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ACTIVITIES

3rd Sino-European Environmental Law Conference – 27-28 June 2014 – Ghent

The Center of Environmental Law and Energy Law of Ghent University (Belgium) and the Research Institute of Environmental Law of Wuhan University (China) will jointly organize the

3rd Sino-European Conference on Environmental Law on the topic of “Environmental Justice”. The Conference will take place in Ghent, Faculty of Law, on 27 and 28 June 2014.

Following link provides information for persons who might be interested in attending this conference: <http://www.ugent.be/re/publiekrecht/nl/>

Meeting with Chinese delegation: environment and energy – 30 June 2014 – Antwerp

On Monday, June 30, 2014, the Flanders Cleantech Association is receiving a delegation of its Chinese partner CAEPI, together with a delegation of about 10 Chinese environmental and energy companies looking for partners in Flanders.

CAEPI is the Chinese Association of the Environmental Protection Industry, which is guided by the Ministry of Environmental Protection (MEP). During the visit the Flanders-China Chamber of Commerce (FCCC) will introduce the cleantech mission to China in October which the FCCC is organizing together with the Flanders Cleantech Association, Flanders Investment & Trade (FIT) and the Province of East Flanders. More information about the Chinese delegation and the introduction of the projects “CAEPI Delegation” can be requested by sending an e-mail to info@flanders-china.be.

The meeting will take place in the strategically located Portview at the Noorderlaan in Antwerp.

If you wish to participate, please download the registration form at www.flanders-china.be and return it before June 20. Participation is free of charge for FCCC members and limited to companies in the cleantech sector.

In addition to information about the delegation on June 30, you can also request a list of opportunities in the Tianjin region (the prosperous industrialized port region on the coast close to Beijing) via info@flanders-china.be or www.flanders-china.be

The meeting with CAEPI on June 30 and listing of your areas of interest in the registration form are part of the preparations for the cleantech mission to China in October. You will receive more information on June 30, which will also be available on our website www.flanders-china.be

ALTERNATIVE ENERGY

China fast tracks targets for higher clean energy use

Beijing has set targets for faster growth in installed wind power generation capacity and higher levels of solar power usage up to 2017, though analysts say more financing and subsidies will be needed for them to be realized. The National Development and Reform Commission (NDRC) set a goal of 150 gigawatt (GW) for wind power capacity and 70 GW for solar capacity by 2017. It is part of an objective to see non-fossil fuel supply 13% of the nation's energy consumption by 2017, up from a target of 11.4% in 2015 and 9.8% last year. From 2001 to 2015 Beijing planned to invest CNY1.8 trillion to develop renewable energy projects to realize a goal of 100 GW of wind power capacity and 35 GW of solar capacity. At the end of last year, China had 77.6 GW of wind power capacity, according to the China National Renewable Energy Center. It also had around 20 GW of solar capacity. In order to reach the new targets, an annual average of 18.1 GW of capacity from wind farms and 12.5 GW of solar capacity would need to be added in the four years to 2017. In January, the National Energy Administration (NEA) said it aimed to add 18 GW of wind farm capacity and 14 GW of solar farm capacity this year. Last year, wind farm installations totaled 14.9 GW, short of the NEA's target of 18 GW, due to a shortage of power transmission capacity that resulted in lower-than-expected capacity utilization and reduced profits for developers. The grid bottleneck has persisted in the past three years, with substantial relief only seen last year after State Grid Corp of China fast tracked some projects. “To reach the 2017 wind target, more needs to be done on transmission infrastructure expansion, and more financing needs to be made available,” said Michael Parker, Senior Analyst at U.S. brokerage Sanford C. Bernstein. “Project approvals also need to be fast tracked.” For solar farms, last year the industry far exceeded the NEA's target of 10 GW, installing 12 GW.

Joint Hong Kong-Shenzhen solar project to end

The first-ever collaborative project between Hong Kong and Shenzhen to create solar cells for power generation will come to an end this year after a subsidiary of DuPont, DuPont Apollo, said it was stopping production of silicon thin-film modules, which are used in solar cells. The move dealt a blow to cross-border efforts to establish the region as a hub for the research, development and production of solar power technology. The partnership, called the Shenzhen-Hong Kong Innovation Circle, sought to create research and development (R&D) facilities in

Hong Kong for the technology that would be manufactured in Shenzhen. It was established in 2008 at the invitation of the Hong Kong and Shenzhen governments as part of the central government's 11th Five Year Plan. DuPont Apollo had aspired to become one of the world's top three providers of thin-film photovoltaic modules by next year. Its versatile thin-film products were cheaper to produce as it uses much less silicon than rival crystalline panels. In 2009, it still expected the photovoltaic market to grow exponentially. But a year later, an oversupply of silicon lowered the prices of rival modules, making the technology less competitive. DuPont Apollo ran the project's production facilities in Shenzhen and an R&D center at the Hong Kong Science Park in Tai Po. DuPont Apollo Chairman Chuck Xu cited a flagging market for the decision to pull the plug on the project. DuPont Apollo would hand back the research and development facility, opened in 2009, to the Science Park when the lease expired in August. The production facility in Shenzhen, which came into full operation in 2010, will be suspended, the South China Morning Post reports.

Solar firms in recovery mode

Consolidation is deepening in China's solar-energy industry, as competition on the domestic market continues and companies face global trade barriers. "It is a recovery year," Stuart Brannigan, Vice President of Sales and Marketing Europe and America ZNSHINE Solar said. "We have toughed out the supply glut and shrinking demand after several countries cut tariffs and subsidies." The ZNSHINE Group was established in Jintan, Jiangsu province, in 1988. Consolidation will go on, leaving only five to 10 mega-companies on the market with big output, Brannigan said. "It is quite similar to what happened to the semiconductor industry. It does not mean that all small companies cannot survive. They have to be more flexible and better tap the niche market just like boutique hotels," he said. Twenty-four of China's 32 listed solar companies were profitable last year. Eight of them doubled their net profit. "Industry insiders are becoming more rational on the China market," Zhang Weiming, Vice President of Technology with Heraeus, said. "Many have learned lessons over the past several years when suffering from oversupply. Meanwhile, more emphasis is going to quality control as solar plant installation expands." Heraeus is a precious metal and technology firm headquartered in Hanau near Frankfurt, Germany. It will open a new front-side paste production site in China, its biggest market.

Rooftop solar projects hindered by cautious bank lending

The installation volume of rooftop solar panels in China has fallen well short of expectations this year owing to the cautious attitude of banks in lending to the sector. This means the industry will have difficulty reaching the goal of 14 gigawatt (GW) of solar panel installations this year, Wang Jin, Director of the National Development and Reform Commission's Institute of International Energy, said. However, activity is expected to pick up rapidly in the year's second half, once issues worrying financiers and investors are resolved, since the central government is working hard on giving banks confidence to provide funding to project developers, Wang added. "Since this year is the maiden year that rooftop solar power projects are being commercialized on a big scale, it takes time to make adjustments to address some new issues," he told a solar industry conference in Shanghai. He said less than 2 GW of rooftop panel installations has been completed so far this year, far short of the NEA's full-year target of 8 GW. The NEA has also set an installation goal of 6 GW of ground-mounted solar farms that rely on power grid operators to buy all of their output. Ground-mounted projects used to dominate installations, but since China's richest solar resource is located in its sparsely populated northern and western regions, rooftop installations in those areas are being encouraged to reduce the pressure on power grid operators to build infrastructure. The output of rooftop projects tends to be mostly absorbed locally, with excess output sold to the local power grid if they are grid-connected. Issues troubling financiers and investors include the lack of a guarantee, when a building's ownership is transferred, of developers' rights to operate solar farms they have installed. The industry is also lobbying for state-owned power distributors to act as collectors of power tariffs and take the risk of payment delinquencies in exchange for a return from rooftop projects, so that developers can be assured of stable revenues regardless of who owns or occupies the building. Another issue is the lack of insurance products to protect developers from lost power output due to adverse weather and equipment damage caused by accidents.

Solar panel producer plans move to Malaysia

Comtec Solar Systems has decided to move production from China to Malaysia in anticipation of increasing protectionism in the U.S. and European power markets. Chief Executive John Zhang said that staying clear of China's crowded market served by low-end products was key to long-term survival. Amid increasing overseas trade protectionism, the company has chosen a strategy to gradually move its production away from eastern China to Malaysia. "The United States is highly likely to impose further trade barriers aimed at Chinese producers this year, we can't just sit here and hope that it won't happen," Zhang said. Comtec had been exporting

to its American panel-producer customer Sunpower's Malaysian plant for some time. "We have been considering producing in Malaysia for over a year because we have a major customer there, but now our main consideration for moving there is to avoid trade barriers in our main markets," he added. The U.S. imposed steep anti-dumping duties on Chinese solar products in 2012. Similar duties are likely to be slapped this year on Taiwan-made products to close a loophole that allows mainland producers to avoid duties by shifting downstream product processing to Taiwan, Zhang said. Shanghai-based and Hong Kong-listed Comtec has production facilities in Shanghai and Jiangsu province, which can annually make around 550 megawatt (MW) of mono-crystalline silicon solar wafers. Comtec plans to start commissioning 300 MW of capacity in Kuching, east Malaysia, this month, and reach full capacity by the year-end. 100 MW of capacity is moved from China with the rest newly acquired. Comtec's wafer shipment grew 17.3% last year to 397 MW. It posted a net profit of CNY7.1 million in this year's first-quarter, but suffered net losses of CNY133 million in the whole of last year.

Chinese solar panels have high carbon footprint

The manufacture of Chinese solar panels exported to Europe produces a carbon footprint twice the size of those made in Europe, a U.S. study has found. It says this is because China has fewer environmental and efficiency standards and generates more electricity from coal and other non-renewable sources. The study was conducted by Northwestern University and the Department of Energy's Argonne National Laboratory and published in the *Solar Energy Journal*. "It takes a lot of energy to extract and process solar-grade silicon, and in China that energy tends to come from dirtier and less-efficient energy sources than it does in Europe," said Seth Darling, a co-author of the report and Argonne scientist. The study analyzed the "embedded" energy in Chinese-made solar panels, from mining of raw materials, the manufacturing process to shipping the finished products. "While it might be an economically attractive option to move solar-panel manufacturing from Europe to China, it is actually less sustainable from the lifecycle energy and environmental perspective," said You Fengqi, Assistant Professor of chemical and biological engineering at Northwestern University and an author of the paper. A Chinese-produced solar panel made from silicon and installed in sunny southern Europe would need to be used for 20% to 30% longer than a European-made panel to produce enough energy to offset the higher carbon emissions of its production. Li Yan, Greenpeace's East Asia climate and energy campaign manager, said China's high use of coal for electricity meant its factories were much dirtier than those in most European countries, where renewable and nuclear energy were more common. China is the world's largest maker of solar panels, accounting for more than 60% of the total, according to data from the China Photovoltaic Industry Alliance. The study's authors propose a carbon tariff on Chinese solar panels of between €105 and €129 a ton of carbon dioxide to offset the emissions. China did not have specific environmental and energy limits for solar-panel makers until 2010, when the central government moved to curb the blind expansion of the industry. Last year the Ministry of Industry and Information Technology (MIIT) updated the requirements, setting limits on energy consumption and emissions. By the end of the year, 109 companies accounting for 74% of solar panel production met those requirements. A further 74 companies have since met the target.

China remains leading investor in alternative energy

China remained the leading investor in renewable energy in 2013, even as global investment fell sharply, according to the *Global Status Report* by the Renewable Energy Policy Network for the 21st Century. China invested more in renewable energy than all of Europe did in 2013. Although the renewables sector continues to offer huge growth potential in China, it also faces some constraints like overcapacity. New investment in renewables fell for the second consecutive year globally in 2013, partly because of uncertainties over incentives in Europe and the United States, as well as sharp reductions in technology costs. Investment from developed countries fell to the lowest level in four years, with Europe's investment in renewables falling by 44% in 2013 compared to 2012. China's new investment in renewable energy was USD56.3 billion in 2013, accounting for 61% of developing-country investment in renewables. Lin Boqiang, Director of the China Center for Energy Economics Research at Xiamen University, said growth was further depressed by the economic slowdown in developed countries and the rapid growth of the previous years. Ten years ago, most of the deployment and manufacturing of renewable energy occurred in Europe, the U.S. and Japan. Since then, markets, manufacturing and investment have shifted to other regions, said the report. "China has become the world leader in renewable manufacturing and installed capacity, having increased investment in the sector nearly every year for the past decade," it said.

Three trial parks will harness wave and tidal power

China plans to build three marine renewable-energy trial parks by 2016, to help speed up the commercial expansion of the wave and tidal power industry. "The parks will be developed in Zhuhai, Guangdong province, Zhoushan, Zhejiang province and Weihai, Shandong province, to help accelerate research and development in marine energy technologies," said Kang Jian, Deputy Director of the Science and Technology Department of the State Oceanic Administration, on the eve of the World Oceans Day. Such parks generate electricity by converting the energy of waves and tides. The site in Zhuhai will be a wave park, where a 300-kilowatt wave farm and a test site will be built, while the Zhoushan site will have a tide farm with a 1 megawatt (MW) or more capacity and a test zone. The one in Weihai will be a comprehensive project for wave and tide power. Because the parks are still in the design phase, authorities did not disclose the total investment involved. Lian Lian, Researcher at the State Key Laboratory of Ocean Engineering, applauded the plan, saying the trial parks will be platforms connecting scientists and engineers with users, forming a complete chain from research and development (R&D) to testing and final application. The State Oceanic Administration's latest marine resources survey, released in 2011, estimated that marine energy potential in the coastal areas can reach 1.6 billion kW. The 12th Five Year Plan (2011-15) on renewable energy spelled out that by 2015, the country plans to build offshore marine power farms with a total capacity of 50,000 kW, helping lay the foundation for commercial expansion, the China Daily reports.

- In January, the National Energy Administration (NEA) raised the 2014 target for new solar photovoltaic capacity to 14 gigawatt (GW) from 12 GW previously. 67% of the new installations would be distributed solar facilities – such as individual installations on rooftops connected to the grid – up from 30% in 2013. The target equals 10 times the actual installations in 2013, but if the goal is achieved, it could cut panel inventories in China by 5%, based on the national production capacity in March. The feed-in tariff (FIT) was set at CNY0.42 last August with a 20-year term.
- In China, 24 of the 32 listed solar companies reported a profit for 2013. Eight even doubled their net profit. Yingli Green Energy Holding Co, the biggest solar panel manufacturer in the world by shipment volume, said it expects to return to a profit for the first time in three years during the second quarter. The gross profit margin is estimated at 20% to 30% for solar panel manufacturers in China and 50% to 60% for downstream companies focused on solar plants, said Han Qiming, Analyst with Solarbuzz.
- Wind power capacity in Inner Mongolia has reached 1,849 million kilowatt, the most in China, and accounted for one-fourth of the country's total wind-power capacity, but the region also accounted for a considerable 30% in the generator curtailment rate due to weak power transmission lines. The State Energy Commission decided in April to construct more ultrahigh-voltage power transmission lines this year.
- The China Development Bank (CDB) has led an 11-bank consortium offering a CNY2 billion loan to LDK Solar, said LDK Spokesman Peng Shaomin. The funding marks a turnaround for the company since its formal default earlier this year. CDB has targeted 12 firms in China's struggling solar energy sector to support with loans.
- China is "strongly dissatisfied" with the U.S. decision to slap new anti-subsidy duties of up to 35% on Chinese solar panel imports, the Ministry of Commerce (MOFCOM) said. The preliminary duties range from 18.56% to 35.21%. The case seeks to close a loophole that SolarWorld alleged helps its Chinese competitors evade duties on solar cells imposed by the U.S. in 2012 by shifting production outside the Chinese mainland, such as to Taiwan. The U.S. accounted for 10% of China's solar shipments in 2013.

POLLUTION

Air quality improved nationwide in April

Air quality in major parts of China was better in April than in March, with dust and ozone accounting for a larger proportion among the key pollutants, according to statistics released by the Ministry of Environmental Protection (MEP). The statistics show that air quality in 74 Chinese cities met national standards 70.6% of the time in April, an improvement over March's 62.3%. The number of cities scoring above 80% also rose, from 22 in March to 29 in April. In contrast with the progress made by the 74 major cities as a whole, air quality in the most-polluted area – the Beijing, Tianjin and Hebei province cluster – got slightly worse in April. Nine cities out of the 13 in this region appeared on the list of the top 10 cities with the worst air quality. The number in March was seven. As the seasons changed, PM2.5 was not as dominant among pollutants in April as in March. For the Beijing, Tianjin and Hebei province cluster, PM2.5 was still responsible for most of the days with bad air quality. But the proportion of polluting days caused mainly by PM10, which are larger particles, rose by 10 percentage

points in this region from March to April. The region has entered the season when sand dust becomes common, Zhang Mingying, Senior Engineer from the Beijing Meteorological Bureau, said. In the hotter and more humid cities in the Pearl River Delta, ozone became the top pollutant in April, accounting for 73.7% of the bad-air days. In March, more than 85% of high-pollution days were caused by PM2.5. The 10 cities with the worst air quality in April were Xingtai, Tangshan, Shijiazhuang, Handan, Baoding, Qinhuangdao and Langfang, all in Hebei province; Jinan in Shandong province; and Tianjin and Beijing, the China Daily reports.

Wuhan looking for ways to reduce heatwaves

Urban planners in Wuhan, the capital of Hubei province, have been working on a plan to direct airflows into the city through six green corridors connected to six nearby lakes to reduce heat waves and curb pollution. The project targets a temperature reduction of at least 1 degree Celsius in the city's downtown areas during summer. Many other Chinese cities that are plagued by heatwaves and smog are watching closely to see if the move can be duplicated. "Large cities like Beijing are more and more frequently covered by smog, mainly due to still air conditions, and building green corridors to let breeze flow through can alleviate the issue," said Xu Hao, Dean of the College of Resources and Environment Science at the Agricultural University of Hebei. Urban planning authorities in Hangzhou, Zhejiang province, and Nanjing, Jiangsu province, have also launched studies in building such corridors to ease air pollution. Yu Zhuang, Professor at the School of Architecture and Urban Planning at Wuhan's Huazhong University of Science and Technology, said that the Wuhan model is successful in lowering temperatures and fighting pollution, but he added that not all cities might be able to apply the same method. "Wuhan is surrounded by lakes, which are crucial in wind flowing from water to land, but the model might not be successfully duplicated in Beijing, with mountains on three sides," Yu said. Still, many believe that for cities along the Yangtze River, Wuhan sets an example. Chongqing and Nanjing, both situated along the Yangtze, are the other two "furnaces" of China that have oppressively hot and humid summers. The green corridors in Wuhan cover 2,390 square kilometers, about 27% of its urban area. Building density is required to be less than 10% in the corridor region. Buildings in the corridors must also be less than 10 meters tall and the vegetation rate must be above 50%, according to the city's Land Resources and Planning Bureau.

300 firms leaving Beijing to reduce smog

Beijing will move 300 heavy polluting firms out of the capital before October to reduce smog and speed up industrial reform. The companies, which have high water and energy consumption, include construction material and furniture manufacturers. "These factories and companies will be relocated to nearby cities or regions after technology upgrading and product restructuring," said Zhang Boxu, Director of the Beijing Commission of Economy and Information Technology. Beijing authorities say 288 enterprises were moved out of the capital in 2013, which help the city to cut sulfur dioxide emissions by 7,000 tons. However, the capital's air quality in 2013 did not improve. The average index for PM2.5 reached nearly 90 micrograms per cubic meter last year, exceeding the national standard for good air by 156%. Beijing authorities are also drawing up guidelines to encourage polluting enterprises to move out and are cracking down on illegal plants that cause pollution. Yang Fuqiang, Senior Adviser at the National Resources Defense Council, said Beijing's plants should be moved to China's western or central areas to enable fast economic development.

MEP considers tendering environmental clean-up to private firms

The Ministry of Environmental Protection (MEP) is considering a new policy to boost its use of private contractors to let the market play a greater role in easing the country's pollution. It calls for local governments to commission services from private firms, including sewage treatment, waterway clean-ups, national park maintenance, remediation of contaminated soil and pollution monitoring. The contracts would be arranged through public tender. Details of the new policy are to be released this month. The final payment would be based on the results achieved through the services, making government spending on cleaning up the environment more efficient. Government spending on environmental protection and energy conservation totaled CNY180 billion last year. The Ministry of Finance has called for a 16.7% increase in spending to CNY210 billion this year. Environmental experts say China needs to spend between 2% to 3% of its annual gross domestic product (GDP) on fighting pollution. Current levels of spending are far from adequate and even the money that is being spent is not well managed. The National Audit Office (NAO) said in June that CNY1.6 billion of government expenditure on energy conservation and environmental protection had been misused or embezzled in 2011 and 2012. Lin Shuanglin, Professor of Public Finance at Beijing University, said the public bidding process could invite corruption unless the process was properly supervised.

Solid waste smuggling rises three-fold

Chinese Customs reported 221 instances of smuggling involving solid waste last year, a three-fold increase from 2012. Authorities confiscated 976,500 metric tons of illegal waste material last year, an increase of 150% from 2012. "Our intensified efforts and huge price differences for waste disposal between China and some developed countries contributed to the sharp increase in discoveries of solid waste being smuggled into China," said Xu Wenrong, Deputy Director of the General Administration of Customs. The high cost of waste disposal has pushed some developed countries to discard their waste in developing countries, where illicit importers sort the material for large profits, he said. The imported solid waste includes recyclable and non-recyclable materials. Recyclable items include discarded steel and iron, which may be imported with the relevant permits. Non-recyclable items range from coal slag, chemicals and electronic waste to old clothes, building materials and medical waste. Imports of these are strictly prohibited. "The smuggling of foreign trash seriously pollutes the environment and brings great harm to public health," Xu said. Smugglers collude with their overseas counterparts, who declare the items as "other articles" to pass customs checks. The items are sometimes hidden in other cargo and sent across porous borders, such as those between China and Vietnam, the China Daily reports.

Anti-pollution efforts to be part of officials' assessment

Local government officials who fail to achieve their annual airborne pollution reduction targets may be criticized directly by top leaders, under an assessment method released by the central government. Zhai Qing, Vice Minister of Environmental Protection, said that beginning this year, assessment of officials for their anti-pollution efforts will be divided into two parts. Their performance on air quality improvement will account for half of the assessment marks given during annual appraisals. The targets are included in the Airborne Pollution Prevention and Control Action Plan (2013-17) unveiled on September 12. The plan sets out goals for 338 cities for a marked improvement in air quality over five years. Under the plan, for the Beijing-Tianjin-Hebei regional cluster, concentration levels of PM2.5 must be cut by 25% by 2017 from the 2012 level. The target for the Yangtze River Delta region is a reduction of 20%, and for the Pearl River Delta region, 15%. The concentration levels of PM10 must fall by at least 10% for the rest of the country. The other half of the marks on appraisals will be based on the local governments' measures to reduce air pollution, such as managing pollution from industries and motor vehicles. There are four categories for the appraisals: excellent, fairly good, pass and fail. The method can measure local governments' overall efforts to deal with airborne pollution on a yearly basis and is not simply results-driven, said Chai Fahe, Vice President of the Chinese Research Academy of Environmental Sciences. In 2018, the officials' work in the past five years will be assessed comprehensively. If air quality targets for 2017 are not met, the officials will fail the appraisal no matter how many measures they have taken to improve air quality.

Hazardous levels of trace metals found in Hong Kong's air

The air in China contains much more fine metallic particles than in the United States, according to scientists studying samples of air pollutants collected across the country, including Hong Kong. The city's overall PM2.5 levels are lower than in most urban centers on the mainland, but it has a higher concentration of health-threatening trace metals, the scientists say. Nearly 20% of PM2.5 particle samples collected in the city carried metals such as zinc, a hazardous element that can permanently damage DNA. Scientists say it is not only the level of PM2.5 that matters, but also the particles' composition. Excessive amounts of zinc and chromium are toxic and can lead to a wide range of problems, from premature ageing to cancer. Scientists warn that without tighter environmental regulations, high trace metal levels could lead to a public health crisis. Li Weijun, Professor of Environmental Science at Shandong University in Jinan, said: "While the general level of PM2.5 in China is five or six times higher than in the U.S., the amount of trace metals could be 10 or even 20 times higher." Since 2003, Li and his team have built what is probably the largest data bank of airborne particles in China. He said most of the PM2.5 pollution in Hong Kong could have come from power plants and factories in the Pearl River Delta. Metals or hazardous elements found in China's air included iron, zinc, copper, magnesium, lithium, nickel, cobalt, arsenic and selenium. With the help of oxygen, zinc can damage the structure of the DNA inside cells. Li said the findings show China is in urgent need of tighter and more effective environmental regulations, the South China Morning Post reports.

Only three major cities met pollution standards last year

Only three of China's 74 major cities met state pollution standards last year, according to the 2013 China Environmental Situation Report. Haikou, Zhoushan and Lhasa were the least polluted while Beijing, Tianjin and cities in Hebei province were the worst. Of the 10 cities that suffered the most serious problems, seven were in Hebei, including the worst three – Xingtai, Shijiazhuang and Handan. Beijing residents breathed "good" air on just 175 days last year. In

Shanghai, environmental authorities said the city had 241 “good” days. Li Ganjie, Vice Minister of Environmental Protection, quoted the report as saying that although China’s environment had improved in general, water quality is “not optimistic” and air quality in cities is “serious.” In China’s top 10 river valleys in 2013, about 9% of the water sections was class V, the worst level. Of 4,778 monitoring sites for groundwater almost 60% were poor or extremely poor. Water quality in the East China Sea and in four of China’s nine biggest bays was extremely poor. Soil pollution and land degradation are also serious, according to Li, who said arable land had been reduced by 80,200 hectares in 2013, and a total of 295 million hectares, or 30.7% of China’s land area, was suffering soil erosion. About 82.8% of the polluted land was contaminated by inorganic materials with the top three pollutants cadmium, nickel and arsenic. The level of major pollutants has dropped in the past year. Chemical oxygen demand emissions were reduced by 2.9%, while emissions of sulfur dioxide dropped by 3.5%, but compared to 2012, the percentage of class V water quality in the 10 major river basins dropped by only 1.2 percentage points.

Environmental toll from land 'surgery' mounting

China's campaign to shave off mountaintops and fill in valleys to make way for cities may come at too high a price in the pollution, erosion and flooding unleashed by the unprecedented redistribution of earth, researchers warned. Dozens of peaks up to 150 meters tall have been flattened to fill up valleys and create tens of square kilometers of land over the past decade. But there has been little assessment of the costs and environmental impact of these projects, researchers at Chang'an University said in a commentary published in the journal Nature. “Land creation by cutting off hilltops and moving massive quantities of dirt is like performing major surgery on the earth’s crust,” the group said. In addition to causing air and water pollution, erosion, landslides and flooding, the projects have destroyed farmlands and habitat for wild animals and plants, the group said. Mountaintop removal has never been carried out on the scale underway in China or used to construct urban areas, the researchers said. The first city to expand by bulldozing its mountaintops was Shiyan, Hubei province, in 2007. The transformation caused landslides and flooding, altered watercourses and increased the sediment content in local water sources. In neighboring Shaanxi province, Yanan aims to double its area by creating 79 square kilometers of flat ground in a project started in 2012. The authors of the study questioned the cost benefits of landfills, noting that the Yanan project will cost CNY100 billion over 10 years, but that it will take at least that long for the filled-in valleys to become stable enough for building, the China Daily reports.

Authorities hope to stem water pollution

Following three drinking water pollution incidents in one month, environment officials said they are placing water quality at the top of their list of national environmental challenges this year. “The outlook on water quality nationally is not optimistic, with 9% of the monitoring sections among the 10 major watersheds rated lower than Grade V, the worst level,” Vice Minister of Environmental Protection Li Ganjie said at news conference. Experts have said the government must take tougher measures to protect sources of drinking water and expedite the construction of backup sources. More than 10 drinking water pollution incidents happen each year. The recent string of incidents began on April 10 in Lanzhou, Gansu province. City authorities detected excessive benzene in the tap water and shut down water lines for five days in some parts of the city, resulting in frenetic purchasing of liquids at supermarkets. On April 23, authorities in Wuhan, Hubei province, suspended its tap water for more than 16 hours after excessive ammonia nitrogen was discovered in the Hanjiang river. On May 9, the government of Jingjiang, a city along the Yangtze river in Jiangsu province, suspended its tap water sourced from the river for seven hours after a “pungent smell” was detected. Zhang Xiaojian, Professor at the School of the Environment at Tsinghua University, said that among all sources of drinking water including rivers, reservoirs, and groundwater rivers pose the greatest risk as many industrial facilities are located close by. China raised the number of water quality indicators on July 1, 2012 to 106 from 35, but fewer than 10 indicators among the 106 are officially tested on a daily basis. Some are tested once a month, twice a year, or every two years. Half of the cities in China have only one drinking water source. Once water pollution incidents occur, cities become paralyzed, said Li Yuanyuan, Deputy Dean of the China Renewable Energy Engineering Institute.

- About 60% of Chinese want the government to give priority to environmental protection when boosting economic growth, according to a survey of 1,500 residents by the Public Opinion Research Laboratory of Shanghai Jiao Tong University. In seven cities Beijing, Harbin, Hefei, Nanjing, Shanghai, Wuhan and Zhengzhou up to 60% thought the smog in their cities was serious. Regarding its impact on their lives, 63% said they reduced unnecessary trips and about 72% said they reduced their outdoor activities. About 58% of respondents believe the government plays a critical role in environmental protection, and 43% said government environmental assessments lack credibility.

- A scheme that rewards people for properly disposing of their household waste is to be rolled out in Shanghai after a trial project involving 700 households in Songjiang district. Under the scheme people earn “green points” by taking their household waste to nominated collection points at set times of the day.
- About eight tons of a toxic chemical spilled into a river near Hangzhou on May 18 after a tanker overturned, prompting the authorities to cut off water supplies to people in the area for several hours. The tanker was carrying tetrachloroethane when the accident happened in Fuyang in Zhejiang province.
- A new solid waste treatment facility to be built in the Pudong New Area in Shanghai will convert unwanted garbage into raw materials and fuel for the cement industry as well as alternative fuels. The plant is expected to handle more than 3 million tons of waste per year. It will include a cement kiln and production line with the capacity to produce 4,000 tons of clinker a day and 2.7 million tons of cement a year. The thermal power produced during the incineration of the solid waste will be used to fuel the cement kiln.
- A project by the College of Environment and Resources of Shanxi University has restored tracts of barren wasteland left by coal mining in Yuxian, a county in Shanxi province, to walnut forests. To reduce smog from the burning of coal, the college has developed high-burn-rate coal briquettes and igniters, which have proven to be able to cut 90% of soot emissions in trials in Taiyuan and Liulin county. In addition to scientific research, students of Shanxi University also have launched grassroots campaigns to promote environmental protection.
- In a poll of 965 readers of the South China Morning Post, pollution came out on top as the major eyesore in Hong Kong with 55% of the votes. Editor Tony Smyth said the city’s design and overall planning had exacerbated the pollution.
- Owners of high-polluting vehicles in Shanghai are being offered financial incentives to upgrade to more environment-friendly cars. The payments range from CNY1,500 to CNY16,000. Up to 160,000 high-emission vehicles will be taken off the city’s streets this year. As of the end of last year, there were more than 700,000 high-polluting vehicles in the city. High-polluting public buses will be among the first to be sent to the scrapheap, with more than 4,000 of them set to be taken out of service from July 1.
- President Xi Jinping has stressed the leading role of innovation in developing China into a country with a “blue sky” and “clear water”. He made the remarks in a keynote speech at the 2014 International Conference on Engineering Science and Technology in Beijing.
- Farmers in one Chinese county have been ordered to leave stalks of straw no higher than 10 cm in a bid to end the damaging practice of burning the stalks after the crop has been harvested. The controversial policy was introduced by the Taihe county government in Anhui province after burning straw stalks was widely blamed for poor air quality in May and June. The shorter stalks could be ploughed back into the soil, but cutting the stalks shorter would require more runs by harvesting machines, increasing fuel costs.
- 259 Shanghai companies were blacklisted in the first three months of the year for violating environmental protection regulations. All of them will be punished and face strict supervision of their business activities, the Shanghai Environmental Protection Bureau said. 13 of them were ordered to close. In the final quarter of last year, 254 blacklisted firms were fined a total of CNY16.5 million.
- Public tip-offs regarding environmental issues, especially related to airborne pollution, are on the rise, a report shows, indicating public awareness of the problem has grown. The number of tips received on official hotline 12369 rose by 26% in 2013 over 2012, according the Ministry of Environmental Protection (MEP). More than 70% of the tips concerned airborne pollution. The five cities with the greatest number of tips were all from Hebei province.
- Beijing is stepping up efforts to improve the environment ahead of the APEC summit in the second half of the year. Beijing’s environmental watchdog has issued warnings against dozens of local officials in the past year for their incompetence in improving air quality. The capital is also considering taking up measures used during the 2008 Olympics to cut smog during the APEC event.
- The Beijing-based Institute of Public and Environmental Affairs has launched a smartphone app that tracks and shames polluting factories. It gives hourly updates on emissions reported by factories to local authorities and shows the plants as color-coded points on a map, with violators of emission limits in red. The Ministry of Environmental Protection (MEP) requires about 15,000 factories nationwide to report their air emissions in real time to local environmental officials. Since the beginning of the year, the government has required the data to be made public.

- Experts are questioning whether a proposed canal from Beijing to Tianjin would reduce the capital's smog, as a new study suggested. A bluebook by the Beijing Academy of Social Sciences said the 160 km canal, also capable of carrying ships, would start in southeast Beijing and end in the Binhai New Area of Tianjin. The bluebook said it could help reduce smog by humidifying the capital's air, reducing fine particles from such sources as industrial spray and dust. But moister air may not always be good, said Chai Fahe, Vice President of the Chinese Research Academy of Environmental Sciences.
- Authorities in Guangzhou are to expand a garbage-sorting program. Just over 400 of the 1,400 communities in the city started to adopt the program, in which garbage is sorted at fixed times and locations, in April. Residents in six communities joined the program in November, paying for disposal of rubbish according to the number of different types of garbage bags they used on a trial basis. Guangzhou produces 18,000 tons of residential garbage a day, 4,000 tons of which is recycled, with the remainder going to five landfills and one garbage incineration and power generating plant in Baiyun district.

GREENHOUSE GAS EMISSIONS

EU urges China to roll out carbon trading nationwide before 2020

Jos Delbeke, Director General of the European Commission's Climate Action initiative, has urged China to roll out a nationwide carbon market before the planned completion date of 2020, insisting a carbon cap would not expose the country to greater international pressure to agree to a new climate treaty. He added that the wider the market scope, the more efficient the cap-and-trade system would be in reducing carbon emissions. Delbeke said senior Chinese officials need not worry, adding that the EU's own emission trading scheme only covered a part of its total carbon emissions. The EU has embarked on the €5 million initiative to help China widen its existing regional pilot carbon trading schemes. Delbeke added the earlier a scheme was implemented the cheaper it would be "as it would prevent investment in the wrong type of technology". China has launched six carbon markets over the past year, where local governments impose emissions caps on carbon-intensive companies through the issuing of carbon credits. If a company's emissions go over the limit, they are required to buy more carbon credits to cover the excess discharge. At the same time, a company that becomes more energy-efficient and reduces its carbon footprint can sell carbon credits to help finance investment. Senior officials have previously said a nationwide roll-out of the carbon market would take place in 2020, when a new global climate treaty is due to take effect. China, as the world's biggest carbon emitter, is under pressure to agree to an absolute cap. Beijing bases its carbon intensity targets on emissions per unit of economic growth, a formula to reduce carbon intensity by 40% to 45% by 2020 from 2005 levels, under an existing treaty which exempts developing countries from absolute reductions, the South China Morning Post reports.

China considering cap on greenhouse gas pollution

China, the world's biggest emitter of greenhouse gases, is considering plans to set an absolute cap on its carbon dioxide emissions from 2016. The target will be written into China's next Five Year Plan, which comes into force in 2016, He Jiankun, Chairman of China's Advisory Committee on Climate Change, told a conference in Beijing. This is the first time that a senior government adviser has publicly spoken about a timetable for China's carbon cap, but He later tried to play down the significance of his statement. "This is still a proposal made by Chinese experts after extensive research, but is not yet a government decision," he told the South China Morning Post. China has set a target to reduce its carbon intensity, or carbon emissions per unit of economic growth, by between 40% and 45% by 2020 from 2005 levels. Developed nations have accused Beijing of holding back progress in UN talks on climate change due to its reluctance to take on a quantified emission reduction target, which is considered more stringent than an intensity target. Chinese negotiators have been arguing that as a developing nation, the country should not accept a binding target as do its industrialized counterparts. Having a domestic carbon cap would help pave the way for China to take on binding targets internationally after 2020. Despite the absolute cap on carbon dioxide, He told the conference that China's greenhouse gas emissions would only peak in 2030, at around 11 billion tons of carbon dioxide-equivalent. Emissions now stand at between 7 billion to 9.5 billion tons. This scenario would depend on China achieving a real reduction in coal consumption from sometime between 2020 or 2025 and on the nation meeting its target of having 150-200 gigawatt (GW) of nuclear power capacity by 2030, the South China Morning Post reports.

- The provincial government of Guangdong signed an agreement with the Ministry of Housing and Urban-Rural Development in Guangzhou last year to turn Guangdong into the nation's first model province for developing a low-carbon economy and eco-cities by the year 2020. To date, a total of 160 construction projects with a total floor

space of about 16.6 million square meters have been officially recognized as “green”.

- China is the world’s second-largest carbon trading market following the European Union. Xie Zhenhua, Deputy Chairman of the National Development and Reform Commission (NDRC), said Chinese enterprises traded over 3.85 million tons of carbon emission quotas as of May 23. These quotas were sold for CNY125 million. China began pilot carbon trading in 2011 and has approved seven schemes in Beijing, Tianjin, Shanghai, Chongqing, Shenzhen as well as the provinces of Guangdong and Hubei.



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