

Argonne helps China create cleaner Beijing for 2008 Olympics

The U.S. Department of Energy's Argonne National Laboratory is working closely with Chinese scientists and policy makers toward the goal of creating a cleaner Beijing and developing sustainable technologies for the 2008 Olympic Games and beyond.

Recently, DOE and China's Ministry of Science and Technology announced a five-year agreement aimed at promoting large scale deployment of next-generation vehicle technologies. The benefits of the collaboration include clean, energy efficient transportation, addressing climate change, promoting energy security and sustaining economic growth.

The United States and China are working together to solve global energy and environmental problems," said Larry Johnson, Director of Argonne's Transportation Technology R&D Center. "Our business-as-usual forecast is that by 2020 China will sell more cars and trucks than the U.S., and by 2030 will have more vehicles on the road than the U.S. As China and the U.S. become the two dominant countries in oil use and greenhouse gas emissions, we need to work together on advanced transportation technologies."

China is ideally situated to adopt alternative vehicles because it must establish an infrastructure to handle the demands of future transportation — regardless of fuel source or technology. Since 2003 Argonne and DOE have been working with the China Automotive Technology and Research Center (CATARC) to promote energy-efficient vehicle technologies and clean transportation fuels in China. The benefits of the partnership, however, go far beyond any one country's borders. "Helping create energy-efficient and clean transportation benefits the entire world," explained Johnson.

CATARC, as well as a number of universities and companies, use Argonne's award winning software, Powertrain System Analysis Toolkit (PSAT) and Greenhouse gases, Regulated Emissions, and Energy use in Transportation (GREET) models for evaluation of China's existing vehicles, understanding the interrelationships among performance, fuel economy and emissions and for the design of new, advanced-technology vehicles.

"China is making important progress in developing cleaner vehicles," said Johnson. "Don't be surprised if China starts meeting some fairly impressive standards in terms of renewable energy and automotive technology."

Much of Argonne's transportation research is funded by DOE's FreedomCAR and Vehicle Technologies Program in the Office of Energy Efficiency and Renewable Energy which invests in a diverse portfolio of transportation technologies to provide efficient, clean and renewable energy. Under their sponsorship, Argonne's is developing more energy efficient and environmentally friendly transportation technologies designed to use less petroleum and lower emissions. The long-term aim is to develop "leap frog" technologies that will enhance our energy security, while lowering costs and reducing the impact on the environment.

In another study, Argonne has been working with leading institutions, including the U.S. Environmental Protection Agency (EPA), the University of Tennessee, Tsinghua University, Peking University and the Chinese Academy of Sciences to improve the air quality of Beijing and ensure a healthy atmosphere for athletes and spectators at the 2008 Summer Olympics.

The team has researched and modeled the local and regional contributors to Beijing's air quality, leading to a greater understanding of regional air quality management and development of new emission control

strategies. The modeling study has been widely cited by Chinese policy makers, including the Beijing mayor, in requesting the government to implement unprecedented regional control programs to ensure that the air quality goals for 2008 will be met in Beijing.

Source: Argonne National Laboratory

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