Automotive vehicles major source for air pollution

Automotive vehicles have emerged as a major source of China's air pollution, according to a report released by the Ministry of Environmental Protection (MEP) on Saturday.

China had 295 million automotive vehicles on its roads as of the end of last year, emitting pollutants weighing about 44.725 million tonnes, down 1.3 percent year on year, the report showed.

Analysis of air pollutants of 15 major Chinese cities showed that local mobile emitters, a category that includes vehicles, contributed to about 13.5 percent to 41 percent of total fine particle concentration, according to Liu Bingjiang, a senior official with MEP.

The MEP will enhance supervision on the production, use and elimination of automotive vehicles to reduce air pollution, Liu added.

First China-designed experiment flies to space station

SpaceX on Saturday launched a shipment of supplies for the astronauts living at the International Space Station, carrying for the first time an experiment independently designed by China.

The SpaceX Dragon cargo spacecraft lifted off on the company's Falcon 9 rocket at 5:07 p.m. EDT (2107 GMT) from the Kennedy Space Center in Florida.

About 10 minutes later, SpaceX successfully landed the rocket's first stage at the company's Landing Zone 1, just south of the launch site at Cape Canaveral Air Force Station, as part of its effort to develop fully reusable rockets.

On this trip, the Dragon will deliver almost 6,000 pounds (2,700 km) of supplies, including solar panels, tools for Earth-observation and equipment to study neutron stars. If all goes well, it will arrive at the space station on Monday.

Chinese experiment

Among the cargo is a 3.5-kilogram device from the Beijing Institute of Technology that sought to answer questions like "Does the space radiation and

microgravity cause mutations among antibody-encoding genes and how does it happen?”

The Chinese payload was first reported in 2015, when an agreement was reached with NanoRacks, a Houston-based company that offers services for the commercial utilization of the space station.

Under the agreement, NanoRacks will deliver the device to the U.S. side of the space station and astronauts there will conduct studies using the device in about two weeks, data from which will be sent back to the Chinese researchers.

There is a U.S. law in place, known as the Wolf amendment, that bans cooperation between the U.S. space agency NASA and Chinese government entities, but this deal is purely commercial and therefore considered legal.

NASA spokesperson Kathryn Hambleton confirmed to Xinhua that there is a Chinese experiment that is launched on this mission, known as SpaceX CRS-11.

“NASA complied with all legal requirements to notify the Congress of this activity, and all of the ISS partners approved the inclusion of the experiment,” Hambleton said in an email.

“This is not the first Chinese experiment on the International Space Station (ISS),” the spokesperson said. “Chinese scientists have been investigators and co-investigators on international experiments conducted on the ISS, including for the Alpha Magnetic Spectrometer investigation on ISS.”

Good step

However, Professor Deng Yulin, who led the Chinese research, said that this is the first time an ISS experiment has been independently designed and fabricated in China.

“This cooperation does not violate any laws and regulations, including the Wolf amendment. We do it in an open and visible way,” Deng told Xinhua. “This is a new model of cooperation that we can follow in the future.”

“We think it’s really an important research and they have done a great job,” Mary Murphy, senior internal payloads manager of NanoRacks, told Xinhua, calling the cooperation between the two “a good example.”

Leroy Chiao, a former Chinese-American NASA astronaut and ISS commander, highlighted the significance of the Chinese project.

“I think this is a good step forward,” Chiao said. “I have always believed that cooperation is the best way forward for both the U.S. and China, particularly using civil space exploration as an avenue.”

Joan Johnson-Freese, a space policy analyst at the U.S. Naval War College, said that it evidences the growing importance of commercial space.

“Space is no longer just the purview of government activity,” Johnson-Freese

said. “Space is developing as an area of commercial activity, much like cars and computers, which is a big change from the past.”

SpaceX CRS-11 was the 11th of up to 20 missions to the space station that the California-based company will fly for NASA. It also marked the first time that SpaceX has launched a spaceship that has been used on a previous mission to the space station.

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Air, water quality continues to improve in Beijing

Air pollutant density was lowered in Beijing while its surface water environment also improved in 2016, according to a report released by Beijing Municipal Environment Protection Bureau Friday.

The city's drinking water reserves were expanded to over 1,300 square kilometers. The discharge of two key water pollutants, chemical oxygen demand (COD) and ammonia nitrogen, were reduced by 7.7 and 8.1 percent respectively, the report said.

More sewage treatment plants and water recycling facilities were put into operation last year, bringing its sewage treatment capacity to 6.72 million cubic meters per day, said Qiao Shufang, director of the bureau's environmental monitoring department.

The average density of PM2.5, airborne particles smaller than 2.5 microns in diameter, was 73 micrograms per cubic meter last year, down 9.9 percent year on year.

Densities of other air pollutants including sulfur dioxide, nitrogen dioxide, PM10, carbon monoxide and ozone all saw year-on-year decreases, said the report.

In 2016, Beijing had 198 days with good air quality, an increase of 12 days from 2015. The number of "heavy air pollution" days stood at 39, seven days fewer than that of 2015.

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70 pct of Beijing tap water comes from Yangtze

More than 70 percent of the tap water in Beijing's main urban areas comes from the Yangtze River, thanks to a huge water diversion project that was designed to ease water shortages in the north.

Beijing has received 2.28 billion cubic meters of Yangtze water since the south-to-north water diversion project began pumping water into the city in December 2014, Beijing Waterworks Group said in a report Saturday.

It said the project had increased Beijing's water supply capacity to 3.72 million cubic meters a day, ending the water shortage the capital experienced every every summer.

Before Yangtze water diverted to Beijing, the city’s daily supply capacity was 3.2 million cubic meters at most and water sources, mainly from underground, were susceptible to calcium and magnesium salts.

At least 11 million people in Beijing have benefited from the water diversion project so far, according to Beijing Waterworks Group.

“Residents in high-rise apartment buildings used to suffer water crunches in summer. On some of the worst days, there was no water for cooking or washing,” said Fang Yajun, chief of the water authority in Tongzhou District, east Beijing.

“Their problems will soon be solved, with a new waterworks that will open this summer to supply 200,000 cubic meters of water daily,” he said.

The new waterworks in Tongzhou District, the city’s “subsidiary administrative center,” is fed by Yangtze water and will double Tongzhou’s daily supply capacity, said Fang.

Among the 2.28 billion cubic meters of Yangtze water pumped to Beijing since the end of 2014, about 1.58 billion cubic meters has gone to water supply companies. The rest is stored in reservoirs or used as groundwater, river and lake supplies.