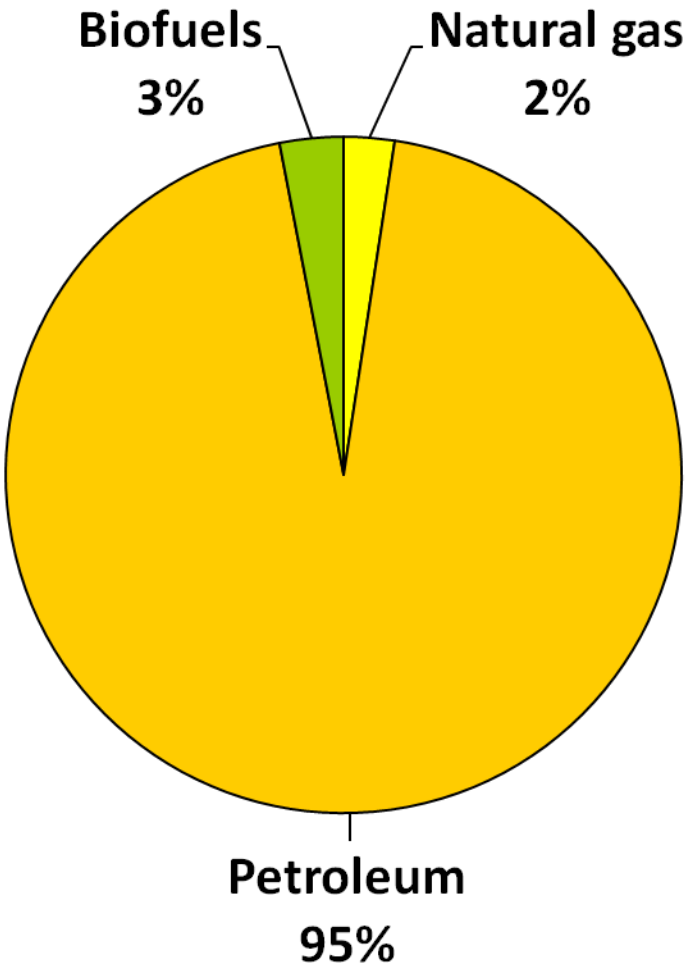
Vehicle Technologies Program Merit Review

Washington, DC

June 7, 2010

David Sandalow
Assistant Secretary for Policy and International Affairs
U.S. Department of Energy

We are highly dependent on oil



U.S. transportation fuel share (2008)

Source: Energy Information Administration

We're investing in five technologies

Electric vehicles

Advanced biofuels

Advanced ICEs

Natural gas

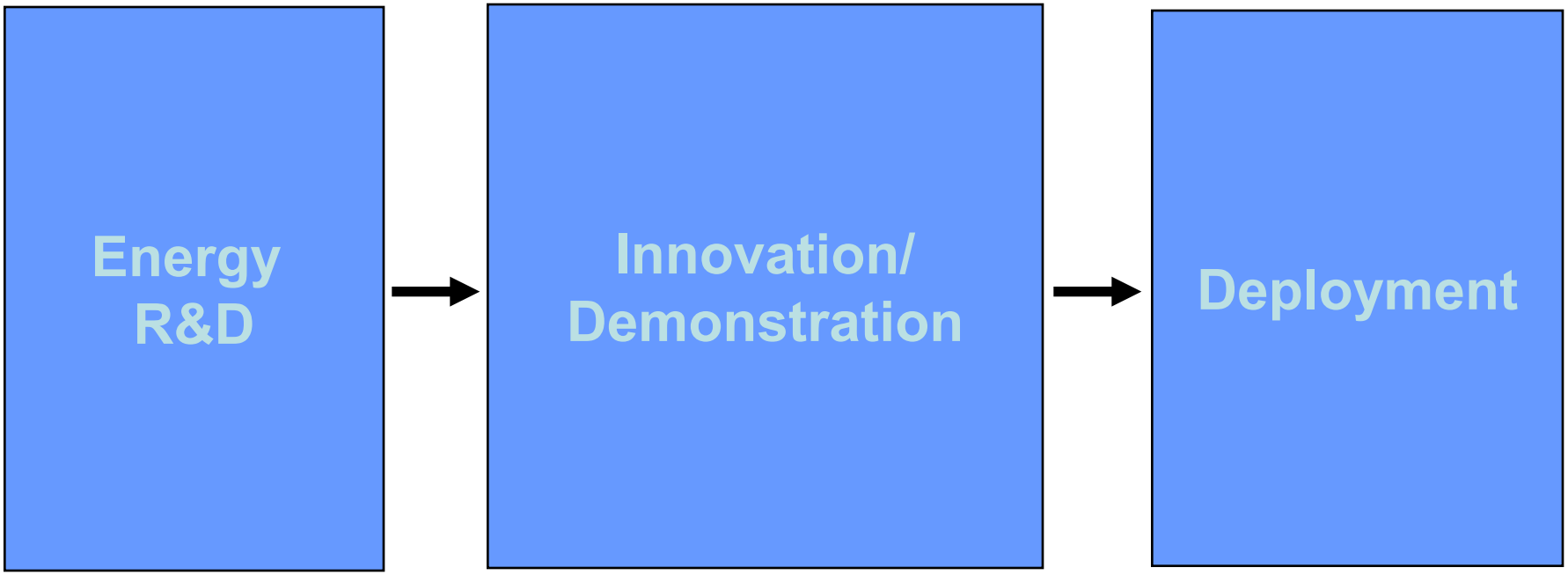
Hydrogen fuel cells

U.S. Department of Energy

Secretary Steven Chu

We are driving innovation: from the lab to the marketplace

Using federal funds to leverage substantial private investment



$6.7 ARPA-E grant for to Kokomo-based Delphi Auto for advanced power semiconductors

Central Indiana Clean Cities Coalition $10m grant for alternative fuel vehicles and infrastructure

Recovery Act $118.5m grant for battery production to EnerDel, Indianapolis

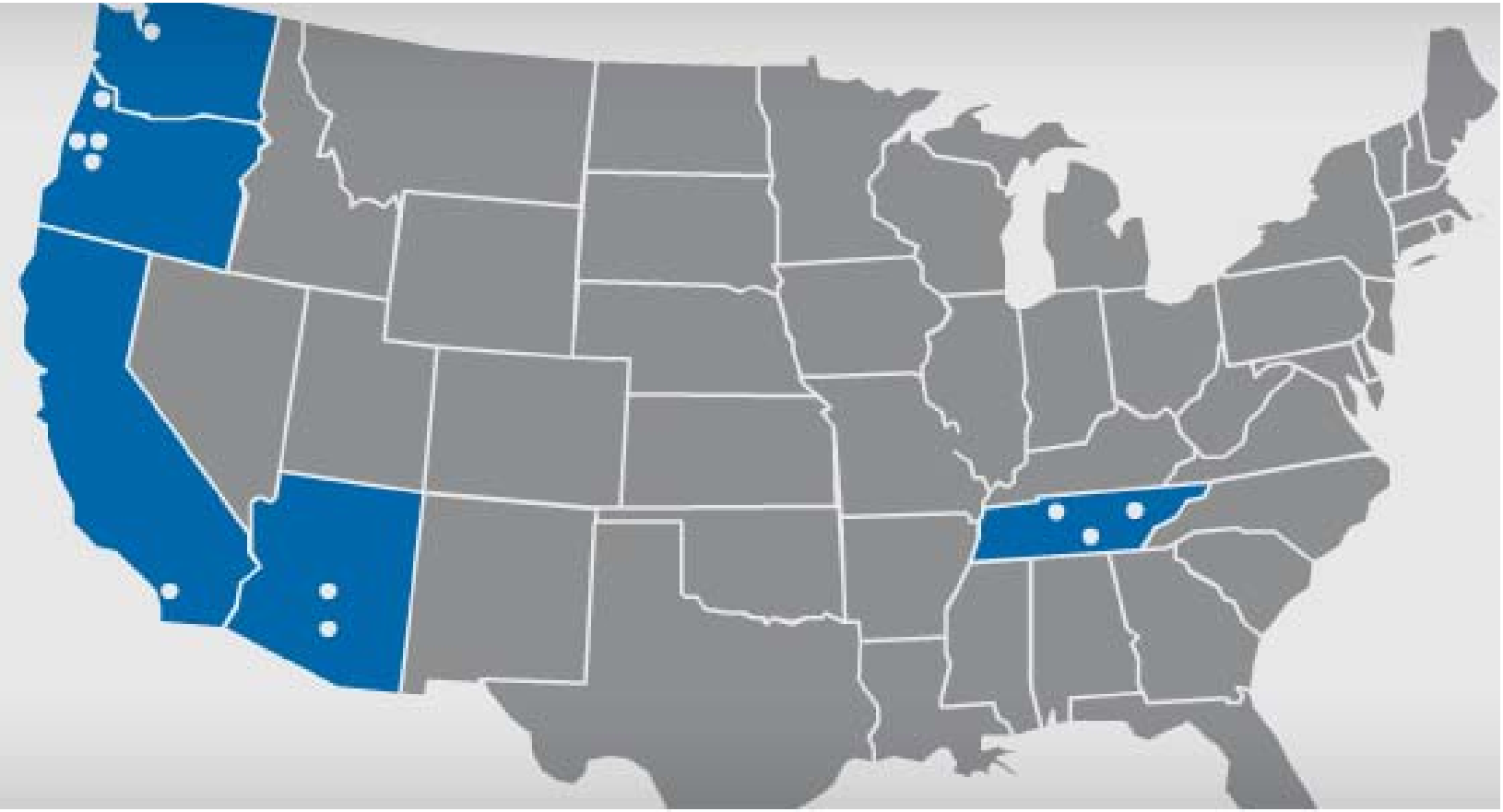
We're funding the world's largest EV deployment project

11 cities
11,000 Level 2 chargers

4,700 Nissan LEAFs
260 Level 3 chargers

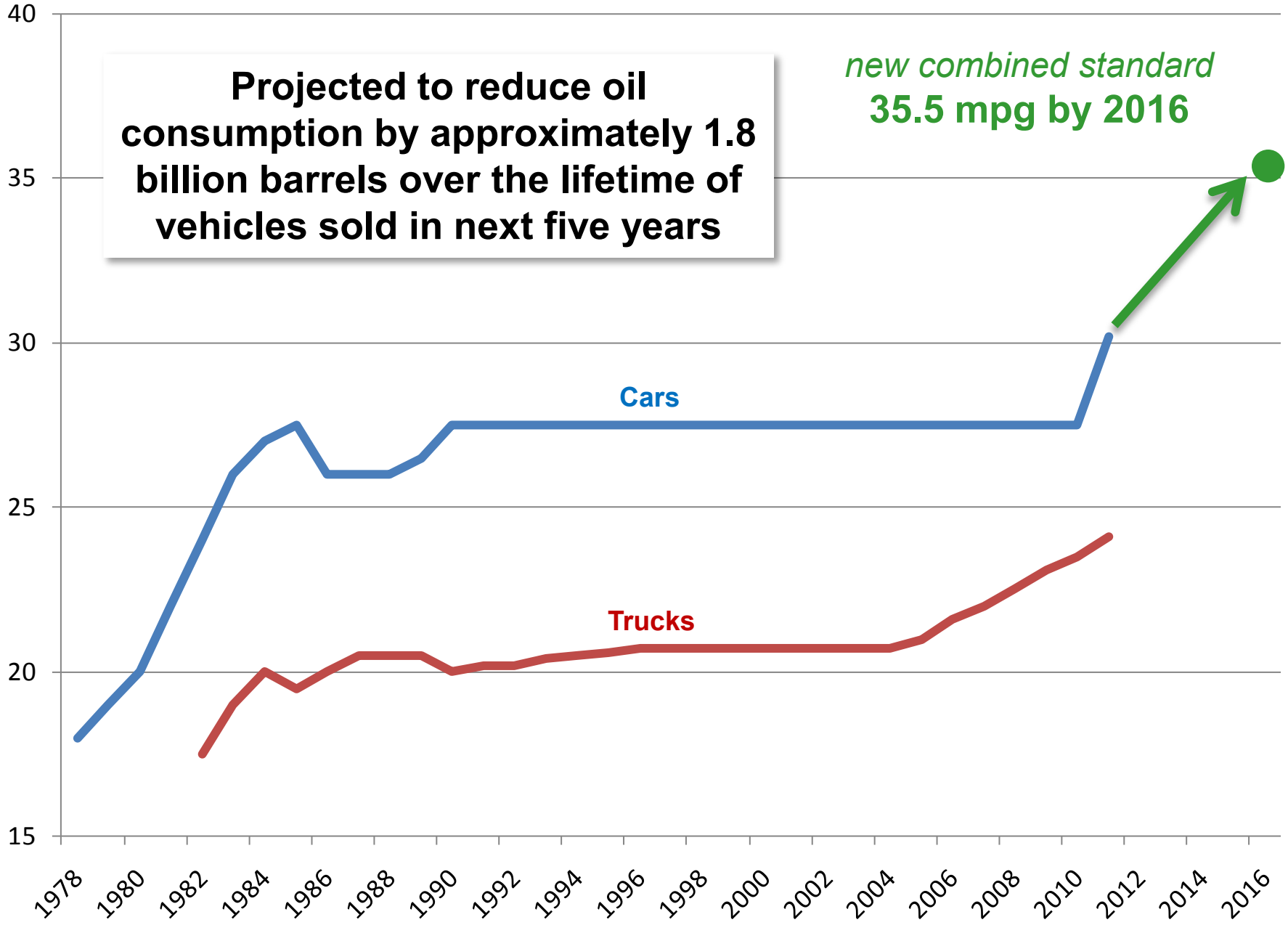
ecotality™

U.S. DEPARTMENT OF ENERGY



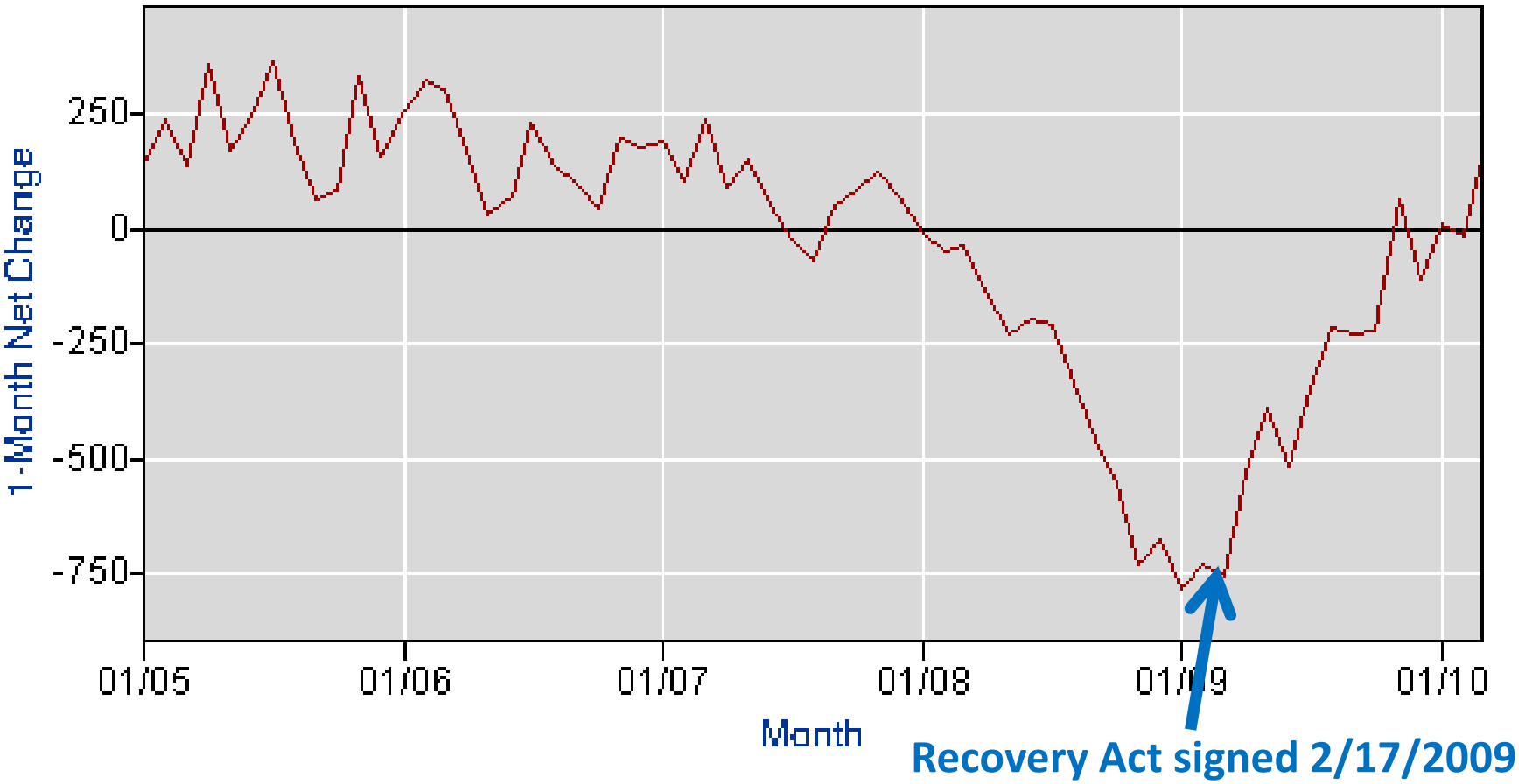
Phoenix, AZ
Tucson, AZ
San Diego, CA
Portland, OR
Salem, OR
Corvallis, OR
Seattle, WA
Nashville, TN
Knoxville, TN
Chattanooga, TN

President Obama announced a new U.S. automobile and light truck fuel standard



Pulling the economy back from the brink…

Economists estimate the Recovery Act is responsible for creating or saving 2-2.4 million jobs



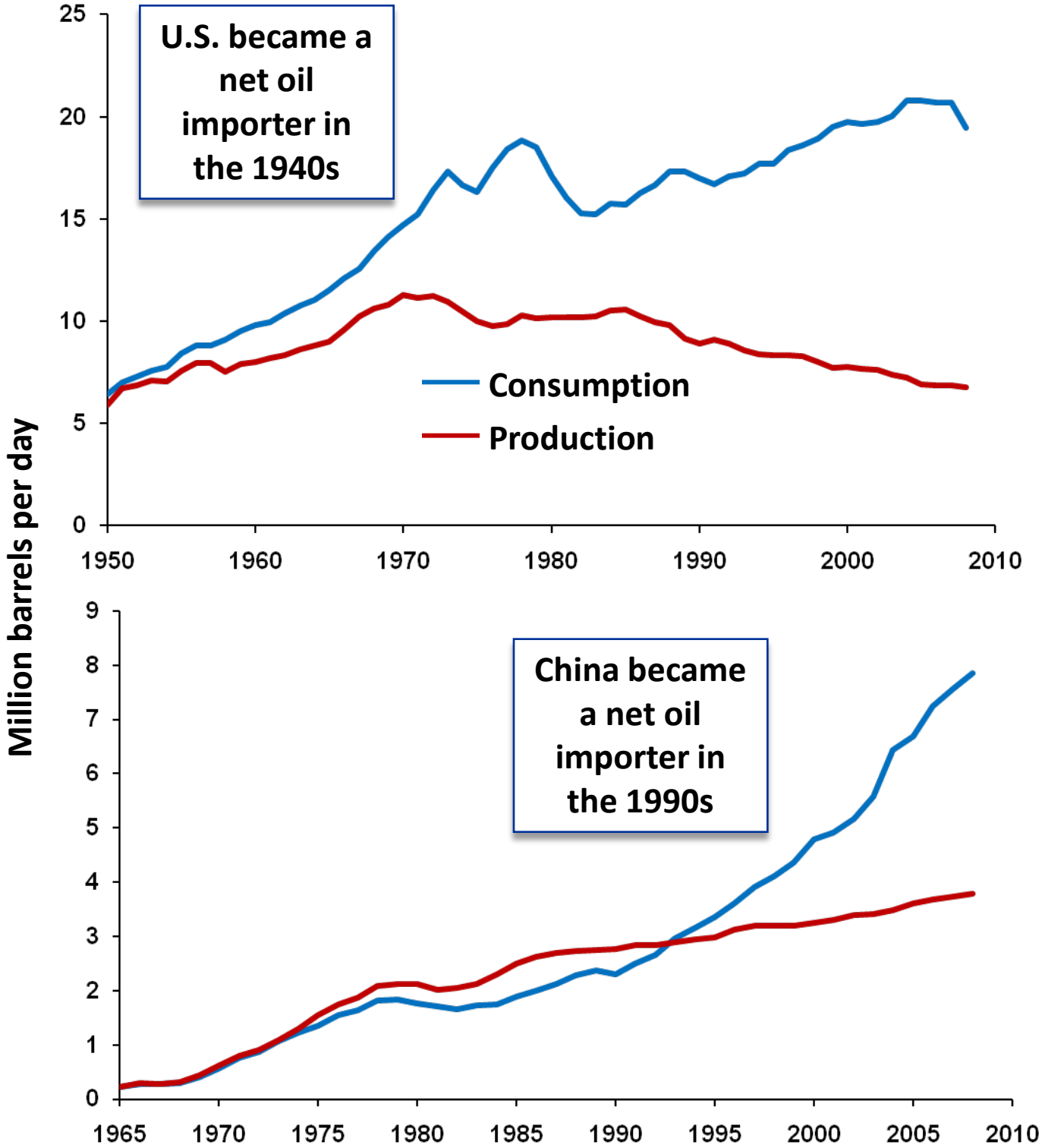
The high-speed train from Beijing…

Heping Hotel, Shanghai

shift
enter
BlackBerry
T-Mobile

Strategic & Economic Dialogue
Joint Statement on Energy Security

"The United States and China share the view that diversifying the fuel mix in our vehicle fleets is fundamental to both countries' energy security in the decades ahead. Toward that end, the United States and China are committed to the promotion of electric vehicles, advanced vehicle energy-saving technologies, and advanced alternative fuel technologies."

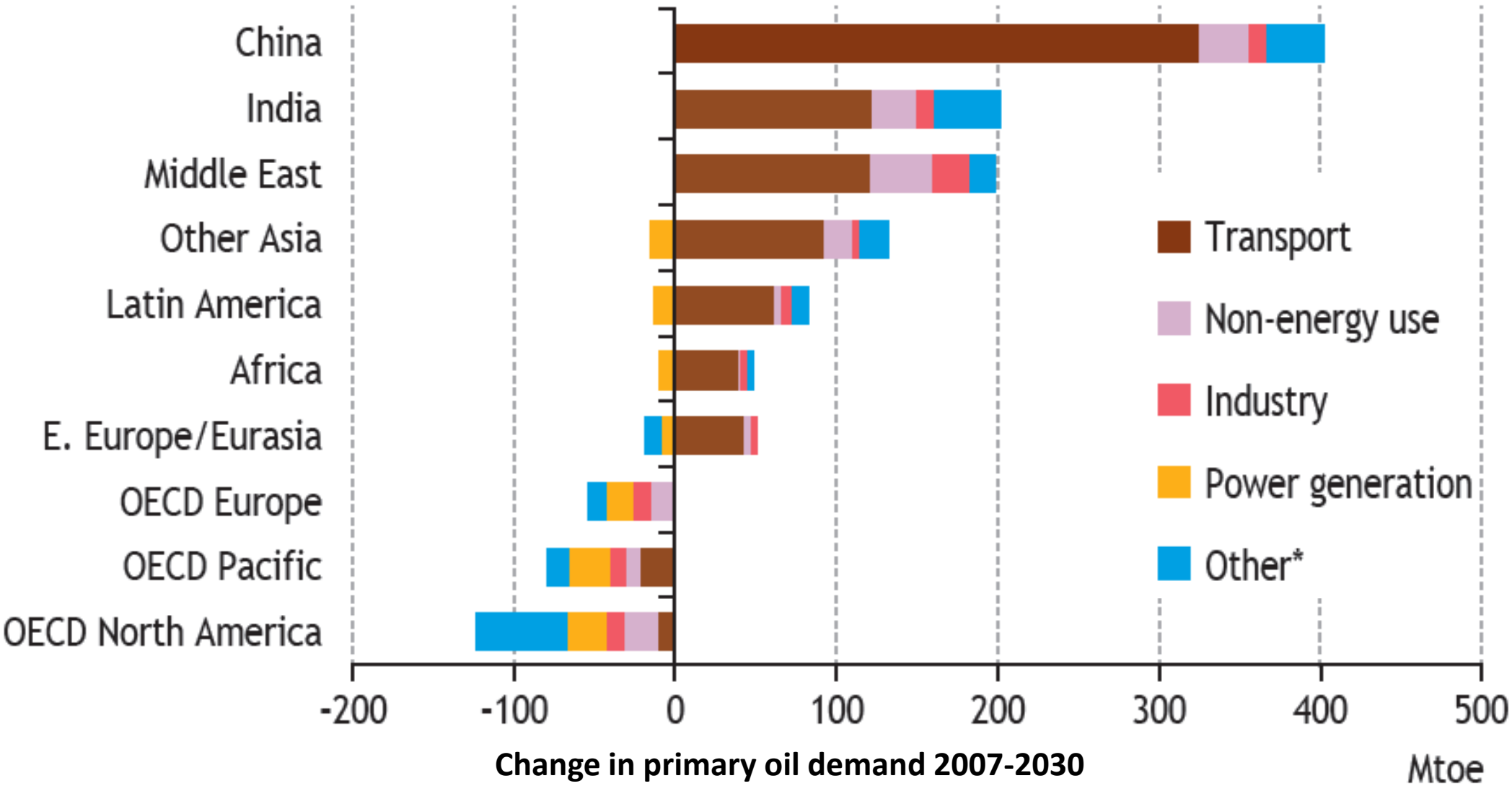


Both countries now import around half of their oil

Energy security is an increasing concern

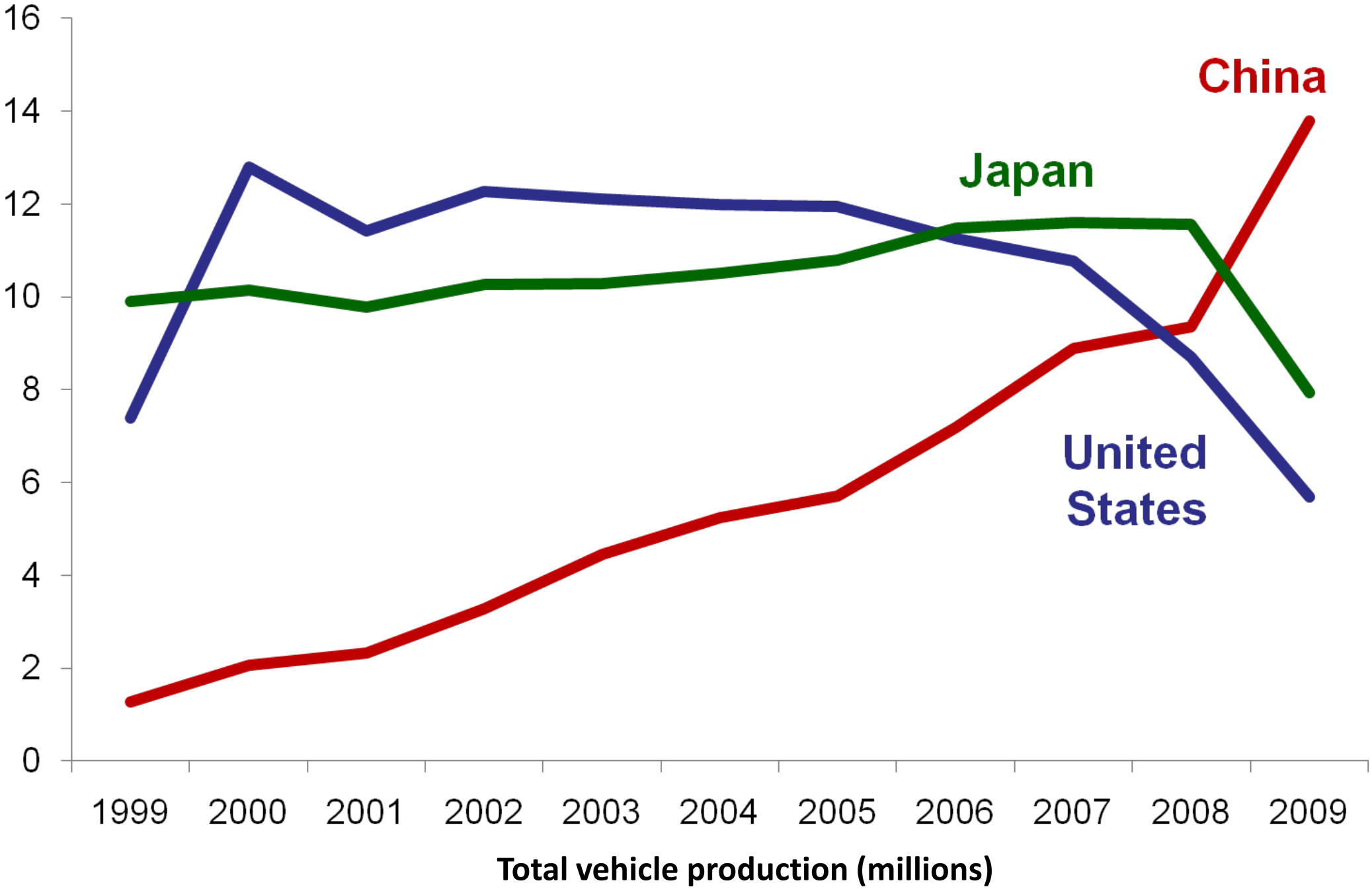
Source: Energy Information Administration

Huge growth in oil demand is projected through 2030, especially in China

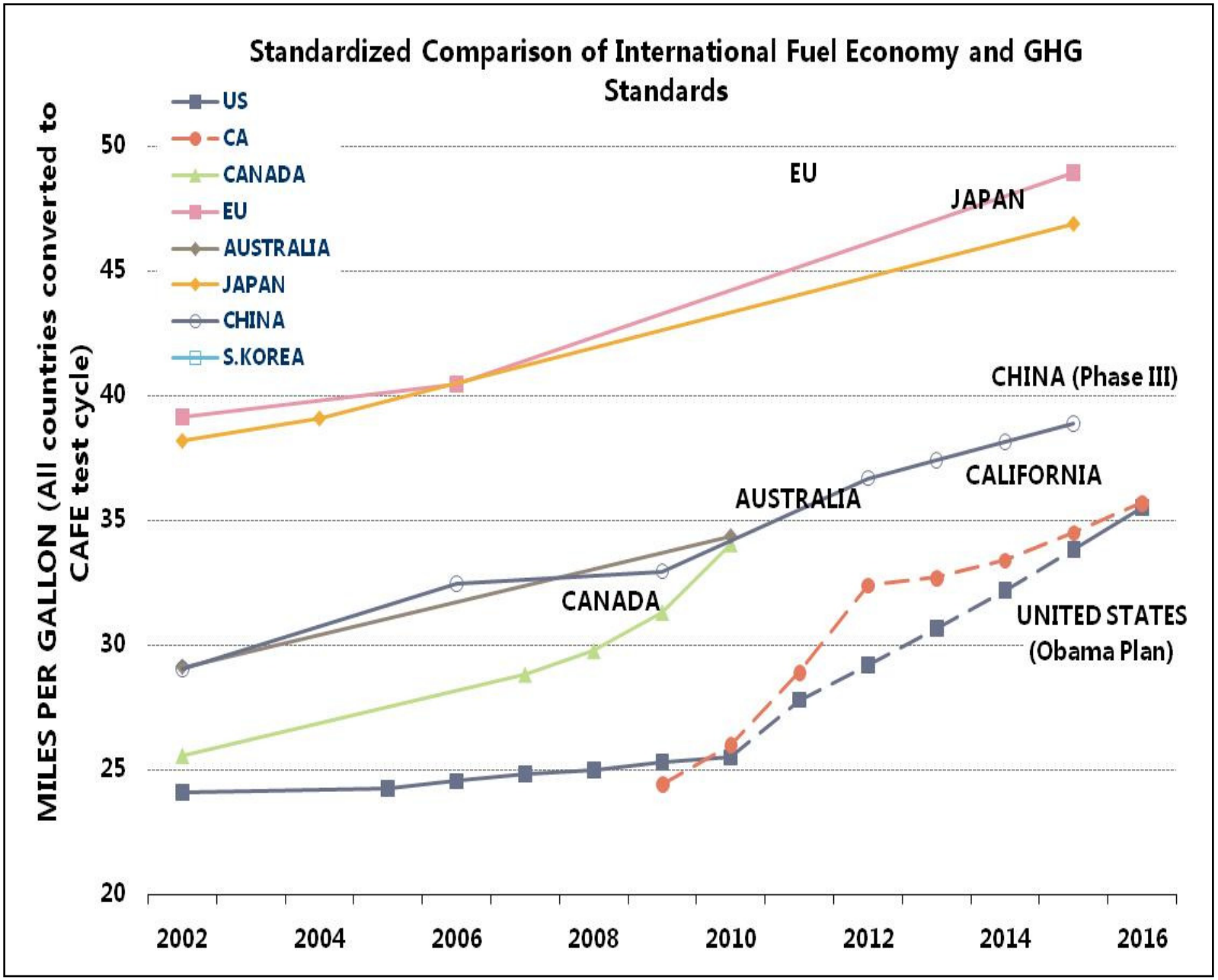


Source: **IEA World Energy Outlook 2009**

China's auto production is soaring



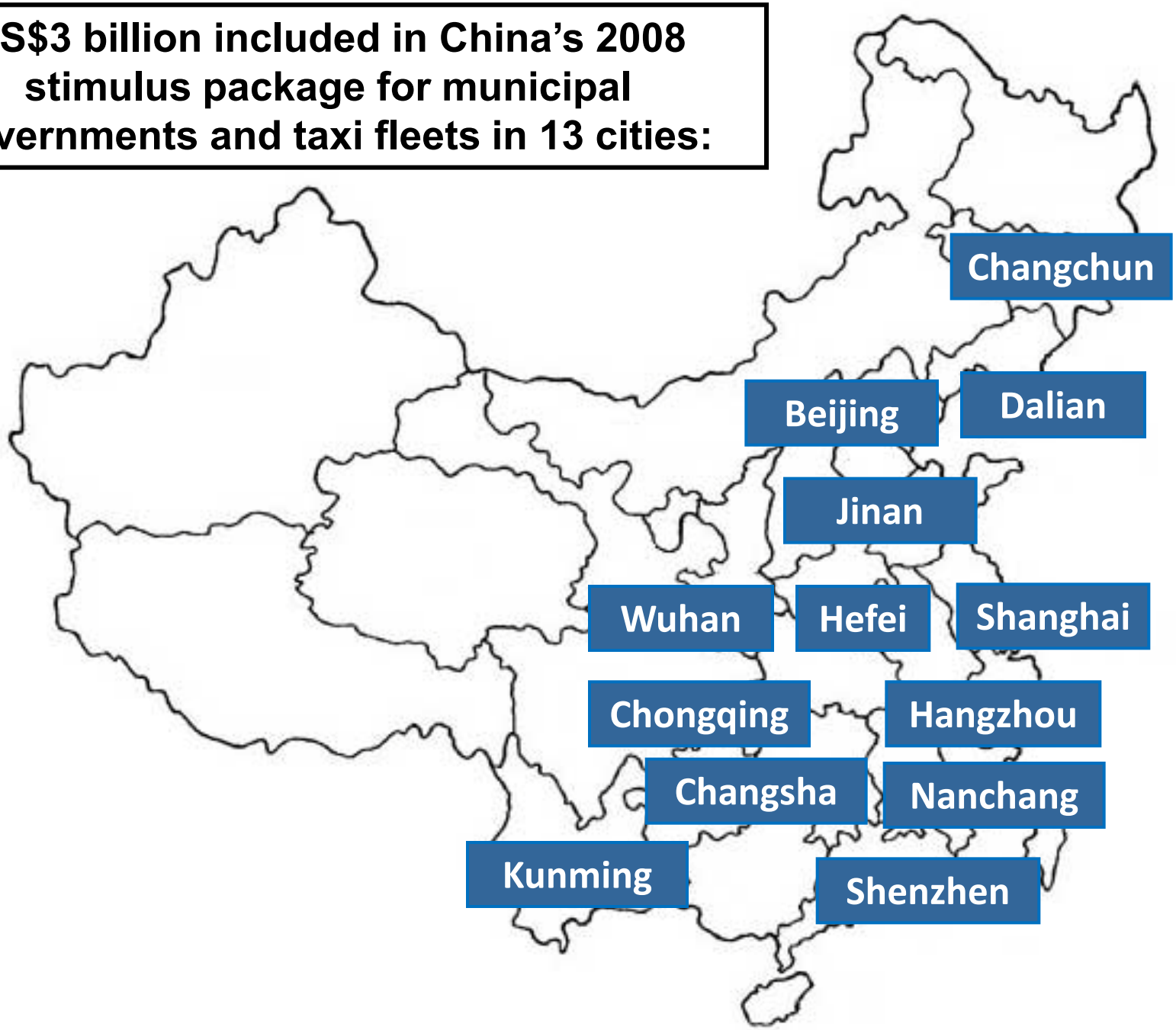
China has also adopted aggressive fuel economy standards



Source: iCET

China also has a large EV deployment program

US$3 billion included in China's 2008 stimulus package for municipal governments and taxi fleets in 13 cities:



U.S.-China Clean Energy Research Center

- First of its kind joint clean energy research center, bringing together teams of U.S. and Chinese scientists and engineers
- $150 in public and private funding over five years, split evenly between U.S. and China
- Initial topic areas: building energy efficiency, clean coal including CCS, and **clean vehicles**

Other recent U.S.-China clean energy announcements

- **Electric Vehicles Initiative**
  - Energy Efficiency Action Plan
  - Renewable Energy Partnership
- Shale Gas Initiative
  - 21st Century Coal
  - Capacity Building for GHG Data Collection

U.S.-China Electric Vehicles Initiative

Joint technical roadmap

Create a joint multi-year roadmap to identify R&D needs as well as issues related to the manufacture, introduction and use of EVs

Joint standards development

Explore the development of joint product and testing standards for EVs, including common design of EV plugs, common test protocols for batteries, etc.

Joint demonstrations

Link more than a dozen cities with EV demo programs in each country, to best practice policies and data on charging patterns, driving behavior, consumer preferences

Joint R&D

Through the newly established U.S.-China Clean Energy Research (CERC), which has clean vehicles research and development as an initial priority area

Public-private engagement

through the U.S.-China Electric Vehicles and events like this

Upcoming events

DOE/VTP and Argonne National Lab will host an EV and Battery Technology workshop August 30-September 1 to assess progress and continue work in the agreed-upon areas of cooperation.

Discussions will include: vehicle and battery standards, battery R&D, and vehicle demonstration and deployment.

Last week, a team of DOE and Argonne technical experts met with Chinese counterparts in Beijing to discuss codes and standards to lay the groundwork for this workshop.

DOE will also host the second U.S.-China Electric Vehicles Forum this fall in the United States.