

China is the world's largest consumer of petroleum products, largest importer of petroleum and fourth-largest producer of petroleum. In the last 20 years, China's demand for oil has more than tripled, while domestic production levels have increased only modestly. China has been a net importer of petroleum since 1983, creating a strong national goal of meeting as much of the country's domestic oil demand as possible.

Most oil fields in China, however, have now entered into the tertiary stage of oil recovery, at which oil extraction becomes increasingly difficult and inefficient. Thus, the demands for new technologies to improve oil extraction efficiency and reduce its cost are at an all-time high. Among these technologies is a new generation of real-time automated systems that dramatically increase the efficiency of extracting and refining petroleum products.

China also continues to face a massive and worsening air pollution issue due to a heavy reliance on coal for energy production. One solution could be the development of domestic Chinese natural gas supplies – which are clean-burning -- with shale gas being the most plentiful. The U.S. Energy Information Administration (EIA) recently determined that China has the world's largest reserves of recoverable shale gas – approximately 1,115 trillion cubic feet. Unfortunately, extracting this gas and transporting it to needed locales has been an exceedingly slow and technologically daunting process. This problem is borne out by 2012 government data, showing 67 percent of China's power generation emanating from burning coal and only 3 percent from natural gas.

Chinese government authorities, however, are increasing support and funding for technologies designed to facilitate the extraction of shale gas, with the objective of bringing it up to account for at least 8 percent of the nation's power generation by 2030.