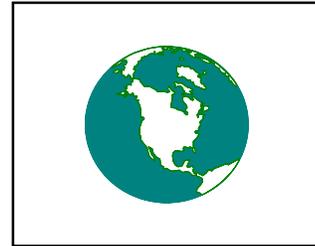


Michael P. Walsh
3105 N. Dinwiddie Street
Arlington, Virginia 22207
USA
Phone: (703) 241 1297 Fax: (703) 241 1418
E-Mail mpwalsh@igc.org
Michael@theicct.org
<http://walshcarlines.com>



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EUROPE

1. European Commission Names Top Climate, Environment Officials

Incoming Commission president Jean-Claude Juncker announced a new Commission structure and team on 10 September.

The European Union's climate and environment policy through 2019 will be overseen by a former Spanish agriculture minister and a former Maltese tourism minister, according to a plan published by the European Commission on September 10th. The former Spanish minister, Miguel Arias Cañete, will head the commission's climate action department that is currently headed by climate action commissioner Connie Hedegaard. Malta's Karmenu Vella will take over from Slovenia's Janez Potočnik in charge of environment policy.

In a break from the current commission structure, in which climate and energy policy are handled separately, Cañete will also be given responsibility for the commission's energy department, according to the commission plan. Vella will also oversee a combined department including fisheries and maritime affairs alongside environment policy.

The European Parliament must approve the commissioners-designate before they take office. Assuming approval is secured, the new commissioners will take over their departments in November.

The commissioners-designate were nominated by their member states, and allocated roles by Jean-Claude Juncker, the former prime minister of Luxembourg who will be president of the commission through 2019.

In a "mission letter" to Cañete, also published on September 10th, Juncker said that the main objectives for climate policy would be to agree EU emission-reduction targets for 2030, and to strengthen the EU emissions trading system. The commission has proposed that the EU adopt a 40 percent emissions reduction target for 2030 compared to 1990. In his letter to Vella, Juncker said that the Maltese politician should "overhaul the existing environmental legislative framework to make it fit for purpose." This would include reviewing EU conservation laws, and working on two major legislative packages on air quality and waste management, which were proposed but not finalized by current environment commissioner Potočnik, Juncker's letter said.

Under the structure put in place by Juncker, Cañete and Vella would be part of a "project team energy union," which would be headed by Commission Vice President Alenka Bratušek, a former prime minister of Slovenia. Bratušek would coordinate policy and would have a right of veto over proposals from Cañete's and Vella's departments if they did not fit with the commission's priorities and resources, the commission said.

European Parliament hearings of the commissioners-designate will take place Sept. 29 to Oct. 3. The largest political group in the European Parliament, the center-right European People's Party, said in a statement that the revised commission structure proposed by Juncker would make it "more political and more efficient to meet the challenges ahead and to deliver."

Conversely, the Green Group in the European Parliament said in a statement that the merging of responsibility for climate and energy could lead to a "further downgrading of the EU's commitment to climate action at a crucial juncture." "The same is true of the proposal to merge the fisheries

and environment portfolios: this cannot lead to a dilution of the EU's commitment to either of these key areas," the Green Group said.

Cañete is likely to face a difficult hearing in front of the European Parliament over derogatory remarks about women that he made in May, and about his former presidency of, and financial interests in, a company that supplies shipping fuel. Mahi Sideridou, managing director of Greenpeace EU, said in a statement that Cañete was "a surprising choice, given his connections to the oil industry." Cañete would have to "resolve conflicts of interests and improve on his environmental record as a minister," Sideridou added.

The incoming commissioner for energy and climate Miguel Arias Cañete announced that he will sell all of his oil shares, according to his political group, the EPP. But MEPs say Mr. Cañete is still a controversial choice for the EU's top climate job and he will face a difficult hearing from members of the European Parliament's environment and industry research and energy (ITRE) committees. "Cañete still has a lot to do to prove that he will put the fight against climate change first," said Catherine Bearder of ALDE.

Mr. Cañete held shares in two shipping oil companies. "I gave instructions to divest my shares in the energy sector the moment I was nominated Commissioner-designate for climate action and energy to avoid even the slightest notion of potential conflict of interest," Mr. Cañete said in a statement issued by the EPP.

The environment and ITRE committees will also come together to interview incoming Commission vice-president for energy union, Alenka Bratušek of Slovenia. MEPs say they are particularly keen to find out Bratušek's views on renewable energy targets and on shale gas. The newly created position of energy union commissioner will put Ms. Bratušek in charge of improving EU energy security and coordinating the Commission's efforts to ensure the EU achieves its 2020 and 2030 energy targets.

Some MEPs want assurances that the EU's planned energy union will be good for the environment. "It has to be made clear from the very beginning that the energy union is about diversification of the energy mix with a focus on renewable energy, energy efficiency and a better energy infrastructure," said Jo Leinen of the S&D.

Industry Welcomes Juncker's 'Better Regulation' Agenda

Industry has welcomed incoming European Commission president Jean-Claude Juncker's plans for less regulation and a strong focus on economic growth and energy security.

Green NGOs see the new structure as a signal that environment policy will be sidelined, but industry sources welcomed the decision as pragmatic.

"We are happy to see that growth and jobs are no longer overshadowed by environment and climate change," said a source at one major industry lobby group in Brussels.

Lobby groups for the steel, oil refining, metals and pesticides sectors told the press that they are particularly pleased at Mr. Juncker's appointment of former Dutch foreign minister Frans Timmermans as Commission vice-president for "better regulation". The newly created role will see Mr. Timmermans act as a regulatory gatekeeper, deciding whether each policy proposal is actually needed. Critics see this as a signal that Mr. Juncker plans a deregulation agenda that will hamper environmental protection.

But Jernej Vernik of metals lobby Eurometaux said: “If this is implemented in the right way, it might make Commission decisions more efficient.”

“This is not about deregulation, it’s about smarter and better regulation,” agreed Jean-Charles Bocquet of pesticides lobby ECPA.

However, heavy industry groups remain concerned about Mr. Juncker’s commitment to a binding 30% energy saving target for 2030, which he confirmed recently. Energy-intensive industries such as paper, steel and glass should be exempt from the target, said Mr. Vernik.

Refineries association FuelsEurope said additional targets were unnecessary and could undermine the emissions trading system.

Greens Remain Concerned However

In a letter to Juncker on September 11th, a Green 10 group of environmental advocacy organizations including Friends of the Earth Europe and Greenpeace said combining the portfolios represented “a rollback of EU commitments to sustainable development, resource efficiency, air quality, biodiversity protection and climate action.” In addition, a decision that Cañete should work under former Slovenian Prime Minister Alenka Bratušek, who will be Juncker’s vice president for energy union, “could imply that climate action is considered subordinate to energy market considerations,” the green groups said.

The Green 10 concerns echo those of a cross-party group of 25 European Parliament lawmakers, who wrote to Juncker on September 4th warning against the introduction of a combined climate and energy portfolio. “If the EU intends to remain a leader in international climate negotiations, next year’s extremely busy international agenda alone would require a dedicated [climate] commissioner,” the lawmakers wrote.

Richard More O’Ferrall, a spokesman for the Green Group in the European Parliament, told reporters that, though the lawmakers’ letter was sent to Juncker before his announcement of the new commission portfolios, “for us there’s no change” to the view that responsibility for climate and energy should remain separate.

The Green 10 group in their Sept. 11 letter also said a proposal by Juncker to shift responsibility for the relationship between the European Commission and the European Chemicals Agency (ECHA) from the commission’s environment department to the enterprise and industry department indicated a “bias toward prioritizing business interests over protection of human health and the environment.” ECHA, based in Helsinki, is responsible for the implementation of the EU’s REACH chemicals law (Regulation No. 1907/2006 on the registration, evaluation and authorization of chemicals) and other EU chemical safety legislation.

Juncker’s spokeswoman, Mina Andreeva, told reporters that the “new structure and portfolio shape strengthens environmental policies.” Juncker “wants Europe to be the world No. 1 leader in renewables and to lead the fight against climate change at the Paris climate summit next year,” Andreeva said. As commission president-elect, however, Juncker has the right to reorganize the allocation of commissioners’ responsibilities “whenever he sees the need,” and “changes can thus never be excluded,” Andreeva added.

2. Finland Introduces New Emissions Restrictions

A new law will bring Finland into full compliance with the European Union's Industrial Emissions Directive (2010/75). The law, which amends Finland's Environmental Protection Act, requires operators to ensure that industrial emission levels do not exceed those set out in the best available techniques conclusions mandated by the EU. The law, which took effect on September 1st, also requires operators to prepare mandatory reports if an industrial process involves the production, use or release of hazardous substances that may pollute soil or groundwater. The reports will be used to assess the condition of the soil or groundwater after operations cease.

New supervision fees for the monitoring of installations also will be levied, the size of which will be announced separately by the Environment Ministry. In a September 9th statement, Heidi Malmberg, an attorney at the Finnish legal firm Castren & Snellman, told reporters that the changes formed part of an ongoing review of Finnish environmental legislation that could reduce the bureaucracy involved in environmental permit applications.

3. Cyclists Map Antwerp Air Pollution with On-Bike Monitors

Cyclists with pollution monitors and GPS trackers attached to their bicycles have produced detailed maps of Antwerp's air quality, as part of a recent study.¹ Their data show that a gap of just a few meters between cycle lanes and cars significantly reduces cyclists' risk of inhaling high levels of ultrafine particle pollution.

Personal 'mobile monitoring' is attracting increasing attention as a way of understanding how much air pollution we are exposed to, and to help evaluate its risk. Small monitors attached to a person are a promising low-cost technology, which show how pollution levels for an individual vary with precise location and time. They therefore offer a higher resolution picture of air pollution exposure than provided by conventional static monitors which are dotted around urban centers.

The researchers equipped cyclists in Antwerp, Belgium, with the special monitoring bicycles and sent them on two fixed routes around the city center. The first route was 2 km long, the second was 5 km, and they went through both low- and high-traffic areas. They were ridden a total of 354 times over 11 days, with the rides taking place between 07:00 and 13:00 each day.

The study, which received some funding through the EU EveryAware project², focused on two pollutants: ultrafine particles (particles with a diameter of less than 0.1 micrometers) and black carbon. Both are emitted by traffic and both have been linked with health issues, including breathing and heart problems.

The data revealed how pollution levels can vary within a single street. For instance, ultrafine particle concentrations rose from around 50 000 particles per cm³ (pt/cm³) to 80 000 pt/cm³ on one section of a busy street because of a short tunnel. Black carbon concentrations shot up from 3 micrograms per m³ (µg/m³) to 17 µg/m³ in the tunnel, compared with a section of the street next to a green space.

¹ Source: Peters, J., Van den Bossche, J., Reggente, M., et al. (2014) Cyclist exposure to UFP and BC on urban routes in Antwerp, Belgium. *Atmospheric Environment*. 92: 31-43. DOI: 10.1016/j.atmosenv.2014.03.039.

² EveryAware (Enhance Environmental Awareness through Social Information Technology) was supported by the European Commission under the Seventh Framework Programme. See: www.everyaware.eu

A cycle lane on the same street varied in its distance from the traffic, and hence also influenced cyclists' exposure to the traffic. One section of the cycle lane, which was 2 m away from the driving lane, exposed cyclists to 50 000-80 000 pt/cm³ of ultrafine particles. However, a separate section, 5 m from the traffic, reduced exposure to 30 000-50-000 pt/cm³.

The mere presence of cycle lanes made a difference. Generally, streets without cycle lanes, which lead cyclists to ride behind vehicles, increased exposure compared with streets that did have lanes.

Average ultrafine particle levels varied between 20 000-46 000 pt/cm³ along the streets ridden. Black carbon levels ranged from an average of 3.2 µg /m³, to 9.7 µg /m³. As would be expected, the highest levels of pollution were on streets with the most traffic and during the rush hour in the morning. High levels of pollution were also recorded in streets with tall buildings on either side ("street canyons") where pollution is trapped.

The mobile monitoring method not only provides a detailed picture of pollution, but can also be used to inform plans for new cycle lanes and routes which avoid pollution hotspots, the researchers propose.

4. UK Lawmakers Criticize Government Environmental Record

British lawmakers say the government is doing a worse job of reducing air pollution, preventing flooding and protecting wildlife than it was four years ago, according to a new report. The Environmental Audit Committee's report scored the government according to the progress it has made in 10 areas of the environment including air pollution, emissions and climate change, forests, flooding and coastal protection, resource efficiency and water availability. The parliamentary committee assigned a traffic-light score to each environmental area. Red shows a deterioration in the area since 2010; amber shows "unsatisfactory progress" and green shows "satisfactory progress".

The areas of air pollution, biodiversity and flooding were of particular concern and were classified as red risks. The remaining seven were amber. "In none of the 10 environmental areas we have examined is satisfactory progress being made despite the necessary urgency," the report said.

Britain has been failing to meet European Union limits on nitrogen dioxide, which is produced by diesel engines and is harmful to respiratory systems. In July, the European Union's top court heard that London and two other densely populated areas in Britain will not meet the EU limits until after 2030, 20 years after the original deadline. The quality of Britain's air remains a "major environmental gap", according to the report.

In December last year, 2.4 million properties in Britain were at risk of flooding from rivers or the sea and 3 million were at risk from surface water, the report said. Winter storms in 2013-14 resulted in widespread flooding and hundreds of millions of pounds of damage and the government's response was seen as slow to the crisis.

On biodiversity, three out of four types of bird populations are deteriorating in Britain, and invasive species are on the rise, the committee said. Further work is needed to develop plans for species on national and EU lists of concern and legislation on invasive species needs to be tightened.

All in all, the government must commit to improve the situation in all environmental areas, if not in the current term of Parliament (2010-2015), then in the next, the committee said. "A dedicated,

wide-ranging Environmental Strategy is needed, overseen by a new Office for Environmental Responsibility to ensure the Government meets the requirements to protect human health and the natural world," Joan Walley, the committee's chairwoman, said in a statement. The strategy should set out principles to improve environmental protection over the next five, 10 and 25 years and include actions by both central and local government.

5. Time in Traffic Has Major Effect on Exposure to Cancer-Causing Chemicals

Our lifestyles determine how often we are exposed to cancer-causing chemicals, such as those in traffic emissions and cigarette smoke according to a new Swedish study³ which reveals how exposure to these chemicals varies from person to person. Among its findings, the amount of time a person spends in traffic or refueling their car significantly affects how much benzene and butadiene they could inhale.

Many studies measure environmental levels of air pollutants, but these levels do not correspond to personal exposure levels. It is not easy to estimate personal exposure levels because they vary depending on factors which may change within a person's lifetime, or even the course of a day, such as where they live, their habits and their activities.

However, since 2000, the Swedish Environmental Protection Agency has been conducting surveys of exposure to airborne carcinogens for randomly selected people in five cities. The surveys take place on a five-year cycle, so that each city is surveyed once every five years. In the current study, results were available for eight surveys conducted across Gothenburg, Umeå, Malmö, Stockholm and Lindsberg.

In each survey, 40 participants answered questions about their home and working life, and filled in activity diaries detailing time spent indoors or outdoors. Each participant wore a personal exposure sampler around their neck for a week, hanging it close to their bed at night. These samplers measured exposure to nitrogen dioxide, benzene, butadiene and formaldehyde.

The results suggest that, on average, people were exposed to levels of benzene higher than the recommended low-risk level set by the World Health Organization. The variation in benzene exposure between people in the same city was as large as the variation of the mean levels between cities. For butadiene and formaldehyde, the largest variation in exposure was between people in the same city. However, for nitrogen dioxide the largest differences in exposure were between cities.

Benzene and butadiene exposure levels were higher in smokers and passive smokers. However, they were also increased for non-smokers who spent more time outdoors, who refueled their vehicles during the seven days of monitoring and who spent more time 'in traffic' (i.e. on roads, along pavements, in a car, in a bus, walking or cycling).

Nitrogen dioxide exposure levels were higher for people who were exposed at their place of work or who had gas stoves at home. They were lower for people living in houses with oil heating. The researchers suggest this may be because houses with oil heating tend to be older and situated outside of areas affected by traffic.

³ Source: Hagenbjörk-Gustafsson, A., Tornevi, A., Andersson et al. (2014). Determinants of personal exposure to some carcinogenic substances and nitrogen dioxide among the general population in five Swedish cities. *Journal of Exposure Science & Environmental Epidemiology*, 24(4), 437–443. DOI:10.1038/jes.2013.57

Formaldehyde is emitted from building materials as well as produced by cooking and cigarette smoke. Exposure levels were higher for people living in houses compared to apartments - perhaps because apartments are better ventilated, say the researchers. Non-smokers were exposed to higher levels of formaldehyde than smokers. This could be explained by smokers opening windows more often. Formaldehyde also sticks to particles in cigarette smoke, making it difficult to detect.

6. EU Proposes Regulation For Off-Road Engines; Adds Particle Number Standard

The European Commission has proposed measures will cut emissions of major air pollutants from engines in non-road mobile machinery and cut the complexity of the legal framework for the sector. The proposal provides for more stringent emission limit values for internal combustion engines installed in non-road mobile machinery (NRMM) and at the same time, it sets out harmonized rules for placing those engines on the EU market.

Compared to vehicles for use on roads, NRMM covers a very wide variety of machinery typically used off the road in manifold applications. It comprises, for example, small gardening and handheld equipment (lawn mowers, chain saws, etc.), construction machinery (excavators, loaders, bulldozers...) and agricultural & farming machinery (harvesters, cultivators...); even railcars, locomotives and inland waterway vessels fall under the scope of NRMM.

The new Regulation will replace a patchwork of 28 national laws on this matter. It will also repeal an extremely complex directive comprising 15 Annexes and amended 8 times since it was adopted in 1997.

Besides improving air quality throughout the EU, the new proposal provides the NRMM sector with a predictable and stable regulatory framework that is fit for the future: a clear focus in this context was therefore put on international alignment of technical requirements, particularly with a view to bringing those of the EU and the US closer together. This will ensure a level playing field for European industry and avoid unfair competition from low-cost imports of non-regulated machinery. Beyond that, the proposal is expected to alleviate the pressure on individual Member States for additional regulatory action at national level that would eventually hamper the internal market.

Emission limits and approval procedures for engines in NRMM are currently set out in Directive 97/68/EC and its subsequent amendments. A technical review carried out some time ago identified a number of substantial shortcomings of this Directive, confirming the need for a fundamental review. On these grounds, the work on the new proposal was conducted along the following main axes:

- Introduction of new emission limits reflecting technological progress and EU policies in the on-road sector, with a view to achieving EU air quality targets;
- Extension of scope, with a view to improving market harmonization (EU and international) and minimizing the risk of market distortions;
- Introduction of measures for simplifying administrative procedures and improving enforcement, including conditions for better market surveillance.



Engines installed in NRMM contribute significantly to air pollution and are accountable for roughly 15% of the nitrogen oxide (NO_x) and 5% of the particulate matter (PM) emissions in the EU. Moreover, studies indicate that their relative contribution to the total NO_x emissions could become bigger over time, should efforts and technical progress in the on-road sector not be carried over to NRMM.

The new Regulation addresses the following major air pollutants: nitrogen oxides (NO_x), hydrocarbons (HC), carbon monoxide (CO) and particulate matter. As for the latter, it introduces in most engine categories - for the first time ever in the NRMM sector – a limit on particle numbers (PN) complementing the limit on particle mass (PM): in this way, emissions of so-called ultrafine particles will also be limited, taking up the most recent conclusive evidence on their adverse health effects.

7. Public Support for Wind Farms Increases with Community Participation

Public attitudes towards wind farms vary across Europe. Opposition to wind farms because they are in the local area (the 'NIMBY', or 'Not in My Back Yard', effect), has been dismissed as being too simplistic to explain why many communities oppose turbines. Various studies have shown that how wind farms are introduced to a community seems more important. This study⁴ explored Swedish attitudes to wind farms through an online survey. The researchers argue that public acceptance of wind farms is important if governments are to continue supporting wind energy through schemes such as tradable renewable energy certificates (REC), which are issued in Sweden (among other countries, including Belgium, Italy, the Netherlands and the UK). REC schemes are designed to ensure that a certain percentage of energy comes from renewable sources.

Their survey asked respondents to select their preferred wind farm from a choice of two farms. A series of choices was given, where the two farms differed in key features. A total of 1 500 people completed the survey, who were selected from a randomly phone-recruited group of volunteers to be representative of the general Swedish population, according to age, gender and place of residence. Questions within the survey revealed that most were broadly supportive of wind energy. The respondents revealed a number of general preferences, including the following:

- Ownership: Respondents preferred wind farms that are at least part-owned by either a cooperative or the local municipality, while private ownership was viewed much more negatively.
- The survey's use of the term 'cooperative' did not specifically refer to the local community, but the researchers believe that this is how respondents may have interpreted it. If so, this survey potentially supports other research which suggests that higher levels of community ownership in Denmark and parts of Germany partly explain why the wind energy sector has developed more rapidly in these areas than in the UK or the Netherlands, for example.
- Location: Respondents were generally opposed to wind farms in recreational areas, such as summerhouse locations or coastal resorts. They were also strongly against farms being

⁴ Source: Ek, K., & Persson, L. (2014). Wind farms — Where and how to place them? A choice experiment approach to measure consumer preferences for characteristics of wind farm establishments in Sweden. *Ecological Economics*, 105, 193-203. Doi: 10.1016/j.ecolecon.2014.06.001.

placed in mountainous areas. They did not appear concerned about farms in the environment where they actually live, however, although they preferred offshore sites.

- Consultation: Respondents would like to be involved in 'extended consultation', whereby the operator consults stakeholders at an early stage of a farm's development and gathers their input throughout the whole process. This approach contrasts with the more basic level of consultation required by Swedish law, and these results support other research which shows the important role of consultation in wind farm acceptance.
- REC fees: Swedish consumers currently pay an extra 0.6 Swedish kronor (kr) (€0.07) per kWh of electricity, which goes towards the REC scheme. This survey suggests that they would pay an extra 0.45 kr (€0.05) per kWh on top if farms in mountainous areas and private ownership are avoided.

Although consumers naturally prefer lower electricity bills, the study suggests that, generally, higher bills through the REC fee would be more accepted if: wind farms are not in recreational areas, they are part or fully owned within the community and the local population is extensively consulted in their development.

8. Prague to Implement Low Emissions Zone

Prague will implement a low emissions zone (LEZ) from 1 January 2016, the Czech government has announced. The LEZ scheme to tackle air pollution from transport will be one of the first in Eastern Europe.

The government has earmarked 100 million Czech crowns (€3.6m) for tackling transport pollution in Czech municipalities. The funding will be used to develop parking areas and to support the creation of services including car sharing, an environment ministry spokeswoman said. "In the Czech Republic there are several locations where emission limits are repeatedly exceeded," the spokeswoman said, adding that in the Moravian-Silesian region in the North-East, transport is responsible for at least 30% of air pollution.

The government has established rules allowing municipalities to implement LEZs but it will not require them to do so, instead allowing local administrations to set up the schemes if they consider them necessary.

A previous attempt to lay the legal framework for low emission zones in the Czech Republic was torpedoed in 2011 by then president Václav Klaus.

The Czech Republic will be the second CEE member state to implement LEZs, following the establishment of a scheme in Budapest in Hungary.

9. French Group Develops Mass Electric Car Charging Stations

A consortium of French companies led by construction firm Bouygues has developed an electric car charging system based on old batteries that helps smooth out power demand when dozens of cars simultaneously recharge.

A typical charging station of the popular Paris Autolib self-service rental cars has four to five charging plugs, which each make no more demand on the power grid than an average home. But imagine a firm or institution where dozens of employees arrive in the morning and all start recharging their cars at the same time. That would put a huge strain on the building's power network and force it to upgrade its electricity connections.

The Eco2charge group, which also includes car maker Renault, electrical engineering group Alstom and cable maker Nexans, has developed a charging system that assembles old batteries from electric vehicles into a power storage bank that can soak up electricity at night and gradually charge vehicles during the day.

The project, which has a 13 million euro (\$16.8 million) budget, has been trialed in two Bouygues and Renault pilot sites and the group aims to sell it to office buildings, parking lots, campuses and other sites where fleets of electric cars can park. "In about a year we will have a commercial offer," Bouygues Energy and Services director Servan Lacire said, adding that it was too soon to say how much the system would cost.

For storage, Eco2charge will use end-of-life Renault electric vehicle lithium-ion batteries. Renault, which sells electric cars but rents the batteries to their owners, owns and manages some 47,000 batteries from four different models. Once the batteries have lost 20 to 25 percent of their charging capacity, they are no longer used in cars, but still have enough charging power for stationary power storage. "It is a very cheap form of storage, as the cost of the batteries has already been written off for use in the vehicle," said Thomas Orsini, head of electric vehicle business development at Renault.

The car maker is also looking at developing utility-scale power storage systems that would assemble as many as 50 recycled car batteries into one container for use with large solar power stations or wind parks.

The system could likewise be part of a grid-wide demand-response system, and in the future it should also be possible to not only temporarily stop drawing power from the grid, but also to feed back power into it at times of peak demand. Nexans's Alain Robic said the stations will be modular "like Lego blocks" so that companies can install anything from half a dozen to 100 or more.

Utilities across Europe are very eager to boost usage of electric cars as they see it as a way to boost power demand, which has been flat or falling due to the economic crisis and increased energy efficiency.

IHS Automotive estimates that in 2014, car makers worldwide will produce more than 217,000 battery electric vehicles, or 0.25 percent of a global production forecast of 87.7 million vehicles, rising to nearly a million electric vehicles, or 0.9 percent of a forecast 104 million vehicles, by 2020.

10. 'Real-World' Car Diesel NOx Emissions Seven Times Higher Than Limit, Study Says

The "real-world" nitrogen oxide emission from modern diesel cars is seven times the limit set by the new Euro 6 emission standards, supposed to be the most advanced in the world, according to a study by the International Council on Clean Transportation.⁵ Published as the European Commission finalizes a new automobile emission testing procedure in order to get a more accurate analysis of both NOx exhaust and fuel-efficiency standards, conclusions of the study—"Real-World Exhaust Emissions from Modern Diesel Cars"—are based on road-testing 15 vehicles.

⁵ "Real-World Exhaust Emissions From Modern Diesel Cars", Vicente Franco, Francisco Posada Sánchez, John German, and Peter Mock.

Twelve of the diesel-powered cars were certified to meet the EU's Euro 6 standards, while three of the vehicles complied with the U.S. equivalent known as Tier 2 Bin 5.

The International Council on Clean Transportation, an independent nonprofit organization that provides scientific analysis to government regulators of the environment, said cars tests in laboratory settings can miss by a wide margin the amount of actual on-the-road pollutants an automobile emits. That could mean some vehicles allowed on European roads and assumed to be relatively clean are, in reality, far exceeding legal limits for NOx in day-to-day driving.

“Emission limits are evaluated with a standard test performed under predefined conditions in a chassis dynamometer laboratory,” the report said. “There is substantial evidence that the actual, on-road emissions may not be sufficiently controlled under certain operating conditions that are not covered by the laboratory test.”

And the ICCT said its study found significant differences among the various models when it came to NOx emission levels. “This supports the notion that the technologies for real-world clean diesels already exist,” said Vicente Franco, an ICCT official who directed the study. “Policies are needed to ensure that manufacturers will use the technologies and calibrate them to effectively control emissions over the large majority of in-use operating conditions, not just those covered by the current test cycle.”

The researchers used an on-road testing method, which is similar to the one being considered by the European Commission, and they insisted that the high levels of NOx could not be attributed to extreme or abnormal driving.

The excessive levels of NOx emissions found by the ICCT study follow results the organization published in September indicating there is a 30 percent gap in the actual fuel efficiency of cars sold in the EU compared to those listed and that difference costs the average motorists more than \$500 a year. “All data sources confirm that the gap between sales brochure figures and the real world continues to grow,” Peter Mock, another ICCT official, said in a statement. “Two years ago, the gap was still around 25 percent. Now it has increased to 31 percent for private cars and even higher for company cars.”

As with the case of the NOx emissions, the ICCT faulted the current automobile testing model sanctioned by the European Commission and due to be revised. The Association for European Automobile Manufacturers refused comment on the results of both ICCT studies but said in a statement that automakers “provide information about emissions and fuel economy of their vehicles based on the legal requirements set out in EU law. The figures presented to the customer are verified by an independent authority, which is often a public authority as part of EU type-approval.

“The actual real-world fuel efficiency experienced by drivers varies widely as it depends on many external factors such as traffic conditions, terrain, driving behavior, road type, vehicle load, vehicle condition, weather, etc.,” the association said, implying that the responsibility of vehicle manufacturers is only to build vehicles which are clean and efficient in the laboratory but not in the real world..

Highlights of the results:

- On average, real-world NOx emissions from the tested vehicles were about seven times higher than the limits set by the Euro 6 standard. If applied to the entire new vehicle fleet,

this would correspond to an on-road level of about 560 mg/km of NO_x (compared to the regulatory limit under Euro 6 of 80 mg/km). This is compelling evidence of a real-world NO_x compliance issue for recent-technology diesel passenger cars, for both the EU and US test vehicles.

- In most cases the exceedances found could not be attributed to “extreme” or “untypical” driving. Instead, they were due to transient increases in engine load typical of everyday driving (e.g., going up a slight incline), or to normal regeneration events in the normal diesel exhaust aftertreatment systems.
- Performance differences among the vehicles tested indicate that the technologies for real-world clean diesels already exist. Some of the tested vehicles had average emissions below Euro 6 emission limits, suggesting that the technologies to achieve that level of performance are available, but that policies are not yet in place that can force manufacturers use these technologies and calibrate them to effectively control emissions over the majority of in-use operating conditions, not just those covered by the test cycle.

The European Commission’s Real Driving Emissions (RDE) working group is preparing for the introduction of on-road PEMS testing as part of the passenger-car type-approval process in the EU. The results of this study strongly support this approach to improving type-approval testing for new passenger vehicles.

11. European Parliament Confirms New EU Environment, Climate Commissioners

On October 22nd, Members of the European Parliament voted 423-209 with 67 abstentions to approve the new European Commissioners, or top officials who will propose and monitor the implementation of European Union legislation through 2019. The vote confirms that the bloc’s environment policy will be guided by Karmenu Vella, a former tourism minister from Malta, who will be Environment, Maritime Affairs and Fisheries Commissioner. Miguel Cañete Arias, previously Spain’s agriculture minister, was confirmed as Climate Action and Energy Commissioner.

Vella appeared in front of European Parliament lawmakers to assess his suitability for the post on September 29th and Canete’s hearing took place on October 1st.

Cañete and Vella will work alongside Maroš Šefčovič, a Slovakian diplomat who since 2010 has been the EU commissioner in charge of the internal administration of the European Commission, the EU’s executive arm. In the new commission, Šefčovič has been appointed Vice President for Energy Union, a coordinating role with the power of veto over proposals put forward by Cañete and Vella.

The five-year term of the new commission will start on November 1st under the presidency of Jean-Claude Juncker, a former prime minister of Luxembourg, who will replace outgoing commission president José Manuel Barroso.

12. Faced With Threat of Transport Strike, France Suspends Eco-Tax on Heavy Trucks



The French government has indefinitely suspended the most recent version of the country's "eco-tax" on big trucks, citing complaints by national truck lobbies that the measure would hurt their sector's ability to compete. Following an October 9th meeting with truckers, Minister of Ecology, Sustainable Development and Energy, Segolene Royal, and Secretary of State for Transport, Alain Vidalies, announced that they had decided "to suspend sine die" the measure.

National trucking syndicates had threatened massive strikes beginning on October 13th if the government did not withdraw the measure. The suspension was the second version of the tax that Parliament passed in four years only to have the government withdraw it.

Environmental groups attacked the government's retreat on a measure they have strongly supported. "Nothing justifies this victory given to lobbies," the green political party Europe Ecologie-Les Verts said in a statement.

First passed in 2010, the original French tax was supposed to be assessed on domestic and foreign large trucks using French national and local roads, excluding toll roads run by concessions, and was aimed at reducing carbon dioxide emissions from transportation by pushing companies to use cleaner means, such as rail or river freight.

Europe Ecologie-Les Verts said Austria, the Czech Republic, Germany, Poland and Slovak Republic have successfully implemented kilometer taxes that have compelled trucks to take shorter routes, and, in Germany's case, has generated 4 billion euros (\$5.1 billion) in tax revenues.

After implementation problems and protests derailed France's original eco-tax in October 2013, before it ever took effect, in June 2014 Royal proposed an "affordable alternative" that would apply to about 4,000 kilometers of roads, as opposed to 15,000 km for the abandoned version, and primarily target foreign trucks. On Oct. 1 the government launched a test of the latest version, which Parliament passed during the summer and was to take full effect in early 2015.

Whereas the first levy was to have an average rate of 12 euro cents (15.2 cents) per kilometer, the alternative was to apply at an average 13 euro cents (16.5 cents) per km rate, based on pollution level and number of axles. Both versions were to apply to trucks exceeding 3.5 metric tons, but the alternative included exemptions for farmers' vehicles and other local transport to focus on trucks coming from outside France.

Despite the concessions, the truckers' unions have argued that the alternative system would create unacceptable regional disparities in the sector, further weakening truckers already hit hard by the economic crisis. Business, truckers and other groups also have argued the tax would hurt the general French economy by raising transport costs.

Royal and Vidalies said the government had "taken note" of implementation difficulties for the tax, including during the test phase, as well as a need to "clarify the sources of financing for use of infrastructure, in order to achieve a clear and fair system."

They said the government will form a working group with stakeholders to come up with a new "solution that preserves the competitiveness of the French trucking industry, taking into account its labor and economic situation." The officials did not set a date for a new solution to be implemented.

13. EU Leaders Agree to 40 Percent Emissions Cut by 2030 in Blueprint on Climate, Energy

The presidents and prime ministers of the European Union's 28 member countries agreed on October 24th on a blueprint to guide the bloc's climate and energy policy through 2030, centered around a binding target of at least a 40 percent reduction in greenhouse gas emissions relative to 1990. The blueprint, agreed to by EU leaders at a summit in Brussels, was broadly in line with proposals put forward in January by the European Commission but added a number of elements on energy efficiency and the interconnection of the power grids of EU member states.

As well as endorsing the 40 percent emissions reduction goal proposed by the commission, the heads of state and government opted to back the commission's suggested target for renewable sources to provide 27 percent of total energy consumed in the EU by 2030.

In addition, the leaders said there should be an "indicative" target of 27 percent energy efficiency savings relative to current business-as-usual projections for 2030, and a nonbinding objective of 15 percent interconnection by 2030, meaning that countries should have the capacity to export at least 15 percent of the electricity they generate to other EU countries as an efficiency and energy security measure.

Herman Van Rompuy, the former Belgian prime minister who is president of the European Council—the EU institution in which member state leaders meet—said that agreement on the package was "not easy, not at all," but the outcome was "ambitious yet cost-effective."

The EU currently has a 20 percent emissions reduction target, to be achieved by 2020.

Van Rompuy said the agreement would enable the EU to take a "positive message" to the 21st session of the Conference of the Parties to the United Nations Framework Convention on Climate Change (UNFCCC), in Paris in late 2015, at which a global climate deal to come into force in 2020 is meant to be finalized.

The EU leaders concluded the agreement after overcoming objections in particular from Poland, which had threatened to veto any deal if Polish concerns about the economic impact of climate and energy measures were not addressed. Polish Prime Minister Ewa Kopacz said that although negotiations were "extremely difficult," she had secured sufficient concessions from other EU countries, and could "reassure Poles that following the adoption of the climate package, there won't be an additional increase in energy prices."

The main concession to Poland was that the governments of less wealthy EU countries should be able to continue to give for free up to 40 percent of the emissions allowances allocated to their power generation sectors. Power generators, along with heavy industry, must participate in the EU emissions trading system (ETS), and will be required to make the deepest emission cuts under the 2030 blueprint.

The post-summit communique issued by EU leaders said that, in order to achieve the overall 40 percent cut relative to 1990, sectors covered by the ETS would have to cut their emissions by 43 percent by 2030 compared to 2005, while non-ETS sectors—such as agriculture and services industries—would have to cut emissions by 30 percent.

To achieve the emissions cuts, the number of carbon allowances allocated to ETS sectors is capped, with the cap tightening each year. In principle, companies are required to buy the allowances they need to cover their emissions.

As well as some continued free allocation in poorer countries, however, EU leaders said that companies judged vulnerable to international competition would continue to receive some free allowances after 2020, to prevent them relocating outside the EU to jurisdictions without carbon controls.

The other main elements of the leaders' agreement were:

- •The 40 percent emissions reduction target will be reviewed after the 2015 Paris climate summit, and could be increased if other economies agree to high targets as part of a global deal.
- •The 27 percent renewables target will be binding at EU level, but will not be broken down into country-by-country targets. Instead, countries' contributions will be "guided by the need to deliver collectively the EU target," according to the leaders' communique.
- •The 27 percent energy-savings target will be nonbinding and will be reviewed in 2020 with an option to increase it to 30 percent.
- •A current set-aside of 300 million ETS allowances that is used to fund renewable energy and carbon sequestration projects will be continued beyond 2020, increased to 400 million allowances, and will be also used to fund "low-carbon innovation in industrial sectors."
- •An additional reserve of 2 percent of ETS allowances will be set aside and allocated to poorer EU countries to pay for energy efficiency and energy system upgrades.
- •For non-ETS sectors, richer EU countries will have the option of supporting emission reductions at home, or supporting emissions reductions in poorer EU countries, where the reductions are likely to be achievable at lower cost.

The EU leaders' agreement provides the green light for the European Commission to propose legislation to implement the various pledges. Direct responsibility for proposing the legislation to implement the various targets agreed to by EU leaders will fall to Miguel Arias Cañete, a former Spanish agriculture minister who will take over as EU Climate and Energy Commissioner on November 1st.

MEPs have backed Maroš Šefčovič as the European Commission's vice-president for energy union after what they deemed a confident performance at his European Parliament hearing. Mr. Šefčovič outlined his plan for a European energy union resting on five pillars, the first of which should be energy security and the need to reduce the EU's energy bill of €400bn per year.

The second pillar should be a competitive and integrated market, which will be boosted by infrastructure investment, he said.

The third pillar would be to reduce EU energy consumption. Mr. Šefčovič said he favored a binding 30% energy saving target for 2030, which is also incoming Commission president Jean-Claude Juncker's position. He signaled his backing for ecodesign as a means of improving energy efficiency. "We need to keep energy bills in check. The cleanest form of energy is one that is never used," Mr. Šefčovič said.

The fourth pillar should be the "decarbonization of the EU energy mix" based on the planned 2030 package of climate and energy goals to be agreed by heads of government later this week. He

also spoke in favor of carbon capture and storage as a means by which coal-dependent member states like Poland could reduce their emissions.

The fifth and final pillar should be research and innovation, Mr. Šefčovič said.

His performance at the hearing was praised by the EPP group, the parliament's largest. He "showed quite a lot of knowledge after only five days of preparation" and demonstrated a "positive outlook for the climate conference in Paris", Peter Liese of the EPP said. Mr. Šefčovič belongs to the rival S&D.

While he managed to impress MEPs overall, some observers noted that there were issues on which Mr. Šefčovič was more hesitant.

The Greens were disappointed not to get a definite answer on which commissioner will take the lead for the EU in the international climate change negotiations. At present, climate commissioner Connie Hedegaard negotiates for the EU but her successor, Miguel Arias Cañete, will report to Mr. Šefčovič in relation to the UN climate talks.

Mr. Šefčovič also avoided giving a clear answer on whether the proposed 2030 target for renewable should be binding.

Mr. Šefčovič, a Slovak diplomat, was appointed to the energy union position after MEPs rejected Alenka Bratušek.

EU leaders have also backed the optional inclusion of transport in the emissions trading system and will allow forestry carbon offsets to be used to meet EU climate goals. The provisions are concessions to less industrialized, high-income member states, particularly Denmark and Ireland.

The deal states that land use, land use change and forestry (LULUCF) should be incorporated into "the 2030 greenhouse gas mitigation framework", as proposed by the European Commission in January. Such a policy, which would allow carbon 'sinks' to offset emissions, should be established as soon as technically possible, and definitely before 2020, the leaders agreed.

Offsetting methane emissions from cattle using forestry credits would make it much easier for Ireland to meet its 2030 climate goal, while going ahead with plans to increase agricultural production.

T&E noted that the real world impact of the Council's decisions on transport will depend on what implementation steps policymakers take, given that the provisions on renewable energy in transport, for instance, are "short on details". Little detail is provided on transport in the ETS also.

The deal commits Europe to "a comprehensive and technology neutral approach for the promotion of emissions reduction and energy efficiency in transport" and pledges support for electric transport and renewable energy in transport "also after 2020".

Carmakers' lobby ACEA welcomed the deal, stating that "a technologically-neutral approach is the most effective way of ensuring practical carbon-reduction technologies make it to the road".

The carbon price would have to skyrocket for the inclusion of transport in the EU emissions trading system to be effective, however, one study has indicated. A carbon price of €217 per tonne of CO₂ over the decade up to 2030 would be required to achieve similar emission reductions in road

transport as would be delivered by extending current emission standards for cars, according to Cambridge Econometrics. Such a price would drive a 38% increase in fuel prices, which would place a heavy burden on energy-intensive industries and on consumers, according to the paper.

Under current carbon price projections, emission reductions in road transport would be limited to around 3% in 2030, said the authors of the report commissioned by the European Climate Foundation.

Concerned about the high cost of emission reductions in sectors such as transport which fall outside of the ETS, Denmark has asked for the 2030 climate and energy policy framework to allow member states to use ETS allowances to meet their other obligations.

This would allow high-income states with higher targets to keep their emissions reduction costs down as the carbon price currently hovers around €6/tCO₂.

14. Carmakers Urge EU Regulators to Be Realistic With Emissions Limits

Car executives at Volkswagen and Fiat Chrysler Automobiles (FCA) on Thursday urged European regulators not to overburden the industry with excessive emission targets, especially in times of an economic downturn. EU nations have agreed to reduce emissions from new cars to 95 grams of carbon dioxide per kilometer (g/km) by 2021 from around 127 g/km in 2013.

Volkswagen Group Chief Executive Martin Winterkorn said he was concerned by talk of even tougher targets for the period after, before the industry had time to develop for electric cars, plug-in hybrids and other fuel-efficient technologies.

"We are working flat out to make our vehicles and plants more efficient. And we are ready for further challenging CO₂ thresholds. But what I also say is: It is still too early to define the specifics," Winterkorn told reporters on the sidelines of the Paris car show. "It would be fatal to take the third step before we have even taken the first." He said every additional gram of CO₂ the company saves in its European fleet costs the VW group almost 100 million euros (\$127 million).

Winterkorn's comments were echoed by FCA Chief Executive Sergio Marchionne who urged Brussels to be realistic and take the current economic environment into account.

"There is a limit to what the industry can take and I think we are at the limits now," Marchionne said. "There are things you don't do in times of economic contraction: you don't throw an additional cost on an industry that is already struggling."

The European Commission is expected to make a policy statement on a new 2025 standard for CO₂ emissions from cars later this year.

Several carmakers unveiled new, more efficient models at the Paris show, including Lamborghini's Asterion, a high-performance plug-in hybrid concept car. Volkswagen debuted a Porsche Cayenne hybrid SUV and a Passat plug-in hybrid saloon.

15. Emissions Tax Driving Down Irish Car CO₂

Car taxation based on greenhouse gas emissions has caused a "profound change" in the new car fleet in Ireland, according to a report by the country's sustainable energy authority (SEAI). A CO₂-linked motor tax system introduced in 2008 and strengthened in 2012 has seen the number

of new cars in the cleanest emissions band rise from 1.5% in 2007 to 67.2% in the first half of this year.

Average CO₂ emissions of all new cars purchased in Ireland last year was 120.7 grams of CO₂ per kilometer, down from 164gCO₂/km in 2007. EU obligations on manufacturers to improve the efficiency of their new car fleets has also played a major part, SEAI said.

Transport energy consumption has fallen 25% since 2007, but the economic recession was a major factor, in particular through taking construction trucks off the road, SEAI said.

Transport remains the biggest energy consuming sector in Ireland, accounting for 40% of final energy use, most of it from oil. Use of renewable electricity “remains negligible”, while biofuels account for less than 3% of transport energy, SEAI added.

Along with agriculture, transport is a growing source of greenhouse gas emissions in Ireland. The Irish environment agency has warned that transport emissions will continue to grow in the years to 2020, making it one of the EU countries likely to fail to meet its CO₂ reduction targets under the Effort Sharing Decision.

16. Mixed Results for EU in Green Technology Survey

Europe is increasingly falling behind in the low-carbon vehicle market, but it remains competitive in many renewable energy technologies, according to a study on green technology deployment. Alternative vehicles such as electric cars and hybrids have yet to take off in Europe whereas Japan and the US have achieved mass commercialization, consultancy EY noted.

Investment in renewable energy saw a 58% decline in Europe since 2011 due to uncertainties about future policy support.

However the EU market for services and manufacturing of certain components of PV systems remains large, according to the report. The bloc also maintains a strong trade surplus in manufacturing of wind turbines and components.

In the biofuels sector, the EU leads in R&D and demonstration in advanced biofuels after abandoning the first generation biofuels race, the consultancy said.

Opportunities are now up for grabs in the emerging energy storage market and smart grids sectors.

The green technology market could be worth more than \$600bn by 2020. To ensure it gets a slice of this market, Europe will need an industrial strategy, stimulus policies and incentives, and further market development through public investments and market integration policies, EY said.

The EU will also need to address a predicted shortage of skilled workers in most low-carbon industries, the consultants warned.

17. Coal Fires, Traffic Affecting Air Quality, As Irish Emissions Fail Some WHO Targets

The Environmental Protection Agency (EPA) – which reported that 4% of tests last year failed European pollution standards – said how people warmed their homes and travelled to work or school in future may have to be restricted.

Air pollution is associated with more than 400,000 premature deaths a year in the European Union area, making it the number one contributor to premature deaths in the EU. On that measure, Ireland is doing relatively well, according to the report on air quality in Ireland from the EPA. It found that overall Irish air quality compares favorably with other EU member states with the main air pollutants, such as sulfur dioxide, nitrogen dioxide, carbon monoxide, and ozone, all below EU guideline limits.

However, it warned that levels of some of these pollutants are significantly above WHO guidelines, which could soon be adopted as the new EU targets.

It raised concern over levels of the cancer causing particulate matter (PM) and polycyclic aromatic hydrocarbons (PAH), which are produced by burning solid fuels, and ozone which in high concentrations causes breathing problems, damages lungs and may lead to asthma.

The EPA said local air quality was significantly impacted by using coal or peat in the home and from the amount of traffic in urban areas.

Gerard O'Leary, director of the environmental agency, said 2013 saw higher rates of compliance with emissions limits. "We need to be vigilant to maintain these compliance levels and to continue to target sites where problems have been identified," he said.

"The findings of the report on wider air quality are also very encouraging. I would urge people, however, to consider air quality when making choices about home heating and transport as both of these activities can have a negative impact on air quality."

The agency also warned about the levels of nitrogen dioxide in the air in cities which is mainly produced by engines and power plants. It said: "Ireland must develop and implement policies to reduce travel demand, emphasizing sustainable transport modes such as cycling, walking and public transport and improving the efficiency of motorized transport," it stated.

The report called for Irish consumers to become more aware of the impact that their choice of fuel for domestic heating can have on air quality. It said that burning smoky coal releases particulate matter and polycyclic aromatic hydrocarbons into the air, both of which have the potential to cause cancer. The EPA said there are actually higher levels of these pollutants in the air in small towns where smoky coal is allowed than there are in large cities where smoky or bituminous coal is banned.

18. Boris Johnson Denies Misleading MPs Over London's Air Quality

Boris Johnson's office have described accusations that he misled a House of Commons select committee as "completely untrue and unfounded". Last month the Mayor appeared before the environmental audit committee as part of MPs' investigation into air quality. In both his written and oral evidence to the committee he disagreed with data from King's College London which suggests some roads in the capital have the highest nitrogen dioxide (NO₂) concentrations in the world. He also disputed data suggesting measures to cut pollution, including an age limit on taxi cabs and making more vehicles subject to the Low Emission Zone, had produced only a 3% drop in roadside NO₂ levels rather than City Hall's claimed 20% cut.

City Hall has repeatedly denied suggestions that London's air quality is the worst in the world and insists its policies are working.

Addressing MPs, Mr. Johnson suggested that comparisons with other international cities may not be accurate because “we stick our sensors and our devices right by where the tailpipe of the most polluting vehicles would be expected to be found,” adding that he was “very far from convinced that that is the technique adopted by every country in the EU.

However the Clean Air in London campaign has questioned the accuracy both of the Mayor’s evidence and a report commissioned by his office on which his denials that London lags behind other cities are based. The campaign claims the report “was already out of date by the time it was published” and failed to identify “a single monitoring site in the whole world” reporting higher levels of NO₂ than reported in Oxford Street – the capital’s worst performing street.

CAL has also criticized the report for using “new and complex methodology without publishing a practically auditable trail of methodology or underlying data” which would allow its claims to be verified.

The failure to locate a monitoring site recording higher NO₂ levels than London means, the campaign claims, that Mr. Johnson “may have misled” the committee. CAL has suggested MPs recall the Mayor “to address the concerns raised.”

Responding to the campaign’s comments, City Hall says the report “was independently peer-reviewed to ensure the methodology it used was robust and fair” and confirms that “different cities adopt different approaches to the siting of their monitoring stations, which means that it is not possible to fairly compare the worst location in one city with another.”

A spokesperson for Mr. Johnson told the press: “These claims are completely untrue and unfounded. The Mayor’s work to assess and address London’s air quality challenge is entirely transparent.

“He continues to take the problem extremely seriously and is working with a wide range of stakeholders to take forward a comprehensive range of measures to reduce air pollution and protect the health of Londoners.”

19. EU Abandons 'Dirty' Label For Tar Sands Oil

A European Union plan to label tar sands oil as highly polluting in its fight against climate change has been abandoned after years of opposition led by major producer Canada.

A new proposal published by the European Commission removes an obstacle to Canada exporting tar sands crude to Europe and comes at a time when tensions between the EU and top oil supplier Russia are running high.

The proposal requires refiners to report an average emissions value of the feedstock used in the products they produce, dropping a requirement to single out tar sands content.

Extracting oil from the clay-like tar sands requires digging in open-pit mines or blasting with steam and pumping it to the surface, meaning it uses more water and energy and emits more carbon dioxide than conventional crude production.

The revised plan still proposes a method to assess the pollution levels of various fuel types over their life cycles and the European Commission said it would propose action if these were incompatible with climate goals.

Environmental campaigners and Green politicians criticized what they saw as a step backwards. Greenpeace accused the European Commission under outgoing President Jose Manuel Barroso of putting trade ahead of the environment.

Debate over labeling tar sands, also known as oil sands, began in 2009 when EU member states approved legislation aimed at cutting greenhouse gases from transport fuel but failed to agree how to implement it. In 2011, the Commission agreed tar sands should be given a carbon value a fifth higher than for conventional oil, but member states again could not agree on the plan. After an inconclusive vote by member states in 2012, the Commission said it would carry out an assessment of the financial impact of the legislation.

Oil sands crude is being exploited by major oil firms such as BP Royal Dutch Shell and ExxonMobil. Environmental campaigners say exploiting these reserves will make it very difficult to meet goals to avert the most devastating impact of global warming.

In the context of the Ukraine crisis and concerns about Europe's energy security, Canada had argued Europe should embrace its oil as a secure source of energy.

EU member states will now debate the proposal under a fast-track procedure meant to take less than two months. It will also require a sign-off from the European Parliament.

20. Industry Study Argues For Lead Car Battery Recyclability

Almost 100% of lead-based vehicle batteries are recycled, according to a study commissioned by industries hoping to convince the European Commission to allow the batteries to stay on the market.

Ninety-nine percent of automotive batteries available for collection are recycled, making them “one of the most recycled consumer products in the EU”, according to consultancy IHS. The study was commissioned by Eurobat, the International Lead Association and European, Korean and Japanese carmakers’ lobbies.

The Commission is consulting until 17 December on whether to renew exemptions from the End-of-Life Vehicles Directive – including for lead batteries. The directive aims to phase out the use of lead in cars and the Commission is assessing whether the exemptions for lead are still justified, given technical progress.

Recycling lead is “relatively simple and cost effective” and “the existing market for automotive lead-based batteries in the EU can be predominately met with recycled material”, the industry consultants said. They analyzed data for 2010-12.

The European Chemicals Agency is separately consulting on whether four lead compounds used to make batteries should be added to the hazardous chemicals ‘authorization’ list, which would restrict their use. The consultation is open until 28 November. The batteries sector argues that the four compounds are not present in the final product and alternative substances are not available, putting the industry’s future in Europe at risk.

21. Environment: 12 Cities Apply For European Green Capital Award 2017

The deadline for submitting entries to the European Green Capital 2017 competition cycle has expired. The following cities have entered:

- | | |
|-----------------------------------|---------------------------|
| 1) Bursa (Turkey) | 7) Lahti (Finland) |
| 2) Cascais (Portugal) | 8) Lisbon (Portugal) |
| 3) Cork (Ireland) | 9) Nijmegen (Netherlands) |
| 4) Essen (Germany) | 10) Pécs (Hungary) |
| 5) 's-Hertogenbosch (Netherlands) | 11) Porto (Portugal) |
| 6) Istanbul (Turkey) | 12) Umeå (Sweden) |

EU Environment Commissioner Janez Potočnik said: “The European Green Capital Award is a mark of excellence for cities cherishing their environment. We are already in the eighth year of this competition and it is gratifying to see many of Europe's great cities applying and indeed re-applying for the Award. The winners to date have provided inspiring examples of how cities can change. I wish all the applicant cities the very best of luck in the 2017 edition.”

The European Green Capital Award is recognition of a city at the cutting edge of environmentally-friendly urban living. These cities lead the way in setting higher standards in sustainable urban development, listening to what their citizens want and pioneering innovative solutions to environmental challenges.

An international Expert Panel will perform a detailed technical assessment of each entry, on the basis of 12 indicators covering ambient air quality; climate change, mitigation and adaptation; eco-innovation and sustainable employment; energy performance; green urban areas incorporating sustainable land use; integrated environmental management; local transport; nature and biodiversity; quality of the acoustic environment; waste production and management; wastewater treatment; and water management. Following the technical evaluation, a number of cities will be shortlisted for the 2017 title.

In June 2015, the shortlisted cities will be invited to make a presentation to an international Jury. The Jury will evaluate their commitment to continuous environmental improvement, the level of ambition of their future goals, their communication activities for citizens, and the extent to which they could act as a role model and promote best practice in other European cities. In addition to being an inspiration to others, the winning city will raise its profile, enhance its reputation as a place to visit, work, play and live.

The winner will be announced at an Award ceremony in June 2015 in Bristol, UK, the 2015 European Green Capital.

The European Green Capital Award is the outcome of an initiative taken by cities with a green vision. The concept was originally conceived at a meeting in Tallinn, Estonia, held on 15 May 2006, on the initiative of Mr. Jüri Ratas, former Mayor of Tallinn, where 15 European cities and the Association of Estonian cities signed a joint Memorandum of Understanding on the establishment of such an award.

Seven cities have been awarded the title of European Green Capital since its inception in 2010. Stockholm, Sweden won the inaugural title, followed by Hamburg, Germany in 2011, Vitoria-Gasteiz, Spain in 2012 and Nantes, France in 2013. The current holder for 2014 is Copenhagen, Denmark. Bristol, UK will hold the title for 2015 and will pass it to Ljubljana, Slovenia for 2016.

The Jury comprises representatives from the European Commission, the European Parliament, the Committee of the Regions, the European Environment Agency, ICLEI – Local Governments for Sustainability, the Covenant of Mayors Office and the European Environmental Bureau.

Europe is now an essentially urban society, with more than two thirds of European citizens living in towns and cities. Many environmental challenges facing our society originate from urban areas but it is also these urban areas that bring together the commitment and innovation needed to resolve them.

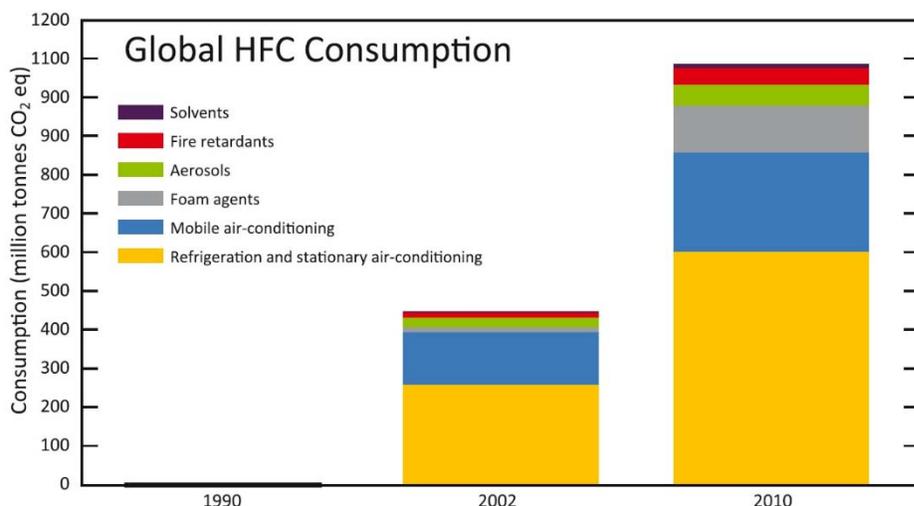
NORTH AMERICA

22. Obama Seeks Faster Phase-out of Coolant in Effort to Curb Greenhouse Gases

The Obama administration is preparing to introduce major steps to phase out production of a popular chemical coolant used in refrigerators and air conditioners, citing growing evidence that the substance is contributing to the warming of the planet. The White House will announce a series of voluntary commitments by some of the country’s largest chemical firms and retailers to move rapidly away from R-134a and similar compounds used in nearly every office, home and automobile in the country, according to current and former U.S. officials familiar with the effort.

The administration is simultaneously stepping up diplomatic efforts to encourage major U.S. trading partners to phase out production of the potent greenhouse gas, the officials said. The class of chemicals to which R-134a belongs — called hydrofluorocarbons, or HFCs — became popular as a replacement for Freon, the refrigerant banned since the 1990s for damaging the Earth’s ozone layer. Most HFCs are harmless to ozone, but collectively they have become a significant driver of climate change — some are up to 10,000 times as potent per ounce as carbon dioxide, climate scientists say.

The steps are intended to accelerate the phase-out of most types of HFCs while still allowing manufacturers time to shift to more environmentally friendly replacements. If fully implemented, the measures would have an impact equivalent to removing 15 million cars from the nation’s



highways for a decade, according to an administration official familiar with details of the plan.

Estimated global consumption of HFCs by various sectors, expressed in carbon dioxide equivalent, for 1990, 2002 and 2010. (TEAP/EPA/UNEP)

“These are some of the strongest greenhouse gases in the atmosphere,” said the official, who insisted on anonymity as discussions were underway to finalize the plans. The White House also was expected to announce several executive measures to expedite the shift to replacement chemicals.

The Obama administration has been seeking since 2010 to phase out production of HFCs, both through voluntary agreements as well as proposed new amendments to the Montreal Protocol, the treaty that outlawed Freon two decades ago. The new initiatives would expand the effort by securing the cooperation of a Who's Who list of U.S. companies, ranging from major chemical manufacturers such as DuPont to some of the biggest users of refrigerants, such as Coca-Cola and PepsiCo and the retailers Target and Kroger.

Among the voluntary participants is a coalition of chemical manufacturers representing 95 percent of U.S. production of HFCs. The companies have agreed to rapidly introduce replacement coolants into the market while taking additional steps to prevent leaks of R-134a into the environment, the administration official said. Coca-Cola, meanwhile, is expected to announce a goal to purchase only HFC-free refrigerators and cooling systems throughout its global network. Several of the companies had already begun making the shift to alternative coolants, responding to new restrictions on HFCs in the European Union as well as economists' predictions of an eventual ban in the United States. One leading alternative to R-134a — called HFO-1234YF — can be used in most existing cooling systems without significant modifications.

The new steps would provide a significant boost to the administration's efforts on climate change at a time when prospects for a global climate treaty appear uncertain at best. Despite increasingly dire warnings from scientists about the buildup of heat-trapping greenhouse gases in the atmosphere, Congress has long been hostile to any binding international treaty limiting U.S. carbon emissions.

Removing the potential threat from HFCs could eliminate a serious threat to the climate at a relatively small cost while buying time for countries to tackle the more difficult challenge of cutting carbon-dioxide emissions from fossil-fuel burning, said Durwood Zaelke, president of the Washington-based Institute for Governance and Sustainable Development and author of a prominent textbook on environmental law. "If we don't deal with the HFC problem now, in the future these gases are going to kill us," Zaelke said. "Fortunately, there are already replacement technologies for most uses, and you can take steps now that are relatively small and cheap."

Although the volume of HFCs in the atmosphere is relatively small, the EPA projects that concentrations of the gases will grow by nearly 140 percent by the end of the decade, compared with levels that existed in 2005.

The Obama administration last year secured an agreement with China to work jointly on reducing domestic emissions of HFCs, and the United States joined Mexico and Canada earlier this year in proposing an amendment to the Montreal Protocol phasing out production of R-134a and related compounds.

The White House also has been lobbying other manufacturers of HFCs in the developing world, particularly India. The Indian government in the past ruled out curbs on its domestic production of HFCs, saying it lacks an alternative. "We are saying we don't have any alternative technology," Sushil Kumar, a senior Indian environmental official, told reporters last fall.

23. Republicans Offer Legislation to Block Tighter Ozone Standard

A group of Republican senators and House members are seeking to put the brakes on a potential tightening of the federal ozone air quality standard. Lawmakers recently introduced legislation in both chambers that would block U.S. EPA from issuing a tighter standard until most of the country has demonstrated compliance with the current standard. The bill would also compel EPA to

consider the costs and feasibility of a more stringent standard when it makes decisions about where to set the limit for ozone pollution, a significant shift from how EPA currently assesses new air standards. Supporters say it would provide a balance between clean air and the economy.

Sen. John Thune (R-S.D.) and eight co-sponsors introduced a version of the bill in the Senate. Rep. Pete Olson (R-Texas), who spoke briefly about the bill in a floor speech, and Rep. Bob Latta (R-Ohio) introduced the House legislation, which has one Democratic co-sponsor.

"Lowering the ground-level ozone standard would be a staggering blow to our economy," Thune said in a statement. "The Obama EPA needs to focus its efforts on areas already struggling with attainment, not strangle American industry with a job-killing regulation."

EPA last set the federal ozone standard in 2008 at 75 parts per billion. The agency is under a court deadline to decide whether to propose a tighter standard by December 1st and to finalize a decision by October of next year. EPA's science advisers, as well as the agency's own technical staff, have recently recommended lowering the standard to between 60 and 70 ppb, based on information about the adverse health effects associated with ozone pollution.

Currently under the Clean Air Act, EPA is required to base air standards only on public health impacts, a standard of review that has been affirmed by the Supreme Court. But agency critics say that by focusing just on health effects, EPA ignores whether new air standards are economically feasible.

In a conference call with reporters, Olson referenced a recent study by the National Association of Manufacturers that found tightening the standard to 60 ppb could shutter a third of the nation's coal plants and cost the economy \$270 billion a year. "It will become harder or even impossible to open new manufacturing facilities or power plants," Olson said.

The "Clean Air, Strong Economies Act would compel EPA to weigh both public health effects and economic implications when it sets a new ozone standard and to not set a tighter standard until 85 percent of the country has shown compliance with the 75 ppb one. The bill would also halt EPA from considering "co-benefits" -- indirect reductions in other air pollutants -- when it analyzes the benefits of tightening the standard.

Industry and business groups, including the Chamber of Commerce, American Fuel & Petrochemical Manufacturers, and the National Association of Manufacturers, applauded the legislation. "There are legitimate concerns regarding whether a significantly lower ozone standard is even achievable in many parts of the country, regardless of costs," the National Association of Manufacturers wrote in a blog post. "Senator Thune's and Representatives Olson's and Latta's CASE Act ensures that two important trends are permitted to continue: improving air quality and a growing economy."

The bill is already facing strong opposition from environmental groups. Frank O'Donnell, president of Clean Air Watch, said that the legislation would take away the public's right to know whether the air is clean. "These bills would radically change and weaken the entire structure of the Clean Air Act," O'Donnell said. "Rather than a law designed to ensure that all Americans breathe clean air, this would say the air would only be as clean as some bean counters say is affordable."

Public health and environmental groups have called on EPA to set a new standard no higher than 60 ppb. Terry Maguire, a Washington, D.C., representative of the Sierra Club, argued in an

emailed statement that numerous doctors and scientists have found that the current standard of 75 ppb is too weak to protect vulnerable populations, such as children with asthma.

EPA's science advisers themselves have said setting a new standard at 70 ppb may not be enough to provide the public with an adequate margin of safety as required by the Clean Air Act.

The bill has little chance of being considered this year, with Congress expected to leave town soon for the midterm elections. Olson acknowledged that uphill climb and said the goal is to lay the issue on the table for possible action in the first half of next year. The House bill counts one Democrat, Rep. Henry Cuellar of Texas, among its 21 co-sponsors. The Senate bill does not have any Democratic support at this time. Among the Senate sponsors is Environment and Public Works ranking member David Vitter (R-La.), who has previously asked EPA to account for the potential costs of tightening the standard.

Other Senate co-sponsors are Minority Leader Mitch McConnell (R-Ky.) and Sens. John Cornyn (R-Texas), James Inhofe (R-Okla.), Deb Fischer (R-Neb.), Jeff Flake (R-Ariz.), Pat Roberts (R-Kan.) and Roger Wicker (R-Miss.)

24. California Draws Criticism for Easing ZEV Rule for Mid-Size Automakers

Environmentalists are attacking a revised proposal from California's air board that weakens mandates under the state's zero-emission vehicle (ZEV) regulation for "intermediate volume manufacturers" (IVMs), changes that if finalized will also prompt several other states that have adopted the state's rules to ease their requirements.

The environmentalists charge the final changes to the state's earlier proposal will further ease requirements over the next decade, likely diminishing air pollution reductions expected from the regulation and hurting the state's strategy to reduce greenhouse gas (GHG) emissions.

How the issue is resolved could have implications for nine other states and Washington D.C., which have adopted California's rules, including many in the Northeast. Other states are allowed to adopt California's more stringent motor vehicle rules under Section 177 of the Clean Air Act.

At issue are proposed modifications to the California Air Resources Board's (CARB) ZEV regulation, which would ease requirements for five companies that are currently defined under the regulation as IVMs -- Jaguar Land Rover, Mazda, Mitsubishi, Subaru and Volvo. CARB is scheduled to adopt the changes, which generally affect 2018-2025 model-year vehicles, at its Oct. 23-24 meeting.

Several of the IVMs are on track over the next three years to cross CARB's threshold for becoming large volume manufacturers (LVMs), defined as selling more than 20,000 vehicles annually in the state. This definition was changed from 60,000 vehicles under CARB's umbrella advanced clean cars regulation adopted in 2012.

But fearing compliance burdens, the companies sought relief from CARB under the ZEV mandate. In July, CARB proposed several modifications to its requirements to address the concerns. These include changing the definition of an LVM by adding a second test specifying that a company's average global revenue over the prior three fiscal years is in excess of \$40 billion, which would be in effect until the 2018-19 fiscal year. This is intended to allow some of the companies to remain defined as IVMs, which lessens their compliance obligations to sell certain numbers of ZEVs each

year. This test would expire in 2020, resulting in manufacturers with sales over 20,000 producing ZEVs by 2025, according to CARB's proposal.

Staff also proposed to provide IVMs with more lead time to produce ZEVs for sale. Currently the lead time for a manufacturer is three sets of three-year averages of the number of vehicles the company sells annually. The staff proposed to add two additional sets of averages. Once a company sells over 20,000 vehicles per year over that span, it must begin producing ZEVs for sale the following year, according to CARB staff. The proposal will provide companies with five to seven years of lead time, staff said during the meeting.

For example, if a company had sales of 14,000, 19,000 and 31,000 in 2015, 2016 and 2017 respectively, its three-year average is over 20,000. If the next four three-year averages also exceed 20,000, the company must comply as an LVM in 2022, which provides five years of lead time.

The IVMs would also see a reduction in the amount of ZEV credit they must amass by certain years, under the CARB staff proposal. IVMs can also meet their entire ZEV obligations with credits for "transitional" ZEVs, such as plug-in hybrid electric vehicles.

CARB staff is also proposing to ease how companies can pool compliance in other states that have adopted the California ZEV regulation. Under existing rules, companies must deliver ZEVs to the other states prior to 2018 to earn the flexibility to pool compliance and to earn a reduced transitional ZEV requirement. Under the proposed modifications, IVMs would not be required to deliver ZEVs in these states in 2016 and 2017, and would be given two additional years to deliver the vehicles to these states.

And CARB staff, in its final regulatory amendment proposal issued earlier this month, included a major additional relaxation to the mandate – adjusting ZEV credit-deficit provisions to provide all manufacturers three years to make up deficits instead of one, beginning in 2018. During CARB's July workshop, a Mazda representative had urged CARB staff to include this additional change in the final plan. This change was not included in CARB staff's July proposal, and is being strongly opposed by environmental groups, which also challenge several of the other amendments to weaken the mandate.

CARB staff acknowledges in its report that the original one-year credit recovery period "reflects CARB's desire to preclude manufacturers from developing sizeable or insurmountable deficits." However, IVMs point out that manufacturers traditionally begin model year sales prior to the beginning of the calendar year, the report notes.

"Compliance reporting for a given model year takes place in the second quarter following the calendar year. It is possible for the sales of the model year following the deficit to be nearly complete before the deficit is realized, thus not allowing sufficient time to make up the deficit in that model year," CARB staff says.

CARB staff also says that a three-year recovery period is consistent with some of the state's other mobile source regulations, such as for non-methane organic gas emissions, as well as EPA's GHG program, which allows three years to cover a deficit, according to the report.

However, in recognition "of the fact that a longer deficit period may allow an automaker to accrue an even larger deficit, CARB staff is proposing that automakers with a credit deficit provide CARB

an action plan, to be approved by CARB's executive officer . . . illustrating how the automaker will achieve compliance," the report says.

The staff report also argues that relaxing the ZEV rules will not set back the state's schedule for reducing pollutant emissions, including GHGs. "The proposed modifications to the ZEV regulation have the potential to reduce California ZEV deliveries by less than two percent in the 2018 through 2025 timeframe," the report says. "However, CARB does not anticipate any loss in emissions reductions because other CARB regulations would prevent backsliding."

For example, vehicles produced for the ZEV regulation are counted in CARB's low emission vehicle (LEV) III criteria and GHG fleet average standards, staff says. "As such, any loss of emissions reductions resulting from changes to the ZEV regulation are required to be made up through increased emission reductions from the LEV III fleet."

25. U.S. Cellulosic Fuel Makers Press Obama to Alter Biofuel Plan

Federally set mandates for the use of fuels such as corn ethanol and cellulosic ethanol, made from plant waste like grasses and wood, must be based on the industry's ability to produce the fuel, not on infrastructure restraints, executives of several biofuel companies wrote. The Environmental Protection Agency rocked the biofuels industry last year with a draft plan slashing requirements for blending renewable fuels into U.S. gasoline and diesel in 2014. Companies including POET LLC, Abengoa Bioenergy and DuPont told Obama that investments in innovative fuel technology could be lost if EPA does not reconsider.

"If the proposed methodology is not fixed in the final rule ... the 2014 rule will have inadvertently done more than your worst critics have to harm a low carbon industry you have always championed," the executives said.

Following a backlash to the initial proposal, the companies said they expect the administration to raise the targets from the proposed rule to the final rule, sent to the White House for review in August.

But an increase in targets will not be enough to support new investment, the companies said, as long as the agency continues to limit targets based on the number of fueling pumps available to dispense higher blends of ethanol in gasoline - a variable mostly controlled by big oil companies.

The Renewable Fuel Standard requires increasing amounts of ethanol and biodiesel to be mixed into U.S. fuel supplies each year until 2022. The EPA said it lowered the targets for 2014 because the nation had reached a point where the law would require ethanol to be blended into gasoline at levels higher than the 10 percent per-gallon mixture that dominates retail fuel stations. But capping ethanol at 10 percent of the fuel supply will not give oil companies any incentive to invest in new fueling equipment, and the biofuel program will "cease to be effective," the companies said.

After years of falling far short of the targets set by Congress, makers of cellulosic biofuels are starting to gain some momentum. While 2014 production will come nowhere near the 1.75 billion gallon target originally set by Congress, POET and Dutch food and chemicals group DSM recently jointly opened a plant in Iowa with an initial production target of 20 million gallons a year using corn cobs, stalks and other crop waste as its feedstock. Also, Quad County Corn Processors opened a plant that should produce 2 million gallons cellulosic ethanol a year.

It is unclear how much cellulosic ethanol will be produced in 2014. EPA's draft proposal set the target at 17 million gallons.

26. Obama to Tout U.S. Climate Plan at U.N. Summit

President Barack Obama will highlight strides the United States has made on climate change when he addresses a major U.N. climate summit, senior administration officials said. About 120 heads of state and government, in New York for the United Nations General Assembly, are expected to attend the summit hosted by U.N. Secretary General Ban Ki-moon.

The summit, an effort to move global leaders closer to an ambitious climate deal due to be finalized next year, will allow the United States "to showcase actions we are taking across the government and across the country," said John Podesta, a senior Obama adviser. Podesta said that although the leaders of China and India, the major emerging economies, will skip the summit Obama has bilateral meetings with them scheduled for November and late September, respectively.

Ahead of the meeting, the White House unveiled new executive actions and public-private partnerships with major companies to boost the use of renewable energy and target potent greenhouse gases.

Administration officials, including Environmental Protection Agency Administrator Gina McCarthy and Jason Furman, chairman of the Council of Economic Advisers, will fan out across the country in a "full-court press" to highlight U.S. moves on climate, Podesta said.

Reversing the impacts of climate change has become a legacy issue for Obama, who has struggled to make headway on foreign and domestic policy goals since his re-election in 2012. A series of executive actions and other moves has followed.

The Obama administration's renewed focus on the issue has started to change the international perception of the United States' role, said State Department climate change Special Envoy Todd Stern. "There is no question the United States is in stronger standing," Stern told reporters.

27. Study Argues Ditching Cars for Buses, Bikes Best Way to Cut City Pollution

The report, by the University of California and the Institute for Transportation and Development Policy (ITDP), proposed governments expand rail and bus transport and ensure cities are safer for pedestrians and cyclists. Researchers found that a radical change in the way people get around cities could cut carbon dioxide emissions from urban passenger transport by about 40 percent by 2050 and save \$100 trillion in public and private spending.

Michael Replogle of ITDP, a co-author of the report "A Global High Shift Scenario", said transport, driven by a rapid growth in car use, had been the fastest growing source of carbon dioxide emissions in the world. "While every part of the global economy needs to become greener, cleaning up the traffic jams in the world's cities offers the least pain and the most gain," said Replogle.

Replogle said better access to public transport would also foster economic opportunities, providing the poor with better access to employment and services - and the private sector had an important role to play.

"It is clear that the success of developing good public transport in wealthy countries has come by governments establishing systems for greater private investment in public transport," he told the Thomson Reuters Foundation. "That has not been happening as effectively in much of the developing world, but this report describes the framework in which it could happen."

Carbon dioxide emissions are likely to increase fastest in developing countries because of growing wealth and sprawling urban populations.

United Nations figures released this year show that 54 percent of the world population lives in cities and this figure is forecast to rise to 66 percent by 2050.

Indian emissions, for example, are expected to leap nearly eight-fold to 540 megatons by 2050 from 70 megatons now but the researchers found this rise could be reduced by more than a third if cities managed to cut down car use. Similarly, projections showed that in China emissions could be cut by almost a half if bus and metro systems were developed extensively. Replogle said initiatives similar to those proposed were already happening in countries like Mexico and Colombia, which have plans for comprehensive urban transport programs.

"The bottom line message is that to address climate change we really need to undertake all of the measures that are feasible to help us reduce global warming pollution," Replogle said. "We particularly need to take rapid action on things that support sustainable development for low and moderate income countries so that they can realize their economic aspirations."

28. Gas Production Blamed For Rise in Colorado, New Mexico Quakes

The deep injection of wastewater underground by energy companies during methane gas extraction has caused a dramatic rise in the number of earthquakes in Colorado and New Mexico since 2001, U.S. government scientists said in a new study. The study by U.S. Geological Survey researchers is the latest to link energy production methods to an increase in quakes in regions where those techniques are used.

Energy companies began producing coal-bed methane in Colorado in 1994, then in New Mexico five years later. The process creates large amounts of wastewater, which is pumped into sub-surface disposal wells. Scientists have long linked some small earthquakes to work carried out below ground for oil and gas extraction, which they say can alter pressure points and cause shifts in the earth.

The new study, published in the Bulletin of the Seismological Society of America (BSSA), focused on the Raton Basin, which stretches from southern Colorado into northern New Mexico. The report said the area had been "seismically quiet" until shortly after major fluid injection began in 1999. But since 2001, the scientists said, the area experienced 16 earthquakes of greater than 3.8 magnitude, compared with only one of that strength recorded during the previous three decades.

"The increase in earthquakes is limited to the area of industrial activity and within 5 kilometers (3.1 miles) of wastewater injection wells," the study said. The researchers said "several lines of evidence" suggest the earthquakes are directly related to wastewater disposal as a by-product of extracting methane, and not to the separate practice of hydraulic fracturing occurring in the area.

Hydraulic fracturing, or fracking, is a controversial technique that involves pumping water and chemicals into rock formations underground to push out gas and other hydrocarbons.

The USGS scientists said there are now 21 high-volume wastewater disposal wells in Colorado and seven in New Mexico, and that since mid-2000 the total injection rate across the basin has ranged from 1.5 to 3.6 million barrels per month. They said the timing and location of seismic events correspond to the documented pattern of injected wastewater, and that their findings suggest seismic events are initiated shortly after an increase in injection rates.

Experts say fracking and wastewater disposal may also be linked to the soaring number of earthquakes rocking Oklahoma, which has already surpassed last year's record-breaking 222 "felt" earthquakes, defined as those strong enough to rattle items on a shelf.

29. U.S. Top Court Rejects Challenge To Ozone Regulations

By declining to hear the case, the court left in place the so-called primary air quality standards designed to protect public health, which Democratic President Barack Obama's administration defended. Those rules, which set air quality standards that U.S. states and the federal government must implement through regulations, had been challenged by the Utility Air Regulatory Group, which represents electricity-generating companies.

In July 2013, the U.S. Court of Appeals for the District of Columbia Circuit upheld the primary standards but sent secondary standards that are required to protect vegetation, crops and animals back to the EPA for revision.

Ozone pollution forms when air pollutants react with sunlight and has been linked to health problems including decreased lung function.

The 2008 rule was challenged by states, industry groups and environmental groups, with some saying it was too strict and others that it was too lenient. The EPA was on the verge of issuing a new rule to supplant the Bush-era regulations in September 2011 but the Obama White House rejected the proposal.

30. Judge Considers CARB Diesel Challenge

Glenn County Superior Court Judge Peter Twede has a lot of reading to do. So much so that the Alliance of California Business will likely reschedule a November 7th hearing in the organization's lawsuit over the California Air Resources Control Board's requirement that diesel-powered trucks and buses statewide be equipped with diesel particulate filters.

Dozens of truck owners and operators who haul goods throughout the state appeared in court, after the alliance sought a preliminary injunction to stop CARB's enforcement of the requirement. In its motion, the alliance submitted the personal testimony of dozens of truckers who detailed the nightmarish consequences of having installed the filters, from health and safety standpoints to mechanical failures and financial hardship.

Twede said he's practically buried in the paperwork, almost beyond what the court would typically accept. "This is an important case, so I have been willing to bend the rules," Twede said.

The alliance filed the lawsuit in 2013, alleging the state did not disclose known defects associated with the filters. The testimonials are at the very heart of the alliance's case, according to Therese Cannata, the San Francisco attorney representing the truckers. Cannata argued that the filters

are unsound, causing trucks to break down on highways and that they pose a safety risk to operators, the public and to property.

The filters have been known to cause fires, burn fields of crops and destroy truck engines, she said. Cannata said the alliance is asking the court for an evidentiary hearing as an opportunity to prove the filters are flawed. "The court has the power to enforce safety," she said.

Deputy Attorney General Russell Hildreth, representing the California Environmental Protection Agency, said the alliance's lawsuit does not take aim at the manufacturer of the filters, but is simply an attack on the state's air pollution regulations. "This is just a way for them to get their foot in the door," he said.

Hildreth said the state has already amended the 2009 regulation, which prompted the alliance's lawsuit. The state has extended the deadline in counties where federal and state ozone standards are met, mostly northern California, he said. The state also expanded grant opportunities to help small trucking companies replace older trucks, and pushed back the date by which truck owners must replace an older truck with a later year model.

Additionally, the state extended the phase-in deadlines to install filters for small fleets and offered low-use exemption requirements for trucks that travel fewer than 5,000 miles in a year total. "The 2009 requirements on these filters are not an issue in this case," Hildreth said.

According to truck operators who attended the hearing, the filters have been disastrous, and trucker safety isn't the only problem they have with them. Most said the \$18,000 device is not designed for use on short distance travel routes, like on trucks used in the local agriculture industry, and the filters commonly malfunction as a result.

According to Alliance members, the problem with the filter for short-distance operators have required truckers to drive empty trucks on the road longer distances without stops, serving no commercial purpose other than to burn off soot buildup in the filters, which burns up costly fuel and increases air pollution.

In May, the California Air Resources Board announced it settled 256 cases in 2013 involving air quality violations by heavy-duty diesel truck and bus fleets that failed to comply with its air quality regulations.

31. Canada's Finalized Vehicle GHG Emissions Standards Align With Those of U.S.

The Canadian government has published final regulations to cut greenhouse gas emissions from passenger automobiles and light trucks in the 2017–2025 model years and maintain alignment of Canadian standards with those in the U.S. The final amendments to the Passenger Automobile and Light-Truck Greenhouse Gas Emission Regulations build on the success of the previous regulations covering the 2011–2016 model years by imposing progressively more stringent annual fleet average emissions standards over the 2017–2025 model years, Environment Canada said in a regulatory impact analysis published with the final regulations in the October 8th issue of the Canada Gazette, Part II.

The standards were developed in cooperation with the U.S. Environmental Protection Agency, in support of the bilateral approach that is consistent with the joint regulatory cooperation action plan announced by President Barack Obama and Prime Minister Stephen Harper in December 2011.

“The amended regulations also reflect the global trend toward the regulation of improved automotive fuel economy and GHG emission reductions,” the department said.

Federal Environment Minister Leona Aglukkaq announced on September 22nd that other regulatory initiatives to cut greenhouse gas emissions and other pollutants, align Canadian vehicle and fuel emission standards with U.S. Tier 3 standards and develop more stringent emissions standards for post-2018 model year heavy-duty vehicles.

Environment Canada cited the final regulations as an important step for the country to meet its Copenhagen Accord commitment to reduce greenhouse gas emissions by 17 percent by 2020, from 1990 levels. Passenger automobiles and light trucks accounted for about 13 percent of Canada's total greenhouse gas emissions in 2010, it said.

The updated standards are projected to reduce greenhouse gas emissions by 174 million metric tons over the lifetime of vehicles produced during the 2017-2025 model years, and to produce net benefits totaling C\$60.3 billion (\$54.3 billion), according to the department. The benefits result from fuel cost savings, shorter refueling time and reduced greenhouse gas emissions, it said.

The tougher regulations are projected to increase costs by about C\$11.2 billion (\$10.1 billion) through increased costs to consumers for new technology and vehicles and government costs for vehicle testing, compliance promotion, enforcement and administration, it said. Both the benefit and cost projections take into account the “rebound” effect of additional driving or mobility associated with a reduction in driving costs, it said.

The final amendments do not address concerns raised by auto manufacturers and importers that applying the U.S. standards in Canada could make the Canadian standards more stringent due to differences in the composition of the two countries' vehicle fleets, Environment Canada said.

The industry participants pointed, for example, in submissions filed after the regulations were published in draft form in December 2012, to the proportionally greater number of small compact vehicles in Canada, which are subject to numerically more stringent standards than larger vehicles.

The department acknowledged that the Canadian market isn't a smaller replica of the U.S. market in terms of the mix of new vehicles purchased each year, but it said regulatory alignment with the U.S. is a long-standing policy and provides significant environmental and economic benefits, while minimizing costs to industry and consumers. “The vast majority of light-duty vehicles are imported into Canada by large corporations with sufficient volume and diversity so as to not make small fleet mix differences a significant barrier to compliance,” it said. “Also, the amended regulations provide a variety of compliance flexibilities that allow companies to adjust their fleet mix, if needed, to meet their regulatory obligations.”

Environment Canada said it was unable to accept the proposal by one association representing vehicle manufacturers and importers for a midterm review similar to that conducted in the U.S., as that authority is not provided by the Canadian Environmental Protection Act. The regulations incorporate by reference the U.S. standards for modal years 2022–2025, however, so alignment will be maintained if the EPA modifies its standards as a result of the midterm review, it said.

The final regulations contain one change proposed by Canada's provincial and territorial governments, supported by vehicle manufacturers and importers, for additional incentives to support the introduction of electric vehicles on the basis of Canada's significantly cleaner

electricity production than that in the U.S., Environment Canada said. U.S. standards don't provide any such incentive.

The factor by which the regulations permit companies to multiply the number of electric vehicles in their fleet, originally proposed as 1.2, will be increased to 1.7 for model years 2017–2021, it said. For model years 2022–2025, the regulations permit companies to apply a factor of 1.5 to electric and fuel cell vehicles and a factor of 1.3 to plug-in hybrid electric vehicles, it said.

32. EPA Orders BMW to Lower Fuel Economy Claims on Four Mini Models

The Environmental Protection Agency is continuing its crackdown on auto companies that issue inflated fuel economy claims for their vehicles, this time ordering BMW to lower the estimates for four of its 2014 Mini Cooper cars.

During an EPA audit of the fuel economy ratings on the window stickers of new Mini Coopers, the agency derived values that differed from those submitted by the automaker for certification. The EPA told BMW, which owns the Mini brand, to conduct new emissions and fuel economy testing. The EPA also did its own tests at its National Vehicle and Fuel Emissions Laboratory in Ann Arbor, Michigan. The results demonstrated that BMW had inflated the fuel economy claims for the three-door models of the Mini Cooper and the Mini Cooper S by 1 mile per gallon for both city driving and combined city and highway driving.

The ratings for highway-only driving were inflated by 1 to 4 miles per gallon depending on the vehicle and whether it had an automatic or manual transmission.

The new ratings for the Mini Cooper with automatic transmission are 32 mpg for combined driving, 28 for city driving and 39 for highway driving. For the automatic Mini Cooper S, the ratings are 30 mpg for combined driving, 26 for city and 35 for highway.

The new ratings for the Mini Cooper with manual transmission are 33 mpg for combined driving, 29 for city driving and 40 for highway driving. For the manual Mini Cooper S, the ratings are 28 mpg for combined driving, 24 for city and 34 for highway.

The EPA has ordered BMW to put the lower ratings on the window stickers of the cars.

“Fuel economy values matter to consumers and automakers,” said Christopher Grundler, director of the EPA’s Office of Transportation and Air Quality. “To provide consumers with the most accurate, reliable and repeatable fuel economy values, we are continuing to strengthen our oversight to ensure fair competition among automakers.”

More carmakers are getting into trouble over their fuel economy claims. Hyundai, Ford, Kia, Mercedes-Benz and BMW have all had to lower the fuel economy of various models in recent years.

The EPA’s National Vehicle and Fuel Emissions Laboratory conducts fuel economy testing on vehicles each year to ensure that their performance matches the mileage and emissions data automakers submit to the EPA. The agency said the audits “are part of the oversight program that helps ensure all carmakers are following the same procedures for calculating mileage estimates.”

33. Utah Governor's Clean Air Action Team Releases Recommendations

Poor air quality during certain periods of the year ranks as Utahns' greatest concern about their quality of life, and it threatens not only citizen's health but their economy as the state seeks to recruit and retain businesses and a high-quality workforce. That's why Governor Gary Herbert asked Envision Utah to convene and facilitate the Clean Air Action Team, which includes representatives from health care, business, nonprofit organizations, government, academia, transportation, and more. This independent team was tasked with working to provide a set of broadly supported recommendations to improve air quality.

The team's consensus recommendations were recently released and shared with the Governor, the legislature, and the Air Quality Board. These recommendations will make a substantial difference in the amount of emissions put into the air. Moreover, the projected cost to Utahns is fairly minimal.

Summary of Recommendations

- 1) Ensure Utahns have access to low-sulfur Tier 3 fuel as soon as possible.
- 2) Accelerate the transition to cleaner Tier 3 cars. If all cars and fuel were Tier 3 by 2050 we would remove approximately 62% of mobile emissions per day from our air.
- 3) Reduce the amount of wood burning that occurs during inversion periods. Eliminating residential wood burning would decrease daily area source emissions by about 5% in 2050.
- 4) Invest additional resources in public transportation and facilities that make "active transportation" modes like biking and walking more convenient. By 2050, if we reduce the number of miles driven per capita by 10% we would reduce daily mobile emissions by roughly 8%.
- 5) Allow the Air Quality Board and Division of Air Quality to adopt rules that are more stringent than federal regulations and continue to give the Division of Air Quality sufficient budget to continue effectively achieving its mission.
- 6) Adopt a rule to require suppliers to sell only ultra-low NO_x water heaters. Replacing all water heaters with ultra-low NO_x models would reduce daily area emissions by about 5.3% in 2050.
- 7) Increase the energy efficiency of our existing and new buildings. Increasing the efficiency of existing buildings could reduce area source emissions by about 1.7%. Increasing new building efficiency by 50% would eliminate approximately 2.4% of our area source emissions by 2050.
- 8) Continue current efforts to reduce emissions from the oil & gas operations within the Uintah Basin.

Vehicles make up approximately half of local emissions, a proportion that is decreasing as older cars are phased out and newer, cleaner cars are phased in. Reductions in the pollution emitted by Utah's cars—through "Tier 3" cars and fuel—are projected to have a significantly greater impact in emissions reductions than any other strategy.

Tier 3 refers to an integrated system of vehicle and fuel standards nationwide that the EPA has adopted to replace the prior Tier 2 standards. With both the vehicles and fuel working together, the Tier 3 standards will reduce volatile organic compounds (VOC) and nitrogen oxides (NO_x) emissions by 80% on a fleet average basis and direct particulate emissions by 70% on a per vehicle basis. These reductions are achieved through improved vehicle emissions standards and by reducing the amount of sulfur in gasoline from an average of 30 ppm to 10 ppm. The low-sulfur fuel is important because sulfur reduces the effectiveness of the advanced pollution control equipment in the vehicles.

Tier 3 cars are projected to cost on average \$72 more than current Tier 2 cars. Tier 3 gasoline standards are estimated by the EPA to increase the cost of gasoline by less than a penny per gallon on a national basis. The actual cost to produce the cleaner fuels in Utah is unknown.

The EPA has adopted Tier 3 for phase-in beginning in model year 2017, but Utahns can accelerate the changeover by purchasing cars with higher smog ratings. A car with a smog rating of 8 or higher generally meets Tier 3 emission standards. Smog ratings run from 1 to 10, with 10 being the cleanest. Smog ratings for all new cars are shown on the window stickers, and those for used cars can be found at fuelconomy.gov. Buying a car with a high smog rating is probably the most important thing each citizen can do for air quality.

To achieve the full emissions reductions, Tier 3 cars also need low-sulfur fuel, but many of Utah's refineries will not actually be required to produce or sell Tier 3 fuels in Utah. The EPA's proposed fuel standards include an "averaging, banking, and trading" system that allows refiners and importers to spread out their investments, which means they would only need to meet a nationwide average to satisfy the fuel standards; if a large gasoline producer decides to produce cleaner fuel in another state, it may be able to average that out by producing fuel that is not as clean in Utah. The Clean Air Act also contains provisions that generally prevent an individual state like Utah from adopting its own fuel standards. If the refineries serving Utah decide to produce low-sulfur fuel, they will provide a significant benefit to air quality.

Many of the Clean Air Action Team recommendations ask Utahns to embrace technologies that now exist to reduce pollution. Whether it's a car with a high smog rating or an ultra-low-NOx water heater, that technology can make a tremendous difference.

34. Appeals Court Tosses E15 Suit

An appeals court has tossed a lawsuit over an EPA rule aimed at warning consumers not to use gasoline blended with more than 10 percent ethanol in older engines, saying none of the petitioners could show any real harm from the rule.

The American Petroleum Institute and the Engine Products Group, an umbrella group of industry associations, asked the court to review EPA's rule aimed at preventing consumers from using E15 — gasoline blended with 15 percent ethanol — in cars older than model year 2000, which could suffer engine damage. The 2011 rule includes an approved label that warns consumers they should not to use E15 in boats and other small-engine equipment.

Judges David Tatel and Janice Rogers and Senior Circuit Judge Stephen Williams tossed the lawsuit, saying the groups didn't have standing "because they cannot show that their members have suffered or are threatened with suffering an injury in fact that is traceable to the regulation and redressable by a favorable decision."

"API and EPG previously challenged EPA's decisions approving the introduction of E15 for certain vehicles and engines," the order said, noting that case — also dismissed — had "similar flaws" related to standing. In fact, API couldn't produce evidence that any of its members sells E15, nor do they plan to do so, the ruling said.

35. U.S. Fuel Economy Hits New High in 2013 Model Year: EPA

Fuel economy for new light-duty vehicles in the United States reached an all-time high in the 2013 model year, averaging 24.1 miles per gallon, up 0.5 mpg on the year, the EPA said in an annual report. At the same time, average carbon dioxide emissions fell to a record low.

U.S. fuel economy has increased in eight of the last nine years and is up nearly 5 mpg since 2004, the agency said.

The EPA said recent improvements in part reflected automakers' rapid adoption of more efficient technologies such as gasoline direct injection engines, turbo chargers and advanced transmissions.

The EPA estimates that a plan to double fuel economy by 2025 will save the average American family more than \$8,000 in fuel costs per vehicle.

The agency said Mazda vehicles averaged the highest fuel economy, at 28.1 mpg, and lowest greenhouse gas emissions from the 2013 car and light truck fleet.

Nissan logged the biggest improvement in average fuel economy and greenhouse gas reductions, posting fleet-wide fuel economy of 26.2 mpg, up 8.7 percent on the year. "The realization of this accomplishment came in part due to the introduction of three all-new fuel-efficient models for the 2013 model year - Altima, Pathfinder and Sentra," Nissan Group said in a statement.

Sport utility vehicles, long castigated as gas-guzzlers, achieved the greatest improvement by class, the EPA said.

Assuming gas prices of \$3.50 per gallon, the 3-mpg jump in passenger car fuel economy from 2008 to 2013 would save a typical driver over \$300 in the first year, the Natural Resources Defense Council estimated.

MY 2012 – MY 2014 Adjusted Fuel Economy and Adjusted CO₂ Emissions by Manufacturer¹

Manufacturer ²	MY 2012 Final		MY 2013 Final				MY 2014 Preliminary	
	Adjusted Fuel Economy (MPG)	CO ₂ (g/mi)	Adjusted Fuel Economy (MPG)	Change from MY 2011 (MPG)	CO ₂ (g/mi)	Change from MY 2011 (g/mi)	Adjusted Fuel Economy (MPG)	CO ₂ (g/mi)
Mazda	27.1	328	28.1	+1.0	316	-12	28.8	309
Honda	26.6	334	27.4	+0.8	324	-10	27.6	322
Subaru	25.2	352	26.7	+1.5	332	-20	27.5	324
Nissan	24.1	369	26.2	+2.1	339	-30	26.8	332
VW	25.5	355	25.7	+0.2	353	-2	26.7	340
Toyota	25.6	347	25.1	-0.5	354	+7	25.8	344
BMW	23.7	377	24.5	+0.8	363	-14	26.0	344
Daimler	21.1	426	22.4	+1.3	399	-27	22.8	393
Ford	22.8	390	22.2	-0.6	400	+10	23.4	380
GM	21.7	410	22.0	+0.3	404	-6	22.0	404
Chrysler-Fiat	20.1	442	20.9	+0.8	425	-17	21.1	420

All	23.6	376	24.1	+0.5	369	-7	24.2	367
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¹ Adjusted CO₂ and fuel economy values reflect real world performance and are not comparable to automaker standards compliance levels. Adjusted CO₂ values are higher and adjusted fuel economy values are lower than compliance values.

² Hyundai and Kia are not included in this table due to a continuing investigation. In November 2012, Hyundai and Kia corrected fuel economy labels for many vehicle models. Based on these corrected data, Hyundai’s values are 28.3 mpg and 314 g/mi CO₂ for MY 2012, 29.0 mpg and 306 g/mi for MY 2013, and 27.3 mpg and 326 g/mi for MY 2014. Kia’s values are 26.5 mpg and 336 g/mi CO₂ for MY 2012, 27.4 mpg and 324 g/mi for MY 2013, and 25.7 mpg and 345 g/mi for MY 2014. Hyundai and Kia adopted unusually short MY 2014 production time frames for some high fuel economy models, which the authors believe is the primary reason for their lower fuel economy and higher CO₂ preliminary values for MY 2014. These corrected data for Hyundai and Kia are included in industry-wide or “All” values.

36. EPA Says Electric Vehicles Are Finally Having an Impact

Electric Vehicles have been touted by car makers recently as the one solution to climate change and high energy consumption without losing the ability to drive around whenever we like. According to the EPA, only this year has a noticeable impact been observed. The info comes part of the Light-Duty Automotive Technology, Carbon Dioxide Emissions and Fuel Economy Trends study. The bottom line is that EVs are starting to actually matter. For example, the number of such cars (including PHEV and CNG-Powered alternatives) is now accounting for 1 percent of the total manufactured in the US. In the past, the alternative fuel vehicle ratio was basically around 0.1 percent.

In 2013, for example, there were 11 EVs up for sale and only 4 PHEVs on the US market. This year, those numbers grew to 12 EVs and 10 PHEVs, an impressive hike in less than 12 months (as 2014 is not over yet and the two versions of the Model S, the P60 and P80 are taken as one).

“The combined production of alternative fueled vehicles has increased from under 1,200 in MY 2010, to nearly 105,000 in MY 2013. While alternative fueled vehicles still represent a very limited portion of overall new vehicle production (0.7% of overall light-duty vehicle production in MY 2013), this increase by a factor of about 100 in three years is both notable and significant,” says the study.

That means that in just 36 months, the production went up nearly 100 times. The charts are also looking impressive and, if the current trend keeps up, we’re in for big changes all around.

MY 2014 Alternative Fuel Vehicle Fuel Economy Label Metrics

Make	Model	Fuel or Powertrain	Charge Depleting			Charge Sustaining	Overall Fuel Economy (mpge)
			Electricity (kW-hrs/100 miles)	Gasoline (gallons/100 miles)	Fuel Economy (mpge)	Fuel Economy (mpg)	
Chevrolet	Spark	EV	28	N/A	119	N/A	119
BMW	i3	EV	27	N/A	124	N/A	124
BYD	e6	EV	54	N/A	63	N/A	63
Fiat	500e	EV	29	N/A	116	N/A	116

Ford	Focus	EV	32	N/A	105	N/A	105
Honda	Fit	EV	29	N/A	118	N/A	118
Mercedes-Benz	B-class	EV	40	N/A	84	N/A	84
Mitsubishi	i	EV	30	N/A	112	N/A	112
Nissan	Leaf	EV	30	N/A	114	N/A	114
Smart	Fortwo	EV	32	N/A	107	N/A	107
Tesla	Model S (60kW-hr)	EV	35	N/A	95	N/A	95
Tesla	Model S (85kW-hr)	EV	38	N/A	89	N/A	89
Toyota	RAV4	EV	44	N/A	76	N/A	76
BMW	i3 REX	PHEV	29	N/A	117	39	88
BMW	i8	PHEV	43	0.1	76	28	37
Cadillac	ELR	PHEV	41	N/A	82	33	54
Chevrolet	Volt	PHEV	35	N/A	98	37	62
Ford	C-MAX	PHEV	37	0	88	38	51
Ford	Fusion	PHEV	37	0	88	38	51
Honda	Accord	PHEV	29	0	115	46	57
McLaren	P1	PHEV	25	5.7	18	17	17
Porsche	Panamera S	PHEV	52	0.5	50	25	31
Toyota	Prius	PHEV	29	0.2	95	50	58
Honda	Civic	CNG	N/A	N/A	N/A	N/A	31

37. Watchdog Says Canada Ill-Placed To Ensure Safety of Arctic Shipping



The Coast Guard ship Des Groseilliers is seen near the arctic community of Pond Inlet, Nunavut August 23, 2014. Photo: Chris Wattie

Canada will have trouble ensuring marine safety in the Arctic as climate change melts the sea ice and shipping increases, according to Parliament's environmental watchdog.

Canada, said Environment Commissioner Julie Gelfand, had "no long-term national vision" to cope with

more shipping in the region, where firms are trying to exploit reserves of oil, gold, diamonds, iron ore, zinc and other commodities.

Gelfand said many high-risk areas in the Arctic had been inadequately surveyed. She also found the Coast Guard had done little to improve aids to navigation and was cutting back its ice-breaking services as demand grows. "We found gaps and emerging risks that if left unaddressed will only grow as marine traffic increases in the region," she said in an official audit.

The Canadian Arctic is particularly challenging, since it comprises a series of large islands separated by often narrow channels that are clogged with ice for much of the year. "We found that many higher-risk areas in the Canadian Arctic are inadequately surveyed and charted ... many charts available to mariners may not be current or reliable," Gelfand. Only 1 percent of Arctic waters have been surveyed to modern standards.

The sheer remoteness of the region, combined with an almost total lack of infrastructure, means that an accident could have calamitous consequences.

Gelfand cited experts suggesting that "due to future sea ice retreat, it is likely there will be even greater marine access and longer seasons of navigation across the Arctic".

There were around 350 marine voyages in the Canadian Arctic in 2013 and the Coast Guard estimates that number could almost double by 2020 as new mining projects start.

Canada's Conservative government says the Arctic is a priority, in particular the need for safe shipping. One way to help ensure this is by installing marine aids such as beacons, buoys and fog horns to help ships avoid danger.

But Gelfand said the Coast Guard had done little to meet increased demands for help.

"Despite repeated requests by the shipping industry for new or modified aids to navigation in 30 locations in the Arctic, reviews of only two of these locations were conducted by the Canadian Coast Guard," said the audit.

It also found the Coast Guard had cut the number of days it offered ice-breaking services at a time when the shipping season is growing. The Coast Guard says its ice breakers are reaching the end of their operational lives and need more maintenance.

The Canadian Arctic is also home to the famed Northwest Passage, which cuts the distance between Europe and the Far East to just 7,900 nautical miles (14,630 km), from 12,600 nautical miles through the Panama Canal. Commercial shipping firms have so far largely avoided using the passage, citing the unpredictable nature of Arctic ice, the relatively shallow waters and increased insurance costs.

38. U.S. Biofuel Mandate Cuts Would Raise Carbon Pollution: Lawmakers

The Obama administration's proposed cuts to U.S. biofuel use targets could undermine the White House's plan to tackle climate change, according to two Democrats on the Senate committee that oversees the renewable fuel mandate. The Environmental Protection Agency's plan, slashing requirements for blending ethanol and biodiesel into U.S. fuel supplies in 2014, would lead to increased oil use and carbon emissions, Senators Barbara Boxer and Edward Markey said in a letter sent to White House.

The lawmakers are the latest to weigh in as the White House's Office of Management and Budget considers revisions to the EPA's original proposal on 2014 targets.

"EPA's proposed rule would not only increase carbon pollution, but would also derail our efforts to ... drive the development of fuels that further reduce carbon pollution in the long-term," the lawmakers said.

A study by the Biotechnology Industry Organization cited by Boxer and Markey found the proposed targets would increase net carbon pollution by 28.2 million metric tons in 2014.

California's Boxer is chairman of the Senate committee on environment and public works, which has oversight authority for the Renewable Fuel Standard. Markey, from Massachusetts, is a committee member and frequent critic of the oil industry.

Producers of renewable fuels say the proposed cuts have already hurt investment in advanced fuels made from crop wastes and led to less output of biodiesel than would otherwise have been the case.

Boxer and Markey also took aim at EPA's reasoning that the cuts were needed due to a shortage of gas-station pumps that can dispense gasoline with higher blends of ethanol, a problem known as the blend wall. "EPA ... relies on a questionable reading of the statute that would allow the oil industry to escape its obligation under the RFS by simply blocking or limiting the distribution of renewable fuel blends to consumers," the letter said.

The Renewable Fuel Standard requires increasing amounts of ethanol and biodiesel to be mixed into U.S. fuel supplies each year until 2022.

Obama administration officials have said the final targets will likely be higher than the initial proposal, but industry analysts do not expect EPA to restore the requirements fully to the levels set by federal law.

39. Rising Seas Seen Causing Routine Floods in U.S. Cities: Study

Rising sea levels are causing more frequent high-tide floods even on completely clear days on the East and Gulf Coasts, says a new report from the Union of Concerned Scientists. In the next 15 years or so, many towns and cities could see a tripling in the number of high-tide floods each year. In 30 years, a whopping tenfold increase is possible.

"Several decades ago, flooding at high tide was simply not a problem," said Melanie Fitzpatrick, a report co-author who is a climate scientist at UCS. "Today, when the tide is extra high, people find themselves splashing through downtown Miami, Norfolk and Annapolis on sunny days and dealing with flooded roads in Atlantic City, Savannah and the coast of New Hampshire," she said.

The UCS report, "Encroaching Tides: How sea level rise and tidal flooding threaten U.S. East Coast and Gulf Coast communities over the next 30 years," builds upon a report this year from the National Oceanic and Atmospheric Administration, which found that such nuisance flooding, as it's known, has increased on all three U.S. coasts 300% to 925% since the 1960s.

The biggest increases have been in cities in the Mid-Atlantic and Northeast. For example, even though it's not stormy today, the full moon and its resulting high tides could bring floods to parts of New York, Connecticut, Maine, Maryland and Virginia, the National Weather Service predicts.

"We know that along the U.S. coast, almost 3 million people, and their homes, reside within 3 feet of mean high water," Fitzpatrick said. Overall, she said, 100 million people live in coastal counties — nearly one-third of the U.S. population.

This tidal flooding can also worsen the devastating floods that occur when storm surge water roars inland, such as what happened during Hurricanes Katrina and Sandy.

The tides that bring today's nuisance floods will be capable of causing "extensive" floods in many cities — floods that are deeper, reach farther inland, last longer and threaten life and property, the report says.

Sea level has risen nearly 8 inches worldwide since 1880, but it doesn't rise evenly: In the past 100 years, it has climbed about a foot or more in some U.S. cities, according to the National Oceanic and Atmospheric Administration.

"Around the world, sea level is rising in response to global warming," Fitzpatrick said. "As the oceans heat up, the water expands, and as glaciers and polar ice sheets melt, they add water to the oceans."

40. Urban Air Initiative Calls New EPA Emission Models Flawed

A computer model that states use to assess mobile source emissions is seriously flawed, according to an analysis by Urban Air Initiative and could effectively block access to the market for higher ethanol blends. The Motor Vehicle Emissions Simulator (MOVES) and other modeling tools are used by states to demonstrate to the U.S. EPA how they plan to maintain air quality standards or in some cases come into compliance for various pollutants. Because of the methodology used by EPA, using more ethanol is shown to increase particulate emissions rather than correctly identifying aromatics and other high boiling hydrocarbon compounds added to test fuels as the cause.

With the publishing of the model in the Federal Register, a letter from the Energy Future Coalition and Urban Air Initiative has been sent to EPA Administrator Gina McCarthy. The letter cites specifics as to why the models are flawed and requests an immediate suspension of their use. "Ethanol blends can be created in one of two ways – by adding more ethanol to a product approved for commercial use, such as E10 ("splash blending"), or by adjusting the gasoline blend stock first to match certain selected parameters ("match blending"), wrote UAI and EFC. "Many tests of splash-blended ethanol have shown that it reduces pollution, but this study used match blending instead – despite the fact that nearly all U.S. gasoline is produced by splash-blending 10 percent ethanol."

The groups contend that Office of Transportation and Air Quality models have been contradicted by numerous studies which show splash blended ethanol with a fixed consumer-grade gasoline blend stock substantially reduces vehicle exhaust emissions, including the most dangerous PM, air toxics, and brown and black carbon. The letter also noted that these problems in EPA methodology are recognized by fuel experts in the auto industry, the Department of Energy's National Renewable Energy Laboratory, and numerous others independent of the ethanol industry.

"In short, the conclusions of both the EPA study and the MOVES2014 model about the air quality impacts of ethanol are clearly and demonstrably false, and they should be withdrawn as a matter of scientific integrity. Fuels experts at DOE's national laboratories should be engaged in a further peer review, and guidance should be provided to the states to refrain from using the MOVES2014 model for assessing the air quality impacts of ethanol blends," wrote the two groups.

"It defies logic that adding ethanol, which contains no benzene and virtually no toxic compounds could cause a fuel to produce higher particulate emissions. If the EPA model stands by that

position then no state would look favorably on higher ethanol blends,” said UAI President David VanderGriend.

ASIA-PACIFIC

41. China’s Demand Growth May Make It Globally Dominant, Speakers Suggest

China potentially could dictate terms as the fastest growing market in a world suddenly awash in potential oil and gas resources, speakers suggested during a discussion of energy and security in China and Pacific Asia at the Woodrow Wilson Center for Scholars. That would put pressure on Russia to reconsider threats to cut off sales to European countries and other customers for political purposes since its potential new supplies may be too expensive to develop, especially if the US decides to aggressively export crude oil and LNG, they said.

“The two big markets for growth will be the Middle East, which will consume its own oil and gas, and China,” said Amy Myers Jaffe, executive director of energy and sustainability at the University of California at Davis. “That let it extract terms from Russia leading up to the recent pipeline announcement, then go back to LNG suppliers and say they need to be more competitive.”

It also has lent money so aggressively to oil producing countries that Russia and Venezuela essentially are giving it crude to repay their debts, she said, adding, “It’s something Russia will need to consider, given its boldness in Europe.”

Among other Pacific Asian countries, Japan is still recovering from the 2011 Fukushima nuclear power plant accident and becoming more dependent on LNG, observed Mikhail E. Herberg, research director at the National Bureau of Asian Research’s Energy Security Program. “I don’t think energy is a big piece of the China-Japan relationship, although Japan has a vital interest in controlling sea lanes coming through Asia,” he said.

Territorial disputes in the region tend to be 95% geopolitical, Herberg said. “It raises the stakes at the margin to the extent that you believe there are major oil resources in the South China Sea,” he said, adding, “All the countries are using energy to put out markers defining their territory.”

Australia and China’s relationship is being drawn closer together in the meantime because China’s energy market potential is so great, he continued. “Australia is going through a huge debate about whether its future relationship needs to be as strong as it has traditionally since China is closer and holds such promise,” Herberg said.

China’s shale gas potential is significant, but its development will depend on its ability to overcome a large number of variables and replicate the US success that was grounded in economic opportunity, a good existing transportation system, and other very favorable conditions, according to J. William Ichord, ConocoPhillips Co.’s vice-president of international government affairs.

“We’ve really only been in the shale gas business for about 10 years,” he said. “There’s been a substantial amount of experimentation to get the best yields and production rates. Seventy-five percent of the wells being drilled now benefit from pad technology.”

China’s basis for success lies in its having a lot of shale gas spread across the country, and its production contracts for conventional gas recovery having working over the last decade, Ichord said. “We’re having discussions with the Chinese ministries about the flexibility which will be

needed," he said. "We believe a rolling operating development plan could help bring China's shale gas on-line more quickly."

Asked how this might work, the ConocoPhillips official explained that under a Chinese production-sharing agreement, a producer has to file an action plan. That's not always practical in shale project, where the producer often learns as he goes along. "A rolling operating development plan would make a search for unconventional energy closer to a conventional strategy," Ichord said.

Jaffe noted, "The US also has an interesting opportunity in its oil and gas exports. That gives us an instant platform to improve global oil and gas trade. Having a proactive global energy policy where countries don't hoard their reserves is a worthy goal. The irony is if the US exports more, China won't have to develop as much of its shale. The need for Russian energy in Europe also would go down."

Speakers' responses varied when they were asked whether gas will begin to replace coal in China. "In the near term, it has an all-of-the-above strategy, for lack of a better term," said Ichord. "The government has set targets for shale gas development in the 12th 5-year plan, and LNG imports have started to increase. But it's all feeding into growing demand."

Herberg said, "China understands now that it needs to move more gas into power generation. Its goal of 20 bcm/year is ambitious."

Jan H. Kalicki, the Wilson Center's regional and global energy issues leader, said, "If the US played a more aggressive role in promoting energy trade with China, it also would contribute to its environmental improvement."

Jaffe added, "If China develops its shale, a lot of LNG which would have gone there would logically head to India. Its demand is much more commercial than China's, which is more willing to pay top dollar to participate in resource developments in places like Myanmar. Middle East supplies will need to ask where they'll align themselves."

42. China Targets 300,000 'Green' Buses, Taxis By 2020

China's Ministry of Transport, taking another step to clean the country's polluted urban skies and save energy, will mandate the use of 300,000 "green" vehicles for public transport by 2020, according to the agency's website. The 'green' fleet will include 200,000 public buses, 50,000 taxicabs and 50,000 delivery vans in urban areas, the ministry said. The fleet can include electric vehicles, plug-in hybrids or fuel-cell powered vehicles, according to the ministry.

To achieve the 300,000 target, the ministry requires that green vehicles constitute no less than 30 percent of the new vehicles to be purchased by municipalities from now on.

The ministry did not disclose the size of the green fleet already used for public transport. But the figure is believed to be fairly small. In the first half of the year, 20,477 EVs and plug-in hybrids were sold in China, according to the China Association of Automobile Manufacturers.

The new mandate could be a boon to Shenzhen-based BYD Co., which markets a line of electric buses.

43. China Bans Use of Coal with High Ash or Sulfur in Continued Air Pollution Battle

China will ban sales and imports of coal with high ash or sulfur in a move to promote cleaner types of the fuel and improve the nation's air quality. Coal with ash content of more than 40 percent and sulfur of more than 3 percent is banned from sales and imports into China starting January 1, 2015, according to a regulation posted on the website of the National Development and Reform Commission. Lignite containing ash of more than 30 percent and sulfur of more than 1.5 percent is also prohibited. Other limitations involve coal with chemical content such as mercury and arsenic.

China, the world's largest consumer of coal, is restricting the dirtiest grades to fight pollution. It will encourage imports of higher quality supplies after smog worsened in Shanghai and Beijing and sparked social unrest in Maoming and Hangzhou. The nation depends on coal for about 65 percent of its energy.

“The regulation is mainly to promote use of cleaner coal and will affect low-quality coal's flow into China, especially low-heating value coal from Indonesia and coal with arsenic content from Australia,” Winston Han, a Beijing-based analyst with the China Coal Transport and Distribution Association (CCTD), told reporters. The nation's coal imports will fall as much as 15 percent to less than 300 million metric tons this year, Han predicted.

Separately, China has asked coal importers including power utilities and coal miners to reduce coal imports by 40 million tons from September to December, according to CCTD. National coal imports may fall “significantly” in the fourth quarter.

Coal used in some coastal and developed regions including Beijing, Shanghai and Guangzhou should have ash content of less than 16 percent and sulfur of less than 1 percent, according to the regulation.

Lignite transported from port of entry to the consuming area is required to have heating value higher than about 3,946 kilocalories per kilogram, sulfur less than 1 percent and ash less than 20 percent.

44. Proposed Amendments to China Air Pollution Law Include National Limits on Coal

China could limit coal consumption, reduce domestic coal production and bar importation of the dirtiest coal as it moves to tighten the nation's main anti-air pollution law, the government said on September 9th. The announcement came in draft amendments to the Air Pollution Control and Prevention Law unveiled by the Legislative Affairs Office of the State Council.

The proposals include recommendations for potentially tougher fines for companies that violate pollution limits.

But China is the largest global consumer and producer of coal, and while the government has talked about reducing its reliance on coal, incorporating restrictions into the country's major air pollution legislation would mark a significant step for the nation, whose big cities are plagued by some of the world's worst air pollution.

Last month, Beijing announced a pending municipal ban on coal burning.

The amendments call for China to develop a long-term coal reduction plan, gradually cut coal use as a primary energy source and reduce coal production; set limits on mining coal with high ash content (although no specific limits are suggested); bar the production, importation or use of coal

that fails to meet quality standards (although those standards are not spelled out); and encourage the development of clean coal technology.

The amendments also recommend more air pollution monitoring and early warning systems, focusing on air pollution control in key regions, and targeting emissions from motor vehicles, ships and industry.

And they recommend giving ultimate responsibility for meeting air quality guidelines to local governments and officials, according to an overview the State Council published.

No timeline was given on when the amendments could take effect. The State Council Legislative Affairs Office said it would accept public comment on the recommendations through October 8th.

“Overall the draft is very detailed, particularly the penalty section,” Mao Xianqiang, a professor at the Beijing Normal University School of Environment specializing in air pollution from coal-fired facilities, told reporters. “But in some areas it is also too detailed, that makes it look more like a [Ministry of Environmental Protection] work plan than a law,” Mao said, suggesting that it could go through further revision.

The Air Pollution Prevention and Control Law was last amended in 2000, but civic dissatisfaction with poor air quality grew enough to spur the central government to issue an action plan to address the problems a year ago.

The draft amendments spell out potential fines for violating air pollution limits, with most ranging from 10,000 yuan (\$1,600) for an initial penalty up to 100,000 yuan (\$16,000). Companies that fail to obtain emissions permits could be fined 1 million yuan (\$163,000).

And companies could be charged compounded daily penalties for failing to meet emissions standards, discharging without authorization, falsifying or hiding emissions, or failing to control dust pollution from construction. They also could be held criminally liable in some instances.

Local government officials above the county level and executives with direct responsibility for major air pollution incidents could be fined up to half their salary. And officials with direct responsibility for major pollution incidents could lose their jobs.

Government officials also would be given the authority to halt industrial production and order cars off the road during emergency air pollution periods.

45. Health Costs Plummet After Chinese City Acts to Cut Particulate Pollution

Beijing residents checking the hourly air quality index online and strapping face masks on their children may miss the halcyon days just before the 2008 Olympics, when the city temporarily cleaned up its skies (at least, relatively speaking). But not every city in China has seen the air grow darker during the past half-decade.

The northern city of Taiyuan, capital of coal-rich Shanxi province, has launched several measures to reduce coal burning and emissions. Although its skies are hardly clear, they are clearer. And that has made a noticeable difference in health outcomes and health-care costs, according to a new study published in the journal *Environmental Health*.

During the past decade, Taiyuan has closed several large coal-burning power plants and increased environmental monitoring of its other factories—effectively lowering the average concentration of PM10—particulate matter 10 micrometers or less in diameter. As a result, average PM 10 concentrations dropped more than 50 percent between 2001 and 2010.

The economic costs associated with pollution—including health care expenses, loss of labor productivity and premature death—correspondingly dropped more than 50 percent, according to estimates by the researchers. Specifically, the researchers correlated reduced air pollution over the course of a decade with 141,457 fewer hospital or doctor visits, 31,810 fewer hospital stays, 969 fewer trips to the emergency room, 951 fewer cases of bronchitis, and 2,810 fewer premature deaths.

“Our analysis demonstrates that air pollution abatement during the last decade in Taiyuan has generated substantial health benefits,” concluded the researchers, who are based at Columbia University in New York, Shanxi Medical University, Fudan University in Shanghai, and the Center of Diseases Control and Prevention of Taiyuan Municipality.

46. Fines, Real-Time Data Should Help Effectiveness of China’s Pollution Standards

Pending daily fines for polluters and real-time monitoring of pollution levels for air, soil and groundwater could create the leverage needed to better enforce China's environmental laws, according to the director of a Beijing watchdog group. Ma Jun, director of the Institute of Public & Environmental Affairs (IPE), told a press briefing in Beijing that the amendments to China's Environmental Protection Law that take effect January 1, 2015, could help better enforce pollution standards and build evidence that could be used in lawsuits.

Amended in April, the new law will levy daily fines on polluters whose emissions violate environmental standards. The law also will open reporting channels for whistle-blowers and allows criminal prosecution of local officials who fail to enforce the law.

Coupled with real-time data monitoring, the new law will put polluters under more scrutiny, Ma said, adding real-time data makes it possible to map out polluted areas and to identify offenders, and daily fines hold violators accountable.

“From the beginning of next year, when the law goes into effect, people can ask questions,” said Ma. “Have they [violators] been penalized? If not, who failed? And behind that, who interfered?” In response to calls for more transparency about pollution levels, the Chinese government last year agreed to allow real-time disclosure of environmental data, Ma said.

IPE now tracks pollution data for 190 cities and releases the information hourly online and through a mobile app. According to the organization's research, about 4,100 sites are responsible for 65 percent of China's emissions.

Ma said that weak enforcement is China's biggest problem when it comes to the environment, especially on the local level.

“In China, the largest gap is the enforcement gap,” he said. “It's the interference by the local mayors. It's very hard to solve that problem. But if the data is made available every hour, then it will be highly risky for the mayors over the years to try to intervene, because they will more easily be held accountable.”

The tighter rules and increased transparency that real-time data provide also could make it easier to gather evidence for environmental lawsuits, Ma said.

“In other countries, people drive enforcement through the judicial system, but in China, environmental litigation is still extremely difficult,” he said. “All of this means that the cost of violation is too low—and much lower than the cost of compliance.”

47. Beijing Cracks Down on Air Pollution and Fines Companies More Than \$2.1 Million

Beijing's Environmental Protection Bureau (BJEPB) has announced that it has levied more than 13 million yuan (\$2.1 million) in fines to 615 companies since its local air pollution prevention and control action plan went into effect on March 1 as part of a broader national air pollution action plan released a year ago. The BJEPB said it has conducted more than 1,000 inspections of air pollution violations at businesses since the local ordinance, which focuses largely on coal-fired boilers, furniture manufacturers, chemical producers, vehicle manufacturers and food and beverage industries, went into effect.

More than half the fines, or 330, were due to companies not installing emissions treatment devices or not operating them properly, and 117 were for failing to get proper environmental approvals or for refusing to allow inspections from environmental officials.

Beijing's municipal government also announced on the same day an awards program to help encourage companies to purchase and install advanced emissions control technology, with companies eligible for up to 20 million yuan (\$3.2 million) for individual projects that cut sulfur dioxide, nitrogen oxide or volatile organic compound emissions.

In another announcement, Beijing said it has established a special commission of more than 30 experts, headed by Hao Jiming from the China Academy of Engineering, to advise the Beijing and Tianjin municipalities and surrounding Hebei province on drafting plans to integrate the environmental policies of the three areas.

Finally, nearly 200 of the biggest air polluters in Beijing will be required to publicly disclose their airborne emissions, the city's municipal environmental protection bureau announced on September 15th. The announcement covers 187 companies, industrial enterprises and waste treatment facilities, but the entities were not named. All 187 must begin publicly disclosing emissions by the end of 2015, with the requirement beginning earlier for some of the heaviest polluters. About 80 key enterprises in Beijing already are reporting their emissions to authorities under national regulations.

In other development on the national level related to the Air Pollution Action Plan, China's Ministry of Environmental Protection (MEP) has issued inventory guidelines for small particulate matter (PM 2.5), volatile organic compounds (VOCs) and ammonia (NH₃) emissions, as well as a technical guideline for air pollution inventories. The MEP said the guidelines are meant to help local governments in their collection and compilation of data under air pollution prevention and treatment policies, and added the additional data on PM 2.5, VOCs and NH₃ should contribute to better understanding of China's action plan and provide a way for local governments to use data to prioritize air pollution control.

48. Ahead of UN Meeting, China Updates Short-Term Plans to Fight Climate Change

China's top climate negotiator updated the country's short-term commitments to reducing carbon intensity ahead of the United Nations climate summit in New York. Xie Zhenhua, deputy director of the National Development and Reform Commission, said at a press conference in Beijing on September 19th that the country is “ready to set controls for energy consumption and carbon dioxide emissions,” likely to be laid out in the 13th Five-Year Plan (2016–2020).

Xie also announced a national “action plan” on climate change from 2014–2020, reaffirming the nation's commitment to reach a 40 –45 percent reduction in carbon intensity per unit of gross domestic product by the end of 2020 compared to 2005 levels. By the end of 2013, China had cut carbon intensity nationally by 28.56 percent compared to 2005 levels.

Other goals laid out in the action plan—which instructs national policy, but does not in itself carry the force of law—include making non fossil-fuel-based energy sources 15 percent of the primary energy consumed (a figure that stood at 9.8 percent at the end of 2013) and accelerating the establishment of a national carbon trading system. China, which has seven pilot carbon trading programs in progress, could consider bilateral and multilateral linkages to foreign carbon trading platforms, Xie said.

Lo Sze Ping, chief executive officer of WWF China, said in a written statement that the plan “establishes a solid foundation for China to potentially raise its ambition and over-deliver its target” and is a “positive offer to build the political trust” during international negotiations during the next year. “At the same time, we hope China could speed up its climate legislation process to enhance its legally binding climate actions, as well as to strengthen China's rule of law on climate change,” Lo said.

Xie stopped short of announcing when China expects to reach its carbon dioxide emissions “peak,” saying experts are still studying when the country can expect its annual greenhouse gas emissions to begin falling.

Xie said the Chinese delegation at the UN meetings in New York, led by vice premier Zhang Gaoli, will detail China's efforts at controlling greenhouse gas emissions and its position on a UN agreement at the summit and strive for an “early announcement” of an expected peak in emissions.

Speculation on China's peak year range from 2025 to 2030. Because China is the world's leading carbon emitter, its ability to reach an annual peak and begin the process of reducing overall emissions sooner rather than later could signal an important milestone in global efforts to control global warming.

49. Japan Eyes New Environmental Tax on Autos Based on Mileage and Performance

The Japanese government plans to introduce a new automobile tax on vehicles with poor fuel economy as early as next year, while essentially keeping the current tax breaks for fuel-efficient cars, a Ministry of Internal Affairs and Communications official told reporters on September 4th.

The new tax would be aimed at reducing motor vehicle greenhouse gas emissions and ensuring steady tax revenues, the official said. The exact rate of the new tax and precisely what class of vehicles it would apply to has yet to be determined.

An official at the ministry's Prefectural Tax Division, who asked not to be identified, said the “environmental performance tax” idea stemmed from a 2013 policy report from the Regional

Finance Policy Council. The proposed tax would be a part of the nation's broader fiscal 2015 tax reforms, he said.

The ministry expects the new environmental performance tax to take effect in October 2015, when the Japanese government also plans to raise the consumption tax rate to 10 percent, the official said. In April, Japan's consumption tax—a national sales tax that applies to a broad range of goods—was raised from 5 percent to its current 8 percent.

Under an arrangement that the government worked out last year, the Motor Vehicle Acquisition Tax now collected when a consumer buys a car would be abolished when the consumption tax hits 10 percent.

The 10 percent consumption tax would apply to all cars. The new environmental performance tax would be an additional tax on some cars, and perhaps many. Still to be determined is whether it would apply only to poor mileage vehicles or to a range of cars with a sliding tax rate, depending on a vehicle's miles-per-gallon fuel usage, the official said.

The Ministry of Economy, Trade and Industry, which oversees the Japanese auto industry, supports applying the environmental performance tax only to poor mileage vehicles. The government also must decide whether to impose the tax for the entire registered period of a vehicle or to limit the period to three years, the official said.

50. Indonesia Parliament Ratifies Regional Cross-Border Air Pollution Agreement

Indonesia's parliament has ratified a regional agreement meant to curb cross-border air pollution, much of it attributed to Indonesian fires. On September 16th, the parliament ratified the Association of Southeast Asian Nations (ASEAN) Agreement on Transboundary Haze Pollution (AATHP).

The measure needs a presidential signature to become law, but both President Susilo Bambang Yudhoyono and President-elect Joko Widodo, who takes office Oct. 20, expressed support.

Regional air pollution caused by land clearing and other forest fires has become a major concern across parts of Southeast Asia. Much of it has been caused by commercial interests burning peat lands on Indonesian islands, usually for plantations. Wind then carries ash and dust into Singapore, Malaysia and other neighboring countries.

In 2002 all 10 ASEAN member countries signed the pact, but Indonesia's failure to ratify the agreement had left a gap in prevention and enforcement. "Indonesia's ratification of the AATHP is timely, coming against the backdrop of the recent escalation of hot spots in Sumatra and Kalimantan," Singapore's Ministry of Environment said in a statement. "Singapore looks forward to closer cooperation with the Indonesian government and our ASEAN partners to tackle this recurrent problem."

51. China to Publicly Shame Automakers That Fail Fuel Efficiency Standards

China is warning automakers whose passenger vehicles do not meet new fuel consumption requirements that they will be publicly named and restrictions will be placed on their production capacity and ability to release new models.

In an October 17th announcement from China's Ministry of Industry and Information Technology and four other ministries, the government said that as of November 1, the average fuel

consumption for new 2015 passenger vehicles cannot exceed 6.9 liters per 100 kilometers driven (which equates to ~34 miles per gallon).

The average fuel consumption requirements will be tightened again in 2020, to an average of 5 liters of fuel per 100 kilometers, or about ~47 mpg, for each automaker's fleet.

In 2013, 85 companies produced cars domestically and 26 companies imported vehicles into China. About 70 percent of the domestically produced brands met 2013 average fuel consumption requirements, while only 50 percent of the imported brands did, according to the most recent checks by Chinese authorities. There were few repercussions for failing to meet 2013 requirements, but all companies must now comply with the 2015 and 2020 guidelines or face the new penalties.

Last year, domestically produced vehicles averaged 7.23 liters per 100 kilometers, according to the Ministry of Industry and Information Technology. Automakers that sell those vehicles can easily reach their target of 6.9 liters next year by diversifying their product mix with more small vehicles, electric cars and plug-in hybrids.

But the importers face a more daunting task. Last year, the average imported vehicle consumed 9.1 liters per 100 km, significantly above the government's 6.9-liter target. Last year, 13 of China's 26 importers failed to meet their fuel economy targets. Two are joint ventures: Shanghai General Motors Co. and Dongfeng Nissan Passenger Vehicle Co. The rest are import companies wholly owned by foreign automakers: Aston Martin, Porsche, Ferrari, Maserati, Honda, Chrysler, Renault, Suzuki, Nissan, General Motors and Hyundai.

Aston Martin had the highest fleet fuel consumption at 14.4 liters. Vehicles imported by Porsche, Ferrari, Maserati, Nissan and GM all topped 10.5 liters.

How can these companies meet their targets within two years? Like other automakers, they could introduce smaller models or add EVs and plug-ins to their lineups. But car buyers may not be so malleable. In China, prosperous middle-class consumers prize a vehicle's size and performance more than its fuel economy. Nearly 70 percent of China's imports are SUVs and MPVs, and 40 percent of imports have engine displacements of 2.5 liters or more.

Electric cars aren't a likely alternative, either. Due to a nationwide lack of public charging stations, foreign automakers have sold only a handful of electric vehicles and plug-ins. So the only feasible solution seems to be for foreign automakers to reduce their imports of all those gas guzzlers.

In the first eight months of the year, imports surged 28 percent to 940,000 vehicles, according to China's trade data. It's hard to see how imports can maintain such a rapid growth rate if enforcement really occurs.

Last month, China's Ministry of Environmental Protection, along with several other ministries, released an updated "yellow-label vehicle" phase-out plan in an effort to remove 6 million older vehicles from the country's roads in the next few years. The plan requires key local governments to implement policies to ban such vehicles from city center areas by the end of 2014, improve inspections and implement mandatory retirement of certain vehicles, and award subsidies for retirement of vehicles in a timely manner.

Local governments that do not meet their goals will be publicly chastised, according to the ministry.

52. Manufacturers' Group Cuts Forecast For 2014 Sales Growth To 5%

China's vehicle sales probably will miss a revised growth forecast for the year as demand slows in the world's second-largest economy, predicts the country's main automotive association. Dong Yang, secretary general of the state-backed China Association of Automobile Manufacturers, said passenger and commercial vehicle sales this year are likely to rise 5 percent to 23 million units.

In July, the group lowered its projected sales increase to 8 percent, or 23.8 million units, down from the 10 percent increase it had predicted in January.

"There was an obvious slowdown in auto sales in August and September," Dong said in an interview at a forum in Beijing. "We are looking into the exact reasons causing this so I don't want to elaborate on the factors at the moment."

Demand for commercial vehicles has slumped this year as the China's economic growth slackened. The Chinese government has signaled that it would tolerate a weaker expansion pace and refrain from broad stimulus this year, with the country headed for the slowest full-year growth since 1990, based on forecasts by analysts.

China last year became the first country to see annual domestic sales surpass 20 million units.

"It looks like China's auto sales this year won't hit 24 million units," Dong said. "It should be no problem for it to reach 23 million units instead."

53. China's Coal Use Falls for First Time This Century, Analysis Suggests

The amount of coal being burned by China has fallen for the first time this century, according to an analysis of official statistics. China's booming coal consumption in the last decade has been the major contributor to the fast-rising carbon emissions that drive climate change, making the first fall a significant moment.

The amount of coal burned in the first three-quarters of 2014 was 1-2% lower than a year earlier, according to Greenpeace energy analysts in China. The drop contrasts sharply with the 5-10% annual growth rates seen since the early years of the century.

"The significance is that if the coal consumption growth we have seen in China in the last 10 years went on, we would lose any hope of bringing climate change under control," said Lauri Myllyvirta at Greenpeace East Asia. "The turnaround now gives a window of opportunity."

Such a turnaround would potentially have a large impact on the biggest coal exporting countries such as Indonesia and Australia, which have profited from China's demand for the fuel.

At the UN climate change summit in New York in September, China said it would start to reduce the nation's huge carbon emissions "as early as possible".

Myllyvirta warned that year-to-year fluctuations in energy use and industrial production could see coal burning grow again in future. "It may not be the peak yet, but it is a sign that China is moving away from coal." Climate scientists say that global carbon emissions need to peak by 2020 and rapidly decline to avoid dangerous climate change.

Myllyvirta said the greatest significance of the current drop in coal use was that economic growth had continued at 7.4% at the same time, although that is a lower rate than in recent years. “The Chinese economy is divorcing coal,” he said. By contrast, the tripling of the Chinese economy since 2002 was accompanied by a doubling of coal use.

Official Chinese data has been unreliable in the past but Myllyvirta said cross-checking the current data for industrial production with energy consumption showed a consistent picture. Coal consumption for electricity is coming down, there is very slow growth of steel and cement and a drop in both coal imports and domestic coal production, he said. “We are seeing so many different data showing a consistent pattern that we have much more confidence this is really happening.”

The cause of the reduced coal-burning was reduced demand, with China’s statistical agency noting that economic growth was increasingly coming from the service sector instead of heavy industry, as well as new renewable energy such as hydropower and wind power.

Also, the consultancy Make said 2014 would be a record year for wind in China with 20.4GW of new installations. A further factor was action to cut the severe air pollution affecting many Chinese cities and which recently led to many of the 30,000 runners in the Beijing marathon wearing face masks.

54. China Could Unveil National Carbon Trading Guidelines, Draft Climate Law This Year

National-level guidelines for carbon trading in China and a draft of the country's first climate change law, which could set more stable expectations for policies related to carbon dioxide as a commodity and a pollutant for years to come, could be released by the end of the year, according to the head of the Shenzhen pilot emissions trading system. “Expectations are that they will come out this year,” said Chen Hai’ou, president of the China Emissions Exchange (CEEX), speaking October 13th at a carbon finance seminar in Shenzhen.

The National Development and Reform Commission has said it expects to launch a national carbon trading market in 2016, which could cover around 4 billion metric tons of carbon dioxide emissions in the country by the time it is fully operating around 2020. About 1.2 billion metric tons are covered under the seven pilot ETS programs being tested around the country.

In 2013, China emitted 9.9 billion metric tons of carbon dioxide, or 28 percent of the world's total, according to recent estimates from the Global Carbon Project, and per capita emissions passed European Union levels for the first time.

A first draft of the law was released for public comment in March 2012 and focused primarily on mitigation, adaptation and defining responsibilities. More important, it also described emissions of greenhouse gases—such as carbon dioxide, methane, nitrous oxide and fluorinated gases—as “pollutants.”

55. Boeing and Chinese Partner to Make Jet Fuel from 'Gutter Oil'

Aircraft makers Boeing and Commercial Aircraft Corp of China have launched a joint pilot project to turn used cooking oil into jet fuel. Their plant, based in the southeastern Chinese city of Hangzhou, will be able to convert just under 240,000 liters a year of used cooking oil into fuel, Boeing said in a statement.

The project will allow the two aircraft makers to test the viability of producing biofuel using the cheap and widely available form of cooking waste, referred to in China as "gutter oil". Boeing and its Chinese state-owned partner estimate that 1.8 billion liters of fuel could be produced in China a year using gutter oil.

In February, the Civil Aviation Administration of China granted a subsidiary of state-owned behemoth Sinopec Corp a license to produce jet fuel from used cooking oil.

Gutter oil has long been a public health concern in China due to its widespread use in restaurants. Used cooking oil can contain toxic compounds and is often considered insanitary. Chinese media reported in 2010 that crime rings were collecting used cooking oil from sewers and drains, rebottling it and selling it as new. Over the past two years, dozens of people have been given lengthy prison sentences for the scam, which has made many Chinese in major cities sick. Last year one man was sentenced to life in prison for making and trafficking gutter oil.

56. China Pollution Levels Hit 20 Times Safe Limit

Days of heavy smog shrouding swathes of northern China pushed pollution to more than 20 times safe levels recently, despite government promises to tackle environmental blight. Visibility dropped dramatically as measures of small pollutant particles known as PM2.5, which can embed themselves deep in the lungs, reached more than 500 micrograms per cubic meter in parts of Hebei, a province bordering Beijing.

The World Health Organization's guideline for maximum healthy exposure is 25.

In the capital, buildings were obscured by a thick haze, with PM2.5 levels in the city staying above 300 micrograms per cubic meter for several days and authorities issuing an "orange" alert.

"It's very worrying, the main worry is my health," said a 28-year-old marketing worker surnamed Hu, carrying an anti-smog mask decorated with a pink pig's nose as she walked in central Beijing.



Smog shrouds Shijiazhuang on 9 October, 2014 in China. Photograph: Xinhua / Landov / Barcroft Media

China has for years been hit by heavy air pollution, caused by enormous use of coal to generate electricity to power a booming economy, and more vehicles on the roads.

But public discontent about the environment has grown, leading the government to declare a "war on pollution" and vow to cut coal use in some areas.

Nonetheless poor air quality has persisted with officials continuing to focus on economic growth, and lax enforcement of environmental regulations remains rife.

In a sign of growing environmental activism, Greenpeace East Asia projected the message “Blue Sky Now!” on to a facade of the Drum Tower, a historic building north of the Forbidden City.

The pollution – which also hit areas hundreds of kilometers from Beijing – comes as the city hosts a high-profile cycling tournament, the Tour of Beijing, and a Brazil-Argentina football friendly.

Global heads of state from the US, Russia and Asia are set to gather in the capital for a key summit next month. City authorities announced that they would place tighter restrictions on vehicle use during the APEC Economic Leaders’ Meeting in November, while requesting neighboring areas to shut down polluting facilities.

Pedestrians covering their faces as they cross a street in Beijing amid heavy smog.

But most locals were not wearing protection Friday, and several people said they believed Beijing was being hit by natural haze, rather than pollution.

Even so, sitting in a Beijing park 82-year-old Liu Shuying said: “There are too many cars. I don’t wear a mask because I’m not afraid of death.”

57. Price Companies Pay for Pollution Continues to Rise in China

The penalties that companies must pay for air and water pollution rose in about half of Chinese regions the past seven years, the government has reported. Sixteen provincial-level administrative regions have increased discharge fees since 2007, according to a report from the state-run Xinhua News Agency. That includes the municipality of Shanghai, which is expected to increase fees again, a report on the China Environment Chamber of Commerce website said October 9th.

The fees, which had long been nominal and figured into the operating cost of many companies, are being raised to bring them in line with an expected future environmental tax system, which would replace the current fee system, according to a report last month from People's Daily, the official newspaper of the Communist Party.

Some recent developments include:

- Charges in Beijing have risen quickly this year. In March, Beijing increased charges for airborne sulfur dioxide and nitrogen oxide, as well as for levels of chemical oxygen demand and ammonia nitrogen in wastewater discharges, as much as 15 times higher than previous levels.
- Tianjin municipality, adjacent to Beijing, also finalized its increases in July, raising fees of the four key pollutants as much as 10 times over the original price.
- Hebei province, which surrounds Beijing and part of Tianjin—a region where many environmental policies are being integrated as part of better coordination to tackle air and water pollution—raised its pollution discharge fees at the end of the 11th Five-Year Plan (2006–2010).
- Shanghai's government announced plans in September to raise its fees, though no timeline was given.

In September, the National Development and Reform Commission, Ministry of Finance and Ministry of Environmental Protection announced that a new charging system—the first in more than a decade—would be implemented nationwide by the end of June 2015. It could double fees nationwide on average, and also include discharge fees for several heavy metals.

58. China Embraces Carbon Pricing and UN Takes a Shine to Plan

At the UN's Climate Summit a diverse group of global leaders, from World Bank president Jim Yong Kim to California Governor Jerry Brown, spoke of the need for polluters to pay for each ton of carbon they emit. More than 1,000 companies pledged their support for the effort.

Carbon pricing, largely rejected by the United States and struggling in Europe, is suddenly all the rage, with China leading the charge. The world's biggest greenhouse gas emitter plans to establish a national market for carbon permit trading in 2016 and has already launched seven regional pilot markets.

Boosters of carbon pricing policies say that once China sets a national price on carbon, others will follow. "Once China goes live, that will establish a major price (signal) that will affect all the other markets and all other (carbon) prices," said Christiana Figueres, Executive Secretary of the UN Framework Convention on Climate Change.

China's top economic planning agency has said its planned carbon trading scheme will cover 40 percent of its economy and be worth up to \$65 billion. "You will see a shift in the fulcrum toward China and that will attract other countries," Rachel Kyte, World Bank Group special envoy for climate change, told reporters. Governments like Chile and Mexico and U.S. states like California will be keen to link their emerging carbon markets to the Chinese model, Kyte said.

South Korean Environment Minister Yoon Seong-kyu said his country, which in 2015 will be the first in Asia to launch a national carbon market, wants to eventually link its scheme to China's.

Kyte said emerging economies have shown a strong interest in using measures like markets and taxes to rein in pollution, and have joined the Bank's Partnership for Market Readiness for help to shape their carbon pricing policies.

The initiative is helping countries like Vietnam design and pilot carbon pricing instruments in its steel, solid waste and power sectors, Colombia explore the launch of a carbon tax and Kazakhstan fix problems with the pilot emissions trading scheme it launched in 2013.

The International Emissions Trading Association (IETA) has been lobbying since 1999 for an international framework for carbon trading. It also has supported schemes in emerging economies and in U.S. states like California and the U.S. Northeast's Regional Greenhouse Gas Initiative, a power sector trading scheme that launched in 2009.

The group suffered a blow when a national cap-and-trade bill passed the U.S. House of Representatives in 2009 but died in the Senate a year later.

Since then, "We've spent a lot more of our time talking to businesses in China to build capacity to make emission trading work," said Dirk Forrister, president of IETA.

59. Update to China's Environmental Law to Include Tighter Compliance Rules, Penalties

Amendments to China's main environmental law that take effect on January 1 will increase the burden on companies operating in the country and could include daily fines for industrial polluters, according to the latest implementation guidelines released by the Ministry of Environmental Protection.

The guidelines released on October 17th relate to implementing the amendments passed in April to China's 1989 Environmental Protection Law. The amendments, the first major updates to the law in the 25 years, go into effect at the start of 2015.

After on-site inspections, local environmental protection bureaus will issue orders for companies to rectify pollution problems "as soon as possible." If problems are not fixed within 30 days, a daily penalty system will be triggered until the company complies, according to the guidelines.

"Companies should be preparing or planning for extra compliance cost," said Wang Xi, a professor at the Environmental and Resource Law Research Institute at Shanghai Jiaotong University, who helped to draft the amended law.

Another area of increased risk for companies in China could be public interest lawsuits.

China's Supreme People's Court, the top judicial body in the country, issued an explanatory opinion on environmental public interest lawsuits on September 30th in an attempt to clarify who can file such cases, under what scenarios courts can accept them and how courts can determine compensation. Under the opinion and the amended law, public interest organizations that are registered with civil affairs bureaus and have been continuously operating for at least five years are the only ones allowed to file public interest environmental lawsuits, tight stipulations that have concerned some nongovernmental environmental organizations.

As for compensation, the opinions state that polluters are required to pay for remediation and other associated fees, such as inspection and appraisal, as well as court and attorney costs if they are found guilty in a public interest lawsuit.

The highest penalty related to an environmental public interest lawsuit was the 160 million yuan (\$26 million) fine recently levied against six pharmaceutical companies at the Taizhou

Intermediate People's Court in Jiangsu province related to a case brought by the All-China Environment Federation (ACEF), a legal institute affiliated with the Ministry of Environmental Protection. The companies also were told to clean up the local river environment, state-run Xinhua news agency reported September 15th.

The MEP issued a document on October 14th regarding new and expanded pharmaceutical industry developments, with stipulations on newly required checks to see if such facilities meet environmental compliance requirements once they are completed.

The ACEF said it had filed eight other public interest lawsuits since 2013, but none of these had been accepted by the courts.

The organization's branch office in Guizhou province also filed a public interest suit in June against a ceramics company in the capital of Guiyang that had directly emitted wastewater without treating it, but the case was settled out of court after the company hired a remediation company to deal with the pollution, according to a report on the ACEF website.

60. Over 20,000 New Energy Vehicles to Be Added To Jing Jin Ji Public Transport Sectors

The Ministry of Industry and Information Technology, National Development and Reform Commission, Ministry of Science and Technology and four other government bodies released new legislation to promote the development of new energy vehicles in the public sphere, the China Securities Journal has reported. According to the legislation, the government will try to bring 20,222 new energy vehicles for use as public transport vehicles in Beijing, Tianjin and Hebei, as well as construct 94 new charging stations and 16,200 charging posts. Experts believe that the new infrastructure will greatly benefit the advancement of the new energy vehicle market.

The Beijing-Tianjin-Hebei region has been suffering from increasingly severe particulate pollution, which has led to severe smog attacks. Although regional governments have implemented restrictions for registrations of new vehicles, the already high number of automobiles and the emissions they emit are continuing to add to poor air pollution. According to statistics, approximately 20 percent to 35 percent of particulate pollution in the region comes from automobile emissions.

There were a total of 222,800 public transport vehicles in service in the Beijing-Tianjin-Hebei area at the end of 2013; 53,900 of these are buses while the remaining 168,900 are taxis. Public transport vehicles are driven for long amounts of time daily, which means their average individual emissions are higher than private vehicles. Therefore, promoting the use of new energy vehicles in the public sphere can go a long way in decreasing emissions and helping reduce air pollution.

According to the legislation, government bodies will aim to introduce 20,222 new energy vehicles to the public service sector. 8,507 of these vehicles will be destined for Beijing, while 6,000 are earmarked for Tianjin and the remaining 5,715 for Hebei. The legislation dictates that at least 16 percent of public transport vehicles in Hebei will be new energy vehicles, while new energy vehicles will make up at least five percent of public transport vehicles in Beijing and Tianjin.

If the legislation is successful, it will result in annual savings of 130,000 tons of oil at the end of 2015, as well as help reduce carbon dioxide emissions of 185,000 tons. The government hopes that the Beijing-Tianjin-Hebei region will set a successful example for the rest of the country to look up to.

61. India Improves Labor Laws, Frees Diesel Price Prices

After months of criticism for not moving aggressively enough on promises of an economic overhaul, India's new prime minister has announced a string of policies designed to kick-start Asia's third-largest economy. Over the past week, Prime Minister Narendra Modi has unveiled an overhaul of India's archaic labor laws, freed diesel prices from state control and signed an executive order promising to open India's coal industry to private companies. He also appointed Arvind Subramanian, a respected Washington, DC-based economist, as the country's top economic adviser.

Modi, who led his Bharatiya Janata Party to a landslide election win in May on promises that he would re-energize India's stumbling economy, faced a flurry of criticism after his July budget failed to provide new direction. But that appears to be changing, reigniting optimism that India can lift its economic game.

Though India's economic growth was not far behind China's last decade, it slumped over the past few years, hurt by policy gridlock, weak investment, high inflation and epic corruption. Lack of progress over decades is highlighted by slow poverty reduction. In 1978 some 99 per cent of the population lived on less than \$5 a day, according to World Bank figures. By 2011, that poverty rate was barely changed at 95 per cent.

Experts say that the Bharatiya Party's recent successes in two state elections have given Modi greater political power to implement his agenda. It has increased his party's representation in the upper house, which can delay legislation, and also puts two more states closer in step with the federal government.

The government now has the freedom "to take stronger, bolder steps," said D.K. Joshi, chief economist at the financial research firm Crisil.

Modi, who has promised to make India a global center for cheap manufacturing, announced a major overhaul of labor laws last week, hoping to attract investors. India's onerous labor laws, many written when the country was a British colony, require reams of paperwork and strictly regulate all hiring and firing of employees, often deterring companies from bringing in new staff.

That, Modi said in a New Delhi speech, needs to change. "Ease of business is the first and foremost requirement" to increase India's manufacturing strength, he said.

Creating more jobs is a high priority in India, where some 13 million young people join the workforce each year.

Modi's announcements came as the economy showed some signs of revival, with inflation plummeting to five-year lows because of falling global oil prices.

Taking advantage of that dip in crude prices, the Indian cabinet freed diesel prices from government control over the weekend, targeting one of India's costliest subsidies. The subsidy, along with high international oil prices and a dependency on petroleum-based fuels, has caused India's trade deficit to balloon in recent years, reaching \$14.3 billion in September.

Joshi said that highly subsidized diesel prices had encouraged consumers to guzzle the fuel, adding greatly to the government's subsidy bill. "It'll send a signal to consumers to conserve fuel" while easing the government's subsidy burden, Joshi said.

The appointment of development economist Arvind Subramanian as the country's chief economic adviser was also welcomed by industry. Subramanian, a senior fellow at the Peterson Institute for International Economics in Washington D.C., has worked at the International Monetary Fund and taught at Harvard's John F. Kennedy School of Government. The widely published economist is seen by many in business as well equipped to guide India's economic makeover.

"For an economy struggling to claw out of its deepest slump in 25 years, it's a pleasant sight to spot a flurry of reformist intent," the Hindustan Times said in a recent editorial.

Meanwhile, this week's executive order that will eventually allow any Indian company to mine and sell coal, opens up an industry nationalized more than four decades ago. It also sends a strong signal about a shift away from highly restrictive industrial regulations. Current laws allow only certain private companies to mine coal, and then only for their own use, with state-owned Coal India Ltd. dominating commercial mining.

Most of India's power plants are coal-fired and the new regulations are expected to boost the country's inadequate power supply, a big obstacle to manufacturing in India, by encouraging investment in new generation capacity. Officials have not said when the executive order will go into effect.

Joshi said the flurry of economic announcements are incremental steps but "they all add up significantly" to make the country attractive to investors. But he said one major issue has yet to be addressed: India's poor infrastructure, from its highways to its electricity grid. India cannot become a manufacturing power until those problems are faced.

"Inviting someone to do business isn't sufficient," he said. Without good roads, reliable power and better ports, "you cannot become a manufacturing power."

62. Automakers Welcome Government Initiative to Deregulate Diesel

Diesel prices have finally been freed which means the auto industry will no longer need to split hairs on the issue of subsidies. Until a couple of years ago, all diesel carmakers were having a field day thanks to a generous subsidy which made the fuel a good ₹25 per liter cheaper than petrol. It was helping nobody's cause and the Government had to bear a burden of ₹65,000 crore annually on diesel subsidy alone.

For automakers such as Honda which only had petrol models to offer in 2012, this price differential was creating havoc in its business plans. The company remedied this with a diesel engine for the Amaze and the new City by which time the Government also set in motion a process to deregulate diesel.

Monthly price hikes of 50 paise gradually reduced the difference with petrol and customers began weaning away from diesel cars as a result.

Now, with crude prices falling to record lows of \$82/barrel from levels of \$110, the Narendra Modi-regime has wisely decided to deregulate diesel. Its price was slashed by nearly ₹3.50 per liter last week and could continue to fall in the coming weeks keeping in line with global trends. This will

be equally true for petrol and the auto industry will have reason to celebrate as cheaper fuel is a good reason for customers to buy cars. Lower diesel prices may also prompt a revival in the commercial vehicle industry which has seen its worst slowdown in years with sales falling by over 20 per cent since 2012-13. The two key cost components in trucks are fuel and tires; which, in turn, naturally implies that cheaper diesel may prompt operators to buy new vehicles.

Of course, this will have to be accompanied by growth in the manufacturing sector.

SUV makers will be relieved that with subsidies completely eliminated in diesel, the clamor for higher excise duties will now come to an end too. For a few years now, since the time crude prices skyrocketed in 2009, a section of experts sought higher duty levies on SUVs which they claimed were making the most of subsidized diesel. This argument will no longer be valid in a deregulated scenario.

For the moment, it all looks nice and rosy thanks to low global prices. However, there could be a possibility of crude touching levels of \$100 per bbl in the coming months. Oil companies will then have no choice but to hike diesel prices too.

This, in turn, could stoke inflation and affect household budgets across the country. The essence of deregulation is that customers get to experience market prices which could go either way. And as much as they would exult with a fall, they need to be pragmatic when prices rise too.

63. Hong Kong Issues Guidelines for Power Plant Emissions Amid Talk of Ship Pollution

Hong Kong has released new guidelines for reducing emissions from power plants as area officials discuss further steps to control air pollution across Southern China's Pearl River Delta. On October 17th, the government of the Hong Kong Special Administrative Region (HKSAR) released its fourth set technical guidelines for allocating emissions allowances to power plants. It places caps on annual emissions of sulfur dioxide, nitrogen oxide and respirable suspended particles (PM-10) annually starting in 2019.

The initial caps will cut sulfur dioxide by 11 percent, nitrogen oxide by 2 percent and PM-10 by 7 percent over previously released guidelines for 2017, the government said.

The Legislative Council will review the guidelines, which will go into effect on January 1, 2019, if no additional changes are made.

Power sector emissions in the densely populated Pearl River Delta region—which includes Hong Kong, Macau and the mainland province of Guangdong—account for 47 percent of sulfur dioxide emissions, 28 percent of nitrogen oxide emissions and 16 percent of respirable suspended particles, the most recent data indicated.

Hong Kong's Environmental Protection Department is expected to review the technical guidelines again in 2015 after details of a public consultation on the future fuel mix for the region are evaluated.

At a seminar in Shenzhen on October 16th, experts discussed the possibility of establishing an emissions control area to cover Pearl River Delta marine regions. The discussion comes amid expectations that China could include language on controlling port emissions in the forthcoming 13th Five-Year Plan (2016–2020) or soon after.

In April, Hong Kong began requiring local vessels to use low-sulfur fuel, while Shenzhen, Hong Kong's neighbor to the north, recently released guidelines on use of lower sulfur fuels and portside electricity for ships to plug in at berth instead of running diesel engines.

Elsewhere, Guangzhou and the cities of Shanghai and Qingdao have in place or are creating marine vessel pollution regulations.

But Peng Chuansheng, deputy chief engineer at the China Water Transport Research Institute, who has been working on green port evaluation standards, said China is only at the initial stages of research for emissions control areas along its East Coast and it could be another decade before effective regulations are in place.

Li Shuisheng, deputy director of the Shenzhen Environmental Protection Department, said Shenzhen will start a sulfur dioxide emissions control area between 2018 and 2020 for its water.

64. India's Proposed Air Quality Index Comes Under A Heavy Cloud

Several key issues need to be resolved before a proposed Air Quality Index (AQI) can start yielding meaningful results. India's environment ministry is bullish about the index -- environment minister Prakash Javadekar announced at the launch last week that it would play a big role in cleaning up the country. However, two members of the committee that designed the index told the press, on condition of anonymity, that the ministry was trying to roll out the AQI without addressing important questions. The outcome, they said, could be one where data fudging intensifies.

As ideas go, the proposal to set up an AQI has been welcomed. Air quality data is currently collated by a set of government agencies - the Central Pollution Control Board (CPCB), the State Pollution Control Boards (SPCBs), academic institutes -- and polluting industries. Some of this data enters the public domain - in the form of actual readings, or 15-minute/hourly/daily averages of pollutant concentrations. Indexes, which convert raw concentration numbers into color-coded assessments of health risks--healthy, poor, very poor, harmful, hazardous, etc.--are better at communicating what this could mean for people. The criticism of the committee members springs from concerns about usage.

An index is only as accurate as the data it's based on. As reported earlier this month, the information generated by the SPCBs and the CPCB is flawed. It doesn't measure critical pollutants and is too focused on large cities. There is no certification of instruments or processes to ensure that the details being collected are accurate. India-specific protocols, defining what pollutants to measure and how to measure them, are missing. "Unless we fix these, the index is not of much use," said one of the committee members cited above.

The CPCB said adding more air quality stations will fix the data quality problem. It wants one "continuous monitoring unit in each state capital and million-plus population city," about 66 in all, said AB Akolkar, CPCB member-secretary. Each of these, he told the press will be established on a "50-50 cost sharing basis between CPCB and SPCBs/PCCs," except in the Northeast where it will follow a 90-10 cost sharing model.

But apart from the question whether one CMU can accurately capture a city's air quality, there are other challenges. Prime among them is the relationship between the CPCB and the SPCBs. The latter don't report to the CPCB but to their respective state governments. Further, most SPCB

heads are political appointees, as recent research by Tata Institute of Social Sciences Professor Geetanjoy Sahu has shown.

This has significant implications. Take the national capital--between November and January, PM 10 and PM 2.5 will be very high, close to 400, putting the city in the hazardous category. (PM refers to particulate matter and the number to the size of these particles.) "What should the CPCB or the state Pollution Control Committee do in such times?" asked the official cited above. "Should they issue an advisory closing schools and telling people to stay home?" That would result in schools being closed for three months, drastic action that can have an adverse impact. Advisories - or the risk of being named the most polluted city in the country - could create an incentive for SPCBs to either "stop sharing their data with the CPCB or to fudge their numbers," said the official.

Akolkar said such a situation wouldn't arise. "The entire system is unmanned and data shall be made available at both the ends simultaneously." However, CMU companies and SPCB officials say calibration of these machines is frequently altered to manipulate readings. That could be tackled through "routine calibration exercises through our zonal Laboratories," Akolkar said.

There is potential for conflict of interest. For the AQI to be credible, the CPCB will need to ensure that the data from the SPCBs is accurate. At the same time, the state government, if only to ensure less panic around air quality, might seek to influence the SPCB.

To be sure, the CPCB is not planning to issue public health advisories at this time. "Initially, the CPCB proposes to establish a linkage between local government and air quality data so as to create understanding on the Air Quality Index and desired air quality, so that local authorities can act on it," Akolkar said. But that leaves India with a system very close to what already exists. Under this, the SPCBs are empowered to issue health advisories which they never do.

GENERAL

65. Economist Reviews Actions That Have Done the Most to Slow Global Warming

Recently, *The Economist* made a stab at a global comparison of carbon-mitigation efforts. Chart 1 is the result. It ranks 20 policies and courses of action according to how much they have done to reduce the atmosphere's stock of greenhouse gases. It used figures from governments, the EU and UN agencies.

First, a health warning: the policies and actions on the list are not strictly comparable. Some are global, some regional and some national. Some are long-standing; some new. A couple are not policies at all, such as the collapse of the Soviet Union, which led to the closure of polluting factories and to inefficient state farms reverting to grassland, locking up carbon.

And the numbers almost all come with caveats. It is fairly easy to estimate how much carbon a new field full of solar cells or a nuclear-power plant saves by looking at the amount of electricity it produces in a year and how much carbon would have been emitted if fossil fuels had been used instead, based on the local mix of coal, gas and oil. But as Paul Joskow of the Massachusetts Institute of Technology has pointed out, the standard "levelized" calculations, which divide the total amount of power a plant will produce over its lifetime by its total lifetime cost, are a poor way to compare fossil fuels and renewable energy.

To slash or to trim

Emission reductions by policies/actions, bn tonnes CO₂ equivalent

Policy/Action	Cumulative emissions	Period	Annual emissions*
Montreal protocol ¹	135.0bn	1989-2013	5.6bn
Hydropower worldwide ²	2.8bn	2010	2.8bn
Nuclear power worldwide ²	2.2bn	2010	2.2bn
China one-child policy ³	1.3bn	2005	1.3bn
Other renewables worldwide ²	600m	2010	600m
US vehicle emissions & fuel economy standards ⁴	6.0bn	2012-25	460m
Brazil forest preservation ⁵	3.2bn	2005-13	400m
India land-use change ⁶	177m	2007	177m
Clean Development Mechanism ⁷	1.5bn	2004-14	150m
US building & appliances codes ⁴	3.0bn	2008-30	136m
China SOE efficiency targets ⁸	1.9bn	2005-20	126m
Collapse of USSR ⁹	709m	1992-98	118m
Global Environment Facility ¹⁰	2.3bn	1991-2014	100m
EU energy efficiency ¹¹	230m	2008-12	58m
US vehicle emissions & fuel economy standards ⁴	270m	2014-18	54m
EU renewables ¹¹	117m	2008-12	29m
US building codes (2013) ¹²	230m	2014-30	10m
US appliances (2013) ¹²	158m	2014-30	10m
Clean technology fund ¹³	1.7bn	project lifetime	na
EU vehicle emission standards ¹⁴	140m	2020	na

CATEGORIES:
 Energy production
 Transport
 Other regulations
 Global treaties
 Land & forests
 Other

See following panel for sources and explanations

*Annual emissions are cumulative emissions divided by the relevant period. The estimate for the current emissions avoided under the Montreal protocol is eight billion tonnes of CO₂e. The annual figure for the collapse of the USSR refers to the years 1992-98. ¹Cars and light trucks ⁴Heavy trucks

Saving forests preserves wildlife, not just carbon.

So the table should be treated with caution. It is only safe to say that one policy is better than another in climate terms if it beats it by a wide margin.

As it happens, though, there are some very wide margins to be found. One policy stands head and shoulders above all others. And it is one that few people other than climate-policy specialists will have thought of in this context: the Montreal protocol, a 1987 agreement to phase out substances such as chlorofluorocarbons (CFCs) used in air conditioners, refrigerators and so on. It was enacted to limit the damage such substances were doing to the ozone layer, a goal which it has achieved.

Like carbon dioxide and many other gases emitted by industry and agriculture—methane and nitrous oxide, for example—CFCs are greenhouse gases. And they are extremely potent ones, causing thousands of times more warming per molecule than carbon dioxide does. That means stopping CFC production, which was in the range of millions of tonnes a year, delivered a climate benefit equivalent to cutting carbon-dioxide emissions by billions of tonnes.

Guus Velders of the Dutch National Institute for Public Health and the Environment has compared the warming effect that would have come about if the emissions of such chemicals had continued to grow at the rate they were growing before the protocol with what has come about thanks to their banning. The net effect is equivalent to that of a whopping 135 billion tonnes of carbon dioxide. That is more than twice today's total annual greenhouse-gas emissions, which are

Other measures have problems, too. Take the effects of fuel-efficiency standards. Would companies have curtailed their cars' emissions anyway to sell more of them to cost- and mileage-conscious drivers? And how much has better fuel efficiency encouraged drivers to drive farther? A further complication is that many policies have benefits beyond—or indeed closer to hand than—those they offer in terms of climate. Burning less coal saves lives in the near future as well as reducing climate risks in decades to come.

equivalent to about 50 billion tonnes of carbon dioxide (carbon dioxide itself makes up about three-quarters of that, with methane, nitrous oxide and some gases used in industry making up the rest). Durwood Zaelke of the Institute for Governance and Sustainable Development, a think-tank, says that if CFCs were uncontrolled the annual figure would be 8 billion tonnes higher. The Montreal protocol has had nearly as big an effect as all the rest of our list put together.

Trailing some way behind the Montreal protocol is a small group of measures—not really climate policies—that have been responsible for avoiding between 4% and 7% of greenhouse-gas emissions. According to the International Atomic Energy Agency, nuclear power avoided the production of 2.2 billion tonnes of carbon dioxide in 2010—that is, emissions would have been 2.2 billion tonnes higher if the same amount of electricity had been produced by non-nuclear plants. Energy from dams and other hydroelectric sources avoided 2.8 billion tonnes (though emissions of methane from the reservoirs behind some of those dams mean the net effects were less than that). Between them they generated 6,000 terawatt-hours of electricity in 2011, compared with 450TWhrs for wind and less than 60TWhrs for solar. The high rate at which new wind and solar capacity is being built will eat into this lead, but it will take some time to overturn it.

The other item in this group is something of a cheat. In 2007 Su Wei of China's foreign ministry said that his country's one-child policy, by reducing the number of births between the late 1970s and the mid-2000s by 300m, had reduced carbon emissions by 1.3 billion tonnes in 2005 (because there were fewer people to consume goods which generated greenhouse gases in their production). Taking this argument further, one could say that the fall in global fertility since 1960 cut emissions even more. That is not exactly a climate policy. But it is a reminder that greenhouse gases are powerfully influenced by factors far beyond the scope of climate-change policies.

Three other lessons emerge. First, policies to slow or reverse deforestation are more important than one might expect. Trees absorb carbon as they grow and release it when they are cut down. According to a recent study in *Science*, declining deforestation in Brazil meant that the country produced 3.2 billion tonnes less atmospheric carbon dioxide between 2005 and 2013 than it would have if the tree-felling had continued unabated. That is 400m tonnes a year. The slowdown in deforestation in tropical countries is one of the reasons that the conversion of forests to farmland now accounts for only 11% of greenhouse-gas emissions globally, much less than 20 years ago. The other reason for deforestation's dramatically reduced share of total emissions, though, is that industrial emissions of carbon dioxide have continued to grow rapidly. The rise is not as fast as it might have been. Rules that make vehicles more efficient and improve the energy efficiency of buildings and appliances have done more than might be expected. America has been setting standards for vehicle greenhouse-gas emissions and fuel efficiency since the mid-1970s; the current rules are forecast to reduce carbon-dioxide emissions by 6 billion tonnes in 2012-25, meaning by about 460m tonnes a year. America's Department of Transportation reckons that overall such rules have reduced carbon-dioxide emissions by a cumulative 14 billion tonnes. Europe's equivalent regulations for passenger cars and light trucks do less (European vehicles were more efficient to start with) but are still respectable; being adopted by overseas manufacturers who want to sell cars in Europe gives them an unquantified extra clout.

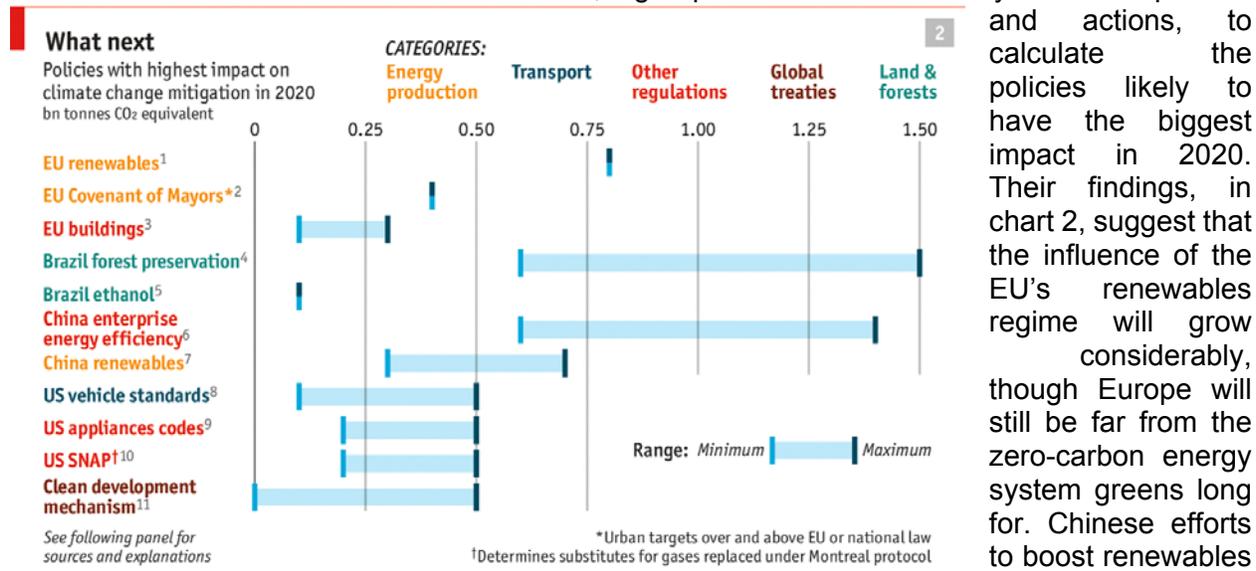
New EU rules on the design of boilers and water heaters are expected to save 136m tonnes of carbon dioxide a year within six years. China's Development Research Centre and the World Bank say that on the basis of 2010 figures energy-efficiency targets for Chinese state-owned enterprises save about the same amount; that scheme has recently been much expanded.

Subsidies for solar and wind power do less than you might expect, considering the attention they receive. The European Environment Agency calculates that between mid-2008 and 2012, what it calls changes in the carbon intensity of energy (mainly, the rise in renewables) accounted for a third of the decline in carbon-dioxide emissions in the EU. Emissions fell 350m tonnes in that period, so renewable policies seem to be responsible for about 30m fewer tonnes of carbon dioxide a year, making them less effective than energy-efficiency measures.

This estimate may be low. A separate calculation by Germany’s environment ministry puts the figure for Germany alone at 100m tonnes in 2012. But even if the EU estimate is only half what it should be, renewables would still fall short of other carbon-mitigation policies. They are also extremely pricey. The cost of Germany’s *Energiewende* (its transformation to a renewables-based electricity system) is €16 billion (\$21 billion) a year. The cost of helping developing countries phase out CFCs under the Montreal protocol was just \$2.4 billion all-told from 1990-2010. The Amazon Fund, which has done much to fight deforestation in Brazil, has mostly been funded by the Norwegian government at a cost of just \$760m over 11 years.

Over the next few years, the relative weights of all these policies will change. Nuclear energy is being phased out in Germany and may not recover to its pre-Fukushima heights in Japan. Although it is growing in China, its share of worldwide electricity generation—currently about a seventh—is likely to decline. The same may be true of hydropower. The share of solar and wind power, on the other hand, will rise as costs fall and capacity increases (installed capacity for these renewables doubled in 2012-14).

The Economist asked Climate Action Tracker, a group of scientists who study emissions policies



and actions, to calculate the policies likely to have the biggest impact in 2020. Their findings, in chart 2, suggest that the influence of the EU’s renewables regime will grow considerably, though Europe will still be far from the zero-carbon energy system greens long for. Chinese efforts to boost renewables

and energy efficiency are also likely to start bearing a lot more fruit. So, they think, could the UN’s Clean Development Mechanism (CDM), which finances greenhouse-gas reduction measures in developing countries to offset emissions in rich ones.

These estimates work on the basis of current policies. But one possible new measure would make a big difference. Hydrofluorocarbons (HFCs) are ozone-friendly replacements for CFCs, and are one of the fastest-growing greenhouse gases, having risen 40% since 1990. Emissions of HFCs are unrestricted, though CDM investments are used to reduce them in some cases. If the Montreal protocol were quickly amended to include them, says Mr. Zaelke, it might do almost as much for greenhouse-gas emissions in the next 35 years as it did in 1990-2010.

Saving the equivalent of some 130 billion tonnes of carbon dioxide so cheaply would be a big win. But it is still only a tenth of what would need to be done to ensure that the temperature in 2100 is no more than 2°C higher than it was at the time of the Industrial Revolution—the limit that the countries of the world have committed themselves to. Without the measures listed in chart 1 emissions might be equivalent to almost 70 billion tonnes of carbon dioxide a year, rather than 50 billion. But even the lower number is too high to meet the stated goal, and the overall trend is up, not down. World leaders gathering in New York are not only being vague about their climate policies. They are being dilatory, too.

66. CO2 Levels in Atmosphere Rising At Dramatically Faster Rate, U.N. Report Warns

Levels of heat-trapping carbon dioxide in the atmosphere rose at a record-shattering pace last year, a new report shows, a surge that surprised scientists and spurred fears of an accelerated warming of the planet in decades to come. Concentrations of nearly all the major greenhouse gases reached historic highs in 2013, reflecting ever-rising emissions from motor vehicles and smokestacks but also, scientists believe, a diminishing ability of the world's oceans and plant life to soak up the excess carbon put into the atmosphere by humans, according to data released by the United Nations' meteorological advisory body.

The latest figures from the World Meteorological Organization's monitoring network are considered particularly significant because they reflect not only the amount of carbon pumped into the air by humans, but also the complex interaction between man-made gases and the natural world. Historically, about half of the pollution from human sources has been absorbed by the oceans and by terrestrial plants, preventing temperatures from rising as quickly as they otherwise would, scientists say. "If the oceans and the biosphere cannot absorb as much carbon, the effect on the atmosphere could be much worse," said Oksana Tarasova, a scientist and chief of the WMO's Global Atmospheric Watch program, which collects data from 125 monitoring stations worldwide. The monitoring network is regarded as the most reliable window on the health of Earth's atmosphere, drawing on air samples collected near the poles, over the oceans, and in other locations far from cities and other major sources of pollution.

The new figures for carbon dioxide were particularly surprising, showing the biggest year-over-year increase since detailed records were first compiled in the 1980s, Tarasova said in a press interview. The jump of nearly three parts per million over 2012 levels was twice as large as the average increase in carbon levels in recent decades, she said.

The organization's annual report on greenhouse gas levels was released ahead of a climate summit of world leaders at this year's U.N. General Assembly meetings in New York.

The WMO's data for 2013 shows the global average level of atmospheric carbon at just under 400 parts per million, about 40 percent higher than in -pre-industrial times and higher than in any other period in at least 800,000 years. The symbolically important threshold of 400 parts per million — described by scientists as the level at which more dramatic climactic impacts become likely — will probably be crossed in the next two years, the report said.

"It's the level that climate scientists have identified as the beginning of the danger zone," said Michael Oppenheimer, a Princeton University professor of geosciences who was not involved in the WMO report. "It means we're probably getting to the point where we're looking at the 'safe zone' in the rearview mirror, even as we're stepping on the gas."

A landmark report last year by a U.N.-appointed panel of climate scientists warned that, if current trends continue, the world could soon see major disruptions to both natural ecosystems and human civilization, including rising sea levels that could swamp many of the world's coastal cities. That report, by the Intergovernmental Panel on Climate Change, projected a rise in temperatures of up to nine degrees in the next century unless action is taken to lower carbon dioxide levels in the atmosphere.

Methane, another major greenhouse gas, also rose significantly in the WMO's latest report, continuing a steady climb that began six years ago. Global concentrations of methane — a byproduct of farming and fossil-fuel extraction, as well as numerous natural processes — are now 2 1/2 times as high as they were at the start of the industrial age, in the mid-18th century, the report said.

The organization's annual report included, for the first time, figures on the increasing acidification of the oceans stemming from higher levels of greenhouse gases in the atmosphere. As the seas absorb more carbon dioxide from the air, the water's chemical composition becomes more acidic. Studies extrapolating from the fossil record suggest that the rate of acidification is now "unprecedented, at least over the past 300,000 years," the WMO said. Higher acidity in seawater is known to disrupt the life cycles of many marine species — from reef-building corals to shellfish beloved by humans — by interfering with the creatures' ability to use sea-borne calcium to build their shells.

In an indirect way, the acidification of seawater also exacerbates climate change: The oceans over time become less capable of absorbing carbon from the air, allowing more of the greenhouse gas to accumulate in the atmosphere, the report said.

67. Warmer Air Caused Ice Shelf Collapse off Antarctica

Antarctica is a key to sea level rise, which threatens coastal areas around the world. It has enough ice to raise seas by 57 meters (190 feet) if it ever all melted, meaning that even a tiny thaw at the fringes is a concern. Until now, the exact cause of the collapse of the Larsen-B ice shelf, a floating mass of ice bigger than Luxembourg at the end of glaciers in the Antarctic Peninsula, had been unknown. Some experts suggested it was thinned by sea water from below.

Writing in the journal *Science*, a team of scientists blamed rising air temperatures, saying that melt water and rain in the brief Antarctic summer had flowed into deep cracks. Water expands when it turns to ice, and the re-freezing meltwater in the Larsen-B shelf - perhaps 200 meters thick - led to a build-up of huge pressures that shattered the ice in 2002.

A rival theory had been that warmer sea water had destabilized ice where the shelf was grounded on the seabed. Studying the seabed, however, the scientists found evidence that water had flowed freely under the ice for the past 12,000 years.

"This implies that the 2002 Larsen-B Ice Shelf collapse likely was a response to surface warming," they wrote. Since 2002, several other shelves have broken up around the Antarctic Peninsula, which is below South America.

Loss of floating ice shelves does not directly affect sea levels but can accelerate the slide of glaciers from land into the sea, raising levels. The new study was by scientists in Italy, the United States, Portugal, Germany, Canada and Britain.

68. Fragile Ozone Layer Shows First Sign of Recovery: U.N

The ozone hole that appears over Antarctica has also stopped growing bigger every year, though it will be about a decade before it starts shrinking, said the report co-produced by the World Meteorological Organization and the U.N. Environment Programme. "International action on the ozone layer is a major environmental success story ... This should encourage us to display the same level of urgency and unity to tackle the even greater challenge of tackling climate change," said WMO Secretary-General Michel Jarraud.

Past studies have suggested the ozone layer has stopped getting worse. "Now for the first time in this report we say that we see indications of a small increase in total ozone. That means recovery of the ozone layer in terms of total ozone has just started," said WMO senior scientific officer Geir Braathen.

The 1987 Montreal Protocol that banned or phased out ozone depleting chemicals, including chlorofluorocarbons (CFCs) once widely used in refrigerators and spray cans, would prevent 2 million cases of skin cancer annually by 2030 according to UNEP. The agreement would also help avert damage to wildlife, agriculture, human eyes and immune systems, the agency added.

The ozone layer was expected to recover toward its 1980 level by mid-century, or slightly later for Antarctica, where it gets dangerously thin every year between mid-August and November or December. "The development you saw during the 1990s that the ozone hole got bigger from year to year - that development has stopped, so it has leveled off," said Braathen.

"We think in about 2025 or thereabouts we'll be able to say with certainty that the ozone hole is getting smaller," he added. Progress could be sped up by as much as 11 years if existing stocks of ozone-depleting substances - many of them stored up in old fridges and fire-extinguishers - were destroyed.

The largest ozone hole on record was about 30 million square km in 2006. The hole now covers about 20 million square km - big enough for the moon to pass through - but may not have peaked this season.

The size of the hole varies from year to year, partly due to temperature in the upper atmosphere.

The reduction of ozone-damaging chemicals would also help the environment, the report said, as many of the substances were also greenhouses gases blamed for global warming.

But the rising levels of other greenhouses gases in the atmosphere had "the potential to undermine these gains," said the report. One of the ozone-depleting substances that was supposed to have been phased out - carbon tetrachloride, a solvent - was still being released into the atmosphere suggesting, the report said, illicit production and usage over the past decade.

69. UCS Looks to Life Cycle Assessment of Advanced Vehicle Technologies

As electric vehicles (EVs) gain popularity in the United States and policies to encourage EV sales are implemented, significant research has been done on reductions in global warming emissions and oil use associated with operating them. This includes research published in the Union of Concerned Scientists' (UCS) report **State of Charge**. However, the broader impacts of EV production and recycling remain less well characterized, and are important when assessing the total environmental impact of consumer vehicle choices.

Life cycle assessment (LCA) is a method to analyze the total impacts of a good or service. This analysis is often termed “cradle-to-grave” as it includes the extraction of raw materials used to make a product all the way to the disposal or recycling of the product at the end of its useful life.

The impacts most commonly measured are costs, energy, and emissions. The LCA of costs is a standard business tool, as accounting for all the costs of a good or service is necessary to determine if a good or service will be profitable and competitive. More recently, energy and emissions have become a larger part of the LCA dialogue spurred by growing concern of climate change and local health impacts.

LCA is important because it helps decision makers (whether policy makers, businesses, or consumers) better understand the true impacts of a given good or service. When the goal is to optimize or reduce the total costs, energy, or emissions, it is critical to look at the process holistically to avoid negative tradeoffs and unforeseen consequences. More information on this can be found in my previous LCA post.

The largest source of global warming emissions from conventional internal combustion engine vehicles comes from the tailpipe when the vehicle is in use. Battery-electric and fuel cell vehicles, on the other hand, do not have an internal combustion engine and thus generate no global warming emissions during operation. However, there are emissions associated with production of EVs and the fuel used to power them (electricity or hydrogen) that would increase the total global warming emissions associated with using the vehicles.

Regardless of whether EVs run partially or fully on electricity, producing the electricity used to charge them can generate global warming emissions. In **State of Charge**, UCS found EVs’ global warming emissions vary significantly based on the mix of energy sources used to power a region’s electricity grid. And just recently UCS updated the main findings with the most current electricity data. Overall, the report finds, nationwide, EVs charged from the electricity grid produce lower global warming emissions than the average new compact gas-powered vehicle (with a fuel economy of 28 miles per gallon)—even in regions powered primarily by coal. In regions with greater proportions of renewable energy resources, EVs produce fewer global warming emissions than even the most fuel-efficient hybrids.

Since the State of Charge report, questions around EVs’ manufacturing- and recycling-related global warming emissions have become more prominent. While recent research suggests the additional components required for EVs (e.g., large battery storage) increase life cycle emissions, the increase is not sufficient to negate the environmental benefits of EVs over their lifetimes. Most studies agree U.S. EVs are cleaner than conventional vehicles, but how much cleaner is still being researched. However, the relative importance of manufacturing and recycling to overall vehicle emissions increases as cleaner sources of electricity generation are added to the grid and the emissions generated by using EVs decreases. In addition, mass-market EVs are in an early stage of deployment and new EV models with different technology approaches (e.g., range, battery chemistry, body design and materials) are rapidly entering the market. Manufacturing processes are likely to evolve and mature over the coming years, as are recycling processes that could change the amount of EV materials being recycled, reused, or scrapped.

UCS is now investigating the impacts of current and future trends in manufacturing and recycling EVs in order to more fully assess the current and potential future emissions of these vehicles over their entire life cycle. This research, along with fuel-production research already published, is

critical to determining how much EVs can contribute to reducing global warming emissions and oil use.

70. Shipping Negotiators Discuss Efficiency Options

The EU, Germany, the US and Japan have set out widely differing proposals on measuring ships' energy efficiency. The four proposals were discussed by EU and non-EU negotiators, shipping companies and NGOs meeting at Germany's permanent representation to the EU. The meeting was organized ahead of the next International Maritime Organization (IMO) environment committee session in October. The committee is working towards an agreement on collecting and reporting data on the fuel consumption of all ships.

It is hoped that measuring shipping efficiency would eventually lead to improvements that would cut the sector's greenhouse gas emissions.

The US is strongly in favor of a phased approach with a two-year data collection period, followed by a pilot phase, before full implementation. It proposes to measure energy used per hour of service.

Japan wants to measure CO₂ emissions per unit of transport work, or deadweight-mile. The European Commission suggests measuring CO₂ per mile, but making less efficient ships do more. Germany wants to reduce the amount of fuel consumed per ship per year. The German proposal is likely to deliver the greatest benefit to the environment because it can be applied to all ship types and would provide an incentive to switch to cleaner fuel, according to consultancies CE Delft from the Netherlands and the Öko-Insitut. The consultancies prepared a comparison of the four options for the event.

The German proposal is the only one that can be implemented using existing data. It would also reward early movers, the consultancies said.

All four proposals would see CO₂ emissions grow as new ships are added to the fleet. Nonetheless, all four provide an incentive to adopt operational measures, such as slow steaming, as well as technical emission abatement measures. Without these, shipping emissions could be 3.5 times what they are now by 2050, the IMO has warned.

At the meeting, it was clear that there is no agreement yet on the need for an absolute target to reduce shipping emissions. Some countries would rather focus on efficiency improvements and on data collection as a precursor to that. But others are pushing for an absolute cap on shipping emissions driven by a market-based mechanism.

The meeting was held under the 'Chatham House rule', meaning the participants' comments cannot be attributed to them.

71. Antarctic Sea Ice Set For Record High As Arctic Heads For Sixth Lowest Extent

The extent of sea ice in Antarctica is set to reach a record high, scientists said, as they announced that Arctic sea ice appeared to have shrunk to its sixth lowest level ever. The NSIDC said that satellite data was expected to shortly confirm whether the maximum extent of sea ice at the opposite pole, in Antarctica, had set a new record.

“Antarctic sea ice is poised to set a record maximum this year, now at 19.7 million sq. km (7.6m sq. m) and continuing to increase,” the center, considered one of the world’s top authorities on sea ice data, said in a statement.



Jan Lieser, of the Antarctic Climate and Ecosystems Co-operative Research Centre (CRC), told Australia’s ABC News that: “This is an area covered by sea ice which we’ve never seen from space before.”

The conundrum of why Antarctic sea ice appears to be expanding as the Arctic decreases had puzzled polar observers, but scientists have suggested that the reason Antarctic ice extent appears to be increasing is due to changing wind patterns.

Figures released by the National Snow and Ice Data Centre in Boulder, Colorado, show that the so-called Arctic sea ice minimum – the point where the extent of sea

ice there is at its lowest after the summer, before it begins to refreeze for winter – is expected to be confirmed imminently and would be millions of square kilometers below the long-term average.

At 5.09m sq. km, the extent of Arctic sea ice this year would be the sixth lowest on record, slightly worse than last year, though not as extreme as the record set in 2012 when it plunged to less than 3.5 million square kilometers. However, the center noted that there had been a particularly strong retreat of sea ice in the Laptev Sea and although the reasons for that were not yet clear, sea temperatures there had been up to 5C higher than average.

The amount of sea ice cover in the Arctic has been showing a long-term decline as climate change takes hold, with temperatures rising more rapidly in the Arctic than the rest of the planet.

72. Childhood Obesity Linked To Traffic Pollution

Traffic pollution contributes to childhood obesity, a recent study⁶ concludes. In the US investigation of over 4 500 children, the researchers estimated that air pollution increased the body mass index (BMI) of 10-year olds in the most polluted areas of study by 0.4 units, compared to those in the least polluted areas. It is thought that pollution may have slowed the children's metabolism.

The global increase in rates of childhood obesity has serious public health implications: overweight children are at increased risk of developing conditions such as cancer, diabetes and heart disease. Of course, diet plays a significant role in this obesity trend, but diet alone cannot explain why the rise is so rapid. Many scientists believe that the environment also has an influence.

Air pollution is considered to be one of many possible environmental influences on weight. It causes inflammation, which may affect metabolism and hence weight gain. Animal research supports this theory: lab mice exposed to air pollution have been found to develop more fat than mice on the same diet but breathing purified air.

Previous research has also found that children living in areas of high traffic have higher BMIs (measured as weight in kilograms divided by height in meters). However, it was not clear what it was about traffic that increased their weight. Could it have been the pollution, or were the children more inactive, owing to their parents' fears about walking and cycling in a neighborhood with more traffic? To explore this theme further, the researchers of this study monitored the BMI of 4 550 children in California over four years.

They used data on traffic and pollution levels near each child's home, as well as information on over 50 other influencing factors on weight. These included physical activity levels, health, diet, poverty rates, and access to parks and food outlets. Using statistical models, the researchers calculated the influence of each of these factors on BMI.

The average BMI at the start of the study, when the children were aged 5-7, was 16.79. After four years, it had risen by 2.6 units to 19.35, on average. Fifteen per cent of these children were classified as obese, and a further 14.4% as overweight.

Air pollution was estimated to be responsible for a 0.4 unit difference between the BMIs of children aged 10 in the top 10% of traffic pollution exposure and the BMIs of 10-year olds in the bottom 10% of exposure. This translates into 13.6% increase in the annual rate of BMI growth for those in the most polluted areas. At the start of the study, there was no difference in pollution's effects on BMI between these two groups. However, it accumulated as the children grew older.

The study concludes that pollution had a significant effect on BMI, and it likely plays a role in obesity epidemics. The findings, which support efforts to reduce traffic emissions, are consistent with the theory that pollution affects metabolism, particularly because the differences in BMI accumulated over time. They are supported by studies that have found higher rates of other metabolic disorders, such as diabetes, in polluted areas.

73. IMO Warns of Potentially Significant Rise in Global Shipping GHG Emissions by 2050

⁶ Source: Jerrett, M., McConnell, R., Wolch, J. et al. (2014). Traffic-related air pollution and obesity formation in children: a longitudinal, multilevel analysis. *Environmental Health*. 13:49. DOI: 10.1186/1476-069X-13-49.

The International Maritime Organization says the economic downturn is behind a recent fall in greenhouse gas emissions from global shipping, but warns that without major policy changes shipping emissions could more than double by midcentury.

The world's shippers produced less greenhouse gas emissions in 2012 than in 2007 as vessels reduced their speed to cut down on fuel consumption, according to preliminary figures released October 15th by the United Nations agency. But the long-awaited study on the latest available GHG estimates warned that without major policy changes, by mid-century the world's shipping could increase over 2012 figures by between 50 percent and 250 percent.

The “Third IMO GHG Study 2014” was approved on October 15th by the IMO's Marine Environment Protection Committee. The IMO had commissioned an update on the previous study, which covered the 2002–2007 period, as it did not account for the impact of the 2008 economic downturn.

Environmental issues on the agenda at the Marine Environment Protection Committee's 67th meeting included the implementation of ship energy efficiency regulations, provisions in the draft Polar Code that regulate ships in the Arctic region and the Ballast Water Management convention.

But GHG emissions is a focus, and according to an earlier draft of the latest study, the increasing practice of so-called slow steaming—reducing speed to use less fuel—by ships accounted for the overall reduction of GHG during the 2007–2012 period. The study, led by the University College London Energy Institute, found that a growing number of ships, particularly container ships, began adopting slow steaming after the 2009 financial crisis, leading to the reduction in daily fuel consumption of approximately 27 percent.

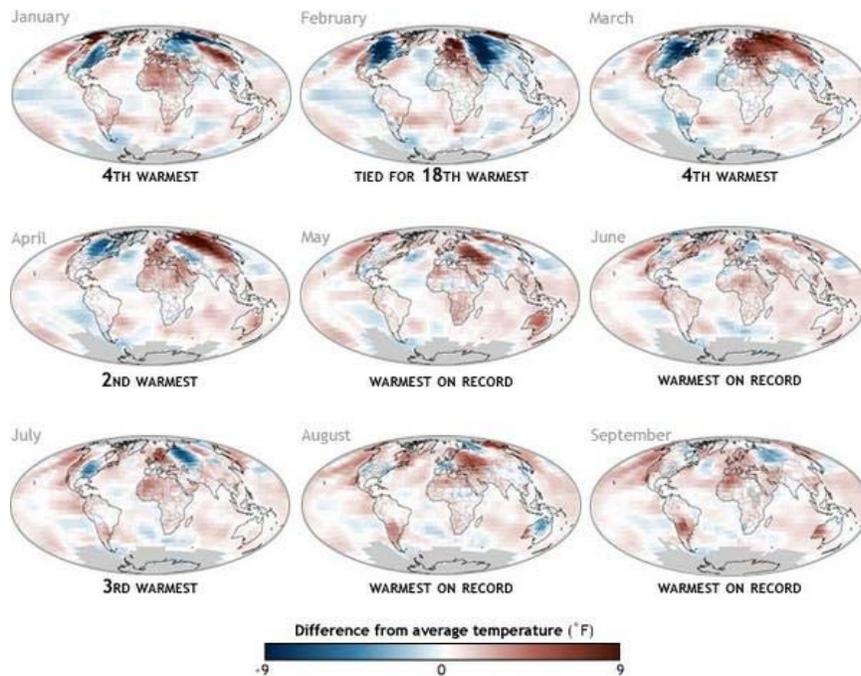
The IMO's latest study said the oil tanker sector has reduced its emissions by 20 percent while the dry bulk and container ship sectors saw emissions reductions, but by smaller amounts.

In a section describing future scenarios (2012–2050), the study projected that, despite the recent dip, maritime CO₂ emissions are projected to increase significantly in the coming decades. Depending on future economic and energy developments, the study estimated that emissions could increase from 2012 figures by 50 percent to 250 percent by 2050. All scenarios except one project emissions in 2050 to be higher than in 2012.

Alongside a rise in CO₂ emissions, the study forecasts that methane emissions will increase rapidly, although from a low base as the share of liquefied natural gas in ships fuel mix increases.

The study underlined that changes in the fuel mix will have a limited impact on GHG emissions and that regulatory or market-driven improvements in energy efficiency will play a greater role in reducing overall GHG emissions.

74. 2014 On Track to Be Hottest Year on Record, Says US Science Agency



The world is on course for this to be the hottest year ever, with global land and sea temperatures for September the highest ever recorded for the month, the National Oceanic and Atmospheric Administration said recently. The findings, which confirm September as the warmest such month on record, continue a string of record-beating months for global temperature.

The year to date for 2014 is already tied with 1998 as the warmest such period since record keeping began in 1880, NOAA scientists said. Combined land and sea average surface

temperatures registered 0.68°C above the 20th century average of 14.1C, NOAA said. That ties with 1998 and 2010 as the warmest period on record.

“If 2014 maintains this temperature departure from average for the remainder of the year, it will be the warmest year on record,” NOAA said in a statement.

All of the world’s top 10 warmest years have occurred since 2000. Climate studies have shown the world is poised for more warmth as the amounts of carbon dioxide rise. Last month, figures revealed carbon dioxide levels rose by the highest amount in 30 years in 2013.

NOAA said the temperatures were driven by warming oceans.

75. Pollution in Pregnancy Linked To Lung Damage in Children

Women exposed to high levels of traffic pollution during the second trimester of pregnancy are at higher risk of giving birth to a child with weak lungs, according to recent research.⁷

In a long-term study, investigators in Barcelona enrolled 1,295 pregnant women who attended pre-natal clinics in Sabadell, in Catalonia, and at Gipuzkoa in the northwestern Basque region. They measured two traffic pollutants -- benzene and nitrogen dioxide -- in the women's residential neighborhoods at different times during their pregnancy. They used this data to draw up a model of exposure for the women, and also for their offspring during their first year of life.

The model took account of differences in geography, climate, population density and time of year.

1. ⁷ “Intrauterine and early postnatal exposure to outdoor air pollution and lung function at preschool age” Eva Morales, Raquel Garcia-Esteban, Oscar Asensio de la Cruz, Mikel Basterrechea, Aitana Lertxundi, Maria D Martinez López de Dicastillo, Carlos Zabaleta, Jordi Sunyer

When the children reached four and a half years of age, a nurse measured their lung capacity with an inflation gadget called a spirometer. A total 620 preschoolers were tested -- many others were unable to blow properly into the device.

The children of women exposed to higher benzene levels during their fourth to sixth months of pregnancy were 22 percent more likely to have impaired lung function than those from less polluted areas, the study found. For nitrogen dioxide, the risk was 30 percent higher.

The link was stronger among children with allergies, or those from a lower social class.

But exposure levels to traffic pollution in the first year of life made no difference to lung strength, the inquiry found.

The results "suggest that exposure to traffic-related air pollutants during the prenatal period could adversely impact the developing lung," the authors reported in the journal *Thorax*. "Substantial health benefits" could accrue from curbing traffic pollution, they added.

The team led by Eva Morales at Barcelona's Centre for Research in Environmental Epidemiology (CREAL), believe they are the first to give a long-term view of how air pollution during pregnancy can affect a child's lungs.

The study did consider whether either or both of a child's parents smoked before or during pregnancy. But it did not examine whether the mothers had been exposed to gas, dust or fumes in their jobs while pregnant. Nor was it powered to measure exposure to particulate matter, another notorious traffic pollutant.

In an independent comment, Seif Shaheen, a professor of respiratory epidemiology at Barts and the London School of Medicine and Dentistry, said a clearer picture may have emerged if pollution levels were monitored directly in the volunteers' homes rather than their neighborhoods. Even so, "the findings should be taken very seriously by policymakers," Britain's Science Media Centre quoted Shaheen as saying. "The results suggest that more needs to be done to reduce air pollution in order to improve public health, and in particular the lung health of the next generation."

76. Solar Energy Could Dominate Electricity by 2050: IEA

Solar energy could be the top source of electricity by 2050, aided by plummeting costs of the equipment to generate it, according to a report from the International Energy Agency (IEA). IEA Reports said solar photovoltaic (PV) systems could generate up to 16 percent of the world's electricity by 2050, while solar thermal electricity (STE) - from "concentrating" solar power plants - could provide a further 11 percent.

"The rapid cost decrease of photovoltaic modules and systems in the last few years has opened new perspectives for using solar energy as a major source of electricity in the coming years and decades," said IEA Executive Director Maria van der Hoeven.

Solar photovoltaic (PV) panels constitute the fastest growing renewable energy technology in the world since 2000, although solar is still less than 1 percent of energy capacity worldwide.

The IEA said PV expansion would be led by China, followed by the United States, while STE could also grow in the United States along with Africa, India and the Middle East.

77. Report Says U.S., China Alone Could Narrow Emissions Gap

China and the U.S. alone could go a long way toward closing the gap between current levels of greenhouse gas emissions and those needed to keep worldwide global warming below 2 degrees Celsius (3.6 degrees Fahrenheit), according to a report released October 21st on the sidelines of the Bonn Climate Change Conference. The report from Climate Analytics, the Potsdam Institute for Climate Impact Research, and Ecofys said that 35 percent of the world's greenhouse gas emissions come from China and the U.S., the world's two largest polluters. It said that if just those two countries converted to "best practices" for electricity production, transportation, industry and construction, 23 percent of the gap between current practices and emissions reductions needed by 2020 could be removed. Overall, adopting "best practices" would have a smaller impact in China in the short term but a bigger impact by 2030. The report said such a change would reduce emissions by 1.2 percent in China by 2020 and 20 percent in 2030. In the U.S., reductions would be 3.2 percent and 16 percent, respectively.