energy exporter from an importer by 2025. It said that more than half of the growth in unconventional gas supplies will take place in North America, providing a foundation for strong US economic growth with solid contributions from the energy, chemical, steel, and manufacturing industries.

- Electricity demand will account for more than half the global energy demand increase over the next few decades, with gas, nuclear, and renewable energy meeting more power generation demand as coal and oil meet less.

- A more than 40% increase in global energy demand related to transportation from 2010 to 2040 will come almost entirely from commercial sectors heavy-duty, aviation, marine, and rail as expanding economies and international trade stimulate more movement of goods.

- The forecast projects more gas penetration into transportation because lower prices make it more economically attractive. It sees the biggest growth in fleets, and in using
liquefied natural gas for long-haul trucking. The market is expected to drive this growth; compressed natural gas growth is expected to be marginal because it’s more difficult.

- Gas-to-liquids looks somewhat better because the technology exists but its capital costs are high. Investors need to be confident that the gap between oil and gas prices will be persistent through a plant’s lifetime.

- The forecast said that by 2040, only about 55% of the world’s energy liquids will be supplied from conventional crude oil production. The rest will come from deep-water wells, tight oil formations, and natural gas liquids, as well as oil sands and biofuels.

- It’s still very much the early days for tight oil with production from the Bakken shale growing slowly but steadily. Other domestic tight oil formations show similar growth trends.

- Other unconventional technologies also are relatively new. Deep-water production was barely on our radar screen 10 years ago, and is expected to more than double.

- The outlook also sees efficiency continuing to play a key part in solving energy challenges. Hybrid vehicles, high-efficiency gas-fired power plants, and other technologies and practices will help industrialized nations within the Organization for Economic Cooperation and Development keep energy use essentially flat as their economic output grows 80% by 2040, it said.

- Energy efficiency improvements are actually accelerating in some industries, and they’re occurring across the board. People see benefits and adopt more efficient practices.

ExxonMobil’s challenge remains producing the world’s fuels with the lowest possible footprint, noted Kenneth P. Cohen, the company’s vice-president for public and governmental affairs, who also participated. Going forward, it’s all about technology, he said. Human creativity and innovation always will be the biggest drivers of energy progress.

114. Debate Underway Regarding Safety of Auto Coolant

An air-conditioning refrigerant that has been criticized as potentially unsafe to car passengers is actually safe to use, according to preliminary results released by an automotive engineering association. The coolant, known as HFO-1234yf, has been at the center of a heated dispute between German carmaker Daimler AG and U.S. conglomerate Honeywell International Inc.

Honeywell and DuPont both make the new refrigerant, which also happens to be the only product of its kind that meets the new European Union climate guidelines.

Daimler had prompted the recent study after simulated crash tests in August found that a mixture of the refrigerant and air-conditioning compressor oil released under the hood of a car could ignite on the hot surface of an engine, releasing a deadly gas. The Daimler test sent the industry, and Brussels, scrambling to figure out whether years of tests that showed the new product to be perfectly safe could have been flawed.

Honeywell and DuPont are deeply invested in the success of the new refrigerant.
Initial results of tests conducted by 13 major auto manufacturers and compiled and vetted by the SAE International, formerly known as the Society of Automotive Engineers, have just been issued. Daimler, whose flagship premium brand is Mercedes-Benz, was one of the 13 automakers involved in the testing.

The SAE International said preliminary results show there is no reason to change its previous stance that HFO-1234yf is safe to use in automobiles. The SAE is expected to issue its completed risk assessment in mid-February and will publish the new findings by the end of the second quarter in 2013. "To date, the majority of the (automakers) involved in the new (research) do not believe that any of the new information reviewed will lead to a change in the overall risk assessment," the SAE International said.

Outside of Daimler, the SAE said, no other automaker provided "information that would suggest a concern for the safe use" of the new refrigerant.

The issue is controversial as the entire auto industry has been on its way to rolling out the new refrigerant in the European Union starting in January, as part of an EU directive banning refrigerants now used, which the EU says create high levels of greenhouse gas emissions. Were other carmakers to discover that the refrigerant mix is combustible at certain engine operating temperatures, then regulators as well as public opinion might force them to find a new, more expensive and technically complicated solution to meeting the EU directive.

Daimler indicated that the new research does not alter its stance against the use of HFO-1234yf. "This preliminary opinion from a continuing investigation of SAE is based primarily on assumptions and does not reflect what our tests showed repeatedly," a spokesman for Daimler said, adding that Mercedes-Benz would still not use the substance.

Daimler and Volkswagen have challenged a ban on cars equipped with potent refrigerant HFC-134a by announcing they will continue using it.

Germany has had concerns over the HFO-1234yf gas for some years, its safety being criticized by the federal environment agency and NGO DUH. Its car industry initially backed CO2-based air conditioning on safety grounds but later changed its mind.

The EU mobile air conditioning (MAC) forbids the sale of new vehicles that use any air conditioning gas with a global warming potential (GWP) more than 150-times that of CO2. This applies only to cars type-approved since 1 January 2011. But until the autumn, a supply problem forced manufacturers to continue using HFC-134a, violating the directive. This led the European Commission to announce in April it would not enforce compliance with the directive until the end of this year.

On Monday, another German carmaker, Volkswagen, confirmed to reporters that it will still be using HFC-134a next year in its new Golf 7. It expects to switch to an alternative, unnamed refrigerant in about six months. A Daimler spokesman said that the company would like the deadline extended by at least a few months to permit compliance.

But a commission spokeswoman said it had not received a formal request from either company. She added that if the German authorities allow the sale of cars carrying HFC-134a next year, the EU executive may start infringement proceedings. It is unable to take action directly against the firms. The German federal transport department said it was waiting for the results of an internal assessment of the risks of HFO-1234yf before deciding what to do.
Countries Discuss Options to Curb Aviation Greenhouse Gas Emissions

Representatives from the United States and 16 other countries met in Montreal on December 12-13 for the first round of discussions on formulating a global agreement to reduce greenhouse gas emissions from the aviation sector. The meeting at the International Civil Aviation Organization of the newly established High-level Group on International Aviation and Climate Change (HGCC) looked at two possible approaches to a market-based measure (MBM) system for addressing aviation emissions.

One option is a single global system of mandatory offsets and/or emissions trading, which would be adopted by all ICAO member states. The second option is a more flexible framework that would allow member states to implement their own market-based measures.

In addition to the United States, countries taking part in the high-level group discussions are Australia, Belgium, Brazil, Canada, China, France, India, Japan, Mexico, Nigeria, Russia, Saudi Arabia, Singapore, Uganda, the United Arab Emirates, and the United Kingdom.

The U.S. delegation to the meeting was headed by Todd Stern, the State Department's special envoy for climate change.

ICAO spokesman Anthony Philbin said the HGCC evaluated a wide range of market-based policy considerations and will reconvene early next year to continue its work. “This will include further consideration of policy aspects of MBMs and other mechanisms being developed in ICAO to reduce the carbon intensity of international civil aviation, including national Action Plans, the development of sustainable alternative fuels, improved technology, enhanced operational procedures, etc.,” Philbin said.

European Union Climate Action Commissioner Connie Hedegaard announced on November 12th that the EU is suspending plans to include flights into and out of the EU in its Emissions Trading Scheme (ETS) to allow time to reach a global solution through ICAO. However, EU officials said airlines automatically will be included in its cap-and-trade program in 2014 if a suitable international measure is not adopted at next September’s meeting of the ICAO’s ruling Assembly.

While an ICAO group of experts is working on options for a single scheme, detailed work remains on complex issues such as monitoring, reporting and verification, possible offsets, creating emissions allowances, and running registries.

ICAO’s governing council is due to review progress in the HGCC discussions at its next meeting in March and again in June in preparation for the important Assembly gathering.

Climate Change Predicted To Hit Poorest Hardest

All nations will suffer the effects of a warmer world, but the world’s poorest countries will suffer most from food shortages, rising sea levels, cyclones and drought, the World Bank’s new report on climate change says. Under new World Bank President Jim Yong Kim, a former scientist, the global development lender has launched a more aggressive stance to integrate climate change into development. "We will never end poverty if we don't tackle climate change. It is one of the single biggest challenges to social justice today," Kim told reporters on November 16th.
The report, ‘Turn Down the Heat,’ says that 4 degrees of global warming by 2100 is likely under current policies, and would have devastating impacts.

Climate change is already having an effect. Arctic sea ice reached a record minimum in September, and extreme heat waves and droughts have hit the US and Russia more often in the last decade than would be expected from historical records, the report says. Such extreme weather is likely to become 'the new normal' if temperatures rise by 4 degrees, unless countries comply with pledges made to reduce greenhouse gas emissions. But even doing so would not stop warming of over 3 degrees Celsius.

In this hotter climate, sea levels would rise by up to 1 meter, flooding cities in places like Vietnam and Bangladesh. Water scarcity and falling crop yields would exacerbate hunger and poverty. Extreme heat waves would devastate broad swaths of the earth’s land, from the Middle East to the US, the report says. The warmest July in the Mediterranean could be 9 degrees hotter than today - similar to temperatures in the Libyan Desert.

117. UNEP Fires New Warning Shot over Climate

UN scientists have issued another damning warning on the inadequacy of existing carbon reduction pledges, ahead of the next round of climate talks in Doha. In a new report, scientists at the UN’s environment program (UNEP) insisted that emissions must peak before 2020 if the world is to avoid a global temperature rise of over 2˚C. This point has been made by UNEP many times before and was also reiterated in the International Energy Agency’s latest World Energy Outlook.

But despite repeated calls for urgent action, which have become a tradition ahead of annual UN climate meetings, the gap between emission levels and countries’ climate pledges keeps widening. This has led accountancy firm PwC and others to question whether the goal of limiting global temperature rise to 2˚C is still within reach.

World governments have agreed that any new global agreement on carbon reduction will only come into force in 2020, with only a handful of countries signing up to binding commitments for the intervening years. Most countries have instead made voluntary emissions reduction pledges for the pre-2020 period, but the UN scientists noted that “there is some doubt that governments may agree to stringent international accounting rules for [these] pledges”. “It is therefore more probable than not that the gap in 2020 [between emissions levels and what is needed to stay below 2˚C] will be at the high end of the 8-13 gigaton CO2 range,” the scientists concluded in the UNEP report.

“We are locking in high emissions,” UNEP chief scientist Joseph Alcamo warned as he launched the report. Gas-guzzling cars, energy-inefficient buildings and fossil fuel-based power plants are still being built today and will continue to “crank out emissions” for decades to come, Mr. Alcamo explained.

Climate policymakers responded to the researchers’ gloomy outlook by arguing that the game is not over and it is still possible to avoid a potentially catastrophic level of climate change. “Yes, the gap is widening, but the good news is that it's not too late to close it,” climate commissioner Connie Hedegaard said. UN climate chief Christiana Figueres said: “This report is a reminder that time is running out, but that the technical means and the policy tools to allow the world to stay below a maximum 2˚C are still available to governments and societies.”
Scientists say emissions will have to peak before 2020 and fall to around 44 billion tons (gigatons) by 2020 to have a good chance of limiting temperature rise to below 2 degrees. Based on 2010 data, global emissions are estimated around 50 billion tons of carbon dioxide equivalent (CO2e) - 20 percent higher than 2000 emissions and 14 percent above the level needed in 2020 to stay under 2 degrees, UNEP said.

"If no swift action is taken by nations emissions are likely to be at 58 gigatons in eight years' time," the report said. "Even if the most ambitious level of pledges and commitments were implemented by all countries and under the strictest set of rules, there will now be a gap of 8 billion tons of CO2e by 2020," the report added.

If the necessary emissions cuts are delayed, costs could be at least 10 to 15 percent higher after 2020, the UNEP warned. Estimates vary on the cost of inaction on climate change but it is projected to reach trillions of dollars.

If current emissions pledges are increased, more ambitious cuts are brought to the table and stricter accounting rules adopted, it is still technically feasible to close the emissions gap but swift action was needed, UNEP said. Emissions could be reduced by around 17 billion tons from the building, power generation and transport sectors by 2020.

"Yet the sobering fact remains that a transition to a low- carbon, inclusive green economy is happening far too slowly and the opportunity for meeting the 44 billion metric ton target is narrowing annually," said Achim Steiner, UNEP Executive Director and U.N. Under-Secretary General.

The UNEP report involved 55 scientists from 22 countries.

118. Global Air Quality to Worsen Significantly Under 'Business as Usual'

Global air quality will significantly deteriorate by 2050 unless further steps are taken to cut current emissions from human activities, according to recent research. Most people around the world will be affected by worsening air quality with hotspots of particularly poor air occurring in China, northern India and the Middle East. Despite measures to abate air pollution in many parts of the world, industrial activity can be expected to cause air pollution to increase globally with serious consequences for human health.

This study presents a possible future of world air quality up to 2050, if no further emission controls beyond those that were in place in 2005 are implemented and assuming that existing pollution trends continue. The researchers estimated global pollution levels under this 'business-as-usual' (BaU) scenario using an atmospheric chemistry model. Although the BaU scenario is pessimistic, it highlights what could happen if no action is taken to curb emissions. Air quality was compared in recent and future years: 2005, 2010, 2025 and 2050.

The study focused on five key pollutants that negatively affect human health: fine particulate matter (PM2.5), nitrogen dioxide, sulfur dioxide, ozone and carbon monoxide. Naturally-occurring emissions such as sea spray, desert dust, biomass burning and volcanic emissions were also included in the study but kept constant.

Despite some uncertainties associated with modeling air quality, the results suggest that, by 2050, China and northern India, and the Middle East in particular, will be hotspots of pollution where large populations will be negatively affected by worsening air quality.

Pollutant emissions have already reduced air quality over the east and west coasts of North America, Europe and the Mediterranean Basin and the Middle East, in addition to eastern China and India. The study’s results suggest that air quality will continue to deteriorate in East Asia over coming decades, through the combined effects of nitrogen dioxide, sulfur dioxide and PM2.5. Ozone pollution will not increase as strongly in this region, mainly because some ozone will be removed by complex chemical reactions found in local conditions. However, northern India and the Persian Gulf regions will continue to suffer with increasing ozone levels up to 2050.

Under the BaU scenario, air pollution will continue to increase over North-eastern USA and Central and Eastern Europe, but not nearly as strongly as in Asia as a result of air quality and climate policies already in place by 2005. Air quality will decrease significantly over the Middle East and North Africa through a combination of emissions from human activities and natural causes, mainly desert dust pollution. In general, the EU and North America have a similar future ‘pollution level per capita’ which is almost constant for the BaU future scenario. Although the energy demand is increasing in these regions, the population density is relatively stable. On the other side, the developing countries present a much higher increase in the ‘pollution level per capita’, mainly due to the increases in industrialization and population density in addition to increasing energy demands.

The researchers suggest that tough action and legislation are needed to avoid a scenario where even the average person would be living under conditions of significantly deteriorating air quality. Unless such measures are introduced, air quality for the global average citizen in 2050 would be almost comparable to that for the average citizen in East Asia in the year 2005, the researchers suggest.

119. U.N. Talks Seen Falling Short Despite Climate Change Fears

Despite mounting alarm about climate change, almost 200 nations meeting in Doha are likely to pay little more than lip service to the need to rein in rising greenhouse gas emissions. A likely failure to agree a meaningful extension of the U.N.’s Kyoto Protocol, a legally binding plan for cutting emissions by developed nations, would also undercut work on a new deal meant to unite rich and poor in fighting global warming from 2020.

"The situation is very urgent ... We can no longer say that climate change is tomorrow's problem," Andrew Steer, president of the Washington-based World Resources Institute think-tank, said of the November 26-December 7 talks in Qatar.

Superstorm Sandy had been a wake-up call for many Americans as the sort of extreme event predicted by climate scientists in a warming world, he said, even though individual weather events cannot be blamed on man-made global warming.

A U.N. conference two years ago agreed to limit any rise in temperatures to below 2 degrees Celsius (3.6F) above pre-industrial times. But greenhouse gas levels hit a new record in 2011, despite the world economic slowdown. And countries are showing little sign of raising ambition.
Delegates will meet in a cavernous conference center in Qatar - the first OPEC state to host the annual talks and the nation with the world's highest per capita greenhouse gas emissions, roughly three times those of the average American.

To keep up climate action, most countries favor extending the 1997 Kyoto pact, which binds developed nations to cut greenhouse gas emissions by an average 5.2 percent below 1990 levels between the years 2008 and 2012. But Russia, Japan and Canada have pulled out in recent years, meaning that Kyoto backers are down to a core led by the European Union and Australia that account for about 14 percent of world emissions. The defectors say it is meaningless to extend cuts under Kyoto when big emerging countries, led by China, India, Brazil and South Africa, have no curbs on rising emissions. The United States never ratified Kyoto, for similar reasons.

Developing countries and Kyoto backers say it is vital that developed nations lead the way towards the new worldwide accord meant to be negotiated by the end of 2015 and to start up in 2020. Failure to extend Kyoto would leave only national actions, with no legally binding U.N. framework. "The Kyoto Protocol is going to be very important for us," said Seyni Nafo, spokesman of the African group of nations. "And ambition is very low."

The EU and others agreed at last year's talks in Durban to extend Kyoto for a new period but details remain to be agreed, such as whether it should last five or eight years.

A study by the London-based International Institute for Environment and Development said that rich nations had fallen short on promises to give poor countries $30 billion in new aid to help them combat climate change from 2010 to 2012. It said commitments so far totaled just $23.6 billion, and most was in loans that would have to be repaid by the poor.

Another study by international aid agency Oxfam also estimated that only 33 per cent of the "fast-start finance" promised at a Copenhagen summit in 2009 could be considered new.

Rich nations have also promised aid totaling $100 billion a year by 2020, but did not make any clear pledges for 2013-2019.

120. Greenhouse Gas Levels Reached New High In 2011

Atmospheric volumes of greenhouse gases blamed for climate change hit a new record in 2011, the World Meteorological Organization (WMO) said in its annual Greenhouse Gas Bulletin. The volume of carbon dioxide, the primary greenhouse gas emitted by human activities, grew at a similar rate to the previous decade and reached 390.9 parts per million (ppm), 40 percent above the pre-industrial level, the survey said. It has increased by an average of 2 ppm for the past 10 years.

Fossil fuels are the primary source of about 375 billion metric tons (413.37 billion tons) of carbon that has been released into the atmosphere since the industrial era began in 1750, the WMO said. WMO Secretary-General Michel Jarraud said the billions of tons of extra carbon dioxide would stay in the atmosphere for centuries, causing the planet to warm further.

Atmospheric methane also reached a new high of about 1813 parts per billion in 2011, or 259% of the pre-industrial level. Atmospheric nitrous oxide in 2011 was about 324.2 parts per billion, or 120% of the pre-industrial level. Further, radiative forcing by long-lived GHGs increased by 30% from 1990-2011, according to the National Oceanic and Atmospheric Administration's
Annual Greenhouse Gas Index. Carbon dioxide accounts for about 80% of this increase.

“We have already seen that the oceans are becoming more acidic as a result of the carbon dioxide uptake, with potential repercussions for the underwater food chain and coral reefs,” he said in a statement.

Levels of methane, another long-lived greenhouse gas, have risen steadily for the past three years after leveling off for about seven years. The reasons for that evening out are unclear.

Growth in volumes of a third gas, nitrous oxide, quickened in 2011. It has a long-term climate impact that is 298 times greater than carbon dioxide.

The prevalence of several less abundant greenhouse gases was also growing fast, it said.

Sulfur hexafluoride, used as an electrical insulator in power distribution equipment, had doubled in volume since the mid-1990s, while hydrochlorofluorocarbons (HCFCs) and hydrofluorocarbons (HFCs) were growing at a rapid rate from a low base.

But chlorofluorocarbons (CFCs) and most halons were decreasing, it said.

121. World 2011 CO2 Emissions Up 2.5 Percent: German Institute

Global carbon dioxide (CO2) emissions in 2011 rose 2.5 percent to 34 billion metric tons (37.48 billion tons), a new record, according to Germany's renewable energy institute. The IWR, which advises German ministries, cited recovered industrial activity after the end of the global economic crisis of recent years. "If the current trend is sustained, worldwide CO2 emissions will go up by another 20 percent to over 40 billion metric tons by 2020," IWR director Norbert Allnoch said.

China led the table of emitters in 2011 with 8.9 billion metric tons, up from 8.3 billion a year earlier. Its CO2 output was 50 percent more than the 6 billion metric tons in the United States. India was third, ahead of Russia, Japan and Germany.

The IWR has long been tabling proposals to put brakes on the rising use of fossil fuels and stabilize global CO2 emissions by linking each country's CO2 output to mandatory investment in climate-protecting equipment and renewables. It reiterated this suggestion, adding that there was no consensus on trying to cap CO2 because such proposals exposed big emitters to criticism and put pressure on politicians to defend the threatened competitiveness of their macroeconomies.

122. Cooling Gases Must Fall To Curb Global Warming

F-gases, used in refrigeration and linked with high levels of global warming, need to be cut substantially by 2030, according to Europe's climate boss. She added that she would be pushing for a global plan on cutting fluorinated gases at U.N. climate change talks in Doha. "F-gases should be two-thirds reduced from today's levels by 2030," Climate Commissioner Connie Hedegaard told an audience representing the refrigeration industry.
"If F-gases contribute less, other sectors will have to do more," she added, referring to the EU's non-binding goal to cut greenhouse gas emissions by between 80-95 percent by the middle of the century. It also has a binding 2020 target to achieve a 20 percent emissions reduction.

F-gases refer to a group of fluorinated greenhouse gases, which are used in air conditioning, for instance, in cars, as well as in domestic, supermarket and industrial refrigeration.

Some two decades after international action led to the phase-out of ozone-depleting chlorofluorocarbons (CFCs), the European Union is pushing to eliminate a new generation of F-gas chemicals. The gases were introduced as a solution that was easily acceptable to industry, since the production chain to make them was similar to CFCs.

But their global warming potential, thousands of times more damaging than carbon dioxide, has led the European Union to push to ban them in favor of natural non-synthetic alternatives, such as ammonia or CO2, which has high cooling properties when used in refrigeration.

At the U.N. summit on global efforts to tackle climate change, Hedegaard said Europe would be pushing for urgent action on F-gases to help close the gap between emissions cuts so far and those needed. She said she hoped collaboration from smaller nations, such as island states at risk of sinking under rising sea levels, would help to overcome expected resistance to tackling F-gases from major emitters, such as India and China.

The Commission, the EU's executive, launched a review of existing EU law on F-gases in 2011 and is expected to publish its proposals for tightening it over the coming days. Industry said the new measures were expected to include a ban on hydrochlorofluorocarbons (HCFCs), the most common CFC replacement gases, in new cooling equipment. As well as contributing to warming, experts say their impact on the ozone layer, while less than CFCs, is still too high.

Hedegaard said F-gases stood out in the European Union in that their use was rising, while other greenhouse gas emissions had fallen. She cited a 60 percent increase in the European Union, compared with an 18 percent drop in carbon emissions since 1990.

Across the European Union, nations and industry have had mixed success in moving away from F-gases toward non-synthetic options. Hedegaard's native Denmark has achieved the most. Outside the bloc, Switzerland is a leader. Roughly 20 percent of Coop supermarkets in Switzerland already use low-power carbon cooling, and all new stores are being fitted with the technology. The change is saving electricity, which helps cut costs as well as emissions, on which the Coop has ambitious goals.

The Bulletin includes a special focus on the role of carbon sinks in the carbon cycle, including on oceans and the terrestrial biosphere, which until now have absorbed nearly half of the carbon dioxide emitted by humans into the atmosphere. Michel Jarraud, WMO Secretary-General, said “oceans are becoming more acidic as a result of the carbon dioxide uptake” and highlighted potential repercussions for coral reefs and the underwater food chain. He called for boosting monitoring capability and scientific knowledge to better understand interactions between GHGs, oceans and Earth’s biosphere.

The Bulletin reports on atmospheric concentrations, which represent what remains in the atmosphere, rather than on emissions, or what goes into the atmosphere. The WMO Secretariat publishes the Greenhouse Gas Bulletin annually in cooperation with the Japan Meteorological
After Brief Decrease Last Year, Sea Levels Resume Their Steady Rise

It is no secret that for the last couple decades, sea levels have been steadily rising. But what is not so well known is that in 2011, sea levels throughout the world fell sharply. Of course, with a body of water as large as the world’s oceans, a sharp fall only equates to one quarter of an inch (1 cm). It is nonetheless, a dramatic change in general trend which caught the eye of NASA and European researchers. Using advanced satellites, they were able to track average sea levels with precision accuracy. What they have found is that after this brief decrease in sea levels, the seas have been rising again and are now back on track with their trajectory of the last twenty years.

The lull occurred between early 2010 and summer 2011. Using the NASA/German Aerospace Center’s Gravity Recovery and Climate Experiment (GRACE) spacecraft, they found that the drop was due to a very strong La Nina that began in late 2010. This phenomenon which occurs in the Pacific climate changes rain patterns all across the planet, moving immense quantities of water from the oceans and depositing them on continents, particularly Australia, Southeast Asia, and northern South America.

According to a new study recently published, researchers at NASA’s Jet Propulsion Laboratory (JPL) in Pasadena, CA found that by mid-2012, global mean sea level had recovered the quarter inch that it dropped in the previous year. Plus, it resumed its long-term annual rise of 0.13 inches (3.2 mm) per year.

Which Electric Vehicle OEMs Are Positioned For Market Dominance?

The market for plug-in electric vehicles (EVs) is growing more competitive, as a variety of auto manufacturers are increasingly offering plug-in hybrid and battery electric vehicles. The early-adopter market is being driven largely by lower operating costs and the desire for zero-emissions driving. However, these two key drivers are not proving to be as effective as expected, and the market is still struggling to expand toward a more mass-market audience. Higher upfront costs, higher-mileage gasoline-powered vehicles, and slow battery price decreases are dampening growth in the EV sector.

The operating costs of vehicles and environmental aspects may play a less important role in this market than other vehicle attributes, such as performance, cargo capacity and low purchase prices. The result is a market that, while continuing to grow with early adopters, is still relying on government purchase incentives and government emissions restrictions.

A recent study anticipates that although growth in the plug-in EV market will be robust, it will fall short of expectations set by OEMs and politicians in 2010 and 2011. Globally, the market for plug-in EVs will grow from 137,950 vehicles in 2012 to 1.75 million in 2020. The U.S. is expected to remain the largest market through the forecast period, with annual sales reaching 400,073 vehicles by 2020.

The authors recently evaluated the key players in the plug-in EV sector against a number of factors, such as go-to-market strategy; production strategy; technology; product performance, quality and reliability; and pricing. The companies rated against the criteria were then segmented as Leaders, Contenders, Challengers or Followers.
In the Leaders grouping, Chevrolet and Renault took the lead due to their respective product portfolios, product strategy, and vision of the plug-in EV market. These Leaders are likely to come as a surprise to some because they do not currently hold sales leads. However, the authors find that Chevrolet and Renault are well-poised for growth in the coming years. Both hold strong positions in the market that will enable them to respond effectively to future changes.

In the Contenders grouping, Ford Motor Co., Toyota and Nissan are vying to move into Leader positions. Toyota and Nissan (the current sales leader in battery EVs) are limited by their narrow product portfolios. Anticipated to become the plug-in EV sales leader in the U.S., Ford is positioned for growth, with a broad portfolio of plug-in EVs and flexible manufacturing. However, Ford has not fully executed its well-laid plans (the C-MAX Energi and Fusion/Mondeo Energi plug-in-hybrid EVs have not yet launched), and its reliance on Azure Dynamics for the battery EV Transit Connect has proven ill fated.

Tesla is a Contender with a number of challenges, such as limited funding and a challenging path to market, but also with a strong product and big future vehicle plans.

The Challengers grouping includes Smart, BMW, Mitsubishi, CODA Automotive and Honda, and Fisker Automotive is on the cusp of joining the category. The Followers grouping consists mainly of manufacturers that have not yet launched a product, such as Audi and Volkswagen. But these OEMs will have product available in the next year and are currently working on laying out strong strategic direction for their EVs.

125. Slowing Cargo Ships Cuts Pollution Near Ports by More Than Half

Freight ship Photo: Julie, Dave & Family/Flickr

Slowing cargo vessels near coastlines by 10 to 15 miles per hour could dramatically cut ships’ air pollution, according to a new study. But only a few U.S. ports have initiated such efforts.

A speed limit of 14 mph, down from the current cruising speeds of 25 to 29 mph, would cut nitrogen oxides – a main ingredient of smog – by 55 percent and soot by almost 70 percent, according to the University of California, Riverside study. It also would reduce carbon dioxide – a potent greenhouse gas and key contributor to climate change – by 60 percent.

With 100,000 ships carrying 90 percent of the world's cargo, air pollution is a heavy burden for people living near ports, so slowing ships could improve their health, researchers say.

In the study, the ships traveled at speeds already used at the ports of Los Angeles/Long Beach and New York-New Jersey as part of voluntary programs. But setting a speed limit on cargo ships has been an elusive goal for port cities because shipping traffic is regulated internationally.
All ocean-going vessels, generally when they are within 10 nautical miles of a U.S. port, must slow down, to typically 14 mph. The voluntary programs in Los Angeles/Long Beach and New York-New Jersey slow them farther out, up to 40 nautical miles offshore.

"Speed reductions, which are known to reduce emissions, would need to be maintained over a very long-term period in order to produce regional air quality benefits," said James Corbett, a professor of marine policy at the University of Delaware, who has studied the impact of the shipping industry on human health. Corbett was not involved with the new study.

The new study measured the emissions of two container vessels traveling between California's Ports of Los Angeles and Long Beach and the Port of Oakland. Emissions were measured near the ports and in international waters.

In international waters, ships burn heavy fuel oil. As it burns, large amounts of particulate matter, sulfur oxides and nitrogen oxides are released. Studies worldwide have linked particulate matter – soot – to deaths from respiratory disease and heart attacks. Particulates specifically from ocean-going vessels have been linked to an increased number of premature deaths, according to a 2007 study by Corbett published in the journal Environmental Science and Technology.

In addition, the shipping industry is responsible for 3 percent of the world's carbon dioxide emissions, according to the International Maritime Organization, a United Nations agency responsible for marine safety and pollution. Shipping emissions are expected to grow 2 to 3 percent every year over the next three decades as shipping traffic grows, according to the IMO. The industry has dodged tax strategies and international treaties, such as the Kyoto Protocol. The International Maritime Organization has failed to set a cap on greenhouse gas emissions at international meetings in previous years. Under the World Port Climate Initiative, some of the world's leading ports have committed to reducing their greenhouse gas emissions.

Some states and local pollution agencies are stepping in. California has banned ships from burning dirty kinds of fuel, and is rolling out other clean port initiatives. Since 2001, the Ports of Los Angeles and Long Beach – the nation's two busiest shipping ports – have offered financial incentives to shippers that voluntarily reduce their speeds to 14 mph. Baker said it has led to 90 percent compliance. Smog-causing nitrogen oxides from the Los Angeles port's ships declined 30 percent between 2005 and 2011, while particulate matter decreased about 70 percent. Carbon dioxide was not reported.

In August, the Port of New York and New Jersey approved several initiatives to reduce emissions, including a voluntary speed reduction program similar to the Ports of Los Angeles and Long Beach. Ocean-going vessels that reduce their speed to no more than 10 knots (11.5 mph) starting 20 nautical miles from the entrance to the New York-New Jersey harbor earn financial incentives and recognition.

Smaller ports, such as PortMiami, are considering setting new policies for cargo ship speeds to help clean the air.

Shippers might not want to slow down because "hours lost in transit can cost carriers and their shipping customers dearly," said Aaron Ellis of the American Association of Port Authorities.

An industry group, the U.S. Shippers Association, noted that there are other ways to clean up the industry. "Speed limits are only one, and not necessarily the most effective, way to reduce greenhouse gas emissions. Vessel owners should be encouraged to implement as many
options as possible to meet and exceed emission reduction standards," said Beverly Altimore, executive director of the U.S. Shippers Association. In Southern California, one other solution has been to supply shore-side power so that ships can plug into the electric grid while docked rather than idling their engines, Atwood said.

The authors of the new study warned that emissions reductions near ports could be negated if the ships travel faster than normal cruising speeds outside of the slow zones.

126. Pollution Hurts Brain Function in Elderly

Living in areas of high air pollution is an environmental risk to seniors’ brain health and function, U.S. researchers found. "The study shows the unexpectedly adverse effects of air pollutants on brain function in the elderly," Caleb Finch, the ARCO/William F. Kieschnick Professor in the Neurobiology of Aging at the University of Southern California at Davis, said in a statement.

Jennifer Ailshire -- a sociologist, demographer and postdoctoral student at the USC Davis School of Gerontology -- said the study involved about 15,000 men and women age 50 and older, whose cognitive tests were matched with maps of air pollution. After accounting for several factors -- including age, race/ethnicity, education, smoking and respiratory and heart conditions -- the study found the more the air pollution, the lower the tests scores.

Brains aged at a rate of three years more quickly among those who lived in areas with the worst pollution than those who lived in areas with the least pollution.

This new analysis is based on information from the U.S. Environmental Protection Agency and the Health and Retirement Study.

"As a result of age-related declines in health and functioning, older adults are particularly vulnerable to the hazards of exposure to unhealthy air," stated Dr. Allshire in public release. According to Allshire air pollution has been linked to cardiovascular and respiratory problems and even premature death among seniors. Air pollution is a significant risk factor for multiple health conditions including respiratory infections, heart disease, and lung cancer, according to the WHO. The health effects caused by air pollution may include difficulty in breathing, wheezing, coughing and aggravation of existing respiratory and cardiac conditions. She further notes that there is emerging evidence that air pollution may have adverse effects on brain health and functioning.

This year a nationwide study followed almost 20,000 women for a period of ten years and found breathing in high levels of air pollution greatly accelerates declines in memory and attention span. Ohio State University researchers in 2011 examined the effects of pollution particles on the brain of mice and found exposure to pollutants affected the hippocampus of the brain.

This analysis is the first of its kind to show how cognitive function in a national sample of older men and women. The study’s sample had included 14,793 Caucasian, African American and Hispanic men and women aged 50 years and older and who had participated in the 2004 Health and Retirement Study (a longitudinal panel study that surveys a representative sample of more than 26,000 Americans over the age of 50 every two years). Individual information was associated to data on 2004 annual average levels of fine air particulate matter from the Environmental Protection Agency’s Air Quality System monitors across the country. Participant’s cognitive function was calculated on a scale of 1 to 35 and had consisted of tests that evaluated word recall, knowledge, language, and orientation.
Dr. Allshire’s results revealed that participants that were residing in areas with high air pollution had poor scores on the cognitive function tests. After taking into account several factors that had included age race/ethnicity, education, smoking behavior, and respiratory and cardiovascular conditions, the link still remained the same.

Fine air particulate matter exposures ranged from 4.1 to 20.7 micrograms per cubic meter, and every ten point increase was associated with a 0.36 point drop in cognitive function score. This means that by comparison the effect was nearly equal to that of aging by three years, among all participants and a one-year increase in age was associated with a drop 0.13 in cognitive function score.

This study suggests that fine air particle matter (2.5 micrometers in diameter and smaller) if they are inhaled they can deposit deep into the lung and possibly the brain therefore making them an important environmental risk factor for cognitive function decline.

This new research was presented at the Gerontological Society of America's (GSA) 65th Annual Scientific Meeting, held in San Diego, California, Wednesday, 11/14 to Sunday, 11/18.

Earlier this year Rush University Medical Center conducted a large prospective study and found chronic exposure to air particle pollution could accelerate cognitive decline in older adults.

Their study included 19,409 American women aged 70 to 81 years from the Nurses’ Health Study Cognitive Cohort. The study examined long term exposure to particle matter (PM) air pollution both course (2.5-10 μm in diameter) and fine (<2.5 μm in diameter) in association to cognitive decline.

Their results showed exposure to PM 2.2 – 10 and PM 2.5 levels in which are the levels typically experienced by many Americans is linked with significant and worsening cognitive decline in older women.

127. Study Finds Multiple Pollutants in Women, Can Be Passed On To Babies

Human bodies accumulate toxins and chemicals throughout a lifetime. From what we eat, to what we breathe, environmental toxins like lead, mercury and PCBs that do not easily break down can be stored in our own fatty tissues. While it is unsure whether the co-exposure of these chemicals is more harmful than each one separately, a new study shows that several risk factors are associated with a higher chance of median blood levels for these contaminants in an analysis of data on over three thousand women.

Brown University researchers concluded that all but 17.3 percent of the women aged 16 to 49 were at or above the median blood level for one or more of these chemicals, which can then passed to fetuses and babies.

Mercury, lead, and PCBs are of particular interest because they are persistent in the environment and can harm fetal and infant brain development, said study lead author Dr. Marcella Thompson. "Our research documents the prevalence of women who are exposed to all three of these chemicals," said Thompson. "It points out clearly the need to look at health outcomes for multiple environmental chemical co-exposures."
The study looked at data collected between 1999 and 2004 from women of all different demographics who participated in the Centers for Disease Control and Prevention National Health and Nutrition Examination Survey.

The study found that as women grew older, their risk of exceeding the median blood level in two or more of these pollutants grew exponentially. Researchers explain this risk not only because these chemicals accumulate in the body over time, but also because these women were born before most environmental protection laws were enacted.

The study also found that women who ate fish more than once a week during the prior 30 days had 4.5 times the risk of exceeding the median in two or more of these pollutants and women who drank heavily had a milder but still substantially elevated risk.

However, not all risks increased. Women who had breastfed at least one child for a month had about half the risk of exceeding the median blood level for two or more pollutants. Researchers explained that women pass the pollutants that have accumulated in their bodies to their nursing infants.

Although the study did not measure ill health effects, Thompson said, the data still suggest that women should learn about their risks of co-exposure to these chemicals well before they become pregnant.

128. FAO Report Links High Food Prices to Biofuel Demand

Biofuels account for the largest source of new demand for agricultural production and have helped drive price volatility in grain crops like wheat and maize, the UN Food and Agricultural Organization says in a new report. Biodiesel accounted for 80% of the EU’s vegetable oil production while 37% of the grain crop in the United States went towards ethanol production, the FAO’s ‘State of Food and Agriculture 2012’ report shows.

The report, released on 6 December, calls for ramping up agricultural investment in developing nations to provide jobs and reduce poverty. It points out that average farm production has declined since the 1960s and that threats to land and water could further erase gains.

Droughts that hurt production in southern Europe and devastated the US corn output this summer triggered calls for the United States and European Union to suspend all biofuel mandates. Prolonged dry spells have threatened parts of China, Russia, Australia, France, Spain, Portugal and the southern United States in recent years – affecting crop output but also leading to frenetic food pricing.

The FAO’s report advocates a balance between improving farm output to meet rising food demand and to prevent price shocks, while also ensuring environmental sustainability.

“Policies in domains such as biofuel production, food self-sufficiency and international trade may have unintended adverse environmental consequences, which should be carefully evaluated. It also requires that public investment is directed towards enhancing production in ways that are environmentally sustainable and socially beneficial,” the report says.

The UN agency attributes growing volatility in farm commodity prices to population growth as well as "higher per capita incomes, urban migration and associated changing diets in developing
countries, weather-related production shocks, trade policy shocks and rising demand for biofuel feedstocks."

Oils produced from wheat, corn, sugar beet, soy and other farm crops are known as first-generation biofuels and their use has become more controversial despite broad public policy support in Europe and America. But non-food alternatives like palm and jatropha are also under fire on the grounds that the land-clearing, production and water use that goes into producing the crops – often in developing countries – yields little or no environmental benefit.

Food prices in 2012 drifted downward from the peaks of 2008 and 2011, but rose during the summer when cereal crops in the United States and parts of Europe failed because of high temperatures and drought. The FAO’s December food price index was at its lowest point since June, although dairy prices rose partly due to tighter feed supplies.

The summer drought that affected three-quarters of the US corn crop and 85% of the main maize-producing region prompted calls for Washington and Brussels to rethink their mandates. FAO Director-General José Graziano da Silva urged Washington to suspend its production targets for ethanol. Olivier De Schutter, the UN food rights rapporteur, has also urged the EU to abandon its biofuel targets for road transport set out in the 2006 Renewable Energy Roadmap.

In October, the European Commission called for halving its target of 10% biofuel use in transport by 2020. But US Environmental Protection Agency rejected such calls, saying it found no evidence that removing the mandate would lead to significantly lower commodity prices, a decision welcomed by the ethanol and biodiesel industries on both sides of the Atlantic.

Development experts call for more focus on farming to create jobs, feed growing populations, while also providing lucrative exports in poor regions like Sub-Saharan Africa, where nearly half of the more than 800 million people live below the UN’s poverty line of less than $1.25 per day. Globally, some 870 million people – nearly one in seven earthlings – don’t have enough to eat, the UN says.

A newly published United Nations Human Development Report on Africa, which focuses on food security, also cites crop failure and low productivity, scare fertilizers and rudimentary irrigation practices as leading factors in food shortages in Sub-Saharan Africa.

“Investment in agriculture is the key issue to achieve food security and development. We are seeing today high-level food prices, very volatile food prices and this has been affecting the poorest countries all around the world,” the FAO’s da Silva told a news conference in Rome.

“Our publication this year shows very clearly that countries where farmers and governments have invested in agriculture are seeing a more rapid progress to meet the Millennium Development Goals, especially those related to poverty and hunger.” The 2000 millennium goals set out eight poverty-fighting goals, including halving the number of malnourished people by 2015. But many countries are lagging behind and overall food production is stagnating. The average annual growth in agricultural production declined in 2001-2010 from the post-war boom years of the 1960s, from 2.7% to 2.6%, the FAO’s new report shows.

129. Ozone Levels Found To Have Sizeable Impact on Worker Productivity

Researchers in the Department of Health Policy and Management at Columbia’s Mailman School of Public Health assessed the impact of pollution on agricultural worker productivity
using daily variations in ozone levels. Their results show that ozone, even at levels below current air-quality standards in most parts of the world, has significant negative impacts on worker productivity. Their findings suggest that environmental protection is important for promoting economic growth and investing in human capital in contrast to its common portrayal as a tax on producers.

Ozone pollution continues to be a pervasive global issue with much debate over optimal levels. While policy makers routinely note that regulating ozone smog leads to many health benefits like reduced hospitalizations and mortality rates, Matthew Neidell, PhD, associate professor at the Mailman School and principal investigator, set out to investigate whether lower air pollution might also affect job performance. Until this research, there had been no systematic evidence on the direct impact of pollution on worker productivity.

The researchers found that a 10 ppb (parts per billion) change in average ozone exposure results in a significant 5.5 percent change in agricultural worker productivity. "These estimates are particularly noteworthy as the U.S. EPA is currently moving in the direction of reducing federal ground-level ozone standards," said Dr. Neidell, PhD.

Dr. Neidell also points out that in developing countries where environmental regulations are less strict and agriculture plays a more dominant role in the economy, the effects reported here may have a vast detrimental impact on a country's prosperity.

Results of the study are published in the American Economic Review.

130. Nanofibers Found Capable To Clean Sulfur from Fuel

University of Illinois researchers have developed mats of metal oxide nanofibers that scrub sulfur from petroleum-based fuels much more effectively than traditional materials. Such efficiency could lower costs and improve performance for fuel-based catalysis, advanced energy applications and toxic gas removal. Co-led by Mark Shannon, a professor of mechanical science and engineering at the U. of I. until his death this fall, and chemistry professor Prashant Jain, the researchers demonstrated
their material in the journal *Nature Nanotechnology*.15

Sulfur compounds in fuels cause problems on two fronts: They release toxic gases during combustion, and they damage metals and catalysts in engines and fuel cells. They usually are removed using a liquid treatment that adsorbs the sulfur from the fuel, but the process is cumbersome and requires that the fuel be cooled and re-heated, making the fuel less energy efficient.

To solve these problems, researchers have turned to solid metal oxide adsorbents, but those have their own sets of challenges. While they work at high temperatures, eliminating the need to cool and re-heat the fuel, their performance is limited by stability issues. They lose their activity after only a few cycles of use.

Previous studies found that sulfur adsorption works best at the surface of solid metal oxides, so graduate student Mayank Behl, from Jain's group, and Junghoon Yeom, then a postdoctoral researcher in Shannon's group, set out to create a material with maximum surface area. The solution: tiny grains of zinc titanate spun into nanofibers, uniting high surface area, high reactivity and structural integrity in a high-performance sulfur adsorbent.

The nanofiber material is more reactive than the same material in bulk form, enabling complete sulfur removal with less material, allowing for a smaller reactor. The material stays stable and active after several cycles. Furthermore, the fibrous structure grants the material immunity from the problem of sintering, or clumping that plagues other nano-structured catalysts.

"Our nanostructured fibers do not sinter," Jain said. "The fibrous structure accommodates any thermophysical changes without resulting in any degradation of the material. In fact, under operating conditions, nanobranches grow from the parent fibers, enhancing the surface area during operation."

Jain's group will continue to investigate the enhanced properties of nanofiber structures, hoping to gain an atomic-level understanding of what makes the material so effective.

"We are interested in finding out the atomic sites on the surface of the material where the hydrogen sulfide adsorbs," said Jain, who is also affiliated with the Beckman Institute for Advanced Science and Technology at the U. of I. "If we can know the identity of these sites, we could engineer an even more efficient adsorbent material. The atomic or nanoscale insight we gain from this material system could be useful to design other catalysts in renewable energy and toxic gas removal applications."

This work was supported by the National Science Foundation, the department of chemistry and the Frederick Seitz Materials Research Laboratory at the U. of I.