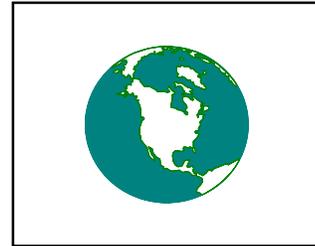


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EUROPE

1. New Policy Package Proposed To Clean Up Europe's Air

The human toll for poor air quality is worse than for road traffic accidents, making it the number one environmental cause of premature death in the EU. It also impacts the quality of life due to asthma or respiratory problems. The Commission has responded with a clean air policy package which updates existing legislation and further reduces emissions from industry, traffic, energy plants and agriculture. The direct costs to society from air pollution in Europe, including damage to crops and buildings, amount to about €23 billion per year, according to the European Commission. The benefits to people's health from implementing the package are around €40 billion a year, over 12 times the costs of pollution abatement, which are estimated to reach € 3.4 billion per year in 2030.

The package has a number of components including:

- A new Clean Air Program for Europe with measures to ensure that existing targets are met in the short term, and new air quality objectives for the period up to 2030. The package also includes support measures to help cut air pollution, with a focus on improving air quality in cities, supporting research and innovation, and promoting international cooperation
- A revised National Emission Ceilings Directive with stricter national emission ceilings for the six main pollutants , and
- A proposal for a new Directive to reduce pollution from medium-sized combustion installations, such as energy plants for street blocks or large buildings, and small industry installations.

By 2030, and compared to business as usual, the clean air policy package is estimated to:

- avoid 58 000 premature deaths,
- save 123 000 km² of ecosystems from nitrogen pollution (more than half the area of Romania),
- save 56 000 km² of protected Natura 2000 areas (more than the entire area of Croatia) from nitrogen pollution,
- save 19 000 km² forest ecosystems from acidification.

Health benefits alone will save society €40-140 billion in external costs and provide about €3 billion in direct benefits due to higher productivity of the workforce, lower healthcare costs, higher crop yields and less damage to buildings. The proposal will also add the equivalent of around 100 000 additional jobs due to increased productivity and competitiveness because of fewer workdays lost. It is estimated to have a positive net impact on economic growth.

The proposal is based on the conclusions of a comprehensive review of existing EU air policy. It comes after extensive consultations that found broad support for EU-wide action in this area.

Background

Many EU Member States are still falling short of agreed EU air quality standards, and the air pollution guidelines of the UN World Health Organization are generally not being met. While EU

air quality policy has brought significant reductions in concentrations of harmful pollutants such as particulate matter, sulfur dioxide (the main cause of acid rain), lead, nitrogen oxides, carbon monoxide and benzene, major problems remain. Fine particulates and ozone, in particular, continue to present significant health risks and safe limits for health are regularly exceeded. EU air quality standards and targets are breached in many regions and cities, and public health suffers accordingly, with rising costs to health care and the economy. The total external health-related costs to society from air pollution in Europe are estimated to be in the range of €330-940 billion per year. The situation is especially severe in urban areas, which are now home to a majority of Europeans.

The measures in this new strategy build on those presented in the 2005 Thematic Strategy on Air Pollution and will deliver further progress towards long term objectives of the 6th and 7th Environmental Action Programs. The strategy also contains non-regulatory support measures to enhance capacity and co-operation at all political levels, with priority areas including urban air pollution, research and innovation, and the international dimension of air policy.

The ongoing substantial breaches of air quality standards can be resolved in the short to medium term by effective implementation of existing EU legislation, notably on emissions from light-duty diesels¹ and complementary measures at national level. Transposing the amended Gothenburg Protocol agreed in 2012 would also be needed to align the EU regulatory framework to the EU's international commitments. The aim of these measures is to achieve full compliance with existing air quality standards by 2020 at the latest.

Fixing the Light-Duty Diesel Emissions Problem

According to the Commission, real-world NO_x emissions from Euro 5 cars type-approved since 2009 now exceed those of Euro 1 cars type-approved in 1992, and are in the region of five times the limit value. This has a major impact on concentrations of NO₂, ozone and secondary particles across Europe.

In its CARS 2020 Communication, the Commission noted the shortcoming of the current procedures and committed to a new test procedure in the type-approval framework to assess NO_x emissions of light-duty vehicles under real-world driving conditions. Real driving emissions (RDE) of NO_x will be recorded and communicated as from the mandatory Euro 6 dates (in 2014) and, no more than three years later the RDE procedure will be applied for type approval, together with what are intended to be robust not-to-exceed (NTE) emission limits. This is intended to ensure the substantial reduction of real-world NO_x emissions required to achieve Euro 6 NO_x emission limits under normal driving conditions.²

Further tightening of EU vehicle emissions standards beyond Euro 6 is not currently considered necessary to achieve new air policy targets for 2025 and 2030. Rather, measures supporting sustainable urban mobility will help target localized transport problems.

The main responsibility for resolving localized compliance problems lies with Member States, where there is substantial scope for enhanced national and local action. The current assessment

¹ I.e. implementation of the Euro 6 vehicle controls under Regulation (EC) 715/2007 so as to ensure that real world emissions of nitrogen oxides (NO_x) from light-duty diesel vehicles are close to the limit values in the legislation.

² Investigation and repression of some of the possible causes of these deviations (poor maintenance, cycle beating at certification, aftermarket defeat devices that eliminate or bypass pollution reduction equipment) should also be enforced, as this would allow to reduce emissions from high emitters without waiting for a new generation of vehicles to enter into service.

and management options available will be supplemented by the measures on sustainable mobility in the Communication 'Together towards competitive and resource-efficient urban mobility', in particular those on Sustainable Urban Mobility Plans and on Urban Vehicle Access Regulations. Guidelines for retrofit programs and for promoting the uptake of advanced technology options will be developed, building on the "Super Ultra Low Emission Vehicle" concept developed in the U.S.A. The latter concept will also be expanded to other sectors to support Member States with compliance problems. To improve public information on the performance of products and the success of national and local air quality action, new public-oriented indicators will be developed to track progress in mitigating air pollution nationally and locally. To facilitate consumer choice, citizens will also be informed of the real-world vehicle emissions measured according to the new test cycle (from the Euro 6 deadlines onwards).

The air policy review indicated that it is not appropriate to revise the Ambient Air Quality Directive now. Policy should focus rather on achieving compliance with existing air quality standards by 2020 at the latest, and on using a revised NEC Directive to bring down pollution emissions in the period to 2030. Such emission reductions will in turn drive down background concentrations across Europe, according to the Commission, bringing major benefits for public health and ecosystems.

The Ambient Air Quality Directive remains a key policy if the EU is to ensure future concentrations below the WHO guideline values everywhere. It will be kept under review, with a view to revision once the NECD has set background concentrations on the right downwards track.

The long-term EU objective for air pollution implies no exceedances of the World Health Organization guideline levels for human health³ (which may also develop over time) and no exceedances of the critical loads and levels which mark the limits of ecosystem tolerance.⁴ The new strategy pursues two priorities in parallel: to achieve full compliance with existing legislation by 2020 at the latest, and to set a pathway for the EU to meet the long-term objective.

Delivering the above targets will require a combination of regulatory and non-regulatory measures. The measures will also focus on delivering benefits for climate change mitigation by targeting those pollutants that contribute significantly to climate impacts as well as air pollution (such as the "black carbon" component of particulate matter) or promoting measures that tackle air pollutants and climate gases simultaneously (such as ammonia and nitrous oxide).

For 2030 the proposal includes⁵ cost-effective national emission reduction obligations for the four original air pollutants (SO₂, NO_x, non-methane VOCs, and NH₃), and for two new ones: primary PM_{2.5} (fine particulate matter, which has major health impacts) and CH₄ (methane, a key short-lived climate pollutant). In implementing the PM_{2.5} reductions, particular emphasis will be placed on reduction of black carbon (BC), the other major short-lived climate pollutant. The CH₄ and BC measures will provide direct climate co-benefits whilst also preparing the ground for international

³ Strictly speaking, there is no known safe level of exposure for some pollutants such as particulate matter, but WHO guidelines are set at low risk levels and regularly revised.

⁴ Critical loads and levels, i.e. the maximum levels the ecosystem can tolerate without degrading.

⁵ Action on Short Lived Climate Pollutants (SLCPs) was specifically examined. While a separate ceiling for black carbon (BC) is not considered currently appropriate, the EU and Member States are to prioritize measures with an impact on BC in meeting their PM_{2.5} reduction obligations. The new methane ceiling will exploit the substantial potential for low- or zero-cost reduction, thus complementing the VOC and NO_x reductions required to reduce the concentrations of ozone both in the EU and internationally. These actions are aimed also at promoting international action on SLCP to reduce hemispheric air pollution.

action. Flexibility arrangements are proposed, to allow for uncertainties regarding emission inventory methods and the future energy mix without undermining the integrity of the instrument.

While the NEC Directive gives Member States maximum flexibility to identify appropriate measures, many stakeholders requested support through targeted EU source controls such as revision of the Non-Road Mobile Machinery Directive, which will generate substantial benefits by extending the capacity range and machinery types covered, and by aligning controls with the Euro VI heavy-duty limits.

The main gap in EU source legislation (other than agriculture) concerns emissions from combustion installations of a thermal capacity between 1 and 50 MW, which are important also to avoid tradeoffs between air quality and renewables policy (notably related to increased biomass use). The proposed Directive on the limitation of emissions of certain pollutants into air from medium combustion plants (MCP) is intended to provide an effective instrument to further reduce pollution of NO_x, SO₂ and PM through appropriate limit values for new and existing installations, coupled with a simple registration scheme. This Directive will hopefully help deliver a significant part of member States' emission reduction obligations.

To achieve the new air policy targets for 2030, the proposed NEC Directive requires ammonia reductions of 27%. Options for further source controls at EU level will be examined, including a general requirement for a nutrient balance in the application of fertilizer, specific controls on manure management, and labelling and other provisions for inorganic fertilizers (in the context of the ongoing review of the Fertilizers Regulation). Many of these measures will also help reduce emissions of nitrous oxide, a potent greenhouse gas regulated under the Kyoto Protocol.⁶

The 2012 revision of the Directive on the Sulfur Content of Liquid Fuels⁷ ensures that the most cost-effective measures to reduce sulfur emissions from shipping in the EU are already on the way, with the SECA standard of 0.1% sulfur content in the Baltic and North Sea from 2015, and the global standard of maximum 0.5% sulfur in all EU waters from 2020. However, previous analysis shows that emissions from shipping will continue to impact air quality on land,⁸ and that reductions from the sector could be cost-effective. Considering the international character of shipping and Europe's dependence on it, preference must always be given to policy development at the international level (IMO), such as designation of NO_x Emission Control Areas and enforcement of NO_x emission standards already agreed by the IMO. The proposal for a revised NEC Directive aims to incentivize reductions from shipping, by allowing them to be offset against the reduction obligations for land-based sources for 2025 and 2030.

Reductions in real-world emissions from light-duty diesels and progress in compliance with the Ambient Air Quality Standards will be tracked closely through the existing reporting mechanisms.

2. Diesel Vehicle PM₁₀ Emissions Show Decline in London

Emissions of particulate matter PM₁₀ from diesel exhausts in London have shown a 'significant decline' in recent years, according to the Department for the Environment, Food and Rural Affairs

⁶ UNEP has estimated that, globally, N₂O emissions equivalent to 0.8 gigatons of CO₂ could be avoided every year by 2020, amounting to 8% of the 'emissions gap' between reduction pledges made by countries and the action needed to keep global temperature rise below 2°C.

⁷ Directive 2012/33/EU.

⁸ In the EU, in 2005 NO_x and SO₂ emissions from international shipping were equivalent to about 25% and 21% of the land-based emissions. While NO_x emissions from land sources are expected by 2030 to be 65% lower, on business as usual shipping emissions would reduce only 2%.

(Defra). Figures revealed by Defra minister Dan Rogerson show that diesel emissions for black cabs, diesel cars, heavy goods vehicles (HGVs), buses and coaches have all fallen over the ten years from 2002 to 2011.

The figures were revealed in response to a written parliamentary question from Labor MP for Poplar and Limehouse, Jim Fitzpatrick, who asked for information on the level and trend in particulate emissions from diesel vehicles in central and Greater London. Mr. Rogerson answered that, according to the most recent data based on annual estimates by the National Atmospheric Emissions Inventory (NAEI), there has been a 'significant decline in diesel exhaust emissions over this period'. In total, exhaust PM10 emissions from a range of diesel vehicles in central London have declined from 0.107 kilotons in 2002 to 0.038 kilotons in 2011, with the biggest reduction appearing to come from buses and coaches. And, figures for Greater London show that overall there has been an even larger decline in PM10 emissions from diesel vehicles from 1.209 kilotons in 2002 to 0.540 kilotons in 2011.

However, the data suggests that the biggest fall in PM10 emissions appears to have come from diesel light goods vehicles.

Furthermore, Mr. Rogerson also said he expected to have new projections for when the UK is likely to comply with EU air quality standards in 2014.

Mr. Fitzpatrick asked the Defra minister when London was expected to comply with EU air quality legal requirements; currently, London is expected to be compliant with limit values for PM2.5 by 2020 when the legal requirements for fine particulates come into force, but it is not expected to meet EU limits for nitrogen dioxide until 2025. And, the minister said that although central London is compliant with the ozone target value for health, it currently exceeds the non-mandatory, long-term objective for this pollutant, adding that 'no projections are available for when we expect it to meet this objective'.

Meanwhile, London is compliant with EU limits on the pollutant benzo[a]pyrene, according to Mr. Rogerson, but 'does not currently meet the non-mandatory national objective for this pollutant as set out in the Air Quality Strategy 2007'.

3. Better Monitoring of Black Carbon Needed To Assess Health and Climate Change Impacts



Black carbon is an air pollutant which harms human health and can contribute to climate change – so cutting emissions may have many benefits. The European Environment Agency (EEA) has recently published a report⁹ on the measurement of black carbon in the air which looks at the monitoring networks currently measuring black carbon, measurement methodologies and how this data is used.

⁹ 'Status of black carbon monitoring in ambient air in Europe'

As the effects of this pollutant have become better understood in recent years, it is increasingly seen as an important target of environmental control. The study is intended to encourage more comprehensive monitoring of this pollutant, which is currently patchy.

Black carbon is the sooty part of particulate matter (PM) formed by the incomplete combustion of fossil fuels and biomass. It is mostly emitted by vehicles, non-road mobile machinery such as forestry machines, ships, and coal or wood burning stoves in homes. Another important source is open biomass burning including forest fires and agricultural waste burning.

Of all air pollutants, PM is the most harmful to health in Europe. The black carbon part of PM is particularly harmful according to the report as it represents a mixture of very fine, partly carcinogenic particles, small enough to enter the bloodstream and reach other organs.

There is currently a lively debate about whether reducing this pollutant could have significant gains in reducing climate change, with a recent study suggesting that black carbon's effect on the climate is more potent than previously thought. In the atmosphere the carbon-containing pollutant effectively absorbs solar radiation leading to a warming of the atmosphere. When it settles on snow or ice, the darker color absorbs more heat, accelerating melting.

4. Preliminary Bulldozer Emissions Assessment Leaked; Appears Weak

A leaked Bulldozers emissions impact assessment shows the scope is likely to be more limited than expected. Further it is not included in the package of policy measures to combat air pollution just released (see story above). A review of the 1997 directive covering non-road diesel machines, which include bulldozers, excavators, mobile generators and barges, is now due. It was assumed that this would be included in the air quality package, but the proposal has been held up within the Commission and is now not expected until March or April of next year.

The impact assessment also does not assess ultra-fine particles from the largest diesel engines greater than 560kw. These include mobile generators located in large construction sites which account for more than 10% of the land-based non-road mobile machinery emissions, and are expected to contribute to 20% in 2020.

The ambition of the assessment also appears limited. The most ambitious scenario it examines is reportedly less stringent than the minimum limits set for road vehicles – the Euro VI standards. Campaigners have also complained that the assessment is using an outdated method from 2008 for estimating the cost of air pollution and also does not take into account recent scientific evidence such as a report last year from the World Health Organization which demonstrated a link between diesel emissions and cancer.

5. EU Ministers Fail To Agree On Biofuels Reform

Energy ministers have failed to reach a deal on reforming the EU's biofuels laws, with some pushing for a more generous regime for conventional, food-based fuels, while others argued for a more radical plan than that currently on the table. The EU executive's 2012 proposal to limit the use of food-based biofuels is therefore likely on hold until at least the second half of 2014, as neither MEPs nor member states have managed to agree internal positions with which they could negotiate with each other.

Member states' widely divergent views on the issue after almost six months of negotiations means an uphill struggle for the incoming Greek presidency, which must now take over responsibility for forging a common council position. The Lithuanian presidency's proposed compromise was to cap the amount of food-based biofuels that could count towards the EU's renewable energy target for transport fuels at 7%, up from 5% under the European Commission proposal. But a blocking minority of countries could not agree to this.

Denmark, the Netherlands, Belgium and Luxembourg pushed for a tighter limit on food-based fuels, while Poland and Hungary wanted the opposite. Germany, Belgium and Portugal reportedly expressed concern about double-counting provisions, which would have watered down the EU's overall 20% renewables target.

Climate commissioner Connie Hedegaard said an "unholy alliance of the most and least ambitious" had "blocked progress". Waiting for lawmakers to make up their minds means uncertainty for the biofuel industry, she said.

Campaign group T&E said the rejected 7% plan would have caused an additional 400 million tons of CO₂ to be emitted relative to the commission's proposal, "equivalent to adding nine million extra cars to Europe's roads by 2020". And the "mere reporting" of indirect land-use change emissions (ILUC), as set out in the compromise text, "would have allowed biofuels that produce more emissions than conventional fuels to still count towards the [transport target]".

6. Report: EU Can Cut Import Dependence and Food Prices By Ditching Biofuels Mandates

If Europe were to rule out its support of biofuels by 2020, the region could lower its net imports of grain and oilseeds by up to 27 million tons, remarkably reducing its dependence on foreign goods. Global food prices could also drop significantly. These are the main findings of a new report¹⁰ by Oxfam and the Heinrich Böll Foundation. "Fixing the EU's misguided biofuel policy is long overdue. Political support for biofuels made from crops such as grain or oilseeds should run out over the next years", explains one of the authors of the study, Prof. Dr. Harald Grethe of the University of Hohenheim

According to the report, if the EU were to drop its current biofuel policy by 2020, the global prices of plant oils would drop by 16 percent compared to a situation with the current biofuel mandates remaining in place. It would also see oilseed prices fall by around 10 percent, with wheat prices also decreasing by about 4 percent.

"Less biofuels would mean more food security. Cutting down the cost of basic foodstuffs would certainly help those living in poverty", explained Marita Wiggerthale, agricultural expert with Oxfam.

"If the EU continues to support biofuels, we'll be importing 85 percent of the resources required for biofuels production in the future. This would mean a huge increase in import dependency", said Christine Chemnitz, adviser for international agricultural policy at the Heinrich Böll Foundation.

In relation to climate change, the report issues a scathing assessment of both biofuels and the related European policy: "The main argument for biofuels, namely their attractiveness as a low-

¹⁰ Biofuels: Effects on Global Agricultural Prices and Climate Change

carbon and thus more climate friendly alternative to fossil fuels, is simply not right if we include the indirect land use change and intensification effects “, said Ms. Chemnitz.

7. Ministers Strip Targets from Alternative Fuels Proposal

MEPs and member states could be set for heated talks on how to boost the refueling infrastructure for alternative fuels after transport ministers confirmed their opposition to targets at a recent meeting. The European Commission’s proposal from January set national and EU-wide targets for electric, hydrogen, and natural gas charging points for road vehicles and ships. The parliament’s transport committee backed this idea and suggested the targets be expanded to all modes of transport, including aviation.

However, some member states feared the targets would be a major burden and several large countries reportedly blocked any consideration of targets, including the Czech Republic, Germany, Hungary, Spain and the UK. There was also concern over the imposition of standard rules given the considerable variation between countries’ current infrastructure and national ambitions.

The recently adopted formal position says member states should develop their own targets to apply from 2030. Targets for hydrogen refueling points should be optional and member states need only install electric charging points in ports if there is demand and the benefits outweigh the costs. The ministers backed the establishment of national policy frameworks on alternative fuel infrastructure, common technical specifications to make all recharge and refueling points interoperable, and the need for rules on information for consumers. “Giving full flexibility... should give member states enough time to carry out comprehensive analyses of their situations, establish accurate figures and determine targets that will provide realistic signals to the market,” they said in a statement.

But seven member states are understood to have had regrets about the dilution of the commission’s proposal, especially with regard to electric cars. This group includes Denmark, France, Italy, the Netherlands and Belgium.

Cecile Toubeau of NGO T&E says the council position is a disappointment and rather contradictory given some countries’ public stance on alternative fuels. Germany, for instance, has pledged have a million electric cars on the road by 2020. Without targets, there is not likely to be any investment, she says, adding that the commission might have been better off setting a baseline target and concentrating on the vehicle infrastructure in urban areas and along the TEN-T trans-European network where funding is available for improvements.

8. Serious Air Pollution Problems Sweeping Across Europe

Paris Put on Air-Pollution Alert as Cold Snap Traps Diesel Fumes

Paris was put on an air-pollution alert recently as cold weather entrapped diesel fumes, leading to the most severe smog in the French capital since 2007. The pollution index reached the highest of five levels for fine particulates, according to Airparif, which monitors air quality. The government urged reduced auto speeds on main roads and asked people to refrain from driving diesel vehicles lacking proper filters and from lighting up wood fireplaces.

The pollution alert may reignite debate over taxes on diesel fuel, which in France are lower than for gasoline. Environmental groups have urged the government to align the levies while carmakers such as PSA Peugeot Citroen (UG) have resisted the move. “Irresponsible policies”

that encourage the use of diesel are causing the pollution, Deputy Paris Mayor Anne Hidalgo said on France Info.

The pollution alert was extended to a dozen French regions hit by a cold snap that pushed temperatures below freezing. The warnings included Alsace and Normandy as well as the southern Mediterranean area around Nice.

“Bad air quality from particulates” can provoke allergic and asthmatic symptoms, Environment Minister Philippe Martin said in a statement. Airparif put its air-pollution index at the highest level because the concentration of PM₁₀ was poised to be greater than 100 micrograms per cubic meter. “The current period of pollution is equivalent to one last experienced in 2007,” Arthur de Pas, a spokesman for Airparif, said. Airparif has warned in the past that residents of the French capital suffer from “chronically high levels” of pollutants such as nitrogen dioxide and particulates.

France has been put on notice by the European Commission for not respecting rules on emissions of PM₁₀. For this episode, the Paris mayor made residential parking free in a bid to get people to leave their cars at home and use mass transit. Speed limits were lowered along the Parisian ring road and major arteries leading to the French capital that are typically clogged with commuters during weekdays, the Paris mayor’s office said on its website.

Air Pollution Alert Raised In Barcelona

Authorities have raised an air pollution alert for the Spanish city of Barcelona, a major tourist draw which suffered for days under a toxic grey mist, according to officials. “High atmospheric pressure and a lack of wind are preventing the dispersal of polluting emissions, which are accumulating over the city,” said a spokeswoman for the Catalonia regional government.

As the mist obscured the city skyline, the government issued an alert in a bid to reduce gas emissions, said the spokeswoman.

It lowered the speed limit for traffic, urged citizens to use public transport and asked factories to reduce their activity in the city of 1.6 million residents.

The level of toxic nitrogen oxide gas in the air had risen above the European Union legal limit seven times since December 4, the spokeswoman said, adding however that these exceptional rises did not threaten people’s health.

A general view shows the Catalan city of Barcelona shrouded by haze on December 9, 2013

Barcelona draws millions of tourists a year for its nearby beaches and city sights such as the decorative architecture of Antoni Gaudi, including the Sagrada Familia cathedral.

But it also has one of the densest concentrations of motor vehicles in Europe and pollution gets trapped by the surrounding mountains, the spokeswoman said.

Macedonia Takes Precautions Against Air Pollution



In this picture taken on Sunday, Dec. 15, 2013, buildings can be seen through the polluted air over Macedonia's capital Skopje, from Vodno Mountain just above the city.

Macedonia's government has imposed emergency measures in four cities, including Skopje, the capital, to address heavy air pollution caused by traffic and wood- and oil-burning heating systems.

For the past six days, airborne particle concentrations in the cities have exceeded the highest permissible levels during freezing winter weather. In response, the Environment Ministry instructed private companies and state institutions in the four cities to let pregnant woman and employees over the age of 60 remain at home. Kindergartens and primary and secondary schools also were advised to avoid outdoor activities, and construction workers were warned to avoid work before 11 a.m. and after 5 p.m.

Trucks will also be banned from the city centers from 7 a.m. to 7 p.m.

Air Pollution From Burning Coal Hits Bosnian Town



Bosnian people walking on the street during heavy smog in the northern Bosnian town of Tuzla, 140 kms. north of Sarajevo, on Monday, Dec. 16, 2013. Due to heavy fog and air pollution, visibility was down to 10 meters (33-feet). Medical officials urged people not to spend too much time outdoors, with particular warnings issued to those suffering from respiratory or heart diseases.

Authorities have ordered factories and homes to stop burning coal in a central Bosnian town where air pollution has reached alarming levels. Zenica is an industrial town that produces steel and where many homes are heated by burning coal. That sometimes leads to significant air pollution.

Samir Lemes of the citizens association Eco Forum said the concentration of sulfur-dioxide in Zenica's air reached 1.400 micrograms per cubic meter, far above the acceptable concentration of 350 micrograms.

Authorities ordered factories to stop production if they have no alternative to burning coal. Families were told to begin burning wood to heat their homes.

The cities of Tuzla and Sarajevo were suffering heavy fog, partly the result of air pollution, but no orders about the burning of coal were given.

9. EU Moves Toward More Flexibility in 2020 Limits on Cars' Carbon Dioxide Emissions

The European Parliament and the EU Council have resolved a dispute over a modification to a draft European Union regulation on carbon dioxide emissions from private cars to give German automakers more time to meet new limits. Meeting in Brussels on November 26th, negotiators from the two institutions agreed that an average carbon dioxide limit of 95 grams per kilometer (g/km), or 152 grams per mile, should be met by 95 percent of new vehicles sold in the EU in 2020 and by all cars in 2021. The agreement is subject to ratification by both institutions.

In addition, manufacturers would be given more flexibility to use "super credits," or offsets granted for electric cars and other "clean" vehicles, to avoid penalties in case their standard vehicle fleets exceed the 95 g/km limit.

The European Commission, the EU's executive arm, proposed in July 2012 that all new cars sold in the bloc should on average meet the 95 g/km limit by 2020. An informal agreement was reached by the Parliament and the EU Council in June, supporting the proposal. Germany blocked ratification of the June informal agreement, arguing that the 95 g/km limit should be phased in through 2024 to give automakers, especially German manufacturers of large luxury cars, more

time to comply. The regulation would impose an “excess emissions premium” of 95 euros (\$129) per g/km per vehicle above 95 g/km, and Germany feared its automakers wouldn't be able to implement fuel efficiency improvements, and therefore reductions in emissions per kilometer, quickly enough.

Reopening of negotiations after provisional agreements have been adopted by the European Parliament and EU Council is rare, and Germany was criticized for its intervention. Matthias Groote, a German center-left lawmaker who heads the European Parliament's Environment Committee, said in a statement on November 26th that the reopening of negotiations on the regulation “sets a dangerous precedent among the institutions. We must ensure that this doesn't happen again.”

Groote added: “Our objective was to stand firm and not weaken our targets, in order not to hold back innovation in the car industry and EU efforts against climate change. We accepted a very limited phase-in of one year only, combined with super credits.”

The European Parliament is scheduled to vote in January to ratify the revised agreement. The EU Council is expected to endorse it at a forthcoming meeting.

10. EU May Extend Freeze on Limiting Foreign Flights' Emissions to 2020

The European Union may decide in the next five months to extend a freeze on greenhouse gas emissions limits for foreign flights to as long as 2020, an EU adviser said. EU lawmakers will consider the position of nations, including the U.K., that are unwilling to have the bloc's emission limits imposed on flights outside the region, Pierre Dechamps, an adviser for energy and climate change at the Bureau of European Policy Advisers, said on December 5th. The bureau reports to European Commission President Jose Manuel Barroso.

The EU's suspension of emissions curbs on international flights applied to 2012 and was called stop-the-clock. Unless the bloc renews or changes the rules by April 30, airlines have to hand in allowances to match their 2013 emissions.

The U.K. said in November that it will seek to extend the halt, which was brought in to avoid trade conflicts and enable global talks on ways to curb aviation emissions. “I perfectly understand the point of the U.K. in this,” Dechamps said at the Westminster Energy, Environment and Transport Forum in London. “It could well be that, in the end, we rather go toward an extension of stop-the-clock until 2016 or even maybe 2020. It's probably still in the right direction.” Dechamps said he was speaking in a personal capacity rather than on behalf of the Commission, the EU's regulatory arm.

The United Nations' International Civil Aviation Organization agreed in October to complete a plan in the next three years for an aviation emissions market to start in 2020. Envoys at the meeting in Montreal declined to validate the EU's plan to include foreign flights in its emissions trading system before the start of the global program.

The commission is proposing to make the regional portion of foreign flights subject to emission curbs from 2014, which the U.K. is seeking to modify. The commission's proposal “doesn't reflect global politics or reality,” Niall Mackenzie, head of industrial energy efficiency at the U.K.'s DECC, said at the London forum. “If the main prize is a global system, and we're working towards that, why do you go and antagonize third countries?”

11. EU Sets Provisional CO2 Auction Calendar For 2014

European governments will auction 926.2 million spot EU carbon permits next year under the bloc's Emissions Trading Scheme (ETS), the European Commission said recently. Around 819.7 million allowances will be sold by German energy exchange EEX on behalf of 27 countries, while London-based ICE Futures Europe will auction 106.5 million for the British government.

Under the EU ETS, utilities have to buy carbon permits to cover every metric ton of carbon dioxide they emit.

The volumes include 4.9 million Croatian units that were unable to be sold this year, but exclude a further 17.2 million allowances from Norway, Iceland and Liechtenstein, which will begin to be sold on EEX once an agreement is reached between the Commission, the exchange and the three non-EU countries.

The figures also do not take into account a proposal to prop up carbon prices by withholding sales of 900 million allowances, which was subsequently approved by EU member states and parliament (see story below). "The calendars will be modified accordingly for the remainder of the year following adoption of this (proposal) ... which will affect the (auction volumes) for individual years including 2014," the Commission said on its website.

EEX said it would hold auctions on behalf of 25 member states every Monday, Tuesday and Thursday from January 7 to December 16, and for Germany every Friday during that period. The bourse added that it will also hold sales for Poland every fourth Wednesday beginning on January 8, after the country selected this as an interim solution while it designs its own auction platform.

EEX was selected to host auctions by most governments, with only Britain opting to sell via ICE Futures Europe, which will hold sales of UK permits every other Wednesday.

The two exchanges are due to sell around 808 million allowances this year, meaning 2014's provisional sales quota marks a 15 percent annual increase. Under EU rules, the number of permits handed out for free to big polluters drops annually during the current 2013-2020 phase of the ETS, meaning that the number auctioned every year rises.

12. European Parliament Approves 'Backloading' Plan to Boost Price of Carbon Allowances

On December 10th, the European Parliament voted in favor of a one-time intervention by the European Commission in the European Union's Emissions Trading System (ETS) in an attempt to boost the price of carbon allowances. Lawmakers meeting in Strasbourg, France, backed the measure, known as "backloading," by 385-284 with 24 abstentions, thereby formalizing an informal agreement to allow the intervention made in November with the EU Council, which represents EU member state governments.

Under the backloading plan, the commission will be authorized to delay the auctioning to ETS participants of up to 900 million carbon allowances in order to reduce the supply during the early part of the current phase of the ETS (2013-2020), and thus boost prices.

The commission in July 2012 proposed legislation to give it authority to make the change because of concerns that the price of EU carbon allowances was too low to encourage market participants

to make emissions-reducing investments. The July proposal was followed by a proposal in November 2012 specifying the deferral of 900 million allowances.

The ETS covers heavy industry, power generation and some aviation activities. Participants are required to obtain enough carbon allowances to cover their greenhouse gas emissions, with allowances being either distributed to them for free, sold at government-run auctions or traded on the carbon market.

The intervention is dependent on an impact assessment showing that backloading will not lead companies to move out of the European Union. The details of the commission's intervention will follow at a later stage. Sources familiar with the matter have previously said that the intervention is likely to involve postponing the auctioning of 900 million allowances from 2014-2016 until 2019-2020.

The commission has estimated that the ETS has a surplus of about 2 billion carbon allowances, equivalent to one year's emissions from all participants in the scheme. EU carbon allowances are currently trading at about 4.80 euros (\$6.60), compared with more than 20 euros in 2008, at the beginning of the previous phase of the ETS (2008-2012).

Following the Parliament's approval, the EU Council must also ratify the backloading intervention for the measure to be finalized.

Matthias Groote, a German center-left lawmaker and chairman of the European Parliament's Environment Committee, welcomed the Parliament's approval of the measure. In a statement, Groote said the ETS "rewards innovation and efficiency by putting a price on carbon. But it needs to deliver a clear price signal." However, center-right Finnish lawmaker Eija-Riitta Korhola said backloading "only speeds up the increase of energy prices," and the ETS "needs to be revised instead of artificially pumping up the carbon prices."

13. Energy Groups Say EU Commission Lacks Climate Ambition

EU policymakers have bowed to industry concerns about the cost of environment policy without even exploring the potential for deeper emissions cuts, green energy groups said in a letter to the European Commission. The Commission, the EU executive, is expected to unveil in January its vision on 2030 energy and environment policy to follow 2020 goals on cutting carbon emissions, improving energy efficiency and increasing use of renewable power.

If the European Union succeeds in agreeing a 2030 carbon-cutting goal, it would be the first major bloc to do so ahead of a new global deal on climate change expected in 2015.

In their letter to Commission Secretary-General Catherine Day dated November 21, three umbrella groups representing scores of EU businesses - the Coalition for Energy Savings, the European Renewable Energy Council and the Climate Action Network - argue the Commission's assessment of the impact of 2030 goals "falls short of the necessary standards". In particular, the letter says the assessment does not include a wide enough range of options and puts politics before scientific analysis.

"We found the lack of a greenhouse gas reduction scenario of more than 45 percent to be inexplicable when a broad range of qualified stakeholders, including governments, are calling for a reduction of 50 percent, 55 percent and more," the letter says. Britain, for instance, has called

for a 50 percent goal, although 10 percent of this could come from offsets bought on the global market, leaving only 40 percent from harder-to-achieve domestic cuts.

EU sources have said the policy document in January is likely to settle on a carbon-cutting goal of 40 percent, which would be debated by the bloc's leaders at a summit in March. That could be accompanied by a goal to get 30 percent of energy from renewable sources, but probably at an EU-wide level, rather than through binding national targets, leaving some nations to do more and others less.

The Commission has said it is premature to agree on another energy-savings goal after difficult negotiations last year on enforcing the existing target of a 20 percent improvement in energy efficiency compared with business as usual.

Campaigners say a glaring example of the Commission closing its mind to deeper emissions-cutting scenarios is a paragraph in a draft stating renewable scenarios of more than 35 percent were not analyzed "in full detail" because they would mean a more than 45 percent cut in emissions or clashed, for instance, with some member states' plans on nuclear energy.

14. Report Says Europe Cannot Afford To Give Up Climate Leadership

Europe's abdication from climate leadership would stunt growth in the region and hand a huge economic advantage to China and the United States as they carve out their share of a multi-billion low-carbon market, a German think-tank said in a new report. The report's release coincided with U.N. climate talks hosted by Poland, one of the EU member states to have embraced the counter-argument that the European Union should be only a part of, not the leader of global climate efforts and that acting alone will damage competitiveness.

Germanwatch, a think-tank used by German government ministries to carry out research, says such a shift would only harm Europe's ailing industrial sector and it is no longer true to say the European Union is an isolated environmental leader. Already China's solar equipment exports are worth almost as much as its exports of shoes, making it a major threat to EU technology. In 2011, China's solar exports totaled \$35.8 billion compared with \$39 billion for shoes, U.N. data showed.

In all, the low-carbon energy products market will be worth an estimated \$500 billion per year by 2050, the report says, citing independent research and economists.

Apart from China, the world's other top greenhouse gas emitter the United States has also begun climate action. While Germany has blocked EU legislation to improve car fuel efficiency, the United States, known for its gas guzzlers, has adopted standards to double the efficiency of new cars compared with those on the road. German Chancellor Angela Merkel said she was saving jobs by sheltering luxury carmakers, such as BMW, which has funded her party, from tougher regulations.

Germanwatch says ultimately her actions will cost, not save jobs as the rest of the world innovates to capture the economic and air quality benefits of cutting fuel bills and emissions. "It's never a good long-term policy to build a protection wall around industry. In the end protection doesn't eliminate but increases the need for transformation," Christoph Bals, one of the report's authors said.

"Industry has legitimate concerns, but they can't blame all their problems on climate regulation."

EU industry is concerned the United States has a huge advantage from cheap energy generated from shale gas, while green energy charges are inflating EU energy prices. European gas prices are roughly three times higher than those in the United States and EU electricity prices are around 2.5 times higher, the European Commission has said. Germanwatch says costs not prices are the problem and they can be tackled through energy efficient buildings, for instance, which would create jobs in construction.

It also wants a deeper 2030 EU greenhouse gas goal (50-55 percent lower than 1990 levels) than the around 40 percent cut the European Commission is considering. A Commission analysis found a 40 percent cut would add around 0.5 percent to annual gross domestic product, in part because fossil fuel import bills would shrink.

15. Halving EU Emissions by 2030 Is Affordable, Says Britain

Cutting the European Union's greenhouse gas emissions by 50 percent from 1990 levels by 2030 would reduce economic growth by a fraction of a percent, Britain's minister for energy and climate change has said. The European Commission is expected to unveil proposed 2030 green energy goals around the year end, and Britain wants the bloc to take on an ambitious target to help limit global temperature rises to below 2 degrees Celsius.

"Meeting a 50 percent target is affordable ... equivalent to a reduction in the EU annual growth rate of 0.04 percent between now and 2030," said Ed Davey, speaking at U.N. climate talks in Warsaw and citing the findings of a study done by the country.

The EU's Low Carbon Roadmap, which aims to cut greenhouse gas emissions by 80-95 percent by 2050, says the 28-nation bloc can inexpensively achieve reductions of 40-44 percent by 2030. Britain thinks the EU can attain a further 5-10 percent in cuts through buying international carbon offsets, effectively outsourcing the reductions to developing countries, where abatement is cheaper.

The Commission reportedly is looking at a bloc-wide target of 35 to 45 percent. A Commission analysis found a 40 percent cut would add around 0.5 percent to annual gross domestic product, in part because fossil fuel import bills would shrink.

The EU is expected to lead the way in outlining binding environment and energy targets for 2030, helping to frame a new global treaty to fight climate change. But Poland, for instance, which is heavily reliant on carbon-intensive coal, has sought to make any further EU promises conditional on the rest of the world pledging to do more to cut emissions.

The EU has already nearly met a target to cut 1990-level emissions by 20 percent by 2020, as a result of lower energy demand following a recession and a shift towards green power, such as solar and wind.

For 2030, the Commission is expected to propose targets for emissions and renewable energy, dropping an extension of its current 2020 energy savings goal.

16. Draft Paper Indicates That Merkel and SPD Set Goal for Reducing CO2 Emissions

German Chancellor Angela Merkel's conservatives and the center-left Social Democrats have agreed to aim for a 40 percent cut in European carbon dioxide emissions by 2030 compared with

1990 levels, a draft paper from coalition talks showed. "We want to give climate protection a central role in energy policy," the paper read.

Both camps wanted to reduce emissions in Germany by "at least 40 percent" by 2020, the paper read.

The European Union is so far aiming to cut emissions by 20 percent by 2020 compared with 1990 levels. Member states want to set goals for 2030 in the coming months.

17. UK Study Finds Green Buses May Not Improve Air Quality As Much As Previously Thought

Whole vehicle testing is the best way to ensure air quality improvements from hybrid buses and HGVs – which may not be as green as originally thought. That's the key finding of a new study from the Low Carbon Vehicle Partnership (LowCVP), which commissioned a review of the air quality impacts from the growing numbers of low-carbon buses in the UK.

With around 1,300 low-carbon buses now in operation, the report – prepared by engineering consultancy Ricardo – recommends that legislation needs to consider hybrid technology impacts in the test processes in order to avoid unintended consequences, in terms of local emissions in urban areas.

Reviewing worldwide test processes for HGV engines, the report says that Euro 6 emissions levels for diesel and gas engines should be roughly the same. However, limited whole vehicle test data shows that improvements, in terms of regulated emissions often don't match test expectations, due to the actual operating cycles of engines on the road.

Transport for London's bus fleet had the most robust data, according to the study. It showed that carbon emissions, fuel consumption and local air quality emissions were lower for green buses. But, in some cases, hybrid vehicles showed higher emission levels per unit of fuel burned than conventional buses.

The study suggests that although technologies such as hybridization offer the prospect of significant reductions in fuel consumption and CO₂ emissions, compared to conventional vehicles, the improvement in terms of regulated emissions may not be so great. They recommend that buses – both conventional and hybrid, and fossil and alternatively fuelled – should be optimized over drive cycles more representative of their real operational use.

18. New Car GDI Engines Emit More Harmful Particles than Predecessors: Study

New-generation petrol engines of passenger cars emit about 1,000 times more particles, including carcinogens, than traditional petrol engines, a study by German researchers showed. Faced with strict CO₂ limits, carmakers have downsized engines to cut emissions and new gasoline direct injection (GDI) petrol engines may be in almost all new petrol cars sold in Europe by the end of the decade, the Brussels-based Transport & Environment think-tank said in a research paper. However, Germany's TÜV Nord independent vehicle researchers said in a study that GDI engines emit about 1,000 times more particles, including harmful carcinogens, than conventional petrol engines, and 10 times more than new diesel engines.

Increased emissions of harmful substances are caused by GDI engines operating with higher pressure in their cylinders, tending to produce a greater amount of the particles, according to Hanover-based TUV Nord.

"Cars are the largest source of air pollution in Europe's cities and 90 percent of European citizens are already exposed to harmful levels of particle pollution," Greg Archer, clean vehicles manager at Transport & Environment, said in the report. "More fuel-efficient, lower CO2 GDI engines would be a great innovation if they did not emit harmful particles. These particles can be eliminated for the price of a hands-free kit," Archer said.

19. EEA Warns of Aviation's Increasing Emissions

Rising emissions of greenhouse gases and air pollutants from aviation pose a serious problem for the EU, says the European Environment Agency (EEA). A 2.6% rise in greenhouse gas emissions in 2011 limited the decrease in the transport sector's overall climate impact, according to the EEA's annual report on the environmental effects of transport. Overall GHG emissions fell by just 0.6%, not including sea shipping. Air travel increased by 10% to hit an all-time high in 2011.

EU lawmakers are considering whether to ramp up regulation of aviation's CO2 emissions, which was severely curtailed earlier this year. But the biggest member states – Germany, France and the UK – are strongly opposed.

The EEA report also shows international flights contributed quite significantly to a 2.3% increase in SOx pollution in 2011.

The trend of falling air pollutant emissions from transport "appears to have stabilized between 2010 and 2011", the authors concluded. The increased share of diesel in road transport fuels continues to cause high concentrations of particulate matter in cities, as well as high NOx emissions. PM10 limits were exceeded at 43% of traffic monitoring sites in 2011.

The slight reduction in overall GHG emissions from transport is consistent with the trajectory needed to meet the EU goal of a 60% cut on 1990 levels by 2050. But keeping on that trajectory could prove difficult without a shift to more sustainable modes of transport, the report warned.

"It is clear that GHG emissions are directly linked with transport demand, and the latter is influenced by the evolution of GDP. The challenge will be to maintain this good progress when the economic situation returns to pre-recession levels of growth and when the 'target trajectory' becomes more testing," it said.

Car use continues to increase in the new member states and is stabilizing in the older ones. Only the Netherlands had a high number of electric vehicles in 2011.

All EU countries were on track to hit the 10% share of renewables in transport by 2020. The use of renewable electricity remained very low compared with the amount of biofuels used, which rose by 3.9% over 2010-11, including biofuels that do not comply with the EU's sustainability criteria. The share of biofuels complying with the criteria increased by 6.3%.

The EU needs to accelerate the rate by which it is cutting transport oil consumption if it is to meet its target of a 70% reduction by 2050 on 2008 levels, the agency added. The reduction between 2010 and 2011 was just 0.6%.

20. Eastern States Need €6.5bn to Upgrade Their Large Combustion Plants

Countries in Eastern Europe need to spend up to €6.5bn to bring their power plants in line with EU air pollution rules they have signed up to. The eight countries in the Energy Community must implement emission limits set out in the Large Combustion Plant Directive by 1 January 2018, although they can exempt some plants that limit their running hours and shut down in 2023.

Countries including Ukraine, Serbia and Albania have until 2015 to decide how many plants they want to exempt, although under the terms of the deal struck in October the EU gets the final say over whether these opt-outs go ahead.

Over half of the €6.5bn needed would be for SO_x abatement, according to the Energy Community secretariat's calculations. NO_x reduction accounts for 32% of the potential expenditure and dust reduction for 13%.

Ukraine needs to make by far the biggest investment, at over €5bn. EU candidate states Serbia, Montenegro and the Republic of Macedonia may need to find over €900m, unless they shut some plants down. Croatia, the EU's newest member, would need to spend €318m to comply with the Industrial Emissions Directive (IED), according to the Energy Community study. The country has until 2018 to implement EU emission limits for most plants.

But a cost-benefit analysis carried out as part of the study found that the health and environment benefits of modernization over 2018-30 significantly outweigh costs at an average ratio of 17:1 across the eight countries and Croatia. IED compliance could bring Croatia benefits worth over €7bn.

It is not clear where the EU's poorer neighbors will find the capital needed to clean up their plants. Most are over 30 years old and would need "significant environmental improvements" to comply with EU emissions limits, according to the study. The Energy Community itself does not have a budget for such investment. International lending institutions such as the World Bank are likely to be a major source.

21. First Decisions Emerge On Industrial Emissions Directive Transitional Plans

The EU has approved Greece's transitional national plan (TNP) giving eight large combustion plants more time to comply with pollutant limits under the Industrial Emissions Directive. Decisions on another nine plans are due shortly. Environmental groups are concerned about the criteria the European Commission is using to judge the plans, and on this basis might challenge some of its decisions in court. They also expect some plans to be rejected.

Member states had to submit their transitional plans by January 2013 and the commission has a year to produce a decision. In the end, 14 submitted plans, plus Croatia after its accession in the summer. The commission has been in discussion with some member states over changes to their plans, including Greece.

The transitional plans cover the period from 2016 to mid-2020, by which time the plants included must comply with IED standards. Member states must also set out the measures they are planning to bring the plants into compliance.

Another derogation is also available, which some plants may use instead of TNPs. It is called the limited lifetime derogation and allows them to keep running until the end of 2023 but with restricted hours. Applications must be made by January 2014.

Environmental campaigners think the commission should be taking a broader approach in considering the transitional plans. For instance, some of the power plants they cover are in areas that breach EU air quality standards but this will not be taken into account, says Kathrin Gutmann from CAN Europe. In addition, many member states have not yet carried out strategic environmental assessments on their plans or consulted the public, she said.

NGOs are also unhappy that they have not been able to see the discussions between the commission and member states over changes to the plans, and that the list of measures is not included in the official Greek decision.

Six NGOs wrote to EU environment commissioner Janez Potočnik in October raising these and other concerns but Ms. Gutmann said the reply was not reassuring.

The other decisions expected soon are for Bulgaria, Finland, Hungary, Ireland, Lithuania, Slovakia, Slovenia, Spain and the UK. The other countries that submitted transitional plans are: Croatia, the Czech Republic, Poland, Portugal and Romania.

22. Consumer, Green Groups Voice Fears Over EU-U.S. Trade Deal

U.S. and European Union negotiators are holding a second round of talks in Brussels on December 16th, on what would be the world's biggest free-trade deal, with a special focus on reducing regulatory barriers to trade. But European consumer and environmental groups have warned that consumers risk losing out in a free-trade deal between Europe and the United States if big business succeeds in loosening standards,

BEUC, Friends of the Earth and the European Public Health Alliance told a joint news conference they were concerned that mutual recognition of regulations, designed to cut costs, would in fact result in the adoption of the lowest standards.

EU Trade Commissioner Karel De Gucht has repeatedly said EU regulation on genetically modified (GM) food will not be changed, but the United States considers this a trade barrier that must be reduced. Consumer groups fear a deal will lead to more GM crops used in products sold in Europe, where there is widespread public distrust of the technology, with looser labeling rules preventing consumers from making informed choices.

The European Union has already dropped its ban on certain U.S. meat imports such as beef washed in lactic acid and poultry washed in chlorine.

The European associations said their comments were not designed as an attack on U.S. standards, but European consumers were broadly protected by a requirement that corporations prove their toys, chemicals and other products do not cause harm. The U.S. approach is more to allow consumers to obtain damages for actual harm, they said.

U.S. consumers could also suffer if current tough regulations on medical devices, financial services or alcohol were watered down, they said.

Among the European associations' greatest concerns is a provision in the future trade deal that would allow foreign companies to bring claims against a country if it breaches the treaty. This, they said, would limit a country's right to pass laws to protect its citizens or the environment.

The Transatlantic Trade and Investment Partnership (TTIP) would create a tariff-free trade zone between the U.S. and the EU, the world's two largest economies. The White House says TTIP will open European markets and stimulate U.S. economic growth.

Robert Weissman, president of Public Citizen, said during a conference call with reporters that the agreement is largely about resolving regulatory differences between the U.S. and the EU that may impede trade.

A White House fact sheet declares that TTIP will “significantly reduce the cost of differences in regulations and standards by promoting greater compatibility, transparency and cooperation,” but also claims that high standards for U.S. health, safety and environmental protection will be maintained. Weissman said corporations are likely to use the negotiations to impose single standards for the U.S. and the EU, inevitably settling on the lowest common denominator.

For example, Michael Brune, executive director of the Sierra Club, said during the conference call that corporations on both sides of the Atlantic are engaged in a “feeding frenzy” to weaken rules on chemical safety, fossil fuels and labeling for genetically modified organisms. Weissman also said European corporations are challenging the so-called Volcker Rule that puts limits on the types of investments banks can make.

Regulatory protections should be determined through a democratic process, “not by a corporate-driven trade agreement,” Brune said.

Some 70 corporations, including AT&T, British Petroleum, Ford Motor Co., Intel, Johnson & Johnson, Microsoft, Pfizer, Philip Morris Intl. and Verizon, belong to the Trans-Atlantic Business Council, the official forum between U.S. and EU business and government leaders for the TTIP talks. However, the details of the talks aren't known, because the talks are held in secret and transcripts haven't been made public, Weissman said.

Weissman further said harmonized standards are likely to come with restrictions that would bar regulators from moving to higher levels of protection over time, as new information becomes available or new threats arise. Precautionary measures, in the absence of certainty about consumer, environmental or other risks, would also be difficult to impose, he said.

The talks may also yield a regulatory cooperation council, a nontransparent “superagency” that would reach into both the U.S. and EU regulatory machinery to further impede already difficult rulemaking processes, Weissman said. Such a council would let corporations in Europe comment on U.S. rules before they are proposed and could even subject all significant rules to trade impact assessments, Weissman said. Both U.S. and EU negotiators have offered proposals to create such a council, according to Weissman.

Moreover, the TTIP negotiators have suggested a dispute resolution system that would give big companies special rights to challenge national laws, and to bring cases challenging regulatory action to secret tribunals made up of “corporate-friendly lawyers.”

The pact is likely to increase the use of fossil fuels in Europe, Michael Brune, executive director of the Sierra Club said. EU negotiators have brought forward language that would limit the ability

of governments to oversee fossil fuel exports, opening the floodgates for higher use of liquefied natural gas and locking both export and import nations into a cycle of mutual dependency.

Domestically, such an agreement could lead to more hydraulic fracking, Brune said.

Peter Chase, the U.S. Chamber of Commerce's vice president for Europe, told reporters in June that the talks will seek not to lower regulations, but rather will encourage U.S. and EU negotiators to "respect each other's regulations and find a way to, if possible, create a bridge between them." But Anna Fielder, senior policy advisor at the Transatlantic Consumer Dialogue, rejected those arguments during the conference call. A trade agreement could theoretically increase consumer welfare and wellbeing by raising the less-protective economy to the standard of the more-protective and spreading the use of best practices, Fielder said. "But we have very real doubts that achieving such a state of nirvana is possible," she said.

The negotiations that began on December 16th are the third round. Because the scope of the talks is so sweeping, a final agreement doesn't appear to be imminent.

NORTH AMERICA

23. API, Emissions Control Makers Spar Over 'Tier III' Low-Sulfur Fuel Mandate

The American Petroleum Institute (API) and the Manufacturers of Emission Controls Association (MECA) are sparring over a low-sulfur fuel mandate in EPA's proposed "Tier III" vehicle air rule, with the two sides criticizing each other's data and statements sent to the agency trying to influence EPA to either drop or retain the mandate in the pending final rule.

The latest dispute, detailed in comments filed recently with the agency, focuses on whether various "cold start" emission control technologies are sensitive to sulfur, along with the future viability of fuel-efficient "lean burn" engines that automakers say would be held back by retaining higher gasoline sulfur levels. The groups are battling over the rule months after EPA closed the official notice-and-comment period on the proposed version on July 1.

EPA recently announced it is delaying by two months its previous non-binding December target date for releasing the final version of the rule, saying it needs more time to review comments and analysis.

API argues that the rule's proposed requirement to cut fuel sulfur levels from 30 parts per million to 10 parts per million will increase refining costs while offering few public health benefits, with a further claim that automakers do not need low-sulfur fuel to meet new tailpipe emissions standards that come into effect in 2017.

But the Manufacturers of Emission Controls Association (MECA), in comments sent to EPA on August 22nd, works to rebut earlier comments from API and the American Fuel & Petrochemical Manufacturers (AFPM) that claimed three technologies that limit nitrogen oxides (NO_x) and hydrocarbons emissions during cold starts are unlikely to be sulfur sensitive -- meaning the emissions control technology would maintain its performance even with higher-sulfur fuel.

MECA says this analysis is "severely flawed" in its assumption that the cold start technology are not sensitive to sulfur, as it says that technology "still relies on a precious metal-based catalyst to oxidize hydrocarbons or reduce NO_x, and these precious metal-based catalysts have well known sensitivities to fuel sulfur levels." The trade group says it is unaware of any cold-start emission

control technology not impacted by fuel sulfur, given that the technologies all rely on precious metal catalysts, adding that "API's and AFPM's premise that cold-start emissions can be zeroed out by a sulfur insensitive technology has no basis in fact."

Further, MECA tries to rebut comments from API that the market share for fuel-efficient lean-burn gasoline direct injection (GDI) engine could top out at 3 percent market share between 2015 and 2020, saying the auto sector has a "significant interest" in further developing the engines to comply with EPA fuel economy standards intended to cut greenhouse gas emissions.

MECA says the low-sulfur level mandated by Tier III will be an "important enabler" for the engines, which can cut gasoline use by up to 20 percent, as the group says current gasoline sulfur levels inhibit the performance of NOx absorber catalysts typically used in lean-burn GDI engines.

API, however, in reply comments recently submitted, says MECA "completely misses the point" it was trying to make about cold start engine technology, saying it never claimed that the cold start technology had "zero sulfur sensitivity," but rather that the technology is "not likely to be very sulfur sensitive." API also faults some the supplemental comments from MECA as being based on "very limited data that have not been independently verified."

Further, API criticizes MECA's outlook for lean-burn GDI engines as ignoring the "real world experience" of the markets where low-sulfur gasoline is already available, saying that MECA "does not explain why lean-burn GDI technology failed to enter the European and Japanese markets in significant volumes" after they switched to gasoline with sulfur levels that are 10 parts per million.

24. EPA FY14-18 Plan Targets Heavy Duty Vehicle GHGs, Off-Road Emissions

EPA's draft strategic plan outlining policy priorities for fiscal years 2014-2018 says the agency's air office will prioritize new greenhouse gas (GHG) rules for heavy-duty vehicles, while evaluating possible new controls on both GHGs and conventional pollutants from off-road mobile sources such as engines used in construction. The new policy goals are outlined in a section of the plan titled "Addressing Climate Change and Improving Air Quality" that provides an overview of EPA's key objectives in the strategic plan, which also includes targets for its water, waste, enforcement and other programs. According to EPA's website, the plan is a blueprint for advancing the agency's priorities and also projects environmental and human and health targets to achieve those outcomes.

EPA says that much of the GHG activity for mobile sources it has planned for FY14-18 lines up with President Obama's Climate Action Plan to reduce GHGs 17 percent below 2005 levels by 2020.

In recent years, EPA has finalized two rounds of GHG standards for light-duty passenger vehicles and one round of heavy-duty vehicles rules, and the strategic plan says the agency will prioritize further cuts from heavy-duty vehicles.

EPA sets a target deadline of Sept. 30, 2015, to coordinate with the Department of Transportation on implementing the existing vehicle and truck rules that are expected to cut GHGs by 6 billion metric tons.

The plan, published in the November 20 Federal Register, say EPA will also focus on implementing the existing vehicle GHG rules, which include light-duty standards for model years

2012-2016 and 2017-2025, and the first round of GHG standards for medium- and heavy-duty trucks for model years 2014-2018.

But the agency will also develop a proposal for a second phase of GHG standards for heavy-duty vehicles, weighing options such as how to encourage use of advanced technologies in the regulations and whether to include truck trailers in the rule, after deciding against regulating them in the first round of the standards.

EPA also indicates that it is ramping up its focus on emissions from off-road engines such as those used in construction, agriculture and other sectors. The agency says that in the FY14-18 time frame it will assess GHG control options for these sources, including whether to set standards for GHG emissions "from a wide range of non-road equipment, locomotives, marine vessels and aircraft, and transportation fuels."

EPA is facing several petitions to issue GHG rules for these types of engines, but has yet to respond to the requests for rulemaking -- and has said its preference for marine and aircraft GHG rules is through international agreements with global standards-setting organizations, rather than setting domestic-only rules.

In addition to considering GHG rules for off-road engines, EPA is also weighing the need to craft rules between FY14 and FY18 to curb these sources' emissions of conventional pollutants such as nitrogen oxides (NOx), volatile organic compounds (VOCs) and fine particulate matter (PM2.5), according to the plan.

EPA says it has conducted an analysis of the mobile source emission inventory to guide future air program priorities, and found that in the 2017-2030 time frame, off-road engine emissions will account for a larger percentage -- more than 50 percent -- of the mobile source inventory for NOx, VOCs and PM2.5.

Any new EPA regulations for off-road engines would likely revive debate over federal preemption of states' efforts to curb those mobile source emissions. California, which has authority under the Clean Air Act to set stricter mobile source rules than the federal government, has pursued a series of non-road engine emissions rules but the policies have faced legal challenges by the road building industry which says federal rules preempt the state policies.

EPA is taking public comment on the draft strategic plan through January 3rd.

25. U.S. 2012 Model Vehicles Hit Record Fuel Efficiency: EPA

The average fuel economy of vehicles sold in the United States hit a record high 23.6 miles per gallon (mpg) for the model year 2012, the U.S. Environmental Protection Agency has announced. Projections for the model 2013 year indicate a rise of 0.4 mpg, the EPA said, though the agency added that it did not yet have final data for 2013.

The 23.6-mpg reading for 2012 was a 1.2 mpg increase over the previous year and the second largest increase in the last 30 years, the EPA said. The boost is part of a trend that has seen fuel economy increase by 2.6 mpg, or 12 percent, since 2008, and by 4.3 mpg, or 22 percent, since 2004, according to the EPA.

Automakers reported an 8.9 percent rise in U.S. sales in November from a year earlier with a seasonally adjusted annualized rate of sales reaching 16.41 million vehicles.

The highest adjusted (as defined by the EPA) fuel economy rating among automakers was achieved by Mazda, with model year 2012 rating on all its cars and trucks of 27.1 miles per gallon. Honda ranked second with a fleetwide rating of 26.6 mpg, followed by Volkswagen at 25.8 mpg, and Toyota at 25.6 mpg. The best-rated U.S. carmaker's fleet came from Ford with a fuel economy score of 22.8 mpg, followed by General Motors at 21.7 mpg, and Chrysler at 20.1 mpg.

Pickup truck and SUV sales at all three U.S. automakers drag down their overall fleet ratings. Ford cars, for example, average 27.2 mpg, while Ford trucks managed just 18.5 mpg. GM's Chevrolet cars posted a fuel economy rating of 25.7 mpg while Chevy pickups could manage just 18 mpg. Chrysler's Dodge Ram pickups posted just 16.1 mpg.

In carbon dioxide emissions, U.S. automakers performed worse than the 2012 average of 376 grams per mile. Ford vehicles emitted 390 grams per mile while GM vehicles came in at 410 grams per mile and Chrysler was worst of all makers at 442 grams per mile.

Alternative fuel vehicles are also included on fuel economy estimates in mile per gallon equivalent (mpge) and carbon dioxide emissions. All electric vehicles like the Nissan Leaf or the Model S from Tesla Motors emit no tailpipe carbon dioxide, which a Toyota Prius plug-in hybrid emits at 133 grams per mile and the Ford C-MAX and Fusion models emit 110 grams per mile.

The mileage ratings are based on converting electricity consumption data into an equivalent amount of energy as contained in a gallon of gasoline. For a Tesla Model S with the 85kW-hr battery pack that works out to 89 mpge. The highest rated vehicle is the Scion from Toyota at 121 mpge.

26. As Gasoline Consumption Declines, U.S. Proposes Biofuel Mandate Cut

The Obama administration has proposed slashing federal requirements for U.S. biofuel use in 2014 attempting to prevent a potential fuel crunch next year. It was the first cut to renewable fuel targets written into a 2007 law, and follows the Environmental Protection Agency's warnings that the country was approaching a point where the so-called Renewable Fuel Standard (RFS) would require the use of more ethanol than can be blended into gasoline at the 10 percent level that dominates the U.S. fueling infrastructure.

Refiners have said this "blend wall," if left in place, would force them to export more fuel or produce less gasoline, leading to shortages and higher prices at the pump. In response, the EPA proposed to cut overall use of renewable fuels, made mostly from U.S. corn and to a lesser extent from soybeans, grasses, crop waste and Brazilian sugarcane, to a range of 15 billion to 15.52 billion gallons. Within that range, the agency proposed a specific goal of 15.21 billion gallons, which is more than 16 percent less than the 18.15 billion gallons contained in the law that governs the RFS, and below this year's 16.55 billion gallons.

The proposed goal matches the number contained in a draft that was leaked and circulated in October.

U.S. gasoline demand had been expected to rise every year when Congress passed the law in 2007, but it peaked in 2008 and has been anemic since, partly because fuel efficiency of U.S. cars and light trucks has risen steadily. "This unanticipated reduction in fuel consumption brings us to the point where the realities of the fuel market must be addressed to properly implement the program," a senior administration official told reporters in a teleconference about the proposal.

The impending blend wall problem had led to a surge in prices for ethanol credits, known as renewable identification numbers or RINs, from a few cents a year ago to almost \$1.50 at midyear. The surge had threatened to push up gasoline prices as the extra RINs costs for refiners would have been passed on to consumers. RINs prices have subsided in recent months, propelled lower in part by confidence that the 2014 mandate would be tweaked. After the EPA proposal on Friday, RINs prices fell about 7 cents to 18 cents.

The proposal still falls short of a request from two major oil and gas trade groups to lower the 2014 renewable fuel use target to 14.8 billion gallons.

The plan cuts the 2014 use of advanced biofuel, including biodiesel made from soybeans and Brazilian ethanol from sugarcane, to a range of 2.0 billion to 2.51 billion gallons. The agency did not propose a specific 2014 volume for ethanol made from corn but the proposed change in advanced biofuels implies a corn ethanol mandate of 12.7 billion to 13.2 billion gallons, down from the previous 2014 mandate of 14.4 billion gallons.

The EPA expects to release a final rule next spring after a 60-day public comment period. After that ethanol backers could unleash legal challenges to soften or reverse the changes.

27. Advanced Biofuels Could Remove Blend Wall, Senate Panel Told

Continued support of developing next-generation transportation biofuels could create alternatives that existing engines and distribution systems can safely handle, two federal government witnesses suggested. This would eliminate the blend wall that the US has hit with growing amounts of corn-based ethanol required under the Renewable Fuel Standard amid reduced gasoline demand, they told the US Senate Environment and Public Works Committee and its Clean Air and Nuclear Safety Subcommittee.

The US Department of Energy and the bioenergy community are using cellulosic ethanol research, development, and demonstration successes to accelerate cellulosic and algal “drop-in” biofuel technologies that can be used to displace petroleum-based gasoline, diesel, and jet fuel, said Steven Chalk, DOE’s deputy assistant secretary for renewable power. “Successful RD&D investments in cellulosic ethanol have provided foundational knowledge and capability at national laboratories, in industry, and at universities to develop the more challenging bio-based gasoline, diesel, and jet fuels,” he testified. Five biorefineries are in the early stages to commercially produce cellulosic ethanol, “and we expect a very fast ramp-up,” Chalk said. “We’re committed to the RFS, and the process and checks and balances Congress provided. We think the long-term predictability of the RFS is vital to encourage investment.”

“For most of the growth in the future, it’s mostly about advanced biofuels,” added Chris Grundler, who directs the US Environmental Protection Agency’s Transportation and Air Quality Office. “Our cellulosic standard will be based on what can be produced in the coming year. As for market conditions that would incentivize more infrastructure, we are seeing progress.” He said EPA believes its proposed framework for determining appropriate total renewable fuel and advanced biofuel volumes under the RFS would simultaneously address the ethanol blend wall and limitations in availability of qualifying renewable fuels. “Our proposal envisions more E15 and E85 being sold next year,” Grundler said. “We got a variety of views at our public hearing last week, where we asked for updated information on sales and infrastructure.”

Some of those views were restated at the committee's December 11th hearing. Wesley K. Clark, co-chairman of Growth Energy, which originally petitioned EPA to increase the allowable ethanol limit in gasoline from 10% to 15%, said the RFS has succeeded and does not need to be reformed. American Fuel & Petrochemical Manufacturers President Charles T. Drevna said it's not working properly and needs to be reworked and possibly repealed.

Jim Collins Jr., senior vice-president of industrial biosciences at DuPont Co.'s Performance Polymers and Packaging & Industrial Polymers Division, said the chemical manufacturer strongly supports the RFS based on its experience in corn-based ethanol and the significant potential it sees in cellulosic ethanol. "For the past 4 years in Iowa, we worked closely with farmers, equipment makers and academia on corn stover harvest trials to build and manage a cost-effective cellulose supply chain," he testified. "All this work culminated in the groundbreaking of a 30 million gal/year facility 1 year ago in central Iowa, approximately 40 miles north of Des Moines. I am happy to report that the construction is progressing on track and the facility is scheduled to begin producing its first gallons of cellulosic ethanol in the second half of 2014."

Collins said DuPont also is working with BP on a joint venture to develop and extensively test biobutanol, a higher alcohol fuel that is produced much like ethanol but has higher fuel qualities and better mileage. "It also reduces the volatility of fuel blends, and so can be used where summer air quality concerns persist," he explained. "It can be distributed by existing gasoline infrastructure, including pipelines. Lastly, biobutanol is more compatible with existing equipment, including small engines and marine engines."

Scott Faber, vice-president of government affairs at the Environmental Working Group, said, "Our view is we need an RFS. It's critically important to reduce the carbon intensity of our fuels, but we believe it's not working as the 2007 legislation intended." He suggested that the corn ethanol mandate be modified so producers have to meet greenhouse gas control requirements comparable to those for advanced biofuel producers. "Reducing the amount of corn ethanol we blend into gasoline would send a powerful signal to the investment money to put money into the second generation of technologies," Faber said. "The way we're managing it now has created a climate of likely litigation that has increased uncertainty."

Shortly after the hearing, US Senators Dianne Feinstein (D-Calif.) and Tom Coburn (R-Okla.) introduced a bill that would eliminate the corn ethanol mandate. "Under the corn ethanol mandate in the RFS, roughly 44% of US corn is diverted from food to fuel, pushing up the cost of food and animal feed and damaging the environment," Feinstein said. "Oil companies are also unable to blend more corn ethanol into gasoline without causing problems for automobiles, boats, and other vehicles. "I strongly support requiring a shift to low-carbon advanced biofuel, including biodiesel, cellulosic ethanol, and other revolutionary fuels. But a corn ethanol mandate is simply bad policy," she continued.

"This misguided policy has cost taxpayers billions of dollars, increased fuel prices, and made our food more expensive," Coburn said. "Eliminating this mandate will let market forces, rather than political and parochial forces, determine how to diversify fuel supplies in an ever-changing marketplace."

Sens. Richard Burr (R-NC), Susan Collins (R-Maine), Bob Corker, (R-Tenn.), Kay Hagan (D-NC), Jeff Flake (R-Ariz.), Joe Manchin (D-W.Va.), James E. Risch (R-Idaho) and Patrick Toomey (R-Pa.) are co-sponsors.

The American Petroleum Institute immediately applauded Feinstein and Coburn's bill. "Repealing corn ethanol mandates is the first step toward protecting consumers from outdated and costly public policy," API Downstream Director Bob Greco said. "EPA's proposal to lower the 2014 mandates could provide a stopgap, but Congress needs to deliver a long-term solution to provide certainly for consumers," he maintained. "Requirements set back in 2007 could soon push ethanol levels in gasoline above what is safe for most cars on the road today."

28. Renewable Fuel Backers Try To Change EPA's Mind at Hearing

Supporters of the renewable fuels industry turned out en masse at a public meeting held by the Environmental Protection Agency on the Renewable Fuel Standard, desperate for the U.S. government to change course after last month announcing a plan to lower the amount of biofuels that must be added to the fuel supply in 2014. About 300 people attended the meeting. The number of stakeholders who signed up to testify - almost 150 - was 10 times or more the count at a similar meeting a year ago, an EPA official said.

The meeting comes nearly three weeks after the Obama administration proposed slashing how much renewable fuel - mostly corn-based ethanol - needs to be blended into the U.S. fuel supply. The 2007 law mandated a total of 18.15 billion gallons of renewable fuel blending next year. The EPA's proposal requires just 15.21 billion gallons. The EPA proposed cutting the corn ethanol portion of the 2014 mandate from the 14.4 billion gallons called for by law to about 13 billion. Based on projected gasoline demand, that level of ethanol use would be slightly less than 10 percent of total U.S. gasoline consumption.

Speakers ranged from representatives of the biofuels industry and petroleum refiners to anti-hunger groups, bakers, small-engine manufacturers, lawmakers and the governor of Iowa, the largest U.S. corn-producing state.

A panel of five EPA rule makers - including Chris Grundler, director of the EPA's Office of Transportation and Air Quality - listened intently as groups of five to six speakers came up in succession to state their positions.

The sprawling event showed the intense interest in the future of biofuels - and caps a year of fierce lobbying that has raged in Washington between pro- and anti-ethanol interests.

The EPA has warned that the country is approaching a point where the RFS would require the use of more ethanol than can be blended into gasoline at the 10 percent level that dominates the U.S. fueling infrastructure. Refiners have said this so-called "blend wall," if left in place, would force them to export more fuel or produce less gasoline, leading to shortages and higher prices at the pump.

The use of a higher, 15 percent ethanol blend, known as E-15, is a big part of the debate. The EPA has declared E-15 safe for cars, SUVs and light trucks built from 2001 forward, now the majority of the U.S. fleet. But refiners say the blend risks damage to car engines, as well as chainsaws, boats and other equipment.

29. Refiners Fight 2013 RFS in Court as Senators Debate Program's Future

While EPA works to finalize the 2014 proposal, it is currently battling a U.S. Court of Appeals for the District of Columbia Circuit consolidated legal challenge by refiners over its 2013 RFS fuel targets. The American Petroleum Institute (API) and American Fuel and Petrochemical

Manufacturers (AFPM) filed suit over the 2013 RFS, and in their December 9th opening brief the groups allege that the method the agency used to establish the standard is arbitrary and capricious, and runs contrary to EPA's statutory authority. The brief says "EPA's increase of the RFS during the compliance year is contrary to law and arbitrary and capricious."

The groups allege that EPA "impermissibly" tasked the Energy Information Administration (EIA) to conduct a second analysis of transportation fuel demand in 2013 without allowing stakeholders to comment on the analysis before making the 2013 requirements final, which API and AFPM argue violates statutory notice-and-comment requirements.

The brief claims that the agency gave no notice when it "switched from using the October 2012 EIA estimate of total transportation fuel, which is specifically required by the [Clean Air Act], to using a new, lower EIA estimate from May 2013, which had the effect of increasing obligated parties'" volumetric blending obligations.

They say the action is unprecedented since the RFS was established, and EPA "has never before used an EIA estimate other than the one provided in October of the preceding year The final rule is therefore not a 'logical outgrowth' of the proposed rule, and obligated parties were deprived of notice and an opportunity to comment."

API and AFPM also claim that EPA erred because it included an exemption for small refineries in the final version of the 2013 RFS, but did not include the exemption in the earlier proposed version of the rule. The exemption increases the amount of fuel required to be blended by the obligated parties, thus depriving "obligated parties of the regulatory certainty that Congress intended and that EPA has repeatedly acknowledged is necessary."

The groups also argue that the agency's blending requirements for cellulosic biofuels are arbitrary and capricious, and violated the DC Circuit's previous orders admonishing the agency's method in determining how much fuel is able to be blended by refiners. The court ruled in January of 2013 that EPA in its 2012 RFS based the cellulosic volume requirement on projections that were far above production volumes based on available capacity.

EPA's opening brief in the litigation is due on January 30th.

30. Emissions Study Finds Advanced Diesels Extremely Clean

The most rigorous emissions testing ever done for modern heavy-duty diesel engines – which power virtually every large truck and bus sold in the United States – has demonstrated a greater than 94% reduction in the levels of nitrogen dioxide (NO₂ - an important contributor to ozone smog), and substantial reductions in all other pollutants, even when compared to engines first marketed to meet 2007 standards, according to a new study from the Coordinating Research Council (CRC). For a number of the most important pollutants, levels were substantially lower than required by regulations. These 2010 engines represent the newest generation of emission control technology. They were developed in response to the US Environmental Protection Agency Heavy-Duty On-Highway Diesel Emissions Rule of 2001 which mandated the implementation of strict NO_x standards starting in January 2010. The rule also mandated the implementation of a stringent PM standard in engines to be sold starting in January 2007.

The study, the Phase 2 Report of the comprehensive Advanced Collaborative Emissions Study (ACES), found that emissions of NO₂ and other nitrogen oxides – which can have direct health effects and contribute to the formation of smog – were approximately 61% below the 2010 EPA

standard and 99% lower than in 2004 engines. These reductions came while emissions of fine particles – a pollutant of significant public health concern whose emissions have been successively reduced by EPA regulations – were also 99% lower than 2004 emissions. Emissions of carbon monoxide, hydrocarbons, and a number of unregulated, so-called air toxics were also significantly below required levels.

The Phase 2 ACES study was conducted by the Southwest Research Institute in San Antonio, Texas, under the oversight of the CRC. Investigators tested heavy-duty diesel engines from the three major manufacturers of these engines, and subjected them to well-established federal test procedures, and to a much more rigorous 16-hour operation cycle designed especially for ACES. All the engines were equipped with after-treatment devices to reduce the emissions of particulate matter as well as oxides of nitrogen. They were tested on multiple repeats of these cycles, and measurements of over 300 regulated and unregulated air pollutants were made in accordance with the highest laboratory standards.

ACES is a multi-party five year initiative to test the emissions and health effects of new technology diesel engines to document the improvements that have been made and to ensure that there are no unintended emissions from this new technology. The study is being undertaken by the Health Effects Institute (HEI) and the CRC with support from a wide range of government and private sector sponsors, including the US Department of Energy, US Environmental Protection Agency, California Air Resources Board, Engine Manufacturers Association, American Petroleum Institute, and manufacturers of emission control equipment.

31. Truckers Seek EPA Overhaul of California Mobile Source Air Rule Waivers

The trucking industry is urging EPA to overhaul its process for reviewing California's frequent applications for Clean Air Act preemption waivers to implement mobile source air rules stricter than federal policies, saying the years-long process creates enforcement gaps, competitive disadvantages, and rule compliance delays. In recent comments to the agency, the American Trucking Associations (ATA) says the existing process penalizes trucking companies that make major efforts to comply early and creates "confusion" in the industry. "Important lessons should be learned from how this process has unfolded and how waiver requests should be handled in the future," says the group in its comments on California's waiver request for a rule to regulate truck and trailer greenhouse gases (GHG).

ATA, representing a slew of trucking sector groups, says that beyond the waiver at issue EPA should review its overall implementation of the air law waiver process in order "to provide future certainty to regulated industries." In particular the group wants EPA to address what it sees as troublesome gaps between the adoption of the state's mobile source rules and the submittal to the agency of a waiver request. ATA warns this can lead to a situation where regulations are implemented but lack state enforceability while EPA approval is pending.

EPA should also determine "whether it is valid to place new equipment requirements on equipment which has already been purchased and is in operation," and evaluate whether there are "adequate enforcement resources available to achieve the projected levels of compliance and environmental benefits" assumed by the rules.

The industry organization charges that because California regulators sometimes fail to apply for the waivers for years after adopting new regulations -- and EPA often fails to make a decision on those requests for years -- there is in many cases little or no state enforcement of the rules. As a

result, companies complying with the measures are at a severe competitive disadvantage to companies that are not complying, the group says.

The group says that the complaints it raises over the waiver process should be addressed either in EPA's response to the truck GHG rule waiver, or as a separate process that will provide more certainty in the future.

Any EPA approval of a review of the waiver process would have significant implications for both state and federal vehicle policies for conventional pollutants and GHGs. California has long enjoyed air law authority to apply for waivers to impose more stringent mobile source rules that, if approved, other states can adopt. The most notable recent example of the air waiver authority is light-duty passenger vehicle GHG rules that the California Air Resources Board (CARB) was pursuing, which ultimately was resolved by EPA adopting the rules on a national scale.

EPA took comment through October 18 on one of CARB's latest waiver requests -- for rules affecting heavy-duty tractors and truck trailers 53-feet long or longer. The rules require truck owners to improve the fuel efficiency of their rigs by requiring use of aerodynamic tractors and trailers that are also equipped with low-rolling resistance tires.

One of the compliance mechanisms is that trucks meet current EPA SmartWay-verified technologies. Some of the technologies include trailer rear fairings, front-gap fairings and trailer side skirts. The CARB regulation does not include any engine-related rules to reduce GHG emissions.

CARB adopted the rules in December 2008. The state's Office of Administrative Law approved the rules in December 2009 and they took effect January 1, 2010. The rules were also amended, mostly to relax requirements, in 2010 and 2012. Until EPA approves the rule waiver, CARB is not allowed to enforce the regulation on "new" equipment, ATA contends. ATA says in its letter that CARB did not submit its application for a waiver for the rules until June 2013.

Meanwhile, the California Construction Trucking Association (CCTA) & Western Trucking Alliance, as well as the Allen Lund Co., are urging EPA to reject the waiver, calling the CARB regulation "arbitrary and capricious" and failing all preconditions necessary under the air law, according to an October 17 letter from the organizations. They claim the state is violating the air law by regulating trailers, which are not motor vehicles or engines, argue Joe Rajkovicz, director of governmental affairs and communications for the trucking groups, and Ken Lund, a vice president with the Allen Lund Co.

CCTA, which earlier this month sued EPA in federal court to challenge an air law waiver for CARB's off-road construction equipment regulation, may also challenge the waiver for CARB's tractor-trailer GHG rules if and when it is approved.

32. California Launches Proceeding To Bolster Alternative-Fuel Vehicle Sales

California energy regulators are expanding the state's aggressive strategy to bolster the sale of alternative-fuel vehicles by launching a rulemaking to evaluate the potential for integration between electric vehicles and the state's power grid, including the use of batteries for demand response and energy storage. The effort will also focus on developing new alternative-fuel vehicle tariffs for each investor-owned utility and exploring additional "financing opportunities" to reduce upfront costs of electric cars and other clean vehicles.

California officials are scheduled to hold a workshop on the rulemaking on December 4, focusing on grid-integration and financing. Written comments on the plan are due December 5.

The new rulemaking by the California Public Utilities Commission (CPUC) adds to several major programs by state agencies to help auto companies sell more plug-in hybrid, full battery-electric, natural gas and hydrogen fuel-cell vehicles, with the overarching goal of helping automakers sell 1.5 million zero-emission vehicles by 2025.

This goal aims to help achieve the state's long-term targets to reduce greenhouse gas (GHG) emissions from the transportation sector, as well as Gov. Jerry Brown's (D-CA) 2012 ZEV Action Plan calling for multiple actions by state agencies to incentivize and accommodate clean vehicles in the coming years.

On November 14th, CPUC approved an "order instituting rulemaking" for the alternative-fuel vehicle strategies. The first track of the rulemaking will focus on "policies, guidelines and implementation strategies to facilitate utility participation in vehicle-grid integration," the order says. "The need for and adoption of rule changes, new rules, pilot programs and Research, Development and Demonstration (RD&D) projects and financing alternatives will be considered."

The second part will examine new clean-vehicle tariffs, "new and existing rate structures and design for residential, workplace and medium/heavy-duty vehicle rates," the order says.

The effort also intends to finalize "submetering" protocols to allow the use of customer-owned meters for utility billing, the ruling says. Utilities and car charging service companies have been debating who should shoulder most of the economic burden of this proposal.

Regarding power grid integration, CPUC officials will evaluate utility activities that can support initiatives and seek to establish rules that allow utilities, plug-in electric vehicle drivers, and the grid to capture the benefits of plug-in vehicle battery storage "for the managed charging, and for providing demand response ancillary services to the grid and power markets," the order states.

Grid integration is in part intended to "help reduce the negative impacts of peak-time charging and an opportunity to integrate renewables into the grid," according to the order. A car charging unit can provide several benefits to the grid, including responding to ramping needs, providing load to absorb renewable energy during times of over-generation and avoiding local distribution impacts by minimizing charging when the local system is overloaded, according to the CPUC document.

Vehicle batteries can be used for storage after they are no longer useful for transportation, the order says. "Developing a method to use these batteries as grid storage after they are removed from the vehicle would 'unlock' this future value to vehicle owners, increasing the total value of electric vehicle ownership."

The second track of the proceeding will delve into possible changes to residential and workplace electricity rates to enhance ZEV sales. CPUC "will look to incorporate opportunities for financing, through tariff design, alternative fuel vehicle-related costs," the order says.

Regarding financing opportunities to incentivize vehicle sales, the order mentions "battery second-life financing and property secured loans as opportunities to reduce the upfront cost of vehicles." In addition, financing opportunities "could occur at different levels of the plug-in vehicle value chain, including battery companies, automakers, charge companies, infrastructure

manufacturers, fleet operators and plug-in vehicle drivers. Specifically, we will explore what role, if any, the utility can play in helping facilitate plug-in vehicle-related financing and investment strategies."

The California Air Resources Board distributes about \$30 million collected annually from fees on motorists to subsidize the purchase of hybrid electric and ZEVs by providing \$2,500 rebates to motorists who buy the cars. In addition, the California Energy Commission provides \$100 million annually from fees on motorists to advance clean-vehicle technologies, including subsidizing fleet operator purchases of medium- and heavy-duty natural gas, electric and hydrogen fuel-cell vehicles.

Despite progress in the number and types of electric vehicles being offered by automakers, they "remain more expensive than their gas-power counterparts and upfront vehicle costs continue to be a barrier to electric vehicle adoption," the order says.

33. Northeast States Urged To Adopt California's Clean Car Rule Incentives

Automakers are pushing Northeast states that have adopted California's zero-emission vehicle (ZEV) rule to also implement incentives for ZEVs similar to those in California, such as rebate and infrastructure policies that the industry says are crucial to promoting the vehicles and making the standard workable in the Northeast.

At November 7-8 meetings between the auto industry, state and EPA officials, and vehicle producers reiterated their concerns about the difficulties in complying with the rule, which requires automakers to ramp up the sale of plug-in battery-electric vehicles and hydrogen fuel cell vehicles in the coming years to reach 1.4 million by 2025. Automakers have warned that a lack of infrastructure and incentives could make the rule's targets impossible to meet.

California -- which has Clean Air Act authority to pursue stricter mobile source rules than the federal government sets -- won EPA approval for the ZEV mandate, clearing the path for the other states to adopt it.

Connecticut, Maryland, Massachusetts, New York, Oregon, Rhode Island, Vermont, Maine, New Jersey and New Mexico are the states that have adopted California's ZEV regulation, though not all of those states signed a recent pact to spur higher ZEV sales. Each state has its own ZEV sales mandate depending on its population and vehicle fleet.

Increasing the sale of ZEVs is central to state and federal efforts to reduce greenhouse gas (GHG) emissions. California aims to reduce transportation-related GHG emissions 80 percent below 1990 levels by 2050.

The states have previously noted they are aware of the automakers' concerns, and on October 24th signed a pact vowing to take steps such as boosting limited fueling infrastructure that could hinder the rule's success. The recent meetings are also a part of the outreach by states aimed at smoothing implementation of the rule.

Representatives from major auto companies such as Ford, General Motors, Chrysler and Honda, the California Air Resources Board (CARB), the Northeast States for Coordinated Air Use Management (NESCAUM) and EPA attended the meetings.

The meetings -- held in Washington, D.C. -- were divided into two parts. The first involved individual states reporting on how they are readying for more ZEV sales, such incentives being made available, the number of electric charging stations that are in place, investments that have been made, and other steps to get ZEVs on the road. The second part of the meetings was talks between individual states and auto companies on current challenges facing the ZEV market that could hinder meeting the mandate. These include a lack of charging and fueling infrastructure, financial incentives for would-be purchasers of the vehicles, engagement with auto dealers, and consumer awareness of electric vehicles that are being offered for sale.

Automakers reportedly want the Northeast states to adopt incentives similar to those in California in order to boost ZEVs, noting California has in place multiple programs that have funneled hundreds of millions of dollars into building electric charging and hydrogen fueling stations, providing motorists who purchase ZEVs with substantial rebates, and funding research and deployment programs for advanced ZEV power train technologies.

As a result of the recent meetings, state officials agreed to form work groups over the next two weeks to further discuss the challenges of meeting the ZEV mandate in more detail. One work group will focus on how states can "lead by example" by passing policies mandating that their state agency vehicle fleet operators must purchase a certain percentage of ZEVs in the coming years.

Though the auto industry has said it plans to work with state regulators to comply with the ZEV regulations in all 10 states, it has at the same time called on California to conduct an early mid-term review of the mandate based on fears that it will be impossible to comply with given the lack of infrastructure and incentives in the other states. However, CARB Chairwoman Mary Nichols rejected those requests during a board hearing last month.

In addition, officials with Global Automakers are planning to meet soon with EPA Administrator Gina McCarthy to request that the agency take a more aggressive oversight role in helping to ensure the 10 states establish the kinds of programs that will enable auto companies to comply with the ZEV mandate.

Between model years 2018 and 2025, the ZEV sales mandate will require auto manufacturers to sell approximately five million ZEVs cumulatively in California and the other states, regardless of market conditions and infrastructure availability, according to auto industry officials.

34. Advisory Panel Suggests EPA Expand Truck Efficiency Program to Other Sectors

An EPA advisory panel is suggesting the agency consider expanding its voluntary SmartWay trucking efficiency program to cover more of the trucking freight industry and also include other sectors such as air freight, though some committee members questioned the extent EPA could invest in an expansion, given dwindling resources.

The Mobile Sources Technical Review Subcommittee (MSTR) of the Clean Air Act Advisory Committee (CAAAC) will within weeks finalize a report to the agency detailing the recommendations, which members of the panel previewed at an October 29 meeting. While the report will make a slew of recommendations for expanding the program, it will also advise that EPA be careful not to overburden small businesses, according to panel members.

SmartWay is a public-private partnership between EPA and the freight transportation industry that aims to find ways to improve fuel efficiency -- which reduces emissions -- and save money, which benefits the sector.

EPA launched the program in 2004 focusing on trucking and rail freight, and the success of the program has prompted the agency to weigh options for crediting trucking companies' participation in its SmartWay transportation energy efficiency program as part of its next phase of greenhouse gas (GHG) rules for medium- and heavy-duty vehicles as one potential way to secure additional GHG cuts beyond those in the upcoming rule.

In addition, the agency tasked the MSTR with recommending ways to expand the program, including the potential for covering sectors such as aviation, marine shipping and non-road engines. EPA is also looking at how to expand the program beyond larger trucking companies to include smaller, independent companies.

At the subcommittee's meeting, the co-chairs of a SmartWay workgroup previewed the panel's report and its recommendations for the program. For example, the panel recommended that EPA create air freight and marine "partner" categories, to include foreign and U.S. shippers. EPA should establish methods to enable shippers to assess supply chain GHG emissions across modes of transport, including air cargo and ocean shipping, the workgroup says.

The group further says that EPA needs to establish reciprocity and possibly data sharing arrangements with existing GHG data sets, including those of the Department of Transportation.

In the non-road sector, which includes construction equipment, the workgroup recommends that EPA create a voluntary market-based partnership -- perhaps with a different brand than Smartway -- and also that EPA implement a pilot program with a focus on subsectors of the industry with fixed work sites. Fixed work sites, such as mines and quarries, or predictable goods movement as part of agricultural operations, are simply easier to include in SmartWay than portable sources of emissions, the work group co-chairs explained. In the construction sector, nonroad engines are frequently part of rental fleets and are not being operated by the owner, they said, making participation in a voluntary efficiency program more difficult.

The MSTR is also making recommendations for how EPA can improve its existing SmartWay trucking sector efforts, including a suggestion that EPA limit any new focus on vocational trucks - those used for work-specific purposes, rather than general freight -- only to large fleets, and that efforts to expand the program to "dray" trucks used in ports also be confined to larger trucking companies. A large proportion of dray trucks are operated by small companies or by individual owner-operators, hence limiting the potential expansion of SmartWay in ports.

To counteract the inclusion of only larger trucking companies -- those with 50 or more trucks -- in ports, the work group also recommends that third-party logistics companies be included to help independent owner-operators afford the technology upgrades necessary.

Speaking at the CAAAC panel meeting, OTAQ Director Chris Grundler said that EPA is "launching a national conversation" on how to reduce air pollution in ports, that will culminate in a "ports summit" next year, to include a variety of interested stakeholders.

Other recommendations on the trucking sector include incorporating SmartWay into driver training schools, inclusion of refrigeration systems, and easing and simplifying requirements for small trucking companies.

In the rail sector, the panel recommended streamlining of reporting requirements and incorporation of operational strategies. Such strategies could include scheduling and load-matching, and speed or idling requirements.

The workgroup further sought to ensure that SmartWay "informs" EPA's forthcoming second-phase heavy-duty vehicle GHG standards, in line with EPA's consideration of how to credit the program in the rule.

The draft report also makes some overarching recommendations for the SmartWay program, including enhancing data quality; strengthening the SmartWay brand; strengthening partner recruiting efforts and partner retention efforts; enhancing financing programs; seeking to include black carbon accounting; incorporating operational strategies; efforts to further harmonize global supply chain carbon accounting; and looking for a way to adopt metric measures. Some CAAAC panel members questioned, however, whether EPA would be able to offer more financial support for the program or pay for other aspects of expansion, given a declining overall budget.

35. EPA and DOE Release Annual Fuel Economy Guide with 2014 Models

The U.S. Environmental Protection Agency (EPA) and the Department of Energy (DOE) have released the 2014 Fuel Economy Guide, providing consumers with "Top Ten" lists allowing consumers to see the most efficient advanced technology vehicles as well as the most efficient gasoline and diesel powered vehicles. Consumers will also find a broad range of information in the guide that can be helpful while shopping for a new vehicle— including an estimated annual fuel cost for each vehicle. The estimate is based on the vehicle's miles per gallon (mpg) rating and national estimates for annual mileage and fuel prices. An online version of the guide, available through www.fueleconomy.gov, allows consumers to enter local gasoline prices and typical driving habits to receive a personalized fuel cost estimate. Also, for the second consecutive year, the guide includes a 1-10 greenhouse gas rating for each model, providing a quick and easy way for consumers to identify vehicles with low greenhouse gas emissions.

The EPA fuel economy estimates are the best way to compare the fuel economy among vehicles. Official fuel economy testing is controlled, repeatable, and accounts for a variety of real-world conditions for the average driver, like air conditioning usage and a variety of speed and temperature conditions. Individual mileage will vary depending on factors such as driving style, high air conditioning usage, carrying extra weight and towing, and weather.

36. US Questions EU's Stepwise Approach to Climate Deal

The US has criticized the EU's proposal that countries should put forward their climate commitments next year, followed by a negotiation process culminating with the adoption of a global agreement in 2015. A "robust international assessment" of this kind is needed to ensure that the overall emission reduction commitment is consistent with the goal of keeping global temperature rise below 2°C, the EU believes. But in a submission to the UN ahead of international climate talks beginning in Warsaw a few weeks ago, the US said such a plan would create "a dynamic in which [countries] may well come forward with the minimum credible level of effort, so as to leave room to move in the negotiations".

Without naming the EU, the US said it wants to discourage the "iterative process" that "others have conceived", whereby countries "submit 'offers' but are expected to enhance them on the basis of negotiation".

But the EU and US positions are similar in that they both see the need for a period of review of draft pledges. And in its submission for Warsaw, the EU has acknowledged that it will be up to each country to decide whether to raise their ambition.

However, the US is placing far greater emphasis on the voluntary nature of countries' climate plans. The US envisages a final climate agreement that will contain "a mix of provisions that are legally binding and non-legally binding", whereas the EU is pushing for a legally binding agreement applicable to all countries.

The US says countries should table draft commitments in early 2015, following which governments would give their views on each other's plans and could ask for information to be clarified. Expert bodies such as the International Energy Agency could also analyze countries' proposals relative to the 2C goal.

The EU and US also seem to differ on the issue of measuring 2015 commitments, position papers for the Warsaw talks indicate. The EU has emphasized that countries proposed mitigation commitments must be quantifiable.

But the US argues that "while the bulk of a commitment should be quantifiable... some countries may include elements in their commitments that will reduce emissions, but are not quantified or quantifiable in greenhouse gas reductions".

37. Canada Launches New Attack Against EU's Proposed Dirty Oil Rules

The EU is working on a Fuel Quality Directive (FQD) to cut emissions of greenhouse gases from the transport sector. The directive singles out the tar sands, a move Canada fears could set a bad precedent and hit crucial energy exports. Therefore, Canada has renewed its attack on the EU plan; Natural Resources Minister Joe Oliver released a study - commissioned by Canada's right-leaning Conservative government - that claims the EU directive relied on weak data.

Canada has the world's third-largest proven reserves of crude, much of which is locked in the tar sands of Alberta. Extracting the oil requires more energy than conventional production, a fact regularly highlighted by environmental campaigners.

The report by energy consultants ICF International Inc. said the FQD ignored the fact that the EU uses oil from Venezuela, Iraq, Nigeria and Russia, which burn and release natural gas during extraction. Oil from these nations is therefore sometimes dirtier than tar sands crude, it added.

"The FQD would discriminate against Canada by discouraging EU refiners and consumers from using Canadian crude oil and products, thereby negatively impacting Canada's energy sector," Oliver said in a statement. "We hope the European Union will consider this report's findings as a basis for changes to make the Fuel Quality Directive sound, fair and effective."

Should the measure be adopted, it would have little immediate impact on Canadian oil exports, which are now shipped almost exclusively to the United States. The Conservative government, however, is keen to diversify energy exports and Europe could become a target market if TransCanada Corp builds a planned 1.1 million barrel-per-day pipeline from Alberta to the Atlantic coast.

Last year, amid heavy Canadian lobbying, the EU held an inconclusive vote on the directive and then decided to assess the full impact of the plan. That assessment is due by the end of this year, an EU commission spokesman told the press.

The FQD calls on EU refiners to cut greenhouse gas from transportation fuel by 6 percent by 2020. The EU's executive commission labeled oil sands crude as having 107 grams carbon dioxide per mega joule - making it clear to buyers that the fuel source had more greenhouse gas impact than average crude oil at 87.5 grams. Canada disputes the figure, contending that much conventional production is more carbon intensive than oil sands bitumen.

TransCanada also wants to construct the Keystone XL pipeline to take tar sands crude from Alberta to the United States. Green activists are pressuring U.S. President Barack Obama to veto the project on the grounds it would accelerate the pace of climate change by boosting oil sands production. Obama is due to announce his decision next year.

38. D.C. Circuit Scraps Truck NOx Control Waiver Rule

The U.S. Court of Appeals for the District of Columbia Circuit has scrapped an EPA rule that provided waivers to truck maker Navistar to continue selling heavy-duty engines that exceeded nitrogen oxides (NOx) limits, finding the agency did not provide adequate notice about its plans to alter its policy on when it will provide waivers. The three-judge panel's unanimous December 11th ruling is the latest development in a long-running legal battle in which major truck manufacturers have filed four lawsuits challenging EPA rules and their related waivers, called certificates of conformity, that have allowed Navistar to continue selling engines by paying a per-engine penalty. The truck manufacturers say the rules, issued last year, have "tilted the playing field" in favor of Navistar.

The opinion in Daimler Trucks North America LLC et al. v. EPA will block EPA from providing any further certificates of conformity to Navistar that cover 2014 engines, given that there is no longer a valid waiver rule. But it is unclear if truck manufacturers will prevail in their pending legal effort to scrap certificates of conformity issued in 2013 and to potentially file Clean Air Act enforcement suits against Navistar for selling engines that lack valid certificates.

EPA last year -- first in an interim final rule that took effect immediately and later in a final rule -- established a "nonconformance penalty" that allowed Navistar to purchase certificates to allow them to continue to manufacture and sell heavy-duty truck engines that exceeded a NOx emission limit of 0.2 grams per brake-horsepower that came into effect in 2010. The interim rule set a per-engine penalty of \$1,919, while the final rule set a \$3,775 penalty.

The D.C. Circuit last year, in response to the first truck manufacturer lawsuit, vacated the interim final rule, finding that EPA was not justified in avoiding typical notice-and-comment rulemaking procedures, but the court in response to a second lawsuit declined to scrap the \$1,919 per-engine certificates of conformity, finding the case was moot because the engines were already sold.

In the recent Daimler Trucks decision, responding to the third truck manufacturer lawsuit that went through oral arguments on Oct. 22, the D.C. Circuit found that EPA had again failed to provide adequate notice, this time about a change to its own regulations called the "substantial work" criterion that defines when it is warranted to provide Clean Air Act waivers to truck engine manufacturers. For 27 years EPA had a definition that it would be warranted to provide the engine waivers if "substantial work will be required" to meet the emission standard. In the 2012 proposed and final rules, however, EPA said that the waivers were warranted if "substantial work was

required" to meet the NOx standard. The truck manufacturers said that EPA had failed to provide adequate notice that the agency was planning to amend its regulatory definitions, and the D.C. Circuit in its ruling agreed, finding that although EPA had used the "was required" language in its proposed rule and other documents, the agency had not clearly announced plans to make the definition change.

With the ruling, the truck manufacturers will be able to pursue their pending lawsuit challenging the 2013 engine certificates of conformity, a case that had been stayed in the D.C. Circuit, though they could face the same mootness issue of the second lawsuit if the case drags well into next year, at which point the engines at issue may have already been sold.

39. U.S. Northeast States Ask EPA to Crack Down On Midwest Pollution

Eight Northeastern and mid-Atlantic governors have petitioned the U.S. Environmental Protection Agency to require "upwind" states in the Midwest and south to curb ozone-forming pollution from their power plants, which they say travels downwind and poses health risks to their citizens. They want the EPA to force nine states - Illinois, Indiana, Kentucky, Michigan, North Carolina, Ohio, Tennessee, Virginia and West Virginia - to regulate the emissions that cross into their borders through prevailing winds and contribute to higher ozone levels to the north and east of the upwind states.

The move comes just ahead of a closely watched Supreme Court review of an earlier appeals court rejection of the EPA's Cross-State Air Pollution Rule. (See Below)

The governors, led by Delaware governor Jack Markell, said the upwind states had failed for decades to install the technology needed to contain emissions of organic compounds (VOCs) and nitrogen oxides (NOx), which cause asthma and other respiratory diseases and contribute to as much as 98 percent of the ozone air pollution problems in their own states.

The petition asks the EPA to require the upwind states to join them in an "Ozone Transport Region," which under the federal Clean Air Act would force actions to limit air pollution consistent with the efforts of the "downwind" states. Under that kind of pact, the Midwestern states would need to install what are known as best available control technologies to capture the emissions.

Besides Delaware the states petitioning for the controls are Connecticut, Maryland, Massachusetts, New Hampshire, New York, Rhode Island and Vermont.

Markell said downwind states pay the price for other states' failure to install necessary controls. "While Delaware's in-state sources are well-controlled with state-of-the-art technology, this is simply not true of our upwind neighbors," Markell said. "Delaware pays more for healthcare resulting from respiratory illnesses and our industries are forced to do more than those in the states causing the pollution, and that's simply unfair."

Delaware officials said removing an additional ton of pollution in a downwind state, which has already removed most of these emissions, would cost between \$10,000 and \$40,000, but that it would only cost \$200 to \$500 a ton in upwind states, "where even some basic control technologies have not been installed."

Vickie Patton, general counsel for environmental group Environmental Defense Fund, said it is also in the interest of the upwind states to install pollution controls. "Cleaning up this harmful

power plant pollution will mean healthier, longer lives for children, families and communities across the Midwest and the millions of people afflicted in downwind states," she said.

40. U.S. Justices Hint at Support for EPA Cross Border Air Pollution Regulation

U.S. Supreme Court justices offered President Barack Obama's administration some encouragement as they weighed the lawfulness of a federal regulation. The Cross-State Air Pollution Rule (CSAPR), limiting air pollution that crosses state lines, mostly emissions from coal-fired power plants. Although it was unclear how the court would rule, a majority of the eight justices hearing the case at points in the 90-minute argument voiced some support for the regulation, which has been challenged by some states and industry groups. (The ninth justice, Samuel Alito, recused himself from the case for undisclosed reasons.)

The government is defending a regulation issued under the federal Clean Air Act that had been due to go into effect in January 2012, requiring some states to cut the smog and soot that travels from their power plants downwind to states further east. It requires 28 states to reduce emissions of sulfur dioxide and nitrogen oxides, was put on hold while courts weighed the challenges.

In striking down the rule in August 2012, the U.S. Court of Appeals for the District of Columbia Circuit wrote in part that the U.S. Environmental Protection Agency could not impose a federal plan on a state until the state was given notice of the amount of pollution it emitted that makes it more difficult for other states, downwind, to meet government-set air quality standards. The appeals court also found that EPA authority was limited over what factors it could consider when setting targets for the states.

The Obama administration appealed the decision to the Supreme Court.

When the high court agreed to take up the case, it did so by saying it would consider three questions raised by EPA in its appeal: whether the D.C. Circuit lacked jurisdiction to address some aspects of its opinion, if states can wait to adopt their own SIPs to address cross-state pollution until after EPA quantifies their interstate pollution obligations, and if the agency is allowed to consider the cost-effectiveness of interstate air pollution reductions.

At arguments, the justices side-stepped procedural arguments raised by EPA over whether the D.C. Circuit had the authority to rule on issues the agency said were not properly raised in the appellate court litigation. On appeal, EPA has argued that the opinion did not just vacate CSAPR, but also amounted to a "collateral attack" on several other agency rules that disapproved SIPs for failure to meet their good neighbor obligations under the air law. The agency has said the court lacked jurisdiction to address those past SIPs, as the deadline for judicial review had already passed, and also exceeded its jurisdiction to scrap CSAPR based on statutory objections not raised in public comments on the CSAPR rule. Under what is known as the "exhaustion requirement" of the Clean Air Act, parties cannot sue EPA for issues that were not raised during the public notice and comment period.

Both Chief Justice John Roberts and Justice Anthony Kennedy, two members of the conservative wing of the court, offered some encouragement to the administration. Roberts challenged Jonathan Mitchell, a lawyer representing Texas and other states that object to the regulation. Mitchell said the EPA had "left states completely in the dark" about what their obligations were.

In his response, Roberts seemed to defend the EPA's approach while acknowledging the difficulties facing the states. "It seems to me that if EPA had taken a different view, it would have

been contrary to the statute," he said. Roberts also appeared receptive to the administration's argument that it could consider cost-effectiveness when determining what emissions reduction goals a state should face.

The administration says that the Clean Air Act requirement that the EPA and states limit pollution that will "contribute significantly" to another state's air quality problems is not limited to consideration of the amount of pollution. The agency can also take into account how difficult it is to reach a particular target, government lawyers say.

Roberts used a basketball analogy in an exchange with Peter Keisler, a lawyer representing business interests challenging the EPA rule. "If you ask the coach what significantly contributed to the loss, he's going to talk about the missed layup rather than the missed desperation throw, even though, as far as amount, each was going to count for two points," he said.

Kennedy also seemed sympathetic to the cost-effectiveness argument. "Can't you say that the contribution in one case is more significant than the other, based on feasibility?" he asked Keisler.

Throughout the argument, the liberal members of the bench stressed that states could still have a say in the process even after EPA has told them what their targets should be. Under the Clean Air Act, states can make a counter-proposal at a later date, Justice Elena Kagan and others said. A ruling for the EPA would not be "the end of the game," she said.

Justice Stephen Breyer, another justice on the liberal wing, noted that the approach taken by the EPA might actually be the least troublesome way of addressing the issue. In an exchange with Mitchell, he indicated that the alternative would be to burden states with expensive targets that do not have a huge impact on air pollution. "It sounds to me like you are asking them to do the impossible," he said.

A ruling is expected by the end of June.

Following the oral arguments, several court observers suggested that the eight high court justices that heard the case could vote either 5-3 or 6-2 in EPA's favor and reverse the U.S. Court of Appeals for the District of Columbia Circuit ruling that scrapped the policy. The appellate court's 2-1 majority ruling said the agency exceeded its air law authority with CSAPR and erred in its implementation of the rule.

Justice Clarence Thomas did not speak at oral arguments, but conservative Justice Antonin Scalia asked questions harshly critical of the agency's rule. For example, when DOJ's Stewart pointed to the briefs of states allied with EPA in the case, which testify that some states have successfully calculated significant contribution and had good neighbor SIPs approved by EPA, Scalia said, "Well, that just means it's pin the tail on the donkey. Some states got the tail. I mean, you know, they pinned it in the right place. That doesn't prove anything."

One of the primary issues in the case is whether EPA had the authority to impose CSAPR on states using FIPs without first allowing them to develop their own plans. EPA when promulgating its rule started from the position that most states in the 28-state region covered by CSAPR had already missed a statutory three-year window to craft SIPs to eliminate their NO_x and SO₂ missions that "contribute significantly" to the problems of another state downwind in meeting federal air standards, a requirement established under the law's "good neighbor" provision.

EPA in its FIPs set states' emissions "budgets," or caps on emissions, in order to operate a cap-and-trade system. CSAPR's opponents, including some states and utilities, argue that this violates the Clean Air Act's system of "co-operative federalism." The D.C. Circuit in its 2-1 ruling vacating CSAPR in August 2012 agreed, saying that EPA must first define significant contribution for each state, then allow states three years to develop a SIP.

Roberts told Department of Justice (DOJ) lawyer Malcolm Stewart, representing EPA, "you would impose on those states the burden to issue the good neighbor program without knowing how much you expect them to -- to meet." Stewart replied that "it's the statute that imposes the obligation on the states."

Questioning Texas Solicitor General Jonathan Mitchell, representing states and cities opposed to CSAPR, Roberts appeared to acknowledge the constraints EPA was operating under in writing CSAPR, saying that for states to first attempt to craft good neighbor SIPs "is certainly hard, but it is what the statute says; and it seems to me that if EPA had taken a different view, it would have been contrary to the statute."

Kennedy, questioning Mitchell on the same issue, said, "at least if you've adopted a SIP or proposed a SIP, you've given reasons, you have a -- you have a rational plan, and the EPA then must give a reasoned response to it. Whereas, if the EPA is the first one, they're writing on a blank slate; and it seems to me that in some respects, the EPA is more constrained under this process to which you object." Mitchell argued that EPA in CSAPR changed its own interpretation of the air act since issuing its NOx SIP Call, an earlier emissions trading program in which EPA calculated states' reduction commitments first, rather than opting straight for FIPs. "Once EPA asserts that exclusive interpretive authority over the provision, the states have no obligation to guess at what EPA might do in the future when they submit the SIP," he argued.

Kennedy also indicated support for EPA's approach on the second key issue in the case -- the content of the FIPs, which industry said unlawfully "overcontrolled" sources in some states and was unreasonable. EPA when setting emissions budgets under CSAPR did not make emissions reduction obligations proportional to a state's "significant contribution," but instead factored in cost-effectiveness considerations that advocates say render the rule cheaper to implement on a national scale. EPA's cost thresholds prohibit the agency from considering controls costing more than a certain amount per ton of pollution reduced when calculating significant contribution.

The question is whether overcontrol is permissible, and the D.C. Circuit's alternative is feasible. EPA says the D.C. Circuit's plan cannot be implemented and is overly simplistic. Sotomayor and Breyer argued in favor of EPA's discretion to craft a rule in a cost-effective manner.

Kennedy questioned attorney Peter Keisler, representing industry opponents of CSAPR, on whether feasibility can be factored into EPA's analysis of what constitutes "significant" contribution. "Can't you say that the contribution in one case is more significant than the other based on feasibility?" he asked.

Keisler said, "I don't think that is a proper definition of 'significant' when it's modifying 'contribution to nonattainment'" by a state of federal air quality standards.

Scalia, also questioning Keisler, said the debate over the meaning of "significant contribution" was misplaced. "It isn't contributions to nonattainment. It's the word 'amounts.' The statute prohibits activity within the state from emitting any air pollutant in amounts which will contribute

significantly. . . . Amounts are amounts," which precludes inclusion of cost-effectiveness or other considerations into the significant contribution analysis.

Kennedy, however, was not so sure, telling Keisler that "the word 'significantly' does import a judgmental component" -- an issue on which Roberts appeared to agree.

41. EPA Tells Court U.S. Mercury, Toxics Rule Is Legally Justified

The U.S. environmental regulator argued in court recently that its rule limiting mercury and hazardous air pollutants is "appropriate and necessary," not an improper interpretation of the federal Clean Air Act as industry groups and some states contend. The U.S. Court of Appeals for the District of Columbia Circuit, the second most powerful court in the country behind the Supreme Court, heard two cases challenging the Environmental Protection Agency's first rules to crack down on mercury from the country's fleet of electric generating units.

The EPA's Mercury and Air Toxics Standard (MATS) applies to 1,400 of the country's largest power plants and would come into force in 2015, or in some cases, 2016.

The MATS rule was finalized in December 2011 but has been subject to several petitions for reconsideration from groups ranging from pollution control equipment vendors to power plant developers. The EPA has said that MATS could prevent up to 11,000 premature deaths, and generate \$90 billion in health benefits, each year.

The three-judge panel asked a number of detailed questions to the dozen or so lawyers representing the EPA, green groups, the energy industry and states. The judges appeared skeptical of industry's argument that the agency did not take the proper steps to determine that it was "appropriate and necessary" to regulate those pollutants.

Neil Gordon, Assistant Attorney General for the state of Michigan, which opposes MATS, said the EPA's interpretation of the word "appropriate" was unlawful since the agency did not weigh regulatory costs in its decision to regulate the pollutants. But Chief Judge Merrick Garland, a Democratic appointee, questioned Gordon's argument, saying, "nowhere does Congress require (the EPA) to evaluate cost" in its determination for the need to curb mercury and other toxic substances to protect public health.

Arguments at the hearing, held even though the court was closed for a snow day in Washington DC, lasted nearly four hours. That was longer than planned and longer than arguments in similar regulatory cases, observers said.

"The panel was well versed in the case and thoroughly read the briefing. The questions were really probing around the salient issues," said John Suttles, a lawyer for the Southern Environmental Law Center who represented the American Lung Association as an environmental intervener in the case. He said the EPA made a strong case that it was within its rights in regulating the pollutants and that he "didn't really see an indication that court disagreed with EPA."

But Eric Groten, an industry lawyer specializing in the Clean Air Act for law firm Vinson & Elkins, said he would be surprised if the MATS was affirmed in its entirety. "There were so many issues argued that it increases the chance the EPA got something wrong," he said.

A conclusion to the case will end years of "pingponging" between the EPA and the DC Circuit court.

42. Ontario Lags in Curbing Greenhouse Gases from Transportation Fuels, Official Says

The Ontario government has stalled in its efforts to reduce greenhouse gas emissions from transportation fuels, largely due to its failure to introduce a low-carbon fuel standard, provincial Environmental Commissioner Gord Miller said recently. The province committed in 2007, jointly with California, to reduce the carbon intensity of transportation fuels by 10 percent by 2020 from 2007 levels to reduce carbon dioxide emissions. But unlike California Ontario has made little progress toward implementing a low-carbon fuel standard to achieve that goal, Miller said in a statement on release of the second volume of his "Annual Energy Conservation Progress Report: 2012". The provincial government should transfer responsibility for developing and implementing a low-carbon fuel standard to the Ministry of the Environment from the Ministry of Energy, he said, as the environment ministry has a strong track record on fuel regulation, including minimum ethanol levels in gasoline and a proposal to require biodiesel use in motor fuels, he said.

Provincial Energy Minister Bob Chiarelli said that his ministry will review the report's comments and recommendations but added that the government's budget for fiscal 2013-2014 already included a promise to consult with stakeholders on a provincial mandate for greener diesel fuels. "As the province plans for Ontario's electricity needs for the next 20 years, conservation will be the first resource considered," Chiarelli said in a statement.

The Ontario government is taking other steps to improve fuel conservation, including the Ethanol in Gasoline Regulation, which since 2007 has required 5 percent minimum ethanol content in gasoline sold in the province, Beckie Codd-Downey, Chiarelli's press secretary, said. The province also has put in place tax incentives for the use of natural gas, propane and electricity by the transportation sector and supports new electric vehicle purchases through an incentive program administered by the Ministry of Transportation, Codd-Downey told the press.

On electricity conservation, Miller said it is unlikely Ontario's electricity distributors will meet 2014 targets set by the provincial government to reduce peak electricity demand by 1,330 megawatts from 2007 levels and total electricity consumption to 6 billion kilowatt-hours. At first glance, the new plan appears to have fewer and less ambitious target, he said. For example, there are no longer interim targets for peak demand or consumption, he said. However, the new plan proposes development of a new framework for conservation by electricity distributors to replace the one that expires in 2014, he said.

Chiarelli said that a new Long-Term Energy Plan, issued on December 2nd, includes a new target for total electricity consumption of 30 terawatt-hours by 2032, which would represent a 16 percent reduction from forecast gross demand in that year, and a target of using demand response to meet 10 percent of peak demand by 2025.

43. Ontario to Announce Lower Fees for Drive Clean Vehicle Emissions Tests

Ontario's Liberal government plans to lower the \$35 fee for the Drive Clean vehicle emission tests. Drive Clean is supposed to be a revenue-neutral program to get cars that spew pollution off the road, but it is now turning a profit of \$19 million. The government has promised to address the issue and lower the charge that drivers pay every two years to get their vehicles tested, but still haven't said what the new rate will be.

The Progressive Conservatives say Drive Clean, which was introduced in 1999, has outlived its usefulness and should be eliminated because most cars and light trucks easily pass the test. Ontario changed its Drive Clean procedures last January to use onboard diagnostic testing equipment instead of tail pipe emissions, which has led to an average 10 per cent failure rates.

The emissions tests are mandatory for vehicles at least seven years old.

44. Recent Developments Regarding Keystone Pipeline

Canada Short On Time for Climate Change Concession

Canada is running out of time to offer U.S. President Barack Obama a climate change concession that might clinch the controversial Keystone XL oil pipeline, as the country's energy industry continues to resist costly curbs on greenhouse gas emissions. Two years of negotiations between the Canadian government and the energy sector to curtail carbon pollution have not produced an agreement. Oil producers have balked at anything more than the 10-cents-a-barrel carbon tax imposed by the province of Alberta.

Late last month, Environment Minister Leona Aglukkaq pointed to "good progress" in the talks but was unable to say when a resolution might come.

Concessions from Canada would arguably make the pipeline more palatable in Washington since Obama has made fighting climate change a second-term priority and has said that Canada could do more to reduce carbon emissions.

By linking Alberta's fields to refiners in the Gulf Coast, the 1,200-mile (1,900-kilometer) Keystone XL pipeline would be a boon to an energy patch where oil sands are abundant but lead to more carbon pollution than many other forms of crude. Keystone's foes say that burning fossil fuels to wrench oil sands crude from the ground will worsen climate change, and that the \$5.4 billion pipeline, which could carry up to 830,000 barrels a day, would only spur more production.

Increasing oil sands production will put Canada on track to miss its target of curbing greenhouse gas emissions by 17 percent below 2005 levels by 2020, according to a government report. Keystone supporters say that is why Canada would be wise to offer a carbon-trimming plan before the White House decides the pipeline's fate.

But the clock is running out. The U.S. State Department is finishing work on a report that will weigh the climate impacts of the pipeline in what could be one of last words before a decision. The White House is expected to rule on Keystone by next spring.

Canada and the United States have often moved together on climate policy, developing similar rules on auto and power-plant emissions while turning their backs on the Kyoto Protocol to limit climate change. Regulating the oil and gas sector has been thornier, though, with oil sands producers particularly concerned that higher costs will erode their already narrow margins.

Canada's fast-growing oil sands sector will soon exceed the capacity of existing pipelines, and analysts say producers will be forced to rely on trains, barges and other transportation alternatives if Keystone XL and related projects are rejected. Those options are generally costlier and less certain than pipelines.

Nevertheless, industry executives say they doubt yielding on tougher pollution regulations will help secure Keystone. Even if Prime Minister Stephen Harper were to offer new greenhouse gas limits this year, the vagaries of the regulatory process virtually guarantee those plans will not be in place until after a Keystone decision. For example, Canada needed 12 months to finalize regulations curbing emissions from coal-fired power plants that were ratified last year, and the rules were significantly weaker in the end than originally proposed.

House Democrats Urge Delay for NEPA Study

House Democrats are urging the State Department to delay release of a supplemental National Environmental Policy Act (NEPA) review of the controversial Keystone XL pipeline until at least February, when the department's Inspector General (IG) is expected to complete a report on alleged conflicts of interest by the contractor that drafted the study.

Supporters of the Keystone pipeline, which would transport Canadian tar sands oil into the United States, continue to press for President Obama to swiftly issue a necessary presidential permit for the project. On December 12th, the American Petroleum Institute (API) touted poll data showing ongoing public support for the pipeline, and advocates of the project argue that it will help bolster energy security, provide an economic boost, and have other benefits.

Many Democrats and environmentalists however remain opposed to the pipeline over concerns that it will have major adverse environmental impacts. Keystone opponents have faulted a prior NEPA-mandated environment review of the pipeline, and the State Department is working to finalize a further review of the project that has also garnered scrutiny due to the contractor's alleged conflicts and whether the company improperly hid relationships with the project's oil industry backers.

In a December 12th letter to Obama, the lawmakers urge the Department to hold back on issuing the revised EIS -- expected this month or early next year -- until completion of the IG's review. "The integrity of contractors is essential to the National Environmental Policy Act process. If the allegations that ERM lied to the Department of State about its conflicts of interest turn out to be true the Department of State must conduct a new EIS that is not tainted by conflicts of interest," the lawmakers say.

Canadian Envoy Says Growing Rail Traffic from Oil Sands Should Sway Critics

Canada's U.S. ambassador said the fact that rail lines are carrying more heavy crude from the Alberta oil sands than before should prompt President Barack Obama to approve the Keystone XL pipeline. "The facts basically speak for themselves," Gary Doer said in a press interview at the Canadian Embassy in Washington. Pipelines are safer, cheaper and release less carbon dioxide, a greenhouse gas, than rail does, he said.

Environmentalists have criticized the State Department draft analysis and pointed to other assessments by groups including Goldman Sachs Group Inc. that show development of the oil sands could be delayed if Keystone were blocked.

Doer said the pipeline would cause less harm to the environment than rail lines. "I deal with lots of issues," Doer said. "Some are really kind of on-the-one-hand or the other. This is actually bang, bang, bang. Higher cost, higher risk, higher" greenhouse gases.

45. Industry Warns Pending Court Ruling May Undo Consent Decree Certainty

Engine maker Volvo Powertrain is warning the U.S. Court of Appeals for the District of Columbia Circuit against issuing a ruling in a pending lawsuit that the company says could create uncertainty over future consent decrees between the agency and industry, saying the court should back Volvo Powertrain's push for certainty.

Attorney Aaron M. Streett, representing Volvo Powertrain, outlined the potential precedent of the court's eventual ruling at December 11th oral arguments in *USA v. Volvo Powertrain Company*, a suit in which the company seeks to overturn a federal district court ruling that awarded EPA and California millions of dollars in damages for its violation of a consent decree. The decree settled a years-old dispute between several engine makers and EPA over agency claims that engine makers used devices that allowed higher emissions in real-world conditions than under test conditions.

Volvo Powertrain is the successor company to Volvo Truck and inherited the settlement's obligations for its engines to meet prescribed emissions standards according to a timetable laid out in the decree.

The decree was subsequently extended to include non-road engines. But Volvo Powertrain, part of the Volvo Group of companies, says the court's enforcement of the expanded decree against it for infractions by Volvo Penta, a non-signatory to the pact, violates "bedrock" legal principles and creates uncertainty over the decrees.

Streett told the court at arguments that enforcing the decree against Volvo Powertrain because of infractions by the non-party Volvo Penta was unjustified. He also warned that the failure of a district court to weigh the case using the legal doctrine of "contempt," if upheld on appeal, will shake the faith of industry in consent decrees.

In a joint amicus brief filed with the court, the National Association of Manufacturers, U.S. Chamber of Commerce and the American Petroleum Institute also highlighted the precedent the case could set, saying enforcement of the decree against a non-signatory will set a damaging precedent, damaging faith in the certainty of consent decrees.

Streett at arguments did not address the issue in such broad terms, but did tell a three-judge panel of the D.C. Circuit that the April 2012 ruling by the U.S. District Court for the District of Columbia wrongly failed to examine the matter under contempt standards. These require that a party seeking relief -- such as EPA -- must establish "by clear and convincing evidence" that the defendant violated a "clear and unambiguous provision of the consent decree."

"It is very important the contempt standard applies whenever the government seeks retrospective enforcement of a consent decree," Streett said. EPA's actions show the agency "doesn't want the protections" for companies "at the front end" that the contempt standard provides, he added.

Department of Justice attorney Brian Toth, representing EPA at arguments, said that even if the contempt doctrine were applied by the court, it is irrelevant because there is a "clear and unambiguous violation of the decree." Specifically, EPA says that Volvo Powertrain violated "non-circumvention" terms of the decree designed to prevent parties avoiding responsibility by spinning off operations to other corporate entities.

Judges David Sentelle, Thomas Griffith and Sri Srinivasan pressed both sides over the meaning of terms specific to the decree, but gave little indication of how they will decide the case -- and they avoided questions over the broader precedent for EPA consent decrees that their eventual ruling could set.

Sentelle and Griffith suggested that if read in isolation, some of the decree's terms include the engines certified by Volvo Penta, but Streett urged them to look at the issue in a broader context. Under questioning from Sentelle, Streett suggested that other ambiguities in the case still render the district court's judgment wrong -- such as whether the engines should have been classed as non-road engines, or instead as stationary engines clearly excluded from the decree. Both countered that tracking the use of the engines to determine if they are stationary is not feasible.

Also, Streett said the lower court's application of the maximum penalties allowed warrants, at the very least, a remand of the judgment. The district court applied the penalty to all wrongly certified engines, even though many were never imported into the United States. Further, there was no "unjust enrichment" or "competitive advantage" bestowed by the certification, Streett argued, citing the standards used by the district court to determine that the maximum penalty should apply.

Griffith appeared somewhat sympathetic to Streett's position on when the anti-circumvention provisions are triggered. Griffith asked "isn't the trigger when someone seeks the certificate of conformity" with EPA standards? Streett replied, "That is absolutely the correct reading. There is nothing that connects Penta's certification of engines" to the consent decree.

Sentelle asked Streett to explain why the case seems to be "the equivalent of a contempt proceeding, but it is not a contempt proceeding." Streett replied that "it is the [retroactive] nature of the relief" that determines whether the doctrine applies, according to legal precedent, not whether the case is expressly labeled as such by the government or courts.

46. EPA Urged To Deny Mercedes' Request for 'Off-Cycle' Vehicle GHG Credits

California, some automakers and environmentalists are urging EPA to deny Mercedes-Benz' petition seeking credit for "off-cycle" greenhouse gas (GHG) reductions in the agency's model year (MY) 2012-2016 vehicle GHG rule, saying that granting the request would set a precedent undermining the certainty of GHG cuts under the rule.

EPA took comment through October 31st on the company's petition, which is part of a process under the rule that allows manufacturers to submit for agency approval an alternative demonstration methodology to win higher off-cycle GHG credits than what the agency lists as default values and can be used to comply with the regulation. Off-cycle credits can be awarded for technologies that achieve real-world emissions cuts "but are not appropriately captured on the test procedures . . . to demonstrate compliance" with the rule, which requires automaker fleets to achieve a 35 mile per gallon (mpg) in 2016, EPA says.

Mercedes-Benz is the first company to submit such a petition, seeking credit for an engine start-stop technology that eliminates all emissions when a vehicle is idling. The company also wants credit for high-efficiency exterior lighting, infrared window glazing and active seat ventilation, according to the petition. The company argues that it should be entitled to GHG credits for a larger percent of driving time than EPA estimates vehicles idle in order to fully count the emissions reduced by its start-stop technology.

But the request is prompting significant push-back from California -- which worked closely with EPA to develop the MY 2012-2016 vehicle rule -- other automakers and environmentalists. The California Air Resources Board (CARB) warns that approving the petition would reduce the expected GHG reduction benefits of the vehicle rule by allowing the company to obtain "unrealistic" off-cycle credits, while also setting a precedent for other automakers to seek similar credit. "[I]f this credit request is accepted, it will create a platform for manufacturers to undermine" the MY 2012-2016 rule as well as the final MY 2017-2025 program that sets fleet averages at 54.5 mpg, CARB Chairwoman Mary Nichols writes.

CARB says it backs the off-cycle credit petition program in general, but not Mercedes' petition as it would allow the company "to generate unrepresentative GHG credits and undermine the effectiveness of the rule." For example, the request for stop-start technology GHG credits is more than three times the value on an EPA-issued menu of options, with Mercedes claiming EPA's value was an underestimate, CARB says. "If a petition like this is accepted, it would set a precedent allowing manufacturers to derive their own credit values for off-cycle technologies that exceed the menu values while still being able to use the default menu values for technologies that fall short."

47. Obama Doubles Agencies' Renewable Energy Goal

President Obama has signed a memorandum to more than double the amount of power obtained by federal agencies and departments from renewable sources. In a December 5th memo -- implementing key parts of Obama's Climate Action Plan -- the president directed agencies to meet an increasing amount of their energy needs through renewables between now and 2020, starting with 10 percent or more in fiscal year 2015 and rising to 15 percent in 2016, 17.5 percent in 2018 and 20 percent in 2020. Agencies are ordered to implement the goal "to the extent economically feasible and technically practicable."

In addition, the memo directs agencies to take several steps to improve federal energy management, including installations of new building energy meters and sub meters, public disclosure of annual "benchmark" data and efforts to increase use of a consensus based "Green Button" standard for managing energy data.

The memo prioritizes agency efforts to install renewable energy on-site over other steps such as buying renewable energy certificates (RECs). It also orders that within 120 days the Department of Energy in coordination with EPA, the Department of Defense, the Department of Veterans Affairs, and other agencies provide recommendations to the Council on Environmental Quality on recommendations related to use of RECs to meet the goals.

The directive to federal agencies implements a goal for renewables use by 2020 already outlined in more general terms in the administration's June 2013 climate action plan.

Following Obama's announcement, Sen. Mark Udall (D-CO) -- a longtime backer of national renewable targets -- renewed calls for Congress to advance his bill to create a national renewable portfolio standard to require 25 percent renewable energy by 2025. Congress still needs to codify a higher federal renewable electricity standard into law, but the president's announcement underscores that this is the right policy," Udall said.

Consensus on federal legislation to boost renewables has proven elusive, though more than half of the states have instituted some kind of renewables target and in 2013 largely rebuffed attempts to repeal the requirements.

Meanwhile, on December 5th, federal agencies announced the release of their 2013 Strategic Sustainability Performance Plans, which detail their efforts to reduce waste and conserve energy. EPA's plan will help "guide EPA's actions to meet the new goal President Obama set today with a Presidential Memorandum directing the Federal Government to consume 20 percent of its electricity from renewable sources by 2020 -- more than double the current level," the agency said in a Dec. 5 statement.

Meeting this renewable energy goal will reduce pollution in our communities, promote American energy independence, and support homegrown energy produced by American workers," EPA said.

Among the steps outlined in EPA's plan are pursuing reconstruction of key research infrastructure to reduce energy consumption, and continuing work on the agency's water conservation program.

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48. Recent Developments in China

China Launches Cleaner Gasoline Standards

China has launched its national "V" standard for gasoline which will become a national mandate from Jan 2018, the government said, as it moves to clean up smoggy air in the world's largest auto market and the second largest oil consumer. "The roll-out of the standard will help upgrade China's gasoline quality and reduce pollutants from vehicles," the General Administration of Quality Supervision, Inspection and Quarantine said on its website.

The new national V standard, similar to Euro V, will require gasoline to have a **sulfur content of no more than 10 parts per million (ppm)**, down from 50 ppm in the national IV standard, the administration said.

China is moving to the national IV standard, similar to the Euro IV standard for gasoline nation-wide from next month, though about a dozen cities have already started using the cleaner grade V, supplied by Sinopec Corp. China is now implementing the national III standard for gasoline — with sulfur content capped at 150 ppm — across the country. The national IV standard for gasoline will become compulsory nationwide from the start of 2014, the government said.

The new specifications of national V also require content of **manganese** — another health hazard — **to be cut to 0.002 gram per liter from 0.008 gram**, it said.

After the new standards take effect from January 1, 2018, emission from existing vehicles could be reduced by 10 to 15%, while emission of nitrogen oxide from new vehicles is expected to be cut by a quarter and emission of particulates by 80%, it added.

Worsening [air pollution](#) has prompted China to speed up a timetable for oil companies to roll out cleaner fuel standards, a move that will require refiners to pump in billions of dollars to upgrade facilities. Sinopec has supplied gasoline of quality similar to Euro V

standards to Beijing since May 2012, and to Shanghai and eight cities in the booming eastern province of Jiangsu from November, the company has said. Its Jinling refinery in Jiangsu is now China's largest producer of Euro V gasoline, Sinopec has said.

China Likely to Meet Reduction Targets for Key Pollutants in 2013, Ministry Says

Chinese environmental minister Zhou Shengxian said he expects the country to meet annual reduction targets for four key pollutants by the end of 2013, according to a notice released by the Ministry of Environmental Protection on December 4th. The notice said the goals for meeting targets to reduce airborne emissions of sulfur dioxide and nitrogen oxides and for reducing levels of chemical oxygen demand (COD) and ammonia nitrogen in wastewater will likely be met. It based that conclusion on the reductions seen during the first six months of the year, pressure put on local governments to meet targets in the second half of the year, more utilization of desulfurization and denitrification equipment in industry and subsidies for energy conservation projects.

The notice said that COD readings dropped 2.37 percent, and ammonia nitrogen levels were down 2.37 percent nationally in the first half of the year, while sulfur dioxide was down 2.48 percent and nitrogen oxide down 3.02 percent nationally in the first half of the year, compared to the same period the year before.

Goals for the 12th Five-Year Plan (2011-2015) include reducing sulfur dioxide emissions and COD levels by 8 percent and for reducing emissions of nitrogen oxides and ammonia nitrogen by 10 percent by the end of 2015 compared to 2010 levels.

The meeting notice also said that air pollution prevention and treatment plans for the energy industry, as well as several implementation regulations related to coal-fired power facilities, will be released soon.

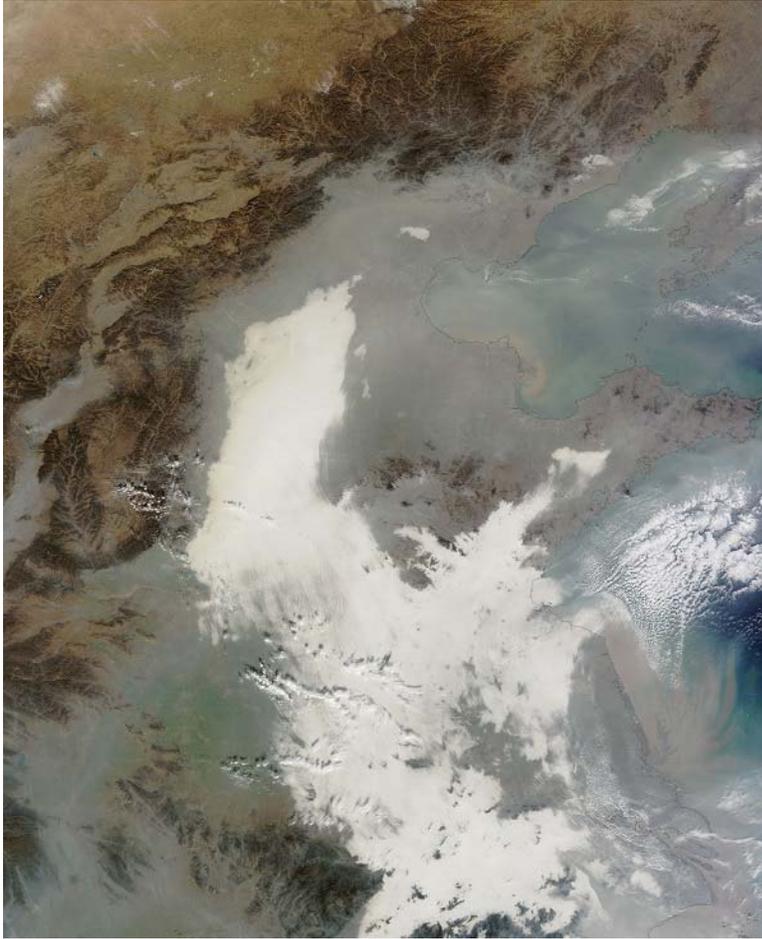
The MEP also is working on a plan for further reducing the four key pollutants for 2014.

China's Current Air Pollution Is So Bad, It Is Visible From Space!

China is currently in the midst of battling a rather astonishing bout of air pollution, most notably in Shanghai and Beijing. Not only is this level of pollution extremely dangerous but it's so thick and blanketing that a new image from NASA shows the smog cloud from space.

The image shows a combination of both fog (white) and smog (grey). On the NASA Earth Observatory blog, they explain:

China suffered another severe bout of air pollution in December 2013. When the Moderate Resolution Imaging Spectroradiometer (MODIS) on NASA's Terra satellite acquired this image on December 7, 2013, thick haze stretched from Beijing to Shanghai, a distance of about 1,200 kilometers (750 miles). For comparison, that is about the distance between Boston, Massachusetts, and Raleigh, North Carolina. The brightest areas are clouds or fog. Polluted air appears gray. While northeastern China often faces outbreaks of extreme smog, it is less common for pollution to spread so far south.



NASA image courtesy Jeff Schmaltz, LANCE MODIS Rapid Response

At the time of this image, the Air Quality Index for Beijing hit 487 — anything above 300 is considered dangerous to human health. The US embassies in Beijing and Shanghai reported fine particulate matter up to 480 and 355 micrograms per cubic meter of air, where being above 25 is unsafe according to the World Health Organization.

This problem isn't unique to China. For decades, London had notoriously bad smog, which at one point killed 4,000 people over the course of just a few days. But what's new is that now we have a much better grasp of the damages this level of pollution can cause, and the technology to see its full extent. Images like this one from NASA provide us with the context of this pollution — and shows just how incredibly large the problem really

is.

Eight Chinese Cities Fined For Air Pollution

Local governments in eight cities in northeast China's Liaoning Province have been fined a total of 54.2 million Yuan (8.9 million U.S. dollars) for air pollution, the provincial department of environment protection said recently. The fines, the first the provincial agency has imposed on lower-level governments, send a clear signal that the provincial government is becoming more serious about tackling air pollution.

According to a regulation which went into effect last year, the Liaoning provincial government evaluates 14 cities on indicators of PM10 (particles less than 10 micrometers in diameter), sulfur dioxide and nitrogen dioxide. Shenyang, capital of Liaoning, was ordered to pay a fine of 34.6 million Yuan. Seven other cities, including Dalian and Anshan, were fined 19.6 million Yuan.

Zhu Jinghai, head of the provincial department of environment protection, said all the fines would be spent in the fight against severe air pollution.

Decades of breakneck economic growth, the coal-dominated energy mix and lax environmental law enforcement are blamed for the prominent pollution in Liaoning and other parts of China. The public hailed a circular released recently on improving the work evaluations of local Party and government leadership and officials, which could lead to greener and more balanced growth. The

circular said Chinese officials should reduce their obsession with economic growth and focus more on people's livelihoods and the environment.

Liaoning was one of the first provinces in China to industrialize and continues to rely on polluting heavy industries like machinery, metal refining, chemical, and petroleum and coal production. In October, it was one of three provinces in northeastern China that found itself suffocating beneath a blanket of smog so heavy that that some schools and roads had to be shut down.

"The circular calls for quality economic growth, a departure from the old extensive growth mode," said a netizen named "Kanshazishadoukan" on Sina Weibo, a popular Twitter-like microblogging service. "It lays out targeted and forceful measures, and I hope the measures will be fully carried out," the microblogger said.

Although Liaoning's fines were small when compared with the 1.7 trillion Yuan China's central government said it plans to invest to improve air quality, they're a sign that local governments are willing to impose punitive measures in the battle to clear the air.

Tianjin Curbs Purchase of New Vehicles

Tianjin has joined other big cities like Beijing, Shanghai and Guangzhou to curb vehicle purchases as worries about pollution and traffic congestion rise around the country.

The purchase restriction led to a rush buying of vehicles in Tianjin and raised fresh doubts over its effectiveness in addressing traffic and environmental problems at the expense of residents' rights to purchase vehicles.



People flood to a local auto market in Tianjin, a day before the city imposed a restriction on the purchase of vehicles. Photo: CFP

The city's municipal government imposed quotas on new license plates, requiring buyers join the lottery or bid in auctions to win a plate, in an effort to optimize the city's traffic environment, ease traffic congestion, improve air quality and ensure a reasonable growth of vehicle numbers,

according to its government website.

"It is a necessary step for big cities like Tianjin to curb traffic congestion before it becomes too excessive," Xu Kangming, a transport expert and founder of consultancy 3E Transportation Systems, told the Global Times.

As a city that holds 14 million permanent residents, Tianjin had 2.36 million registered motor vehicles by 2012, up from 1.2 million in 2006, while the average driving speed on downtown roads during rush hours dropped to 19.5 kilometers per hour in 2011, according to a report by the Tianjin Daily.

"Increasingly heavy air pollution has also triggered big cities like Beijing and Tianjin to intensify limitations on vehicle purchases," Xu added. The Tianjin Daily quoted a 2012 report on the city's environment as saying that vehicle emissions contributed 16 percent of PM2.5, a major pollutant, and are held as a key source of air pollution.

"Curbing car purchases can be an immediate solution to ease air pollution and traffic jams, and it will be adopted in big cities suffering these problems," Niu Fengrui, former director of the Institute for Urban and Environmental Studies under the Chinese Academy of Social Sciences, told the Global Times. "It can't fix the problems completely," Niu said, adding that the causes for air pollution and traffic jams are more complicated than the increasing number of vehicles.

Zhao Ruizheng, a research fellow with the Heilongjiang Provincial Academy of Social Sciences, regards this as a lazy way for the government to deal with problems without researching the underlying cause for traffic jams. "This will exacerbate social inequality and transfer the roads, which are public resources, to privileged resources enjoyed by high-income earners and government vehicles," Zhao was quoted as saying in a report by news portal xinhuanet.com.

Meanwhile, as some locals have expressed concerns over the city's public transportation system, which is less developed than those in Beijing and Shanghai, experts suggest that Tianjin should develop diversified public transportation to ease traffic. "It should be equipped with more suitable public transportation services with more convenient transfers and a low fare," Zhu Shouxian, a research fellow at the same institution as Niu, told the Global Times, adding that urban planning and governance in big cities should be emphasized while managing traffic and pollution problems.

In addition to purchase controls, Tianjin will also follow Beijing's lead by adopting a similar traffic restriction scheme starting on March 1, 2014, which bans one fifth of private vehicles from roads on weekdays, Miao Hongwei, head of the city's traffic management bureau, said at a press conference. Moreover, the city will ban vehicles with non-local plates from driving into the city's outer ring road during morning and evening rush hours on weekdays, Miao said.

Biden Reaffirms Cooperation with China on HFCs, Clean Heavy Duty Diesels

On December 5th, U.S. Vice President Joe Biden and senior Chinese officials pledged increased cooperation by both countries—the world's two leading greenhouse gas emitters—on climate change by phasing out fossil fuel subsidies and the global use of hydrofluorocarbons, a highly potent greenhouse gas. The cooperative efforts, pledged following Biden's trip to China which included a meeting with Chinese President Xi Jinping, include a more pronounced push to curb HFCs under the Montreal Protocol on Substances that Deplete the Ozone Layer.

The two countries will establish a new "contact group" under the treaty to focus on HFCs, a rapidly growing greenhouse gas originally developed as an alternative to ozone-depleting chemicals, according to the joint fact sheet on strengthening U.S.-China economic relations released by the White House.

To help accelerate progress on the U.S.-China Climate Change Working Group Heavy-Duty and Other Vehicles initiative, the United States and China committed to implement and enforce their current schedules for implementation of low-sulfur fuel and for motor vehicle emissions standards. Both sides also committed to work together to help China design and implement China VI vehicle emissions standards as soon as practical, strengthen communication in heavy-duty vehicle fuel efficiency standards to reduce greenhouse gas emission, promote the implementation of clean

action plans for heavy-duty diesel vehicles, and explore ways to design and implement the clean action plans for non-road motor vehicles and supporting diesel engines, which would reduce PM2.5 emissions and would have substantial air quality and climate benefits. The United States committed to provide technical assistance to achieve these goals and continue to provide technical assistance on regional air quality management and modeling, including emissions from mobile sources.

More Emission Controls Urged in China

In order to improve air quality, deal with the increasingly serious air pollution problems, and promote the process of motor vehicle fuel desulfurization, an international seminar was held in Beijing on December 9th. The meeting was sponsored by United Nations Environmental Program (UNEP) and jointly organized by the Vehicle Emission Control Center of the Chinese Ministry of Environmental Protection, the International Council on Clean Transportation, and Clean Air Asia.

With global air quality improvement as a starting point and the development process of fuel desulfurization as the main thrust, representatives from governments, international organizations, research institutions and the business community analyzed international and domestic motor vehicle fuel desulfurization routes and shared management experiences of motor vehicle fuel desulfurization promotion.



A man wears a face mask while walking on the Bund in front of the financial district of Pudong during a hazy day in downtown Shanghai on Dec 9, 2013.

The government should set higher standards for vehicle emissions while promoting cleaner fuels to deal with the significant contribution of motor vehicles to air pollution, environmental officials and experts said at the Workshop. More than 100 cities were shrouded in thick smog and haze just

prior to the workshop and national alarms for smog and haze that lasted for seven days were not lifted until that morning, according to the National Meteorological Center.

"Emissions from motor vehicles contribute a significant part to air pollution, sometimes as high as 50 percent, especially in such foggy weather when the air is stagnant," said Lu Shize, air pollution section chief from the Pollution Prevention and Control Department of the Environmental Protection Ministry (MEP).

Two standards systems, one for emissions and the other for fuel, control the pollution coming from motor vehicles.

China should start to prepare for its new China VI emissions standard, which may further reduce the amount of pollutants discharged by motor vehicles by another 40 percent based on the latest China V standard, said Ding Yan, deputy head of the ministry's vehicle emission control center. The Beijing government has vowed to implement the new standard by 2016 at the earliest. No schedule for the introduction of China VI nationally has been announced by MEP.

"There has been criticism of the government for being radical in promoting the development of emissions and fuel standards over the past decade, trying to reach a similar level as developed countries in such a short time," Ding said. "But seen from the perspective of environmental protection, we are being too slow by following the developed countries' steps, when their pollution levels are already much lower than China's."

Research shows that China's latest fuel standard is behind those of Europe and the United States, and has much room for improvement. The sulfur content of gasoline was lowered four times in the past 10 years, with the allowed content dropping from 1,000 microgram per gram to the current 50 mcg per gram. However, the desulfurization of diesel is occurring at a slower pace, with its allowed sulfur content reduced to 350 mcg per gram nationwide on July 1, 2013 from the previous level of as high as 2,000 mcg per gram, which lasted for more than 10 years. The permitted sulfur level for diesel in the European standard is 10 mcg per gram.

"Limits for contents of other pollutants in our gasoline standard, such as olefin and aromatics, are too high, leading to more emissions of toxic particulate matters and complex airborne pollution," said Tong Li, associate professor at the ministry's appraisal center for environment and engineering. Tong added that the high vapor pressure limit in the country's gasoline standard, which is twice the US standard, may cause high emissions of volatile organic pollutants.

Setting up stricter emission and fuel standards does not necessarily mean higher costs, according to studies and foreign experience. "Introducing cleaner fuels and vehicles is considered one of the most cost-effective air pollution and climate change interventions, because it has climate and health benefits plus provides major cost savings," said Zhang Shigang, coordinator of the UNEP China Office.

The average per-liter cost to upgrade refineries and produce 10-mcg-per-gram sulfur fuel in China is 0.7 cents for gasoline and 1.7 cents for diesel. This is well below the price increases approved in October 2013 by the National Development and Reform Commission, according to analysis commissioned by the International Council on Clean Transportation. The analysis also found that the long-term benefits of the proposed China VI standards outweigh the costs by at least 7-to-1.

The sales volume of motor vehicles in China is expected to reach 22 million in 2013, while the International Council on Clean Transportation predicts the number of vehicles in the nation will reach almost 200 million by 2030, with more than 40 percent of those in the Beijing-Tianjin-Hebei cluster, the Yangtze Delta and the Pearl River Delta, the three most polluted areas in China.

The Air Pollution Action Plan released on September 10, 2013 by the State council made it clear that the fourth stage motor vehicle gasoline and diesel (50ppm) will be supplied nationwide respectively in 2013 and 2014. And at the end of 2015, the fifth stage motor vehicle gasoline and diesel (10ppm) will be fully supplied in Beijing, Tianjin, the Yangtze River Delta, the Pearl River Delta and other key areas; by the end of 2017, nationwide supply should be achieved.



EPA Administrator Ms. Gina McCarthy

US Environmental Protection Agency administrator Gina McCarthy spoke at the meeting and said that precisely because of the implementation of ultra-low sulfur fuel it has been possible to further implement more stringent motor vehicle and engine standards in the United States. She said that clean fuel and more stringent emission standards can also help China apply more advanced vehicle emissions control technology to further reduce emissions. The two countries should strengthen

cooperation to reduce emissions of the transport sector and jointly cope with clean air challenges. McCarthy's activities over her four-day visit included chairing a meeting of the China-U.S. Joint Committee on Environmental Cooperation, launched in 2005 to encourage cooperation between the EPA and its counterpart in China, the State Environmental Protection Administration.



McCarthy's message on low sulfur fuels was reinforced by California Air Resources Board, Executive Director, Mr. Richard Corey.

"The use of low-sulfur gasoline can cut hydrocarbons, nitrogen oxides and toxic air pollutants and mitigate the efficiency decrease of the catalytic converter caused by sulfur pollution; The use of low-sulfur diesel fuel can reduce sulfur dioxide, particulate matter and nitrogen oxides; diesel vehicles can effectively use particulate matter trap with catalytic

devices and nitrogen oxides post processors," California air Resources Board executive officer Richard Corey said," It is estimated that California has made great gains in terms of motor gasoline quality improvement, it is equivalent to removing 3.5 million vehicles off the roads, and reduce the risk of cancer caused by vehicle emissions by 40%. "

UNEP representative in China Zhang Shigang said that UNEP is very pleased to see China has announced plans to further reduce fuel sulfur content to 10ppm, which is a huge contribution to air pollution prevention and control on city, country, regional and global levels. At the same time, China's approach has had a significant impact on other developing countries worldwide.

Prior to leaving the US for her visit to Beijing, Shanghai and other Chinese locations, Environmental Protection Agency Administrator McCarthy noted that China could learn from U.S. struggles to reduce pollution as it confronts its recent high-profile incidents of poor air quality paralyzing major cities. "While I am all too well aware of the severe air quality challenges that China now faces, I see these challenges as ones where the United States can truly speak from experience in support of China's efforts to reduce air pollution," McCarthy said at an event hosted by the Center for American Progress.

China's goals "are now to get down to the similar levels which the United States and WHO indicate need to be phased down (to) but the challenge is enormous," McCarthy said.

McCarthy said a public outcry for better air pollution controls in the United States before the creation of the EPA in 1970 was an impetus for stringent air pollution measures. "Before the EPA and our landmark environmental laws in the United States, dark blankets of pollution covered our great American cities - not just Los Angeles but New York and Pittsburgh," she said in prepared remarks.

The U.S. and China represent the two largest global economies, the largest energy consumers and the largest carbon emitters, and the two countries must work together to address pollution, particularly greenhouse gases, McCarthy said. China and the U.S. need to take a lead to address climate change as the UN Framework Convention on Climate Change looks toward negotiating a global climate agreement to be finalized in 2015, McCarthy continued. "In a 2015 world, the two largest emitters of the greenhouse gases need to be at the table, and it's extremely important that China be with us and be aggressive and be supportive of establishing some goals we can all be proud of," she said.

McCarthy said the EPA has worked with China's Ministry of Environmental Protection on air quality issues for the past 15 years, and she hopes to build on that relationship to address climate change. "They have established some very ambitious goals, not only for air quality but also for climate," she said.

She noted that EPA and China have already discussed methods to reduce emissions of short-lived climate pollutants such as methane, hydrofluorocarbons and black carbon. The U.S. and China in September agreed to pursue amendments to the Montreal Protocol on Substances that Deplete the Ozone Layer to reduce the production and consumption of hydrofluorocarbons (HFCs), a short-lived but potent greenhouse gas. That pledge built on a June 8 agreement between President Barack Obama and Chinese President Xi Jinping to phase down HFC emissions.

The EPA and China also are looking at ways to reduce the allowable sulfur content of diesel engines, a significant source of black carbon. While the U.S. currently caps the amount of sulfur allowable in diesel fuel at 15 parts per million, China allows up to 10 times that amount in its diesel fuel, McCarthy said. She said the agency will discuss methods to reduce the sulfur content of fuels used by highway vehicles, heavy-duty engines and marine diesel engines.

U.S., China Pledge to Cooperate On Marine Emissions, Soil Pollution, Shale

Top U.S. and Chinese environment officials meeting in Beijing reiterated their joint commitment to reducing emissions from marine vessels, soil pollution, impacts from shale gas and mercury pollution, according to a December 11th report on the website of China's Ministry of Environmental Protection. The report, an overview of the December 9th meeting between U.S. Environmental Protection Agency Administrator Gina McCarthy and China's Minister Zhou Shengxian, also called for further cooperation to reduce mercury under the Minamata Convention on Mercury.

The U.S. and China "continue to deepen cooperation and enhance" mutual trust on environmental issues, according to the report.

The U.S.-China environmental talks were the fourth held by the Joint Commission on Environmental Cooperation formed between the U.S. and China in 2005. The meetings alternate

between Washington and Beijing. McCarthy and her Chinese counterpart signed a statement on cooperation at the conclusion of their talks.

The joint meeting of the nations' top environment officials came a week after Vice President Joe Biden and senior Chinese officials pledged increased cooperation by both countries—the world's leading greenhouse gas emitters—on climate change by phasing out fossil fuels subsidies as well as the global use of hydrofluorocarbons, a highly potent greenhouse gas (see related story).

Zhou reportedly said at the December 9th meeting that China's main environmental focus for the coming year will be controlling air pollution, particularly small particulate matter (PM-2.5); protecting drinking water resources; preventing and remediating soil pollution, primarily in rural areas; reducing key pollutant emissions and discharges (sulfur dioxide and nitrogen oxide in air, and levels of chemical oxygen demand and ammonia nitrogen in wastewater); increasing environmental law enforcement; and reforming institutional mechanisms to streamline environmental protection.

China Tells Pilots to Improve Landing Skills to Deal With Beijing Smog



Residents wearing face masks use their mobile phones on a pedestrian overpass on a hazy day at the Pudong financial area in Shanghai, December 6, 2013.

Chinese authorities have told pilots who fly to Beijing they must be qualified to land their aircraft in the low visibility bought about by smog, state media said recently, as the government tries to reduce flight delays due to pollution.

Beginning January 1, pilots flying from the country's 10 busiest airports into the Chinese capital must be qualified to use an instrument landing system on days when smog reduces visibility to around 400 meters (1,315 feet), the official China Daily said, citing China's civil aviation regulator. "It is part of a series of measures the administration took recently to raise the flights' on-time performance," the newspaper quoted an unnamed aviation official as saying.

Despite investing billions of dollars in new airports and advanced Western-built aircraft, China suffers a chronic problem with flight delays, partly because of the country's often wildly-fluctuating weather and partly because the military tightly controls most of China's airspace. Chinese media frequently reports fights, attacks on airport and airline workers and passengers storming aircraft in response to delays and the poor way they are handled, and the government has demanded airlines and airports address the issue. In recent years, smog has added to the problem of delays, especially in Beijing but also in other parts of the country like cosmopolitan business hub Shanghai.

"Considering the recent smog and haze has brought numerous troubles to air transport in eastern and southern regions, it seems necessary for authorities to ask pilots to improve their landing capability in low visibility," the China Daily quoted Ouyang Jie, a professor at Civil Aviation University of China, as saying.

The report added that only a handful of Chinese airports have the instrument landing systems required for aircraft to land in poor visibility.

Beijing to Buy New Buses to Clear City Smog

China's capital Beijing, regularly shrouded in hazardous air pollution, plans to replace its oil-burning buses with greener models by 2017 to help clear the smog, state news agency Xinhua said. Nearly 14,000 new buses powered by electricity or natural gas will be bought with an expected investment of 10 billion Yuan (1.64 billion U.S. dollars) to replace two-thirds of Beijing's bus fleet and halve carbon emissions, Xinhua said, citing the city's environment and transportation authorities.

By 2017, 66 percent of the total 21,000 buses in the city will be electronic or clean energy buses. About 150,000 tons of fuel oil will be saved every year, and carbon emissions cut by 50 percent. The rest of the buses will be low-emission diesel vehicles.

The city plans to purchase a new type of trolley bus that will be powered either through overhead cables or onboard lithium ion batteries, said Cao Yan, operational manager of the Beijing Public Transportation Group. The trolley bus will be able to run for 8 to 10 hours offline.

China to Close Schools, Stop Outdoor Activities During Heavy Smog

Chinese cities should close schools, cut working hours and stop outdoor activities during the most severe spells of air pollution, the Ministry of Environmental Protection has announced. "Every possible compulsory measure" must be taken to cut emissions during the heaviest smog, which has a serious impact on health, the ministry said, including suspending factory production and imposing traffic restrictions.

The ministry's guidelines, issued in a circular, come as China grapples with frequent choking smog in its big cities that has fuelled public anger. State media recently reported that an 8-year-old-girl who lived near a busy thoroughfare in the coastal province of Jiangsu had been diagnosed with lung cancer. The case of the girl, called the country's youngest lung cancer patient, has sparked a public outcry.

Schools and workplaces typically operate as normal in all but the most severe smog, even when it reaches hazardous levels. Primary and middle schools suspended classes last month in the northeastern city of Harbin during a smog emergency. The airport and some bus routes were also closed.

China must also toughen anti-pollution measures on industry and reduce its dependence on coal, which produces more than three quarters of electricity, the Environment Ministry said. Public security departments should also toughen checks on vehicles, including phasing out older ones, and ensure there are not too many on the roads, it said.

China said in September it would slash coal consumption and shut down polluting mills, factories and smelters, though experts have said implementing the measures would be tough.

Air pollution is expected to worsen this winter because of a chronic natural gas shortage.

Schools Close In Smog-Enshrouded Eastern China

Hazardous air pollution forced schools to shut or suspend outdoor activities in at least two cities in eastern China, where residents complained of the yellow skies and foul smells that are symptomatic of the country's crippling smog crisis.

In Nanjing, the capital of Jiangsu Province, the sun was the color of "salted egg yolk" as the government raised the "red alert" for poor air quality for the first time, state-run news media reported. The city saw levels of PM2.5, or particulate matter with a diameter of 2.5 micrometers, reach a reading of 354, said Nanjing-based news portal news.longhoo.net. Levels above 300 are considered hazardous, while the World Health Organization recommends a daily level of no more than 20.

Qingdao, a coastal city in Shandong province, was also shrouded in smog as PM2.5 levels of over 300 were recorded, said Peninsula Metropolis Daily, a Qingdao newspaper.

Nanjing suspended classes in primary and secondary schools and Qingdao banned outdoor activities, said the official Xinhua news agency. Qingdao also banned the burning of leaves and rubbish and restricted the use of government vehicles, while Nanjing said it would strengthen control on industrial sources of pollutants. Residents in both cities took to China's popular Twitter-like Weibo site to describe desolate streets and the apocalyptic environment. "The sky is pale yellow and the air is full of a choking smell," one user wrote.

Shanghai Air Pollution Wanes after Smog Forces Cancellations



Photo: Balloon used by Shanghai's Environmental Monitoring Center to collect air quality data from an elevation of up to 1000 meters.

Shanghai's air pollution finally fell to "light" levels after record smog prompted flight cancellations and the city warned children and elderly to stay indoors on at least seven of December's first nine days. "This is a shock," said Robert Theleen, chief executive officer of ChinaVest Ltd. and chairman of the American Chamber of Commerce in Shanghai. "There was a perception that Shanghai was doing a better job in controlling pollution than Beijing."

The city's air quality index was 130, categorized as "lightly polluted," according to the local monitoring center. A warning to stay indoors is triggered any time the index exceeds 200. The index surged to a record 482 on December 6th to the "severe" level, the highest of a six-tier rating

system, according to the China Daily newspaper. That prompted the government to order cars off the road and factories to cut production.

Baosteel Group Corp., the parent company of China's largest-listed steelmaker, is using low-sulfur coal in its Shanghai power plants in line with government efforts to reduce smog, according to spokesman Alex He. The company also suspended outdoor operations of its chemical facilities and is controlling production at its iron-ore processing operations, He said.

The smog is hurting the city's image as it seeks to attract foreign businesses and talent to its fledgling trade zone, Theleen said. City officials need to do better job with information disclosure and find out the root cause of the smog, he said.

The pollution may be coming from coal power plants and factories such as cement works in the provinces of Jiangsu, Anhui and Shandong, Greenpeace China said on its website. "Steps taken by the Shanghai government to alleviate pollution aren't enough," Huang Wei, who works on climate and energy issues for Greenpeace in Beijing, told reporters. "Smog brings a huge health risk to the public and definitely affects multinational companies' investment decisions and makes them hesitate before sending foreign employees to China."

China State Media Under Fire for Mentioning Benefits of Smog

Commentaries by two of China's most influential news outlets suggesting that the country's air pollution crisis was not without a silver lining drew a withering reaction from internet users and other media. In online commentaries, state broadcaster CCTV and the widely read tabloid the Global Times, published by the Communist Party's official People's Daily, both tried to put a positive spin on China's smog problem. The Global Times said smog could be useful in military situations, as it could hinder the use of guided missiles, while CCTV listed five "unforeseen rewards" for smog, including helping Chinese people's sense of humor.

While both pieces have since been deleted from their websites, Chinese newspapers lost little time in denouncing their point of view, in an unusual case of state media criticizing other state media, showing the scale of the anger.

- "Is the smog supposed to lift if we laugh about it?" wrote the Beijing Business Today, published by the city government's official Beijing Daily. "Smog affects our breathing. We hope it does not affect our thinking."
- The Dongguan Times, from a heavily industrial city close to the border with Hong Kong, said CCTV's comments were so bizarre people did not know "whether to laugh or cry". "There's nothing funny about the health dangers of smog," it wrote.
- Even the main Xinhua news agency - which had initially picked up CCTV's commentary - weighed in, writing on one of its official microblogs that it was "totally inappropriate" to make fun of air pollution.

Users of Sina Weibo, China's answer to Twitter, also vented their outrage over the CCTV and Global Times' comments. "The smog crisis covering large parts of China has revealed the failure of the government's development strategy of only going after GDP (growth). CCTV is shameless in trying to cover up for their masters," wrote Wu Bihu, a professor at the elite Peking University.

"The Global Times thinks that pollution will cause missiles to miss their targets ... How shameful! So that's what all this smog has really been about. People had thought it was just bad pollution..." state television in the eastern province of Shandong wrote on one of its microblogs.

China's Government Stresses Transparency As Localities Take Actions

Amid a continuing series of air pollution emergencies, Chinese environmental authorities are pushing more forcefully for disclosure of air quality information, and more localities are limiting vehicle use and factory production. Air quality readings rose above the 500 mark, the highest level on the air pollution index, at monitoring points in eastern China near Shanghai and the Yangtze River Delta during the first two weeks of December. A reading of 500 or more indicates severe air quality problems.

On December 15th, the State Council released a notice from the Ministry of Environmental Protection calling on environmental protection bureaus to use local government-affiliated media and other news platforms to release detailed information on air quality and to alert local governments to initiate contingency plans during air pollution emergencies. The ministry criticized some bureaus for withholding information and not responding to pollution emergencies in a timely manner, saying that had eroded public confidence in the authorities.

Some cities, such as Nanjing, the capital of Jiangsu province in eastern China, are implementing 24- to 48-hour forecasting systems to alert residents about future air pollution threats.

Minister of Environmental Protection Zhou Shengxian told environmental officials at a December 16th meeting on urbanization plans that frequent air pollution is not only "an environmental issue, but also a quality of life issue that is bound to develop into a major political issue." According to an account on the ministry's website, Zhou added that cities must accelerate implementation of air pollution prevention and controls and adjust their energy mixes, including "substantially increasing" the use of cleaner-burning coal.

Legal Daily, a newspaper under the direction of the Ministry of Justice, reported on December 16th that the ministry has drafted amendments to China's Air Pollution Prevention and Treatment Law for submission to the State Council in early 2014. It said the ministry is drafting new airborne emissions standards for the cement industry and six other unnamed sectors as well as more extensive motor vehicle pollution control policies.

Officials from the ministry and the National Development and Reform Commission said in early December that they have established a joint committee under the State Council to oversee national air pollution control planning.

Several areas have recently begun to implement air pollution plans focused on controlling emissions from vehicles and industry. For example:

- Tianjin said Dec. 16 it will use a license plate lottery and auction system to limit vehicle growth in the municipality to 1 million over the next three years. At the end of 2012 there were already 2.36 million registered vehicles in the municipality, the government said. State media reported that residents are rushing to purchase vehicles before the plan is fully implemented.
- China Environment News (CEN), an agency attached to the Ministry of Environmental Protection, reported on December 16th that 10 cities in the northeastern Shandong

province, including the capital of Jinan, have introduced limited, 30 percent production cutbacks for coal-fired power plants, iron and steel works, chemical facilities and other certain other heavy industries after air pollution index readings in those cities rose above the “hazardous” 400 level on the air pollution index, triggering an “air pollution emergency” response.

- CEN reported December 9th that 49 companies in Jinan had signed an agreement with the municipal government to shut down or reduce production during such emergencies.
- Taiyuan, capital of Shanxi province in central China, said on December 10th that it will restrict the use of vehicles by government departments and alternate daily private car use between odd and even license plate numbers during air pollution emergencies, as well as reduce production by 30 percent in heavy industry during those periods.
- Qinghuandao, a port city in Hebei province, said on December 9th it will impose similar restrictions in emergency situations. Over the past year, Hebei province has spent 13.9 billion Yuan (\$2.28 billion) on prevention and treatment programs for air pollution and closed facilities of 190 companies because of outdated production techniques, CEN reported on December 6th.
- Jiangsu and Heilongjiang provinces and the cities of Chengdu, capital of Sichuan province, and Shijiazhuang, capital of Hebei province, also have finalized and released air pollution action plans in recent weeks.
- CEN reports from December 11th indicated that Beijing's government is expected to approve air pollution control ordinances in January. These will focus on the principle of “polluter pays,” with businesses and industries with the heaviest pollution paying the highest costs.
- The state-run Xinhua news agency reported on December 10th that eight cities in Liaoning province are being fined a total of 54.2 million Yuan (\$8.9 million) by the provincial environmental protection bureau for failing to implement certain air pollution controls.

Light-Vehicle Sales Jump 16% in November; Annual Sales to Exceed 21 Million

China's passenger-vehicle deliveries rose 16 percent in November as Japanese automakers extended their sales recovery for a third straight month. Wholesale deliveries of cars, MPVs and SUVs climbed to 1.7 million units, the state-backed China Association of Automobile Manufacturers reported.

Sales at Toyota Motor Corp., Nissan Motor Co. and Honda Motor Co. surged as Chinese consumers shrugged off renewed diplomatic tensions between Asia's two-largest powers. That's in contrast to last year, when Japanese automakers were hurt by consumer boycotts against Japanese products in the wake of a territorial dispute over a group of uninhabited islands in the East China Sea. "The Japanese have been introducing more new models, especially lower-priced ones, which has made them very competitive," said Harry Chen, a Shenzhen, China-based analyst at Guotai Junan Securities Co. "That has helped their recovery momentum."

The decades-long dispute was reignited last month after China created an air defense area covering the islands, known as Senkaku in Japan and Diaoyu in China. But the simmering dispute

did not ignite a fresh wave of boycotts, and now Honda and Toyota are headed for record sales in 2013.

One reason that Japanese sales look so strong today is that they were so weak last year. Moreover, Japanese automakers fueled their recovery with steep discounts, said John Zeng, Asian director of LMC Automotive, a market research firm. Take the Mazda6 sedan, Mazda's top-selling model in China. Last year, the car sold for 170,000 Yuan (\$27,870), but this year its price dropped below 130,000 Yuan, according to Zeng.

Over the past six months or so, Japanese brands received yet another sales lift from a wave of product launches. Honda, for example, introduced the Cider and Jade to the Chinese market.

Over the next few months, Japanese brands likely will get a lift from some SUVs that they plan to launch. Compact SUVs are in strong demand in China. In November SUV sales nationwide jumped 59 percent from a year earlier to 301,000 units, according to the China Association of Automobile Manufacturers. But SUVs alone can't guarantee sustainable sales growth for Japanese brands, now that rival automakers are launching their own new products.

For example, since last year, the U.S. automaker Ford has introduced four SUVs: the Edge, Explorer, Kuga and EcoSport. By 2015, Ford plans to introduce yet another SUV plus the Mustang.

To capture more market share in China, virtually all global automakers are aggressively expanding. General Motors, for example, is building two plants in China with a combined capacity of 600,000 units.

But that is something that Japanese automakers are wary of doing. Anti-Japanese sentiment in China finally has subsided. But relations between China and Japan remain strained, and neither country has shown any inclination to back down from their territorial dispute. Fearing that tense relations could trigger another boycott, Japanese automakers are reluctant to build new plants in China. Such fears will hold back these companies at a time when their competitors are forging ahead.

Industrywide, total sales of vehicles -- including buses and trucks -- reached 19.9 million units this year through November. China's total vehicle sales should exceed 21 million units this year, according to Dong Yang, secretary general of the auto association.

Ford Motor Co.'s Focus was the best-selling sedan last month, with Great Wall Motor Co.'s Haval line remaining the nation's top-selling SUV.

General Motors, the largest foreign automaker in China last year, reported a 13 percent gain in November sales and the company has said it will deliver 3 million vehicles in China this year by the middle of December.

But Volkswagen AG is poised to overtake General Motors as the top-selling automaker in China after posting a 15 percent November gain. VW delivered 310,000 vehicles in the world's largest auto market last month, outpacing GM's sales of 294,500 units. In the first 11 months, the German automaker has sold 2.96 million cars and trucks in China, while GM sold 2.89 million units.

While VW now sits atop the China market, not all VW brands fared equally well. The company's luxury brands -- Audi and Porsche -- boosted sales, while value brand Skoda continued to struggle.

Audi sales in the first 11 months increased to 443,700 units, while Porsche sold 34,113 units, up 17 percent. However, Skoda deliveries declined nearly 4 percent to 217,400 units.

In the first 11 months, Volkswagen-brand passenger car sales in China increased 18 percent to 2.3 million units. The automaker considers China to be the centerpiece of its campaign to be the world's top automaker by 2018. Over the next five years, VW will spend 18.2 billion euros (149 billion Yuan) on new assembly plants and models in China. During that time, the company expects to increase Chinese production by 60 percent.

WTO Panel Affirms Ruling Against Chinese Export Restrictions on Rare Earths

A World Trade Organization dispute panel has affirmed that China violated its WTO membership terms by imposing export restrictions on rare earths, which are important to a multitude of industrial and high-tech products including wind turbines, hybrid car batteries and energy-efficient lighting.¹¹ The three-member WTO panel issued a final ruling on December 13th, backing the complaint filed by the U.S., the European Union and Japan against the Chinese restrictions, which take the form of export quotas, export duties, various restrictions on the right to export and administrative requirements limiting exports.

The final ruling was issued to the parties on a confidential basis and will only be made public once it has been translated into the WTO's three official languages, a process which is expected to take an additional three months to complete. China will then have 60 days to decide whether to appeal the panel's findings.

The final ruling maintains the conclusions of the panel in its preliminary ruling issued to the parties on October 23rd — that the export restrictions violate Paragraph 11.3 of China's 2001 WTO accession protocol requiring the country to eliminate all taxes and charges applied to exports unless specifically provided for in Annex 6 of the protocol. Annex 6 allows China to impose export duties on 84 tariff lines up to a specified limit; none of the rare earths or metals at issue in the dispute are on the Annex 6 list.

The panel also rejected China's claims that the export restrictions could nevertheless be justified as an exception to WTO rules under Article XX(b) and (g) of the WTO's General Agreement on Tariffs and Trade because they were needed to protect human health or conserve exhaustible natural resources. The complainants contended that Paragraph 11.3 of the 2001 accession protocol precludes the possibility of China invoking an Article XX defense. That conclusion was not unanimous, with one panel members agreeing with China that the export restrictions could in principle be imposed as an Article XX exception but adding that China had not demonstrated the duties were justified under that provision.

China is the world's leading producer of rare earths, a set of 17 chemical elements in the periodic table that include 15 lanthanides (lanthanum, cerium, praseodymium, neodymium, promethium, samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium, lutetium), as well as scandium and yttrium.

In addition to the rare earths, the three complainants also successfully challenged Chinese export restrictions on the metals tungsten and molybdenum.

¹¹ Rare earths are also used in advanced electronics, flat-panel displays, mobile phones, disk drives, steel, automobiles, petroleum and chemicals.

China Sets HCFC Production Quotas for 2014 to Comply With Montreal Protocol

China has assigned hydrochlorofluorocarbon (HCFC) production quotas to 40 businesses for 2014 and released details on 2013 quotas. China's quota system is designed to limit production and use of HCFCs, commonly used in refrigeration systems, in compliance with the Montreal Protocol on Substances that Deplete the Ozone Layer. The quotas determine how much each company is allowed to produce.

Quotas for 2014 were posted on November 25th on the website of the Ozone Action in China Multilateral Fund Project Office, which is under the supervision of the Ministry of Environmental Protection's Foreign Affairs Department. Zhejiang Sanmei Chemical Industry Co. Ltd., Shandong Huan New Material Co. Ltd. and Dongyue Group Ltd. were among companies receiving the highest quotas.

On December 5th, the Ministry of Environment Protection (MEP) posted an announcement about 2013 quotas for HCFCs, stating that 64,460 metric tons of HCFC 22 had been assigned to 28 companies producing small unit air-conditioners for rooms and that 9,995 metric tons of the substance had been assigned to 14 companies for production of air conditioners for industrial and commercial use.

A total of 7,126 metric tons of HCFC 141b was assigned to 22 companies involved in polyurethane production, another 2,967 metric tons of HCFC 22 and 2,255 metric tons of HCFC 142b were assigned to 10 polyvinyl benzene production companies, and 149 metric tons of HCFC 141b were assigned to a pharmaceutical device company.

In a statement, the ministry said it is revising its 2010 Ozone Depleting Substances Import and Export Management Measures because they are outdated. The new measures will include 27 items detailing application processes and supervision responsibilities of government departments.

Separately, China and the U.S. are cooperating on an effort to phase out the global use of hydrofluorocarbons (HFCs), a highly potent greenhouse gas originally developed as an alternative to ozone-depleting chemicals such as HCFCs. HFCs have a global warming potential of between 140 and 11,700, meaning they are more than a hundred times and as much as tens of thousands of times more effective in warming the planet than the most prevalent greenhouse gas, carbon dioxide.

China Says Poorly Prepared To Fight Impact of Climate Change

China is poorly prepared to tackle the impact of climate change that presents a serious threat to the country, thanks to a lack of planning and public awareness, the government said. The world's most populous country already faces challenges from weather extremes, with 2,000 people dying on average each year since the 1990s in natural disasters that are set to get worse, China's powerful economic planning agency said.

"Our country is a developing nation with a large population, complex climate conditions and a weak environment (situation)," the National Development and Reform Commission said in a report. "Climate change is already a serious threat to food, water, ecological and energy security, and to people's lives and property," it added. "The mission to deal with climate change is very arduous, but knowledge in society and ability to do this are weak across the board."

China is seeing more droughts in its northern region, with typhoons arriving earlier, wetlands drying up and sea levels rising, said the document, published in coordination with several ministries, including the Agriculture Ministry. "In the future the rising trend of temperatures will become even more obvious, there will be even more unfavorable impacts (from climate change), and if effective measures are not taken the losses from disasters caused by extreme weather will be even more serious," the agency added.

Government steps to mitigate climate change range from building more reservoirs, providing better protection to forests and wetlands to improving weather warning systems, but the overall picture is not optimistic, the planner said. "Although our work at dealing with climate change has achieved some successes, basic abilities have yet to be raised up, and there are many weak links in our work," it added.

China was unable to protect basic infrastructure, such as power and water supplies, from extreme weather events, and flood prevention efforts need to be spruced up, it said.

A coal-dependent manufacturing base has made China the world's biggest contributor to climate change. In recent months, officials have outlined new policies to fight the problem, on top of steep renewable energy targets in the current five-year plan. But China's pollution is expected to continue growing well into the next decade, albeit at a slower pace, as it has little choice but to rely on fossil fuels to develop its western interior.

China's Public Security Ministry to Help With Crackdown on Environmental Crimes

China is hoping to strengthen its enforcement of environmental laws through closer cooperation and communication between its ministries of Public Security and Environmental Protection, the latter body said in a notice on its website. The December 3rd notice said the environment ministry will be responsible for overall supervision of polluting companies, including handling documentation on their emissions, monitoring emissions at their facilities and imposing administrative punishments such as fines or restrictions on their activities.

The Ministry of Public Security, meanwhile, will be responsible for punishments involving illegal emissions, particularly of hazardous chemicals, and cases of tampering with or damaging environmental monitoring equipment. It will investigate possible criminal violations and help the environment ministry investigate potential environmental crimes. The Ministry of Public Security said 247 criminal cases involving environmental crimes were filed in the first half of 2013 across China.

Zou Shouming, the Environment ministry's secretary for environmental monitoring, said at a news conference about the announcement that "due to the heavy task of air pollution control" in Hebei province, a special police team has been set up to assist in environmental cases there. Zou said Shandong, Hebei, Zhejiang, Jiangsu and several other provinces will be among the first to establish pilot programs to link environmental protection and public security enforcement activities.

In cases where enforcement activities might lead to public protests or other disturbances, the two ministries are required to report to local government and Communist Party committees for instructions on how to proceed.

The notice said the two ministries will set up regular communication channels, particularly during environmental emergencies and other critical events, and appoint communication liaisons to

coordinate activities. Special funding will be made available for further coordination between the two ministries, according to the statement.

Separately, authorities in the central Chinese province of Hubei including the provincial Supreme Court, People's Procuratorate, Public Security Bureau and Environmental Protection Bureau have issued a plan for jointly tackling environmental crimes, according to a December 2nd report from China Environment News, a news agency under the direction of the Ministry of Environmental Protection. The plan calls for coordination and information sharing among the bodies, as well as public disclosure of environmental crimes through the websites of the provincial government agencies.

S. Korea, China to Discuss Ways to Cut Air Pollution

Senior officials from South Korea and China will hold talks to discuss ways to help reduce hazardous air pollution in northern China, as Beijing's smog is increasingly affecting Seoul. The one-day talks in Beijing will bring together dozens of senior officials from the two nations' environment ministries and meteorological agencies, a South Korean diplomat said.

"During the talks, South Korea will provide its lessons in tackling air pollution to China and the two sides are expected to exchange a variety of cooperative measures to jointly improve air quality," said the diplomat.

The levels of particulate matter in South Korea have been jumping during the winter months, as westerly winds carry the smog from China to the Korean Peninsula.

China's Smog Threatens Health of Global Coal Projects

A choking smog across much of northern China threatens not just the health of local residents, but also of major coal projects globally that are still on the drawing board. China's plans to tackle pollution largely target coal-fired power, which will hit already slowing demand in the world's top importer of the fuel.

With China's coal demand the primary driver for a slew of mine investments over the past decade, this trend could derail a list of capital intensive coal projects from Australia to Indonesia and Mozambique.

Even without the environmental drive, new railways from mines to ports, falling investment in coal-fired generation and slowing power demand growth could see China's miners export some of their surplus output at competitive prices, hitting regional miners and the viability of new projects. This is a major shift for a country that built an average of two coal-fired power plants every week in the last decade, went from net exporter in 2009 to the world's top importer just two years later, and burns nearly as much coal as the rest of the world combined.

China's coal imports grew by 17 percent in the first 10 months of the year, down by nearly half from the 30 percent growth in 2012. With weaker demand and high domestic output, inventories have been stuck at record high levels of 300 million metric tons most of this year.

China's massive jump in coal use - to 3.8 billion metric tons in 2012 from 2.5 billion metric tons in 2006 - drove prices of benchmark Asian thermal coal to average \$121 a metric ton in 2011, from less than \$50 five years earlier. But a raft of mine expansions during the boom years and weaker

demand caused by the global economic slowdown pushed prices to a 3-year low near \$80 a metric ton in October 2012, and they have stayed below \$100 since.

Goldman Sachs reportedly expects seaborne coal trade to grow at just 1 percent until 2017, compared with 7 percent from 2007-12.

Miners bullish on demand are planning projects in areas that need significant infrastructure investment, such as the Galilee basin in Australia and the Sumatra region in Indonesia, but need high prices for the projects to make sense.

India's GVK Power & Infrastructure and Adani Enterprises are amongst those spending billions of dollars on new mines in the remote Galilee Basin. State coal miner PT Bukit Asam's \$2 billion coal railway project in Indonesia's South Sumatra is in doubt after India's Adani Group pulled out. Sumatra holds half of the country's resources but accounts for just 4 percent of output due to infrastructure constraints.

In Mozambique massive spending is needed on railways and ports to allow companies like Rio Tinto Ltd and Vale SA to make the most of potential reserves.

"The prospect of weaker demand growth and prices at near marginal production costs suggest that most thermal coal growth projects will struggle to earn a positive return for their owners," Goldman Sachs said in a report.

In Australia, about 40 out of 71 thermal coal mines surveyed by consultancy Wood Mackenzie had a cash cost of above \$87 a metric ton, while many of the proposed projects require a coal price of \$120 a metric ton to be viable, according to a report by Australia's Centre of Policy Development. They could soon find themselves competing with Chinese coal, which is set to become more competitive as production costs fall. China is mulling proposals to scrap a 10-percent coal export tariff, a move which could easily see shipments jump four-fold to the annual quota of 38 million metric tons as Chinese coal becomes more competitive. Plans by the railway ministry to double the volume of coal carried on dedicated railroads to 2.4 billion metric tons by 2015 will cut production costs, as will an ongoing mine consolidation. Railway tariffs cost about 0.15 Yuan per metric ton for each kilometer, less than half the cost of around 0.35 Yuan by truck, according to data from the China Coal Transport and Distribution Association. More coal moving by rail will cut China's average production cost for thermal coal in the next 2-3 years by \$10-\$15 a metric ton to \$80-90, including value-added tax, according to brokerage CLSA.

Power demand growth has fallen even further than economic growth as China has cut its energy use to about 0.7 times GDP growth, according to calculations based on data from the statistics bureau. That compares with an average multiplier of 1.1 times from 2005-2012

A surge in hydropower, nuclear and gas power has cut coal's share in power generation to 73 percent this year, from 78 percent in 2007, and this is set to move even lower. Hydropower capacity is targeted to grow about 6 percent a year to reach 290 gigawatts by 2015, nuclear capacity to quadruple to 58 gigawatts by 2020 and gas-fired capacity to double to 56 gigawatts by 2015. That compares with an expected 4 percent annual growth in thermal power capacity, half that seen between 2005 and 2011, said Liu Xiangdong, director of planning statistics of the China Electricity Council.

To Tackle Pollution, China to Drop Pursuit of Growth at All Costs

China will steer local governments away from the pursuit of economic growth at all costs and beef up their powers to punish polluters as part of a campaign to reverse the damage done by three decades of unchecked expansion. In wide-ranging economic and social reforms recently unveiled, the ruling Communist Party said it would put more emphasis on environmental protection when assessing officials, and would also hold local authorities directly responsible for pollution.

The document, which also pledged to relax its "one-child policy" and further free up its markets, said China would draw an "ecological protection red line" that would limit the economic development of environmentally vulnerable regions.

Three decades of industrialization and double-digit growth in China have left the country badly polluted. With public anger mounting over a series of scandals involving hazardous smog, contaminated soil and toxic water supplies, China has identified the environment as one of the biggest potential sources of instability. But despite a pledge to create a "beautiful China" over the next decade, China continues to struggle to bring polluting state-owned industrial enterprises and growth-obsessed local governments to heel.

The new policy document said China would "correct the bias towards assessing (officials) on the speed of economic growth and increase the weight placed on other indicators such as resource use, environmental damage, ecological benefits, industrial overcapacity, scientific innovation, work safety and newly-added debt."

China already assesses local officials on the way they handle the environment, but with the economy still considered the priority, local authorities stress their green credentials by building ostentatious national parks, wetlands or reforestation projects rather than address the cause of pollution and risk revenues and jobs.

"Before, they were just using environmental protection as another way of generating economic growth and even if something causes a great deal of immediate environmental damage, they would still consider the short-term economic benefits," said Zhou Lei at Nanjing University, who studies the impact of industry on the environment.

The Communist Party document also pledged to improve the way environmental rules are enforced by establishing a more "unified" central government authority and by eliminating administrative overlaps. Experts expect China to strengthen the powers of the environmental ministry as part of a wider government department reshuffle likely to take place during the annual session of parliament in March next year.

Officials, including vice-environment minister Pan Yue, have complained that the current regime lacks teeth, partly because many crucial environmental responsibilities are dispersed across a wide range of departments.

Next year's reshuffle could see the environment ministry taking on responsibilities currently held by the State Forestry Commission, the Ministry of Water Resources as well as the powerful planning super ministry, the National Development and Reform Commission, none of which consider environmental protection a priority.

The pledges made in the document will also be bolstered by amendments to the country's environmental protection laws, which are expected to be published soon and will give environmental agencies a range of new powers to fine and punish serial violators, as well as improve the way Beijing monitors pollution across the country. But Zhou of Nanjing University

said the new rules are unlikely to go far enough. "In my opinion, it is typical Chinese lip service and should not be treated seriously," he said.

China, Norway May Team Up In Search for Arctic Oil

Norway is deciding whether to team up with China to explore for oil in Iceland, Icelandic authorities said, setting up a rare cooperation for the two since a diplomatic row over the award of the 2010 Nobel Peace Prize to Chinese dissident Liu Xiaobo. Norway has the right to join an exploration license with Chinese oil firm CNOOC to look for oil in the waters between Iceland and Norway's Jan Mayen, a tiny speck of land in the Arctic.

Communications between Beijing and Oslo have been mostly cool since the 2010 Peace Prize and collaboration in Iceland may be a signal that relations are on the mend.

"We expect an answer from the Norwegian authorities in the last week of November," said Gudni Johannesson, director-general of Iceland's National Energy Authority, emphasizing that there had been no diplomatic tensions over the issue.

Norway's Conservative-led government took office last month and China has signaled that it was up to Norway to repair the relationship, which has damaged business ties and prevented Statoil from exploring for shale gas in China.

Iceland awarded its first two licenses in January. In June it gave CNOOC and Icelandic firm Eykon Energy a further license as it seeks to boost its fragile economy. At the time of the announcement, it was the first time a Chinese oil firm was licensed to look for oil in the Arctic.

Under a 1981 treaty, Norway has a right to take a 25 percent stake in the licenses. It did so with the first two licenses Reykjavik awarded in January, to London-listed Faroe Petroleum and Canada's Ithaca Energy together with local Icelandic partners.

China is keen to find natural resources and the Arctic could hold some 90 billion barrels of oil equivalent according to the U.S. Geological Survey. In April it signed a free trade deal with Iceland, abolishing tariffs between the two.

Iceland, still recovering from the 2008 financial crisis that brought the country to its knees, is keen to develop its natural resources to help spur its economy. There are no figures for how much oil and gas the area where the licenses lie could hold. But the area off Norway's Jan Mayen Island, geologically similar, could hold 566 million barrels of oil equivalent, according to a February survey by the Norwegian Petroleum Directorate. That is the equivalent of a sizeable North Sea field.

Beijing Slashes Car Sales Quota in Anti-Pollution Drive



Lines of cars are pictured during a rush hour traffic jam on Guomao Bridge in Beijing July 11, 2013.

Photo: Jason Lee

China's capital, Beijing, infamous for its thick smog and heavy traffic, will slash the city's new car sales quotas by almost 40 percent next year, as it looks to curb vehicle emissions and hazardous levels of pollution, the city government website said.

The change in policy gives greater support for new, cleaner cars and could strengthen foreign carmakers' determination to accelerate growth in China's less crowded lower-tier cities.

Over the next four years, Beijing will issue 150,000 new license plates annually, down from 240,000 each year now, according to the city government's website. Car buyers must put on plates before they are allowed to drive on Chinese roads.

That means Beijing's new passenger vehicles sales during the 2014-2017 period will be capped at 600,000 units, fewer than the city's vehicle sales in 2010 alone.

In addition, the government will allot a higher proportion of license plates every year to buyers of new-energy vehicles that need lower amounts of gasoline or use alternative energy. This could benefit electric automakers such as BYD Co Ltd. The number of plates for such vehicles will triple from 20,000 in 2014, to 60,000 in 2017, accounting for 40 percent of that year's total plate quota.

New car sales are currently restricted in four Chinese cities - Beijing, Shanghai, Guangzhou and Guiyang - where car buyers bid for license plates through auctions and lotteries.

China plans to restrict vehicle sales in eight more cities, the China Association of Automobile Manufacturers said in July, a policy trend that has already led carmakers such as General Motors Co and Volkswagen AG to put more resources into China's smaller, less-crowded lower-tier cities.

Chinese Automakers Fight Proposal to Ease JV Ownership Rules

China's auto lobby has fiercely opposed a possible move by Beijing to ease restrictions on foreign ownership in the car industry, saying that the move would seriously weaken the position of domestic carmakers.

Dong Yang, secretary general of the China Association of Automobile Manufacturers (CAAM), said that if foreign ownership rules were relaxed, Chinese carmakers would lose control of joint ventures they now own and run together with global automakers. "Foreign ownership being capped at 50 percent is the red line we must not cross because we need to protect our Chinese brands," Dong said in a statement posted on the CAAM Web site. "From another perspective,

current restrictions have not dampened global carmakers' enthusiasm whatsoever to invest in China, so why should we be more open?"

China has required global automakers such as General Motors, Ford Motor Co., Volkswagen Group and Toyota Motor Corp. to form joint ventures in order to produce cars in the country, hoping that Chinese carmakers can absorb foreign technology and management expertise to become more competitive.

The Ministry of Commerce told a media briefing in Beijing last month that the government would likely relax foreign investment restrictions soon in areas including auto manufacturing.

In addition to the 50 percent ownership cap, the current policy calls for foreign automakers to set up a jointly run technical center in China and to transfer certain technology to their local partners.

CAAM's opposition comes in the wake of indications by several Chinese policymakers that they are considering relaxing foreign investment rules in China's automobile industry. For example, at an automotive conference in Wuhan in October, Chen Lin, the Commerce Ministry official who oversees international automotive investment policy, acknowledged that unlike China, automakers investing in most countries around the world are not required to form a joint venture with a local partner to own and operate any assembly plants in their markets.

In his statement, CAAM's Dong urged Chinese policymakers to think twice before making such decisions, calling on the government to protect local brands. "The government shouldn't rush to make decisions that would have a huge impact on the industry," and needs to study the issue and solicit opinions from various parties as much as possible.

Foreign brand dominate Chinese roads, with home-grown carmakers capturing only a 30 percent share of the market collectively.

49. Hong Kong Finds Switch to Cleaner Fuels Has Flaws

All but one of Hong Kong's more than 18,000 taxis now burn liquefied petroleum gas, but one smog-causing pollutant soars if those vehicles' catalytic converters are not regularly replaced. Concentrations of nitrogen dioxide, one of the most important contributors to smog, surged by a fifth in Hong Kong's air from 2008 to 2012, and a team of local and international scientists have traced the cause to LPG-fueled vehicles, Hong Kong environmental regulators said at a news conference.

The problem lies in the taxis' and minibuses' catalytic converters, said Christine Loh, the undersecretary for the environment. Unless replaced every 18 months for cars and light buses that are driven nearly around the clock, the catalytic converters become fouled, and the vehicles begin emitting extremely high levels of pollution. Although natural-gas-powered vehicles have not been deployed on a large scale in Hong Kong, they would pose the same problems, she added.

As a result, the Hong Kong government in the coming months will pay for the free replacement of catalytic converters on the city's entire privately owned fleet of roughly 18,000 taxis and several thousand minibuses, Ms. Loh said. Pang Sik-wing, the city's principal environmental protection officer for air sciences, said that the replacement effort would cost about 10,000 Hong Kong dollars, or \$1,290 per vehicle.

After the first free replacement, taxi and minibus owners will be responsible for replacing catalytic converters every year and a half at their own expense. Hong Kong will deploy five mobile sensor systems next year to measure the pollution from passing vehicles and send automatic notices to the registered owners of any vehicle surpassing emissions standards, requiring them to take in their vehicles for repairs or risk losing their vehicle licenses. "We will strictly enforce the emissions standard," Mr. Pang said at a news conference with Ms. Loh.

Larger buses in Hong Kong continue to use diesel. Franchised bus operators have long resisted switching, arguing that only diesel engines can push buses up Hong Kong's steep hills while still providing enough power for the robust air-conditioning systems needed to ward off the sweltering heat during late spring, summer and early autumn.

The Hong Kong government is preparing to submit a bill to the legislature that would set deadlines for the retirement of all older diesel-powered vehicles that do not meet modern emissions standards and whose compliance has been grandfathered until now, Ms. Loh said. The bill will set "death dates for each of these categories — this is not a voluntary scheme, this is a mandatory scheme."

50. Hong Kong to Measure Air Quality Impacts on Health Amid Growing Pollution Concerns

On December 30th, Hong Kong introduced an air quality health index (AQHI) pegged to pollution-induced hospital admission risks amid increasing concerns about smoggy skies. Readings on the index will be calculated based on health risks from inhaling concentrations of ozone, nitrogen dioxide, sulfur dioxide and particulate matter, the government said in a statement on December 6th.

Chief Executive Leung Chun-ying has made cleaning up the city's skies a priority with air quality in Hong Kong worsening since 2007. Outdoor pollution can cause lung cancer, the International Agency for Research on Cancer, a World Health Organization agency, said in October.

"It's a much tightened standard," Andrew Lai, deputy director of environment protection, told reporters. "Under the new index, we are not only reflecting the concentration levels of the key air pollutants but also the health risks associated with those pollutants." The higher standards, which spell out the health risks more clearly, mark the first time the former British colony has changed the way it measures air quality since 1987. They were adopted after a review by public health and air science experts from local universities, and reference guidelines from the Geneva-based WHO, Lai said. Under the new system, there may be more days with pollution classified as "high" or "very high," he said.

51. High Diesel Engine Demand, Exports Drive Fiat into Profits in India

Italian car maker Fiat may not have had a great presence in the car market recently, but its joint venture with Tata Motors has quietly broken into profits for the first time since its establishment thanks to the voracious appetite for diesel engines from Maruti Suzuki, export of engine components to China and better cost efficiencies.

After the organizational restructuring in FY-12, wherein Fiat separated the manufacturing company from the marketing company and wrote off losses of about Rs 300 crore in Fiat India, the company posted a profit of Rs 269 crore in the six months ending March of 2013.

Fiat's exposure in the engine business is expected to rise further as its breadwinner engine business and the impending 7-9 new products planned by both Tata Motors which include Falcon 4 -code name for new small car and Falcon 5- a sub-four meter sedan which are in the works along with the upcoming new vehicles from the Fiat-Chrysler's range are expected to grow its revenues in the coming years.

Fiat-Chrysler's plans include the launch of a New Linea, as well as new launches such as Abarth, Grand Cherokee, Punto Cross and 2-3 new utility vehicles which are proposed to be manufactured and in some cases assembled at the Ranjangaon plant. For this purpose, the Fiat-Tata joint venture infused additional capital of Rs 650 crore in June of 2013.

During the October 2012 to March of 2013 period, the average engine production rose by over 20-30% compared to FY-12. Fiat India produced 80,736 engines in six months, with an average of 13,000 units a month. The company supplied over 100,000 engines from its Ranjangaon plant to Maruti Suzuki over the last 12-18 months.

The company's exports increased three-fold in the second half of FY-13 compared to second half of 2011-12 led by exports to GAC-Fiat's China plant for 100% of its primary engine components such as cylinder block, lower cylinder head and upper cylinder head.

A judicious utilization of plant resources and rationalization of working days and shift timings yielded up to 30% production efficiency and some savings in costs and improvement in working capital management despite uncertain market conditions. When contacted Tata Motors spokesperson confirmed to the press that the JV has turned profitable, largely helped by the restructuring arrangement, increased product volumes and efforts towards cost management.

In order to strengthen the JV, Fiat and Tata have infused about Rs 1,500 crore over a span of two years. A sum of Rs 850 crore was capitalized into the JV through a fresh issue of equity shares in FY-12 (September of 2011) and there was an additional infusion of Rs 650 crore in June of 2013.

An analyst said while the reduced engine supply to Maruti Suzuki in FY-14 due to reduced demand for diesel cars may impede growth, it may however be compensated by the expected higher volumes from Fiat with its expanded dealer network and increasing product portfolio.

52. Indian Capital Blanketed In Thick Smog, Transport Disrupted



People cross railway tracks on a foggy winter morning in New Delhi December 18, 2013.

Photo: Anindito Mukherjee

Residents of the Indian capital woke recently to a third day of thick gray smog in one of the worst episodes this year, which disrupted dozens of flights and train services and caused a rash of health complaints.

New Delhi is among several Asian cities that are suffering from toxic levels of pollution fuelled by

industrial growth and a surge in the numbers of vehicles crowding their roads.

The cloak of fog draping much of north India forced dozens of flights to be diverted or canceled, disrupted train schedules and led to a doubling in the number of medical emergencies caused by breathing difficulty, officials said.

Runway visibility has been dropping to as low as 50 m. (164 ft) in Delhi. "Both departures and arrivals were stalled," said airport spokesman Kapil Sabarwal, as planes hovered in holding patterns, waiting for conditions to clear.

Two passenger trains were canceled on one day, while 60 trains were running late and 25 had been rescheduled on the third straight day of disruptions, said railways spokesman Neeraj Sharma.

The fine particles suspended in the fog ranged as much as seven times beyond the concentration that India considers safe, to reach a level the United States Environmental Protection Agency calls "hazardous". At that point, the agency urges that all outdoor physical activity be avoided and that victims of heart or respiratory ailments stay indoors, along with children and the elderly.

The fog mingled with high pollution was an extreme event "when the air quality goes from very poor to dangerous," said Gufran Beig, a scientist at the Indian Institute of Tropical Meteorology. Calm wind conditions and a smaller gap between extreme temperatures helped trap pollutants in the air, Beig said. The frequency and duration of such events have been rising every year since government records started in 2010, he added.

The only time this year that Delhi has choked in such severe air pollution was during traditional fireworks celebrations of Diwali, the Hindu festival of lights, in November, which coincided with a foggy cold snap.

The number of patients seeking treatment for respiratory and cardiac diseases has risen by about a quarter since the fog descended, said Dr. Randeep Guleria, head of the pulmonary department at the All-India Institute of Medical Sciences, a leading hospital in the city.

Particle pollution is linked to many health problems, ranging from breathing difficulties to heart attacks, strokes and early death.

53. Indian Environmental Activists up the Ante as Government Struggles to Enforce Rules

When 12 village councils in the central Indian state of Odisha rejected Vedanta Resources Plc's proposal to mine bauxite for a \$7.9 billion aluminum complex in August, the case highlighted the conflicting pulls and pressures facing the country as it transitions from a poor to a middle-income economy. On the one hand lay the prospect of a multibillion-dollar investment, particularly welcome during a year when the economy is forecasted to grow by 4.9 percent, its most sluggish pace in a decade. On the other hand were the environmental, livelihood and cultural concerns of a tribal population largely isolated from the global economy.

But on closer inspection, the case revealed another disturbing aspect—the frequent inefficacy of India's environmental governance system. Local activists and nongovernmental organizations had for years alleged a range of violations by the company in building its aluminum complex. Only after a sustained campaign, which included bringing tribal members to the national capital of New Delhi to tell reporters about their opposition to the project, did the federal government set up a committee to examine the charges.

The ensuing report, released in 2010, said Vedanta was illegally occupying forest land and had violated a range of laws, including the Environment Protection Act, in “active collusion with the state officials.” The Supreme Court in April 2013 ordered the state government to hold public hearings to seek people's opinion, where Vedanta's plans were extensively criticized.

The August decision by the 12 village councils was final.

Vedanta is not the only company that has had to change or curtail its plans due to environmental compliance issues raised by civil society groups. For example, environmental concerns and compliance issues have held up plans by the South Korean company Posco for a steel plant in the coastal state of Odisha—which, at roughly \$12 billion, would be the largest single foreign investment in India—for eight years. Opposition by local residents has made it difficult to acquire land, and the government has gone back and forth between issuing environmental permits and withdrawing them.

In another example, after flash floods in the Himalayan state of Uttarakhand in June, a public interest lawsuit in the Supreme Court resulted in a ruling halting approvals of any new hydropower projects in the state. Environmental groups have warned that such projects are disturbing the region's ecology and destabilizing its geology.

As Indian officials struggle to create appropriate institutions and build their capacity to enforce environmental laws necessitated by enhanced and varied economic activity, environmentalists are becoming more strident, contributing to the evolution of environmental policy and legislation, monitoring for violations of those measures and partnering with businesses to create industry standards and codes of conduct. The Ministry of Environment and Forests, like all ministries, is required to keep all proceedings in the public domain, including on its website. In addition, mobile phones and the Internet have enabled greater dissemination of information, even as a gradual deepening of democracy takes place, thanks in part to legislative changes that have enabled thus-far marginalized groups such as tribal members to claim their rights.

Armed with information and better tools for organizing, environmentalists have in recent years intervened in a range of scenarios:

- when policies, regulations or laws have been unclear and policy makers undecided on the scientific evidence, as in the case of the harms and benefits of small hydropower projects;
- when corruption or lack of enforcement has led to disregard of laws and regulations, as in the case of many well-documented mining projects;
- when laws and policies have been applied patchily, as in the case of various waste management rules; or
- when local residents' concerns are disregarded, they are paid inadequate compensation or there is insufficient rehabilitation, as is the case with many land-acquisition projects.

54. India's Negotiator Says Climate Treaty Talks 'Partial Success'

After more than 35 hours of continuous discussions, Ravi Shankar Prasad, one of India's lead negotiators, described the United Nations climate change conference as "a partial success" for keeping the pathway open for a global climate treaty to be finalized in 2015. Mr. Prasad said that after being on the verge of a breakdown, the talks delivered a mechanism for developed countries to give money to poor nations for climate-related "loss and damage" and created an outline for a system under which countries could make "contributions" to reduce greenhouse gas emissions after 2020, when the 1997 Kyoto Protocol, the first treaty on climate change, will end.

"Loss and damage is something African countries have been asking for 15 to 20 years. It was very close to their heart and so were keen on it," Mr. Prasad told India Ink, as delegates of several countries rushed out of the National Stadium in Warsaw to catch their flights after the talks had been extended an entire day.

Previously, the failure to reach agreement over loss and damage had led to a walkout by the bloc of developing countries called G77 & China, which also includes India. For itself, India sees any future money for losses and damages to be utilized for building sophisticated risk resilience mechanisms that warn against natural disasters.

But many environmental activists saw the 2013 talks as a bust since no specified amount or timeline has been set for rich countries to actually give the money for losses and damages, and neither is there a specific plan to capitalize the \$100 billion Green Climate Fund, which will help developing nations adapt to climate change.

As old arguments dragged on, a large group of activists handed in their badges and walked out of the conference before it ended to express their anger over the lack of progress.

Even the issue of global emissions was stalled until the last hours of the conference, when delegates of 189 countries agreed to an amendment proposed by India and China to change the word "commitments" to "contributions" in paragraph 2b of the text, which forms the basis of the new climate treaty. The running joke in the negotiating halls was "2b or not to 2b."

Since India is still faced with the massive challenge of increasing development for poverty eradication, Mr. Prasad explained that only developed countries would have legally binding "commitments" as they were responsible for historical emissions. The Indian delegate said that it was not for developing countries to "fill the gap" left by the failure of rich countries to take on 40

percent reduction targets over 1990 levels, targets that had been recommended by the United Nations' Intergovernmental Panel on Climate Change, or I.P.C.C.

Presently, the European Union's reduction figure in the Kyoto Protocol's second commitment period, which runs until the new treaty kicks in 2020, is only 20 percent from 1990 levels. The United States, which never ratified the Kyoto Protocol, has pledged a 17 percent reduction from 2005 levels.

Unlike the Kyoto Protocol, which put the burden of cutting emissions on the shoulders of rich countries, the 2015 treaty will be "applicable to all," as was agreed to in the Durban Platform decided at the 2011 talks in South Africa. But dividing responsibilities remains fraught with contention. "Clearly, there is a difference from the past, but what exactly that is not yet decided," said David Waskow, director of the International Climate Change Initiative in Washington, D.C.

India, for instance, would have preferred "actions" in the text to "contributions" to refer to its voluntary domestic actions to reduce emissions. The country is also not willing to sign up for international obligations until it gets the technology for its implementation. Asked when India would change "contributions" to "commitments," Jayanthi Natarajan, India's environment minister, said, "Why should it be changed to 'commitment'? Developed countries should first show their commitment."

Ms. Natarajan stressed that developed countries had to increase their emission reduction pledges under the second commitment period of the Kyoto Protocol. "I only see with dismay that they are cutting down on their pledges," she said. Countries like Russia, Canada, Japan and New Zealand have not signed up for the second commitment period of the Kyoto Protocol, and Tokyo has also lowered its emission reduction target to 3.8 percent from 2005 levels, which in effect is a 3.1 percent increase in emissions from its 1990 levels.

The Philippines' negotiator, Yeb Sano, who had fasted for the duration of the conference to highlight the suffering from Typhoon Haiyan in his country, said that India "had played a very important role" in retaining the principles of "common but differentiated responsibilities" included in the 1992 Rio Declaration.

On the other hand, the recently released Global Carbon Project finds China (27 percent) and India (6 percent) to be among the world's four largest emitters of carbon dioxide, along with the United States (14 percent) and the 28-nation European Union (10 percent). The report said that China accounted for 70 percent of the global increase in 2012, while India was 7.7 percent. It also found that the United States still had highest per-capita emissions at 16 tons, compared to seven tons in China and 1.8 tons in India.

While India's per-person emissions were low now, the British climate economist Nicholas Stern in a recent conversation with India Ink said that even while grappling with poverty eradication, the country needed to think 20 years ahead. "India's emissions would be something like 12 billion to 13 billion tons of CO₂, while the world budget in 2030 would be 32 or 33. So there is no way the world could achieve that," he said.

Mr. Waskow said that India had a responsibility to act, although not as much as others, including some developing nations. The climate expert suggested different types of contributions that are linked more closely to development goals, like increasing the use of clean energy. Already, some of the most vulnerable island nations and African countries are looking for major emitter developing countries like India and China to do more to combat climate change.

Acknowledging that the very existence of some countries was at stake, Mr. Prasad said, "We always say that we will do more than what they are doing. But that doesn't mean that we have to do as much as developed countries. There is a difference."

Some climate change activists, however, expressed concern that developed countries were gradually diluting their own responsibilities, while developing countries had lost their grip on keeping equity as a strong pillar in the climate talks. Chandra Bhushan, deputy director at the Center for Science and Environment in New Delhi, suggested that India should strengthen its negotiating stance "to operationalize equity," by securing its share of the carbon space left in the atmosphere.

The fifth I.P.C.C. report finds that the atmosphere can accommodate only another one trillion tons of carbon dioxide emissions to the end of the century if the rise in the global temperature is to be limited to 2 degrees Celsius, or 3.6 degrees Fahrenheit. "This has to be now apportioned between countries," said Mr. Bhushan. "Now the time has come for India to take a lead in this."

55. Japan's New CO2 Goal Dismays U.N. Climate Conference

China, the EU and environmentalists criticized Japan at U.N. climate talks for slashing its greenhouse gas emissions target after its nuclear power industry was shuttered by the Fukushima disaster. The Japanese government decided to target a 3.8 percent emissions cut by 2020 versus 2005 levels. That amounts to a 3 percent rise from a U.N. benchmark year of 1990 and the reversal of the previous target of a 25 percent reduction. "Given that none of the nuclear reactors is operating, this was unavoidable," Environment Minister Nobuteru Ishihara said.

Japan's 50 nuclear plants were closed on safety concerns after the March 2011 earthquake and tsunami wrecked the Fukushima reactors northeast of Tokyo. Nuclear accounted for 26 percent of Japan's electricity generation and its loss has forced the country to import natural gas and coal, causing its greenhouse gas emissions to skyrocket.

Japan's new policy was widely criticized in Warsaw. China's climate negotiator Su Wei said: "I have no way of describing my dismay" about the revised target. The European Union also expressed disappointment and said it expected all nations to stick to promised cuts as part of efforts to halt global warming. "It is regrettable," Christiana Figueres, the U.N.'s climate chief, told reporters of Japan's goal. But she predicted that Japan's planned investments in energy efficiency and renewable power would prove that the target could be toughened. "This move by Japan could have a devastating impact," said Naoyuki Yamagishi of environmental campaign group WWF Japan. "It could further accelerate the race to the bottom among other developed countries."

Natural-gas consumption by Japan's 10 utilities was up 8.4 percent in October from a year earlier and coal use was up 4.4 percent as the companies used more fossil fuels to compensate for the nuclear shutdown, industry data showed. Prime Minister Shinzo Abe advocates a return to nuclear, but says he wants to reduce Japan's reliance on it over time. The process of restarting reactors will begin next year at the earliest and some will never come back on line due to safety concerns. With Abe facing opposition to nuclear power even from within his own party, the weaker emissions commitment could be an argument for restarting reactors, given that Japan for decades has touted the technology as clean energy.

"Our energy mix, including the use of nuclear power, is currently being reviewed. In that context, we decided to set this target at this point," Chief Cabinet Secretary Yoshihide Suga said of the

new goal. Hiroshi Minami, Japan's chief negotiator at the U.N. talks, said the new goal "is based on zero nuclear power" in future. He said the original target was based on a nuclear share of more than 40 percent of electricity generation.

Japan's decision added to gloom at the Warsaw talks, where no major countries have announced more ambitious goals to cut emissions, despite warnings from scientists about the risks of more heat waves, droughts, floods and rising sea levels.

Poor nations want the rich to commit to deeper emissions cuts while providing more finance to help developing nations deal with the impacts of climate change, a major issue at the talks after the Philippines was devastated by typhoon Haiyan, one of the most powerful ever recorded.

Australia has been criticized for watering down its climate policies, and Brazil reported a rise in the rate of deforestation in the Amazon - releasing more CO₂ that had been stored in trees.

56. Gas Use Slows Diesel Demand in Thailand

Diesel consumption should rise only slightly in 2014 due to a continued shift to the cheaper NGV and LPG (natural gas for vehicles and liquid petroleum gas) in the transport sector, according to the Energy Business Department. Director-general Somnuk Bomrungsalee said this rise in consumption was attributed to the increasing number of service stations selling gas. At present, the number of NGV stations stands at 478 nationwide, up from 472 at the end of 2012. Meanwhile, LPG stations also rose from 1,135 in 2012 to 1,723.

The department revealed that diesel consumption in the first 11 months of this year rose by only 2 per cent from 55.9 million liters a day to 57.1 million on average, from the same period last year.

In the period, NGV consumption rose 11 per cent from 7.7 million kilograms per day to 8.5 million, while LPG consumption rose by 67 per cent from 2.9 million kg to 4.8 million.

Meanwhile, petrol consumption rose 7.6 per cent from the same period last year, thanks to the delivery of new passenger cars. In 2013, one million new vehicles were registered. The department revealed that petrol consumption in the period rose from 20.8 million liters a day to 22.4 million.

In October, the LPG price for household use rose by Bt0.50 per kilo per month. Subsidies are extended to poor households. To date, about Bt4.9 million has been spent and the department plans to review the subsidy program in the next two months.

On the progress of the Bt20-billion fuel pipeline project, Somnuk said Chulalongkorn University has been commissioned to conduct a feasibility study for completion in 2014, separate from a study by Thai Petroleum Pipeline (Thappline). He noted that if Thappline is not ready to invest in the project, the government would do it. The construction is scheduled to start in 2016, and to be complete in 2018.

The department estimated that pipeline transmission would reduce fuel prices by at least Bt0.25 per liter, while reducing road accidents and energy used in transportation. In 30 years, this would reduce energy costs by Bt121.5 billion, it said.

MIDDLE EAST

57. Israel Approves Compressed Natural Gas for Transport Use to Lower Costs, Emissions

Compressed natural gas (CNG) can now be used for transportation fuel as an alternative to gasoline and diesel under a directive signed by Israel's minister for national infrastructures, energy and water. Although the minister stressed the potential economic savings of CNG use by consumers, he also noted that broader use of CNG in public and private transportation would "most significantly" lower air pollution.

"We're continuing to take steps in every area to reduce the cost of living, and savings by consumers are already in the offing," Minister Silvan Shalom said in a December 6th statement. "When natural gas replaces gasoline and diesel, drivers will be able to save thousands of shekels a year, and benefit from cleaner, cheaper travel."

Shalom's directive is part of a broader government effort to expand domestic use of natural gas supplies being tapped off Israel's coast. His ministry has encouraged the creation of a CNG infrastructure for vehicles and is currently financing half of the 3 million shekel (\$857,000) construction cost of Israel's first CNG fuel station, to be located at Zerifin, outside Tel Aviv. The ministry is also encouraging large car fleets to convert to CNG, it said.

The conversion of buses to CNG has been delayed by security concerns about the increased collateral damage the explosion of such a bus would cause. Public buses in Israel have repeatedly been targeted in terrorist bombings.

The Transportation Ministry has yet to issue standards for private vehicles powered by natural gas. And the National Infrastructure Ministry's estimates of consumer savings are also likely to change when the Israel Tax Authority completes its plan to raise taxes on all natural gas.

SOUTH AMERICA

58. Peru Uses Climate Twist to Lure Tourists to Shrinking Glacier

In its heyday, the Pastoruri glacier in central Peru, drew daily throngs of tourists packed into dozens of double-decker buses 16,000-feet (5,000-meters) high into the Andes to ski, build snowmen and scale its dizzying peaks. It was so bright with ice and snow that sunglasses were mandatory.



But in less than 20 years, including at least 10 of the hottest on record, Pastoruri has shrunk in half, and now spans just a third of a square mile (0.9 square km).

Melting ice has given way to slabs of black rock, two small lakes gathering the glacial runoff have swollen together, and officials have banned climbing on the unstable formation.

"There isn't much left of our great tourist attraction," said local guide Valerio Huerta, squinting at Pastoruri. "Tourists now always leave

totally disappointed."

The dwindling number of visitors to Pastoruri - 34,000 last year compared to an estimated 100,000 per year in the 1990s - has eroded tourism earnings that support thousands in the Cordillera Blanca, Peru's most popular cluster of snowy peaks.

Now locals are making a bid to lure tourists back to Pastoruri before it is gone completely - likely in a decade. Instead of marketing Pastoruri as the pristine Andean winter wonderland it once was - visible in outdated pictures that still hang in hotels and restaurants in nearby towns - the peak is being rebranded as a place to see climate change in action.

The "climate change route," to officially launch in March, is the latest offbeat answer to rising temperatures that have eaten up 30 to 50 percent of Andean glaciers in recent decades. Peruvians have insulated ice with sawdust to stave off melting and painted exposed rock white to reflect sunlight. Those experiments curb glacial retreat on a small scale, but cannot bring ice blocks like Pastoruri back from the brink, said Selwyn Valverde with the Huascarán National Park, home to Pastoruri and more than 700 other shrinking Peruvian glaciers.

"It's irreversible at this point," he said, adding that Pastoruri is no longer technically a glacier because it does not build up ice in the winter to release in the summer. "It's just loss, loss, loss now. It doesn't accumulate anymore."

Peru is home to 70 percent of the world's tropical glaciers, formations particularly sensitive to temperature hikes. Supporters of the route say Pastoruri, an hour-long flight from Lima and then another hour's drive from the regional capital Huaraz, is perfectly positioned to show the world the impacts of warming that will one day be widespread.

On the climate change route, visitors pass marshes and ponds red with rust as they walk over a hill that was once ice. "Smell the water," Valverde said, bringing a handful to his nose. "Do you smell the iron?" Mountain rocks covered for years are shedding minerals as ice melts off them -

rendering water undrinkable with high levels of heavy metals like cadmium and iron, Valverde said.

Newly exposed rocks have also revealed fossilized marine species that likely last saw the light of day before the start of the last ice age - more than 100,000 years ago.

There are no official figures on falling revenues linked to Pastoruri's retreat. But Marcos Pastor with the state agency charged with protecting natural sites said about a quarter of people who live in and around the Cordillera Blanca depend on glacier tourism.

The threat to tourism might seem trivial compared with other potential climate change impacts. Expanding glacier-fed lakes threaten to wipe out entire towns if they burst, minerals leaching into watersheds pose new health risks, and millions along Peru's crowded desert coast will eventually face diminishing supplies of water.

But tourism is an important source of cash for hundreds of towns in the Peruvian Andes, where there are relatively few jobs and the trickle-down benefits of a long metals boom can be hard to find. "Tourism is one of the few economic activities in Peru that distributes money directly to locals," said Pastor. At Pastoruri that means money not just for food vendors but for those who service outhouses or rent horses, bus drivers, guides and companies that coordinate trips from city desks.

Travel agent Artidoro Salas with Andes Hard Expeditions said he has thought of leaving his hometown Huaraz to start a tourism venture where there is stronger demand - maybe Cusco, the home of the popular Incan ruins at Machu Picchu. "There are at least eight travel agencies that have gone out of business here over the past decade - and those are only the ones I know of," said Salas. "Pastoruri has been a big problem. It was the main reason tourists used to come here." Salas has gotten by tailoring trips for adventure travelers, and is curious to see if a niche market for climate change tourism might grow from the melted remains of Pastoruri.

Park official Valverde said the route aims to inspire, not depress. He pointed to lichens and mosses that have managed to thrive in oxidized puddles at the foot of Pastoruri. "If they can adapt to that, why can't we, too, adapt to climate change?" he said. "The reality is that we already are. That's what this route is all about."

CARRIBEAN ISLANDS

59. Ultra-Low Sulfur Diesel Launched In Barbados

Barbados is the first island in the Caribbean to officially move from High Sulfur Diesel to Ultra-Low Sulfur Diesel (ULSD) according to an announcement at the official press launch of the procurement of ULSD at Government Headquarters. Acting Permanent Secretary in the Division of Energy and Telecommunications in the Prime Minister's Office, Jehu Wiltshire, said that the Division of Energy and the Barbados National Oil Company Limited (BNOCL) have been working together to make the transition as smooth as possible.

He noted that both organizations held a number of meetings with various stakeholders associated with ULSD, including Government entities, like the Transport Board, Sanitation Service Authority, the Ministry of the Environment and the Ministry of Economic Affairs, along with other players such as the Barbados Fisherfolk Association, the Barbados Chamber of Commerce and Industry and the automobile dealers on the island.

The Acting Permanent Secretary said that a decision was taken not to move from High Sulfur Diesel to Low Sulfur Diesel because it would not be feasible in the long run. "We would have initially agreed on the procurement of Low Sulfur Diesel, but the fact that the market is going quickly towards the use of Ultra-Low Sulfur Diesel, we realized the best decision would be to go for the Ultra-Low Sulfur Diesel instead of Low [Sulfur Diesel]".

Chairman of the BNOCL, Dr. Leonard Nurse, said that his company remained committed to providing the best possible and cleanest fuels to the island. He added that the procurement of the ULSD was a step in the right direction as it was more environmentally friendly. "I want to point out that we have taken another important step along the road to improving air quality, human health and environmental health in Barbados, following the launch some years ago of unleaded petrol," he told those present.

Dr. Nurse said that the BNOCL spent approximately \$500,000 preparing the tanks for ULSD, adding that it was decided to clean the tanks thoroughly instead of just flushing them. "We took the decision at the level of the board not to flush out the tanks to import the Ultra-Low Sulfur Diesel and add it to the existing diesel ... We cleaned the tanks from scratch. So what we are getting is not mixed with anything ... It was a cost to us but we took that decision," he explained.

ULSD has been available at some services stations since late November, and it is not expected to cost more than Ultra-High Sulfur Diesel. Like other products it will vary according to the world market. "The price is not going to be substantially different from the other diesel, but let me say that as of last night I am told it is one cent cheaper than High Sulfur Diesel, but we do not control the commodity price on the world market", Dr. Nurse stressed.

Prime Minister Freundel Stuart described this as a "great step forward for Barbados". He said: "In whatever area of national life we operate we need a sound and healthy environment and this initiative is intended to achieve that objective."

Acknowledging that Barbados had committed itself to being the most advanced green economy in the region and in the Americas, the Prime Minister stressed that the use of High Sulfur Diesel was inconsistent with Government's objective of creating a sound environment.

The Ultra-Low Sulfur Diesel was on the market from late last month and Mr. Stuart said that if Government had yielded to the suggestion of experimenting with the low and high sulfur diesels, then the Barbados National Terminal Company Limited would have had to embark on massive expenditure to accommodate the exercise. "We did not think that any two diesel options made sense because of the retrofitting that would have had to take place at the National Terminal and at service stations. We are confident that all of the necessary precautions have been taken to guarantee a smooth transition from High Sulfur to Ultra-Low Sulfur Diesel," he stated.

Standard diesel carries a maximum sulfur content of 5,000 parts per million, while ultra-low sulfur diesel carries a maximum content of 15 parts per million. Many vehicles and engines are now manufactured to operate more efficiently with ultra-low sulfur fuels.

GENERAL

60. Honda Accord Named Green Car of Year at L.A. Auto Show

Honda Motor Co.'s Accord was named Green Car of the Year, the editor of the Green Car Journal announced at the L.A. Auto Show. The Accord won in large part because it offers high fuel economy ratings for gasoline, gasoline-battery hybrid and plug-in hybrid versions of the venerable sedan, said Ron Cogan, editor of the Green Car Journal.

"This year's winner offers something for everyone," he said.

The Accord beat out four other finalists: the Audi A6 TDI, the BMW 328d, the Mazda Motor Co Mazda3 and the Toyota Motor Corp Corolla. Audi is a luxury brand of parent Volkswagen AG.

It was the second year in a row that the winner was a top-selling sedan that offered U.S. consumers gasoline, gasoline-battery hybrid and plug-in hybrid versions. Last year's winner of the prestigious award was Ford Motor Co.'s Fusion midsize sedan.

Mike Accavitti, head of automotive operations for American Honda, said the award is an obvious selling point for the Accord.

The Accord is the best-selling of the five finalists. Through October of this year, Accord sales were up 11 percent at 307,000 in the U.S. market, making it the second-best selling sedan behind the Toyota Camry.

The four-cylinder version of the Accord is rated by the Environmental Protection Agency at 30 miles per gallon, the hybrid version at 47 mpg and the plug-in hybrid at 46 mpg under gasoline power and 115 mpg-equivalent under hybrid-electric power. All ratings are for combined city and highway driving.

Accavitti said the award also gives credence to Honda's plans for more hybrid vehicles. "You are going to see more and more of these hybrid motors coming across our lineup."

In addition to the Ford Fusion, previous winners have included General Motors Co.'s plug-in hybrid Chevrolet Volt in 2011 and Honda's natural gas-powered Civic in 2012.

The award has been presented since 2006, when Ford won for its Mercury Mariner hybrid, a since-discontinued sport-utility vehicle that attained about 27 mpg and had a starting price of nearly \$30,000.

61. Greenhouse Gas Volumes Reached New High in 2012: WMO

Atmospheric volumes of greenhouse gases blamed for climate change hit a new record in 2012, the World Meteorological Organization (WMO) said. "For all these major greenhouse gases the concentrations are reaching once again record levels," WMO Secretary-General Michel Jarraud told a news conference in Geneva at which he presented the U.N. climate agency's annual Greenhouse Gas Bulletin.

Jarraud said the accelerating trend was driving climate change, making it harder to keep global warming to within 2 degrees Celsius, a target agreed at a Copenhagen summit in 2009.

"This year is worse than last year, 2011. 2011 was worse than 2010," he said. "Every passing year makes the situation somewhat more difficult to handle, it makes it more challenging to stay under this symbolic 2 degree global average."

Greenhouse gas emissions are set to be 8-12 billion tons higher in 2020 than the level needed to keep global warming below 2 degrees, the U.N. Environment Programme said recently.

If the world pursues its "business as usual" trajectory, it will probably hit the 2 degree mark in the middle of the century, Jarraud said, noting that this would also affect the water cycle, sea levels and extreme weather events.

"The more we wait for action, the more difficult it will be to stay under this limit and the more the impact will be for many countries, and therefore the more difficult it will be to adapt."

He said the climate system was dominated by the ocean rather than the atmosphere, and the time needed to warm the seas meant the full impact of current emissions would only be felt later. "Even if we were able to stop today - we know it's not possible - the ocean would continue to warm and to expand and the sea level would continue to rise for hundreds of years."

The WMO bulletin said **the volume of carbon dioxide, or CO₂, the primary greenhouse gas emitted by human activities, grew faster in 2012 than in the previous decade, reaching 393.1 parts per million (ppm)**, 41 percent above the pre-industrial level. The amount of the gas in the atmosphere grew by 2.2 ppm, higher the average of 2.02 ppm over the past 10 years.

Carbon dioxide is very stable and is likely to remain in the atmosphere for a long time, Jarraud said. The concentrations were the highest for more than 800,000 years, he said.

"The increase in CO₂ is mostly due to human activities," Jarraud said. "The actions we take now or don't take now will have consequences for a very, very long period."

The second most important greenhouse gas, methane, continued to grow at a similar rate to the last four years, reaching a global average of 1819 parts per billion (ppb) in 2012, while the other main contributor, nitrous oxide, reached 325.1 ppb.

62. Nitrous Oxide Emissions Could Double By 2050 -UNEP

Nitrous oxide (N₂O) emissions could almost double by 2050 if more aggressive action is not taken, undermining global efforts to curb climate change, the United Nations' Environment Programme (UNEP) said recently.

Nitrous oxide exists naturally in the atmosphere in trace amounts. However, it is the third most potent greenhouse gas after carbon dioxide and methane due to human activities such as agriculture, fossil fuel combustion, waste water management and industrial processes.¹²

N₂O emissions into the atmosphere are currently around 5.3 million tons a year but this could almost double by 2050 if efforts to cut the gas are not increased, the UNEP report said. More efficient use of fertilizers, less meat consumption, and improved waste water treatment are some ways to cut N₂O.

Emissions could be cut by 1.8 million tons a year from 2020 and the benefits could be worth over \$160 billion annually across sectors such as agriculture, manufacturing, transportation and electricity production, UNEP said.

¹² This estimate does not include recent studies which indicate that Black Carbon may actually be the second most potent greenhouse pollutant after carbon dioxide.

The Kyoto Protocol climate treaty includes N₂O among the greenhouse gases the world has to reduce to fight global warming but more aggressive efforts are needed, UNEP said. "We need all hands on deck to combat the serious and significant increases in N₂O levels in the atmosphere," said U.N. Under-Secretary-General and UNEP Executive Director Achim Steiner. "It has a disproportionate impact on global warming because of its radiative properties and long lifetime in the atmosphere, which is 120 years on average," he added.

Although less potent than carbon dioxide or methane, N₂O is often overlooked and could undermine efforts to prevent the ozone layer depleting, the report said. The ozone layer shields the Earth from the sun's harmful rays and has begun to recover from depletion over the past couple of decades due to curbs on chlorofluorocarbons (CFCs) and other halogenated chemicals.

63. Warming Seen Worse As Nations Fail To Meet Carbon Goals

The world is getting further off track in limiting global warming with setbacks in Japan and Australia outweighing positive signals from the United States and China, according to a recent study. A Climate Action Tracker compiled by scientists said the world was headed for a temperature rise of 3.7 degrees Celsius (6.7 Fahrenheit) above pre-industrial times by 2100, against 3.1C (5.8F) if governments stuck to promised cuts in greenhouse gas emissions.

Governments meeting in Warsaw from November 11-22 are trying to find ways to limit global warming to an agreed ceiling of less than 2.0C (3.6F) above pre-industrial levels to avert more heat waves, droughts, downpours and rising sea levels.

"We are seeing a major risk of a further downward spiral in ambition, a retreat from action, and a re-carbonization of the energy system led by the use of coal," said Bill Hare, director of Climate Analytics. The new study, by Climate Analytics, the Potsdam Institute for Climate Impact Research and Ecofys, said Japan's decision last week to ease its 2020 greenhouse gas emissions goals and Australia's abandonment of its emissions trading scheme made it harder to reach the global 2C goal.

"These negative signals tend to outweigh some positive signals," the study said, noting that U.S. President Barack Obama had outlined tougher action and that China was, for instance, banning coal-fired power plants in some areas.

In September, the U.N. panel of climate scientists said that world temperature rises were headed to exceed 2.0C under most of its scenarios. It said that limiting warming would require "substantial and sustained" cuts in emissions. The panel also raised the probability that human activities are the main cause of warming since 1950 to 95 percent, up from 90 percent in its previous assessment in 2007.

The Warsaw talks are meant to lay the groundwork for a global deal in 2015 to combat climate change. But many developed governments are focusing more on reviving weak economic growth than cutting their greenhouse gas emissions, while developing nations led by China and India insist that the rich have to take the lead.

People around the world are feeling the "wrath of a warming planet", U.N. Secretary-General Ban Ki-moon said in Warsaw, urging almost 200 governments to take tougher action to reach a deal in 2015 on fighting global warming.

Ban told environment ministers they had a steep climb ahead to agree to cut rising greenhouse gas emissions that scientists say fuel more extreme weather. Many developed nations are more focused on spurring sluggish economic growth than fixing global warming, despite scientists' increased certainty that human emissions will cause more heat waves, droughts, floods and rising sea levels.

"All around the world, people now face and fear the wrath of a warming planet," Ban said, referring to extreme weather events such as Typhoon Haiyan that killed more than 3,900 people in the Philippines this month. Current pledges for curbing global warming were "simply inadequate", Ban said. "Here, too, we must set the bar higher."

He said governments needed to step up aid to help poor nations slow their rising emissions of greenhouse gases and to adapt to the impacts of warming.

A report by 49 experts in 10 nations said that carbon dioxide emissions from burning fossil fuels will rise to a record 36 billion tons (1 tonne = 1.102 metric tons) this year. "I am deeply concerned that the scale of our actions is still insufficient to limit global temperature rise to below 2 degrees Celsius from pre-industrial levels," he said.

Ban has invited world leaders to attend a summit at U.N. headquarters in New York on September 23, 2014. "I ask all who come to bring bold new announcements and action," he said.

64. Oceans Suffer Silent Storm of Acidification: International Study

Global warming is causing a silent storm in the oceans by acidifying waters at a record rate, threatening marine life from coral reefs to fish stocks, according to a new international study. The report, by 540 experts in 37 nations, said the seas could become 170 percent more acidic by 2100 compared to levels before the Industrial Revolution. Carbon dioxide, the main greenhouse gas, can become a mild acid when mixed with water.

Acidification is combining with a warming of ocean waters, also caused by a build-up of greenhouse gases in the atmosphere, and other man-made factors such as higher pollution and overfishing, the report said.

The study, released on the sidelines of the meeting in Warsaw on ways to slow global warming, estimated that acidity of the oceans had already increased by 26 percent since the Industrial Revolution in the 18th and 19th centuries. A 170 percent increase in acidity is equivalent to cutting the Ph level of the ocean, a scale of acidity and alkalinity, to 7.9 from 8.2 on a logarithmic scale. Battery acid rates about 1 and soap, an alkaline, is about 10.

The pace of acidification was the fastest in at least 55 million years, the scientists said. Acidification undermines the ability of everything from corals to crabs to build protective shells and has knock-on effects on the food web.

"Marine ecosystems and biodiversity are likely to change as a result of ocean acidification, with far-reaching consequences for society," according to the summary led by the International Geosphere-Biosphere Programme. "Economic losses from declines in shellfish aquaculture and the degradation of tropical coral reefs may be substantial owing to the sensitivity of mollusks and corals to ocean acidification," it said.

And some studies have found that young clown fish, made famous by the movie "Finding Nemo", behaved as if drunk in more acidic waters, their brains apparently disoriented.

"If society continues on the current high emissions trajectory, cold water coral reefs, located in the deep sea, may be unsustainable and tropical coral reef erosion is likely to outpace reef building this century," the report said.

Deep cuts in emissions of greenhouse gases, from power plants, factories and cars, would limit acidification.

65. 2013 Is Seventh Hottest Year, Rising Seas Worsen Typhoon

This year is the seventh warmest since records began in 1850 and rising sea levels caused by climate change are aggravating the impact of storms such as Typhoon Haiyan in the Philippines, the World Meteorological Organization (WMO) said. More greenhouse gases in the atmosphere meant a warmer future, and more extreme weather, was inevitable, WMO Secretary-General Michel Jarraud said in a statement during the climate talks in Warsaw.

The WMO said the first nine months of the year tied with the same period of 2003 as seventh warmest, with average global land and ocean surface temperatures 0.48°C (0.86°F) above the 1961-1990 average. "This year once again continues the underlying, long-term trend," towards higher temperatures caused by global warming that are causing more heat waves and downpours, Jarraud said.

The WMO said it was likely to end among the top 10 warmest years since records began in 1850.

Extreme events include super typhoon Haiyan, one of the most intense in history that smashed into the Philippines, it said. The WMO said, however, that it was impossible to blame climate change for individual storms.

"The jury is still out on whether tropical cyclones will become more frequent in the future," Jeremiah Lengoasa, deputy WMO Secretary-General, told a news conference. He pointed to wide uncertainties about how they form.

But sea level rise, caused by melting ice and an expansion of water as it warms, is worsening storm surges and had been especially rapid in the western Pacific Ocean, driven by local changes in winds and sea currents. One tidal gauge at Legaspi in the Philippines showed a rise of 35 cms (14 inches) in average sea levels from 1950-2010, against a global average of 10 cms, WMO data showed.

Other extremes this year have included record heat waves in Australia and floods from Sudan to Europe, the WMO said. Japan had its warmest summer on record.

Apparently bucking a warming trend, sea ice around Antarctica expanded to a record extent. But the WMO said: "Wind patterns and ocean currents tend to isolate Antarctica from global weather patterns, keeping it cold."

66. U.N. Climate Panel Corrects Carbon Numbers in Major Report

The United Nation's panel of climate experts revised estimates of historical greenhouse gas emissions, made in September, both up and down but said the errors did not affect conclusions

that time was running out to limit global warming. The panel had hoped to avoid more corrections after an embarrassing error about Himalayan ice-melt in its 2007 report.

"I don't see it as a significant change," IPCC chairman, Rajendra Pachauri, told reporters on the sidelines of the Warsaw meeting.

Among changes, the IPCC revised down the cumulative amount of carbon emitted since 1860-1881 to 515 billion tons from 531 billion given in September, and revised up the amount emitted since 1750 to 555 billion tons from 545 billion.

Global emissions are now running at about 10 billion tons of carbon a year, meaning those change are equivalent to about a year to a year and a half of emissions.

"Errors in the summary for policymakers were discovered by the authors of the report after its approval and acceptance by the IPCC," it said in a statement.

The IPCC says the world has emitted more than half the estimated 1 trillion ton of carbon viewed as the maximum to keep temperatures within safe limits at below two degrees Celsius (3.6 Fahrenheit) above the period 1861-1880 with more than a two-thirds probability, it said.

Many experts say that the world has only a few decades left before breaching the IPCC safety limits unless tough action is taken to cut emissions.

When asked if the correction would affect the credibility of the IPCC, Pachauri said, "I don't think so."

Bob Ward, of the London School of Economics, said Monday's correction made little difference to the overall carbon budget of a trillion tons. "Climate change 'skeptics' will no doubt desperately seize on these corrections and falsely allege that it undermines the whole report, but the public and policy-makers should not be fooled by such claims," he said in a statement.

67. UN Draft Stresses Risk Of Global Warming, From Economy to Health

Global warming poses a mounting threat to health, economic growth, crops and water supplies, according to a draft report by top scientists that puts unprecedented emphasis on the risks of a changing climate. A leaked 29-page draft by the U.N. Intergovernmental Panel on Climate Change (IPCC), about the impacts of rising temperatures and due for release in March 2014, mentions "risk" 139 times against just 41 in its last assessment in 2007.

The increased stress on risk may make the case for cutting greenhouse gas emissions clearer both to policymakers and the public by making it sound like an insurance policy for the planet, according to analysts.

Many governments have long pleaded for greater scientific certainty before making billion-dollar investments in everything from flood barriers to renewable energies. But certainty is elusive in climate science, as it is in predicting anything from the weather to Wall Street.

"The IPCC has transitioned to what I consider to be a full and rich recognition that the climate change problem is about managing risk," Christopher Field, co-chair of the IPCC group preparing the report, told reporters. Field, a professor at Stanford University, also said there was more

certainty about many aspects of climate change than in 2007. He cautioned the draft was subject to change in editing.

It says, for instance, that a rise of temperatures of more than 2.5 degrees Celsius (4.5 Fahrenheit) above pre-industrial times could lead to economic losses of between 0.2 and 2.0 percent of global income.

It also says that warming will exacerbate threats to health, damage yields of major crops in many areas and lead to more floods. It could also exacerbate poverty and economic shocks that are root causes of violent conflicts.

"Responding to climate-related risks involves making decisions and taking actions in the face of continuing uncertainty about the extent of climate change and the severity of impacts in a changing world," the draft says.

The panel's credibility is under extra scrutiny, for its last report in 2007 wrongly exaggerated the melt of Himalayan glaciers. Several reviews said that this error, however, did not undermine the key findings in 2007.

James Painter, of the Reuters Institute for the Study of Journalism at Oxford University, said that the focus on risk may make the panel's message clearer. "More risk language helps to shift the public debate away from the idea that decisions should be delayed until absolute certainty is obtained - something that may never be achieved." He said politicians and businesses were used to making decisions based on risks. And many people insure their homes against fire even though the risks of a blaze are small. Field said the report tries to capture a wide range of risks, including highly unlikely events that might have a major impact. "That's the way risk is generally formulated if you are an insurance company or figuring out an anti-terrorism policy."

The report is the second in a four-part IPCC assessment meant to guide governments that have promised to agree a pact in 2015 to slow climate change. The first, in September, raised the probability that most global warming is man-made to at least 95 percent from 90 in 2007.

68. China, India Split with Other Developing Countries over Wording in UN Summit Text

China and India's success in weakening text adopted at a climate summit in Warsaw has created friction with other developing nations that are seeking to step up the fight against climate change. The two countries insisted on single-word changes for a deal at a United Nations conference involving 190 nations on November 23rd. Instead of making "commitments" to roll back fossil fuel emissions, they signed up for "contributions," a formulation that allows more flexibility in their action. Those last-minute revisions puts the two largest developing nations at odds with their smaller brethren, especially island states and Bangladesh that are the most threatened by rising temperatures.

The deal adopted in Warsaw sets out the first steps toward the next major agreement on reducing greenhouse gas emissions. Envoys intend to adopt the package in 2015 and bring it into force no later than 2020, replacing the Kyoto Protocol, which was negotiated in 1997.

Kyoto's limits applied only to industrial nations, leaving only voluntary measures for nations classified as developing, such as China and India. Since then, China has surpassed the U.S. as the world's biggest polluter, and India is catching up.

With emissions at a record, the UN says the world is on track to surpass a 2 degree Celsius (3.6 degrees Fahrenheit) temperature increase by 2100 that would raise sea levels and trigger more violent storms. "We're leading to a 3- or 4-degree world," said Gambian envoy Pa Ousman Jarju. "That is catastrophic for the least developed nations, small island states and the African continent."

The exact wording of the deal is important because it gives a signal to governments and business about the direction of policy. The U.S. and EU preferred "commitments" because it suggests a target all nations will stick to. China and India sought "actions" as well as extra language that referenced the old divisions between rich and poor nations from the 1992 UN Framework Convention on Climate Change. That was rejected by developed countries. "Contributions" was the compromise.

The typhoon that devastated the Philippines earlier in November struck just as delegates were arriving at the UN talks in the Polish capital. It led to an emotional appeal for action from the Philippine negotiator Yeb Saño, who was joined by more than 100 activists in fasting during the talks.

In the past, developing nations both large and small stood together at the UN talks, pressing the industrial world to move first on reducing pollution. Now, the scale of emissions coming from the biggest developing nations is alarming the smaller ones. They pushed at the talks for help from rich countries to contain damages from climate change. "This is a question of survival," Quamrul Chowdhury, a negotiator for Bangladesh, said in an interview in Warsaw. "So many millions of people's lives are at stake, and we are not responsible for this menace. We are innocent victims."

In the closing hours of the conference, delegates who cared most about the wording gathered in a huddle to determine the phrasing in a text the conference would adopt. Envoys from South Africa and the Marshall Islands were among those who preferred the word "commitments" to "contributions." While the smaller countries are pressing for action, China and India sought wiggle room on the nature of pledges they'd have to make for the 2015 deal.

The 28-nation EU, along with the U.S., is insisting all nations join in the next pact, since the growth in pollution from China and India mean Kyoto's limits now apply to less than 15 percent of global emissions.

Su Wei, the Chinese lead negotiator at the UN talks, told delegates he had "serious concerns about the word 'commitment'" and that for countries like his own, the next deal should call only for "enhanced actions" on emissions. He brushed aside concerns that China isn't ready to move on global warming. "We are very serious to come forward with some kind of actions," Su said in the interview. "That would certainly be a very important contribution."

India emphasized the importance of "equity" and "common but differentiated responsibilities." Those principles are interpreted by developing nations to mean that the richer countries must make a bigger effort to cut emissions than the poorer ones. "We share the common goal to tackle the threat of climate change," Environment Minister Jayanthi Natarajan told delegates at the close of the meeting in Warsaw.

The two-decade-old division frustrates the U.S. and EU, which say global warming can't be fixed without a stronger effort by those with the quickest growing emissions. "When you hear some of the things that were said during the course of the week that suggested, 'We're not making any commitments; commitments aren't for developing countries,' that's not going to get us where we

need to go," U.S. Special Envoy for Climate Change Todd Stern told reporters in Warsaw. "These issues are going to be live, serious and difficult."

Ministers convene next in December 2014 in Lima, Peru, and then intend to adopt a final package in Paris in two years. It was two years ago in South Africa that China and India backed work toward a treaty in 2015 that would involve all nations, including them.

69. Short-Cut to Produce Hydrogen Seen As Step to Cleaner Fuel

Scientists have produced hydrogen by accelerating a natural process found in rocks deep below the Earth's surface, a short-cut that may herald the wider use of what is a clean fuel, a study showed recently. Used in battery-like fuel cells, hydrogen is being widely researched as a non-polluting fuel, but its use is so far hampered by high costs. A few hydrogen vehicles are already on the roads, such as the Honda FCX Clarity and Mercedes-Benz F-Cell, and more are planned.

Researchers in France said aluminum oxide speeded up a process by which hydrogen is produced naturally when water meets olivine, a common type of rock, under the high temperatures and pressures found at great depths. "We have overcome a preliminary step for a carbon-free energy production," lead researcher Muriel Andreani of the University Claude Bernard Lyon 1 in France told reporters.

The addition of aluminum oxide accelerated the natural process by between 7 and 50 times, using temperatures of between 200 and 300 degrees Celsius (400-570 Fahrenheit) at a pressure equivalent to twice the depth of the deepest ocean. In the process, olivine turns into the mineral serpentine and water splits into its components, hydrogen and oxygen.

Currently, the most widely used technology for producing hydrogen - separating it from natural gas - requires far higher temperatures of 700 degrees Celsius (1,300 Fahrenheit) and releases heat-trapping carbon dioxide as a by-product. Using lower temperatures would save energy and money.

Fuel cells, which meld hydrogen with oxygen in the air to yield electricity, emit only water. That makes them attractive as a way to cut greenhouse gas emissions and air pollution.

Far more research is needed to see if the French findings could be increased to a commercial scale, said Jesse Ausubel of the Rockefeller University in New York. "Scaling this up to meet global energy needs in a carbon-free way would probably require 50 years," he said in a statement. "But a growing market for hydrogen in fuel cells could help pull the process into the market."

The findings were presented to the American Geophysical Union, meeting in San Francisco from December 9-13, after an initial report in the journal *American Mineralogist* in October. The work is part of the Deep Carbon Observatory (DCO), a 10-year project due for completion in 2019 involving 1,000 researchers in 40 nations.

70. Arctic Thaw Tied To European, U.S. Heatwaves and Downpours: Study

A thaw of Arctic ice and snow is linked to worsening summer heat waves and downpours thousands of miles south in Europe, the United States and other areas, underlying the scale of the threat posed by global warming, according to scientists. Their report, which was dismissed as inconclusive by some other experts, warned of increasingly extreme weather across "much of North America and Eurasia where billions of people will be affected".

The study is part of a drive to work out how climate change affects the frequency of extreme weather, from droughts to floods. Governments want to know the trends to plan everything from water supplies to what crops to plant.

But the science of a warming Arctic is far from settled.

Writing in the journal *Nature Climate Change*, experts in China and the United States said they could not conclusively say the Arctic thaw caused more extreme weather, or vice versa. But they said they had found evidence of a relationship between the two. Rising temperatures over thawing snow on land and sea ice in the Arctic were changing atmospheric pressure and winds, the report said.

The changes slowed the eastward movement of vast meandering weather systems and meant more time for extreme weather to develop - such as a heatwave in Russia in 2010, droughts in the United States and China in 2011 and 2012, or heavy summer rains that caused floods in Britain in 2012, the paper added.

"The study contributes to a growing body of evidence that ... the melting Arctic has wide-ranging implications for people living in the middle latitudes," lead author Qihong Tang of the Chinese Academy of Sciences told the press.

Sea ice in the Arctic shrank to a record low in 2012 and the U.N.'s panel of climate scientists says it could almost vanish in summers by 2050 with rising greenhouse gas emissions.

But some scientists said other factors, including the usual vagaries of weather or changing sea temperatures, may explain some recent extremes rather than changes in the Arctic. "The jury is still very much out," James Screen, an expert at Exeter University in England, said of efforts to see if there is a link between a melting Arctic and extremes further south in the northern hemisphere. Some evidence in the new study was "plausible ... but far from conclusive," he said, adding that some of the data were not statistically significant and might be random variations.

"For people on the streets, what really matters is whether the extremes are changing or not. But from the scientific perspective we want to understand why," he said. Better understanding is vital to make reliable predictions.

James Overland, of the U.S. National Oceanic and Atmospheric Administration, said many extremes studied were in the past decade, too short to know for sure if they were enhanced by Arctic ice and snow melt or not. "Skeptics remain unconvinced that Arctic/mid-latitude linkages are proven, and this work will do little to change their viewpoint," he wrote in a comment in *Nature Climate Change*. Still, he said there was a high potential for an Arctic influence, given the outlook for a further thaw.

71. Temperature Limit Too High To Avoid Climate Change: Study

An internationally agreed target to limit rises in global average temperatures to within 2 degrees Celsius is around double the threshold that would avoid catastrophic climate change, a study by 18 eminent scientists said.

Governments decided in 2009 that such temperature increases needed to be no more than 2 degrees C (3.6 Fahrenheit) above pre-industrial levels to avoid effects such as more extreme

weather, higher sea levels and ocean acidification. They aim to agree by 2015 on a global deal to cut the greenhouse gas emissions blamed for climate change, but the reductions will not come into force until after 2020. Last month, a United Nations conference in Warsaw kept alive hopes for the 2015 deal but nations made little progress on committing to ambitious emission cuts to keep the world on track towards the 2 degree target. However, a study published in U.S.-based scientific journal PLOS One said the 2 degree limit was too high and a more appropriate target was around 1 degree C.¹³

"Some climate extremes are already increasing in response to warming of several tenths of a degree in recent decades; these extremes would likely be much enhanced with warming of 2 degrees C or more," the report's authors said in a statement.

The scientists involved in the study are James Hansen and Jeffrey Sachs of the Earth Institute at Columbia University, Pushker Kharecha of the NASA Goddard Institute for Space Studies, and 15 other climate experts from universities and institutes across the world.

"An appropriate target is to keep global temperature within or close to the temperature range in the Holocene - the interglacial period in which civilization developed," they said. The Holocene is the current geological epoch that started around 11,700 years ago and has experienced relatively stable temperatures. The world cooled slowly in the last half of the Holocene but warming of 0.8 degree C over the past 100 years has brought the global temperature back to near the epoch's maximum, the study said.

Warming could be held to around 1 degree C if emissions from burning fossil fuels were cut by 6 percent a year from 2013 and by reforestation, which would result in 500 billion metric tons (551.16 billion tons) of cumulative carbon in the atmosphere near the end of the century, the study said. However, if emissions continued to grow until 2020, they would then have to be reduced by 15 percent a year to reach 500 billion metric tons. "The huge fossil fuel energy infrastructure now in place makes it practically certain that the 500 (billion metric tons) limit will be exceeded," the study said.

The United Nations' panel of climate experts has said the world needs to stay within a 1 trillion metric tons "carbon budget" to meet the 2 degree target. However, this level would spur slower climate effects such as ice melt and ocean acidification and result in warming of 3-4 degrees C, the PLOS One study said.

The full study is available at: www.plosone.org

72. First 33 Cities Selected to Receive Grants to Boost Resilience to Global Warming

On December 2nd, the Rockefeller Foundation announced the first 33 cities that will receive grants to develop resilience to climate change. New York, Rome and Bangkok were among the cities selected from more than 400 applications to participate in the foundation's 100 Resilient Cities Centennial Challenge.

The winning cities, each with a population of more than 50,000, will receive support to hire a "chief resilience officer" to oversee development of a citywide plan for decreasing vulnerabilities to climate change. They also will receive assistance with implementing their resilience plans over

¹³ Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature

the next three years. In addition, the winners will join the 100 Resilient Cities Network, which will share expertise and best practices.

“The 33 cities named today represent a diversity of urban resilience needs, and as the inaugural members of the 100 Resilient Cities Network, they have much to share with and learn from each other,” Judith Rodin, president of the Rockefeller Foundation, said in a statement.

The Rockefeller Foundation has committed \$100 million to the challenge.

73. Newly Discovered Greenhouse Gas '7,000 Times More Powerful Than CO2'

A new greenhouse gas that is 7,000 times more powerful than carbon dioxide at warming the Earth has been discovered by researchers in Toronto. The newly discovered gas, perfluorotributylamine (PFTBA), has been in use by the electrical industry since the mid-20th century. The chemical, that does not occur naturally, breaks all records for potential impacts on the climate, said the researchers at the University of Toronto's department of chemistry.

The study, published in the journal *Geophysical Research Letters*, found PFTBA was 7,100 times more powerful at warming the Earth over a 100-year time span than CO₂.

Concentrations of PFTBA in the atmosphere are low – 0.18 parts per trillion in the Toronto area – compared to 400 parts per million for carbon dioxide. So PFTBA does not in any way displace the burning of fossil fuels such as oil and coal as the main drivers of climate change.

Dr Drew Shindell, a climatologist at NASA's Goddard Institute for Space Studies, said: "This is a warning to us that this gas could have a very very large impact on climate change – if there were a lot of it. Since there is not a lot of it now, we don't have to worry about it at present, but we have to make sure it doesn't grow and become a very large contributor to global warming."

He said a number of recent studies had drawn attention to other potential new greenhouse gases which, like PFTBA, pack a lot of warming potential in each molecule but are not very prevalent in the atmosphere. Such studies are a warning against increasing uses of such compounds without first understanding their impact on climate change, he added.

"From a climate change perspective, individually, PFTBA's atmospheric concentration does not significantly alert the phenomenon of climate change," Angela Hong, one of the co-authors said. "Still the biggest culprit is CO₂ from fossil fuel emissions." But PFTBA is long-lived. The Toronto researchers estimated PFTBA remains in the atmosphere for about 500 years, and unlike carbon dioxide, which is taken up by forests and oceans, there are no known natural "sinks" on Earth to absorb it.

"It is so much less than carbon dioxide, but the important thing is on a per molecule basis, it is very very effective in interacting with heat from the Earth," she said. "Individually each molecule is able to affect the climate potentially and because its lifetime is so long it also has a long-lasting effect."

Hong said the discovery of PFTBA and its warming potential raises questions about the climate impacts of other chemicals used in industrial processes. PFTBA has been in use since the mid-20th century for various applications in electrical equipment, such as transistors and capacitors. The researchers said it was unclear how widespread its use was today. It belongs to an entire class of chemicals used for industrial applications whose effects on the atmosphere remain

unknown. "PFTBA is just one example of an industrial chemical that is produced but there are no policies that control its production, use or emission," Hong said. "It is not being regulated by any type of climate policy."

74. ExxonMobil Forecasts 35% Increase in Global Energy Demand By 2040

More-efficient, energy-saving programs and technologies, increased use of natural gas and other less carbon-intensive fuels, and continued development of advanced exploration and production technologies will support a 35% increase in global energy production by 2040, ExxonMobil Corp. said in its latest annual outlook.

Governments also likely will establish policies that effectively put a price on carbon emissions, William M. Colton, ExxonMobil's vice-president of corporate strategic planning, said as the company released the forecast at the Center for Strategic and International Studies. "We're not saying there will be a carbon tax," he emphasized. "Although climate policies remain uncertain, we expect governments to try to limit emissions and assign a cost to carbon through their policies." Key highlights of the report include:

- Market forces and emerging public policies will continue to have an impact on energy-related carbon dioxide emissions. After decades of growth, worldwide energy-related CO2 emissions are expected to plateau around 2030 before gradually declining toward 2040 despite a steady rise in overall energy use.
- Oil and gas will continue to meet about 60% of all energy needs by 2040; liquid fuels—gasoline, diesel, jet fuel, and fuel oil—will remain the primary transportation choice because of their unique combination of affordability, availability, portability, and high energy density.
- Crude oil demand is expected to increase 25%, led by increased commercial transportation activity; it will be met through technology advances that enable deepwater production and development of oil sands and tight oil, it indicated.
- Natural gas will remain the fastest-growing major fuel source as demand increases by about 65%. "In North America, [its] abundance is leading to a resurgence of chemical as well as manufacturing industries," Colton said. "The world has over 200 years of gas supplies."
- Unconventional gas now accounts for 40% of the world's resource base, and is expected to represent 65% of global gas production growth to 2040, led by North America.
- Practically all of the projected demand growth will occur in developing nations attempting to industrialize as already industrialized countries emphasize efficiency. "The greatest source for the energy future is learning how to use it more efficiently," Colton said.

75. Air Samples at Cruise Ship Docks Worldwide Find Dangerous Levels of Deadly Soot

Air samples taken near idling cruise ships in New York and three European ports contained dangerously high levels of soot, according to test results released by Friends of the Earth US and the Nature and Biodiversity Conservation Union (NABU) of Germany. The groups said the tests

underscore the urgent need to install more modern air pollution reduction technology with filters that can all but eliminate deadly soot emissions.

At each port -- New York, Venice, Italy and Hamburg and Rostok, Germany -- samples taken by NABU with an ultrafine particle counter contained hundreds of thousands of microscopic ultrafine particles of soot per cubic centimeter of air. In New York, the sample contained 201,000 ultrafine particles of soot per cubic centimeter while the cruise ship Norwegian Gem was idling on November 15, 2013.

Direct comparison with U.S. Environmental Protection Agency soot standards is not possible, because EPA includes somewhat larger particles, counts their mass rather than their number and measures their concentration over time rather than at peak levels. But the latest research according to NABU indicates that the health hazards of ultrafine particle pollution, which are inhaled deep into the lungs, are the same as for other particles -- heart problems, respiratory illness and premature death.

By comparison with the measurements of hundreds of thousands of particles per cubic centimeter at the cruise ship docks, NABU measured only 5,000 particles per cm³ in the center of Berlin.

"These extremely high measurements at the cruise ship docks are from the use of heavy fuel oil or bunker fuel and lack of pollution control technology," said Dr. Axel Friedrich, formerly an air quality expert with the German federal environmental agency, who led the testing. "Without particle filters, cruise ship engines must operate continuously at the dock to keep the lights on, releasing huge quantities of toxic gases that harm public health."

Port	Date	Particulates per cm ³ of air
New York City (Manhattan cruise terminal)	Nov. 11, 2013	~201,000
Venice, Italy	Sept. 16, 2013	~200,000
Rostock, Germany	Aug. 17, 2013	~300,000+
Hamburg, Germany	July 13, 2013	~200,000

NABU and Friends of the Earth are campaigning to get cruise lines worldwide to install state-of-the-art air pollution control technology which can reduce the amount of soot emitted by up to 99 percent. The campaign is focused on Carnival Corp. of Miami, the largest cruise company in the world, which operates 10 cruise lines, under various brand names, in the U.S. and Europe. Although some of Carnival's lines, such as AIDA Cruises of Germany, have installed such equipment, Carnival has not done so for all of its lines and ships.

76. Diesel Fumes Again Linked To Increased Lung Cancer Risk

A new study has found diesel fumes could be responsible for as many as six per cent of all lung cancer deaths in the UK and USA according to a new study published in the Environmental Health Perspectives by an international team led by Roel Vermeulen of the University of Utrecht. Researchers found people occupationally exposed to diesel exhaust fumes account for 4.8 per cent of all lung cancer deaths in the UK and US. People who live on or near major roadways account for a further 1.3 per cent of lung cancer deaths in those countries. In total, the study claims 11,000 deaths may be attributable to diesel fumes.

Truckers and miners regularly exposed to diesel exhaust fumes are at particular risk of terminal lung cancer, with researchers estimating their risk could be up to 70 times higher than is considered acceptable by US health safety standards.

An estimated 21 people in every 10,000 who live alongside highways are also at risk of dying from the disease, compared with one in every 100,000 people who breathe air that meets air quality standards.

To produce the findings, the researchers used data from three previous studies about truckers and miners, and compared them to national death statistics in the UK and US.

“With millions of workers currently exposed to such levels, and likely higher levels in the past, the impact on the current and future lung cancer burden could be substantial,” the study said.

Last year, the World Health Organization concluded diesel exhaust fumes are definitely carcinogenic. Strict emissions regulations in Europe, where diesel cars are particularly popular, means diesel engines are becoming increasingly ‘clean’, in some instances emitting less air pollution than their petrol counterparts. The population of old, uncontrolled diesel engines has declined substantially over the past years in the United States, Europe, Japan and other countries that adopted stringent diesel emission standards. However, uncontrolled, high emission diesels are still common in non-road applications—such as in construction and farm machinery—as well as in many countries around the world that still have relaxed diesel emission requirements.

The study does acknowledge one key limitation of its findings: they do not take into account the smoker status of lung cancer patients.

77. EU, OECD Countries Lead Transition to Sustainable Energy, Index Shows

Norway, New Zealand and France are leading the global transition to a more sustainable “energy architecture,” according to a new index from the World Economic Forum. The top 10 countries on the index, mostly members of the EU and Organization for Economic Cooperation and Development (OECD), used low-carbon energy sources for 41 percent of their energy supply, compared to a global average of 28 percent.

The Global Energy Architecture Performance Index for 2014¹⁴ assessed 124 countries to determine the extent to which their energy systems add or detract from their economies, the environmental impacts of their energy supplies and consumption, and whether their energy supplies are secure, accessible and diversified.

The World Economic Forum (WEF) attributed high scores among EU countries—particularly Nordic ones—in part to their measures for carbon abatement, renewable energy and energy efficiency.

The top 10 countries were, in order, Norway, New Zealand, France, Sweden, Switzerland, Denmark, Colombia, Spain, Costa Rica and Latvia.

The U.S. ranked 37th on the index, performing well on energy security indicators but receiving a low score on the environmental sustainability of its energy system because of the predominance of coal in power generation and emissions from the transportation sector, the WEF said.

¹⁴ The World Economic Forum's “Global Energy Architecture Performance Index” for 2014 is available at <http://bit.ly/1c0kKjm>

Meanwhile, the index noted a struggle in many developing countries to meet citizens' basic energy needs and an over-dependence on energy imports. China, the world's largest energy consumer, has increased access to energy for its population but continues to depend on imports and produces high levels of emissions, the WEF said.

The WEF also examined potential pathways and challenges for regions and economic clusters to achieve a more sustainable energy architecture.

“The Index helps nations take stock of their energy transition challenges and address key barriers to success, such as market distorting subsidies, continued uncertainty around energy policy and funding for research and development of new energy sources and technologies,” Arthur Hanna, managing director for the energy industry at Accenture, said in a statement on December 11th. Accenture collaborated with the WEF on the report.

“Our analysis concludes that there is no single way forward; each country must work with its own resources and constraints, making difficult choices and trade-offs,” Hanna said.