



**New and Renewable Energy Technologies
Expert Group (EGNRET) Meeting
Fortieth Meeting**

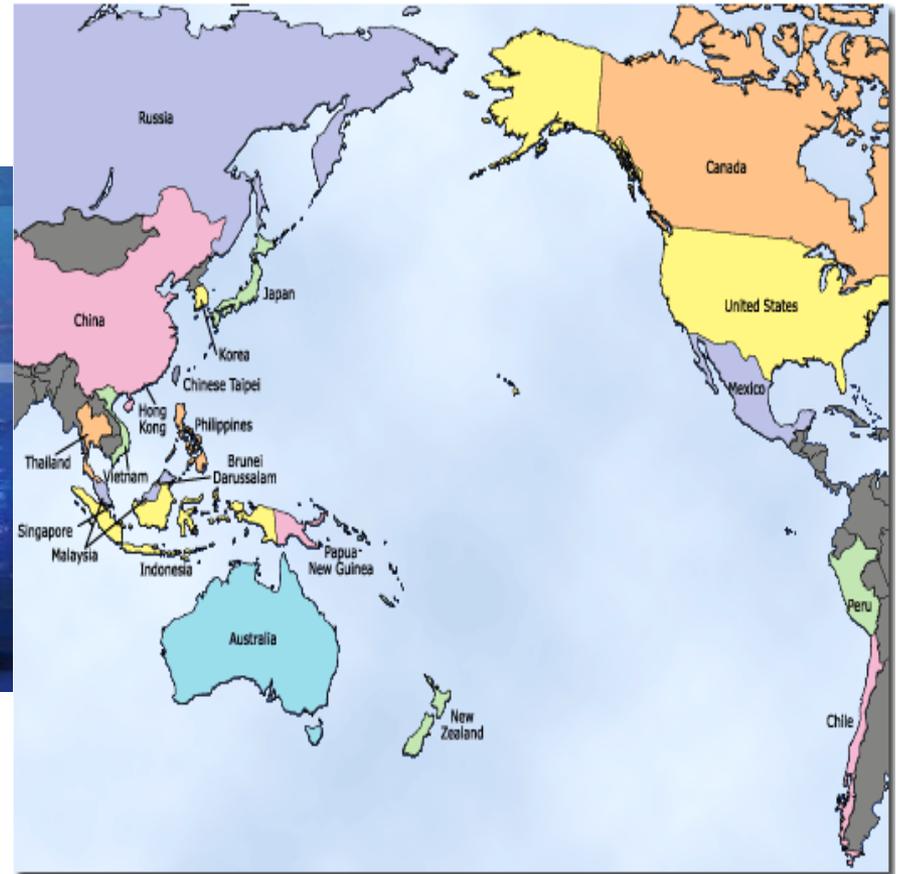
Ha Noi, Viet Nam
2-5 April, 2013

**Renewable Energy and Electricity Supply in the APEC
Region**

APEC Energy Demand and Supply Outlook 2013

**Tran Thanh Lien
Asia Pacific Energy Research Centre (APEREC)**

APEC Member Economies



APEC Energy Outlook 2013



APEC

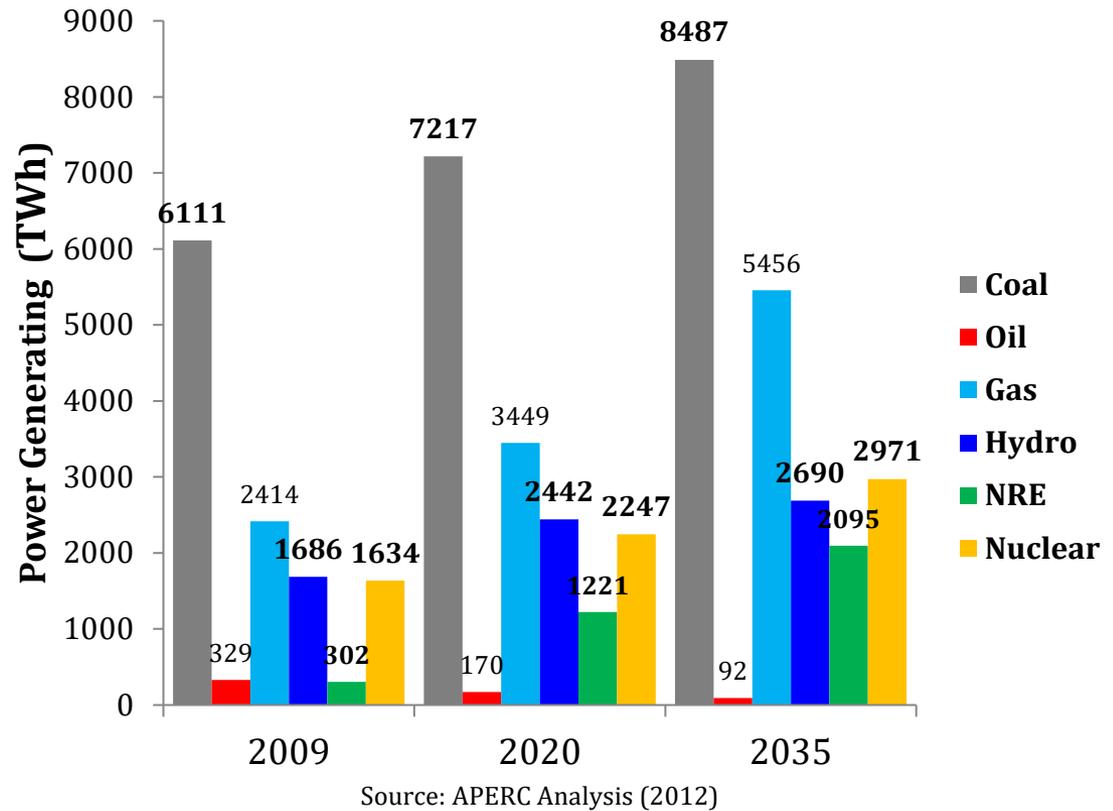
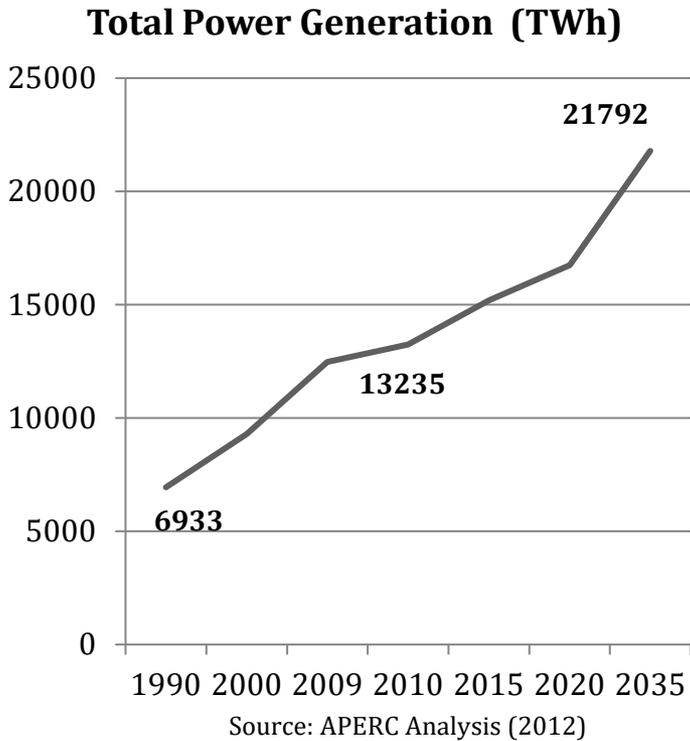
**Energy Demand and
Supply Outlook
5th Edition**

February 2013



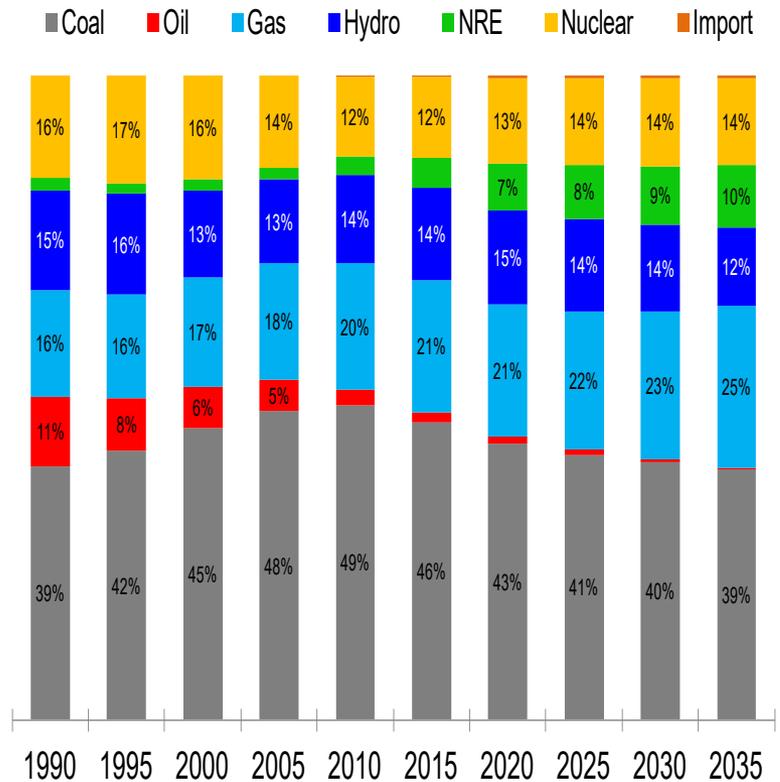
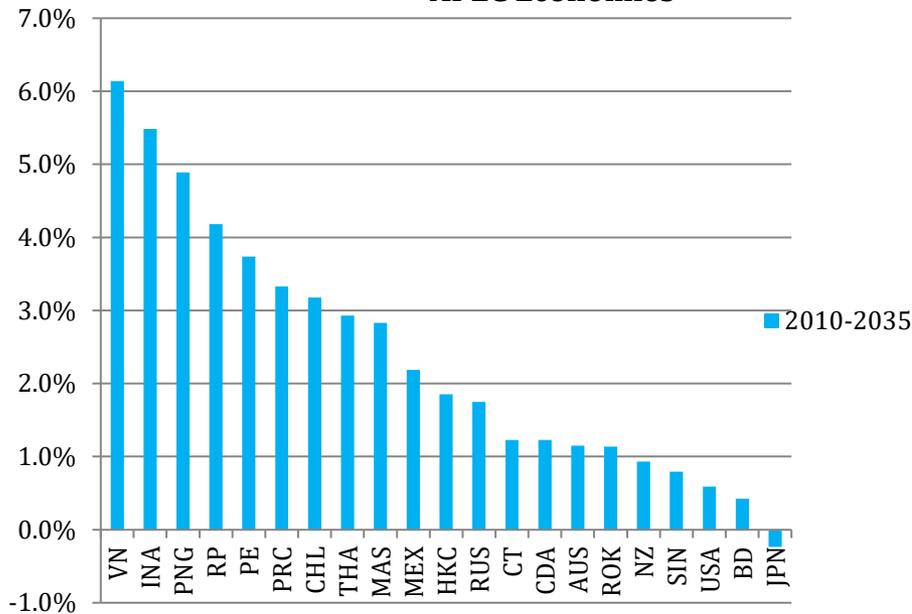
- APERC has historically produced an *APEC Energy Demand and Supply Outlook* every 2 or 3 years
- The 5th Edition was published in February 2013

Projected Electricity Generation by Source



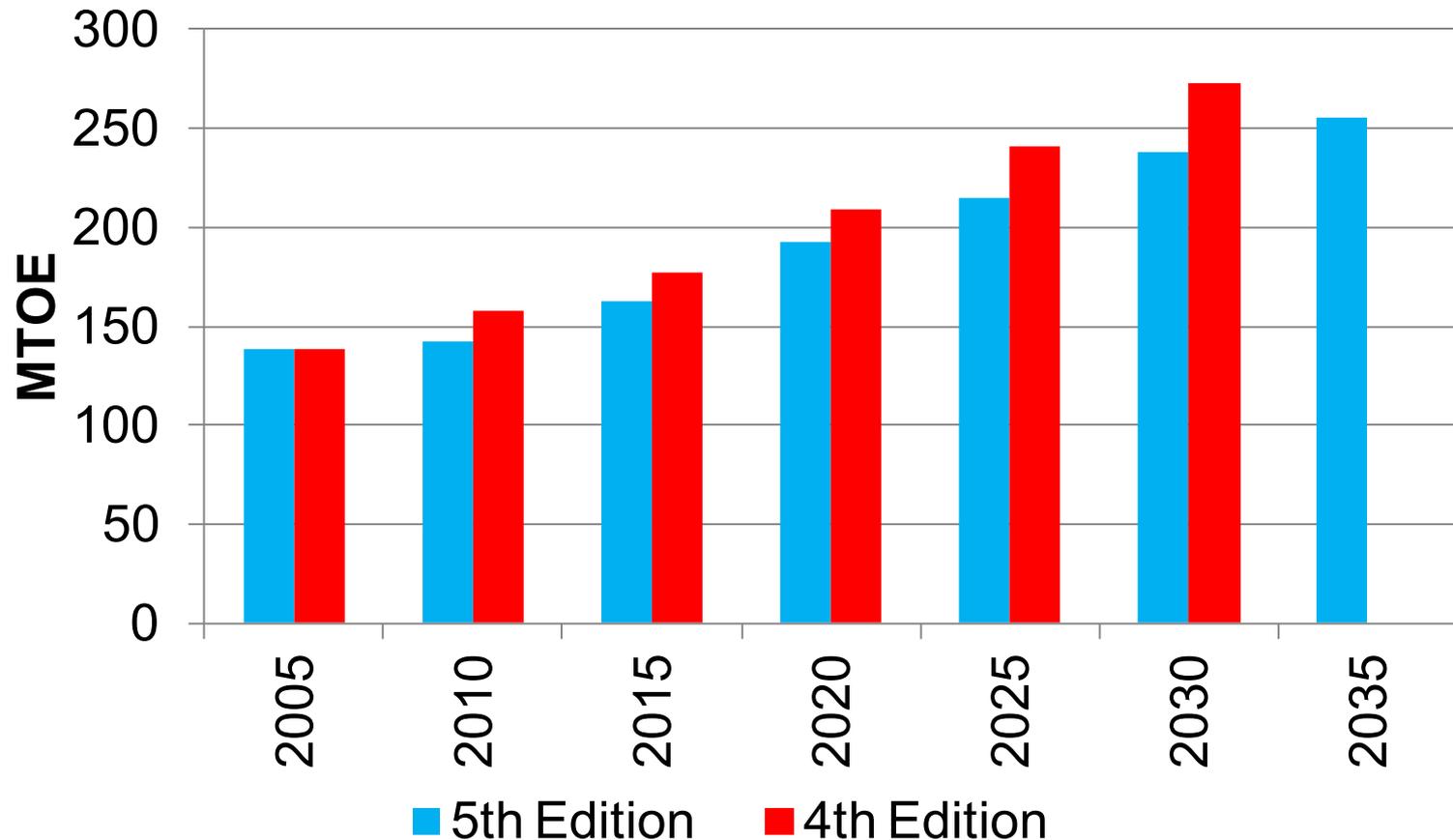
APEC Region Electricity Generation Mix (1990-2035)

Annual Growth Rates of Electricity Generation in APEC Economies



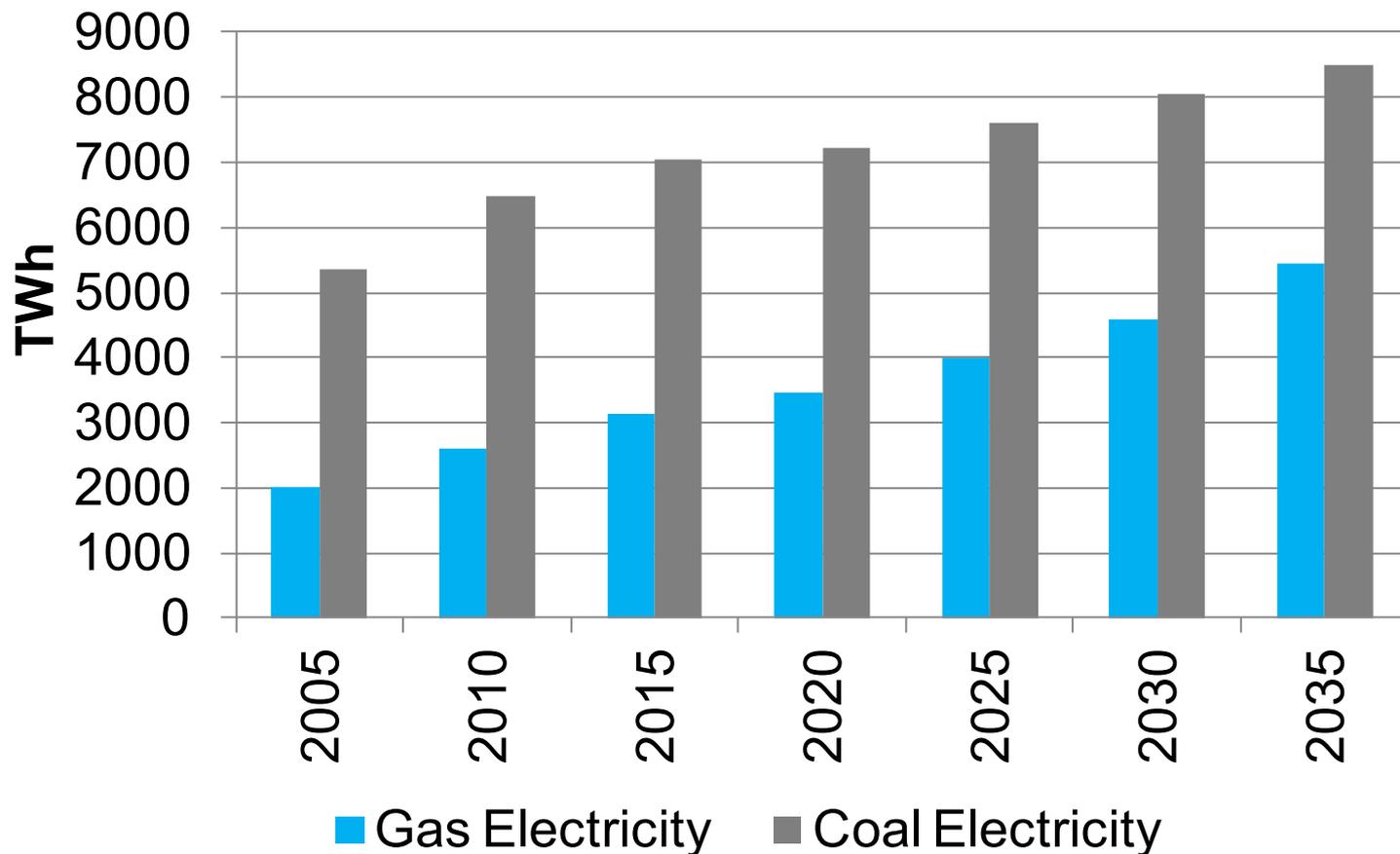
Key Finding: Nuclear development slows down, but not by much

APEC nuclear electricity production

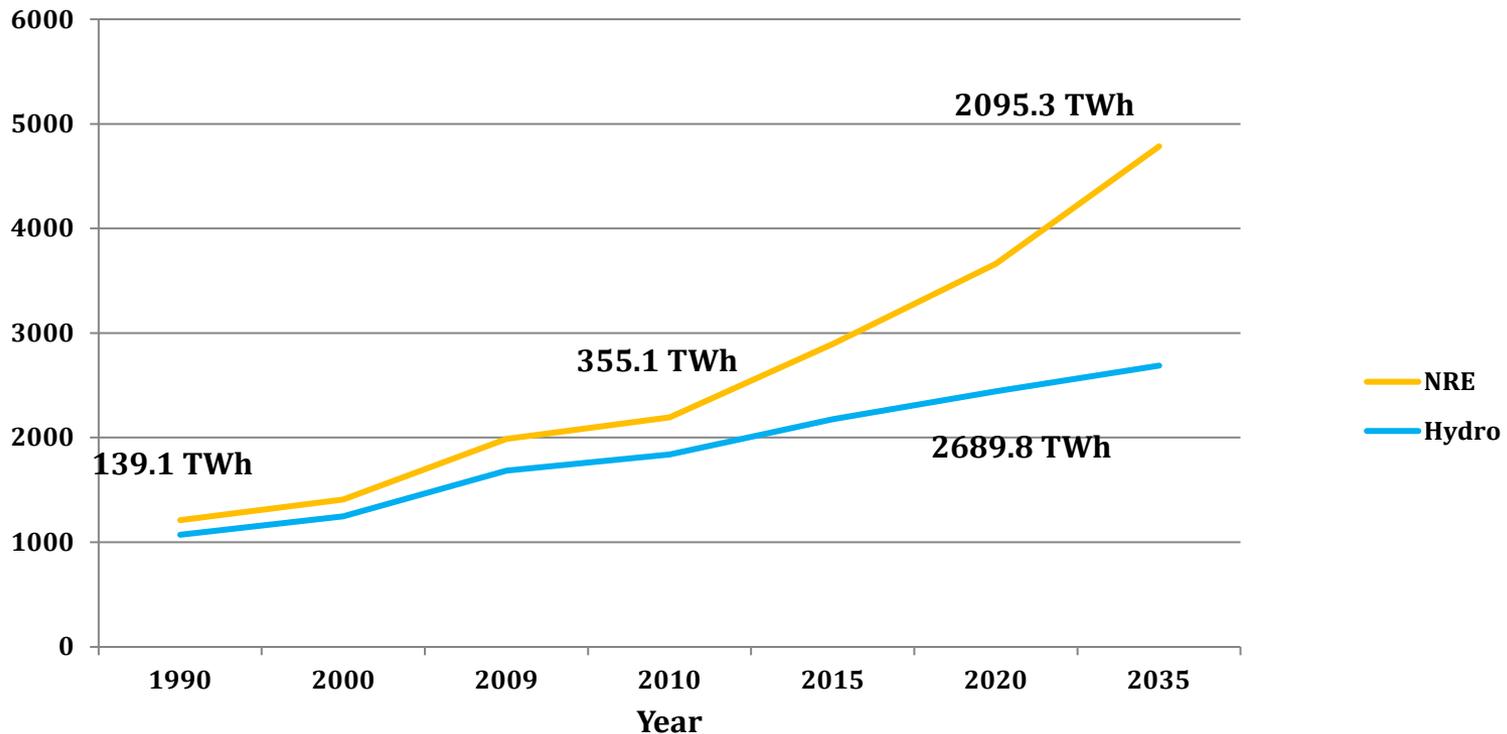


Key Finding: Coal electricity is still dominant but gas production growth speeds up and could challenge coal

APEC electricity output by fuel



Key Finding: Strong Growth in Renewable Power but Modest in Hydro



Key Drivers for the strong NRE growth

- Supportive government policy
- Advancements of RE technology

APEC Renewable Energy Policy Support is Robust

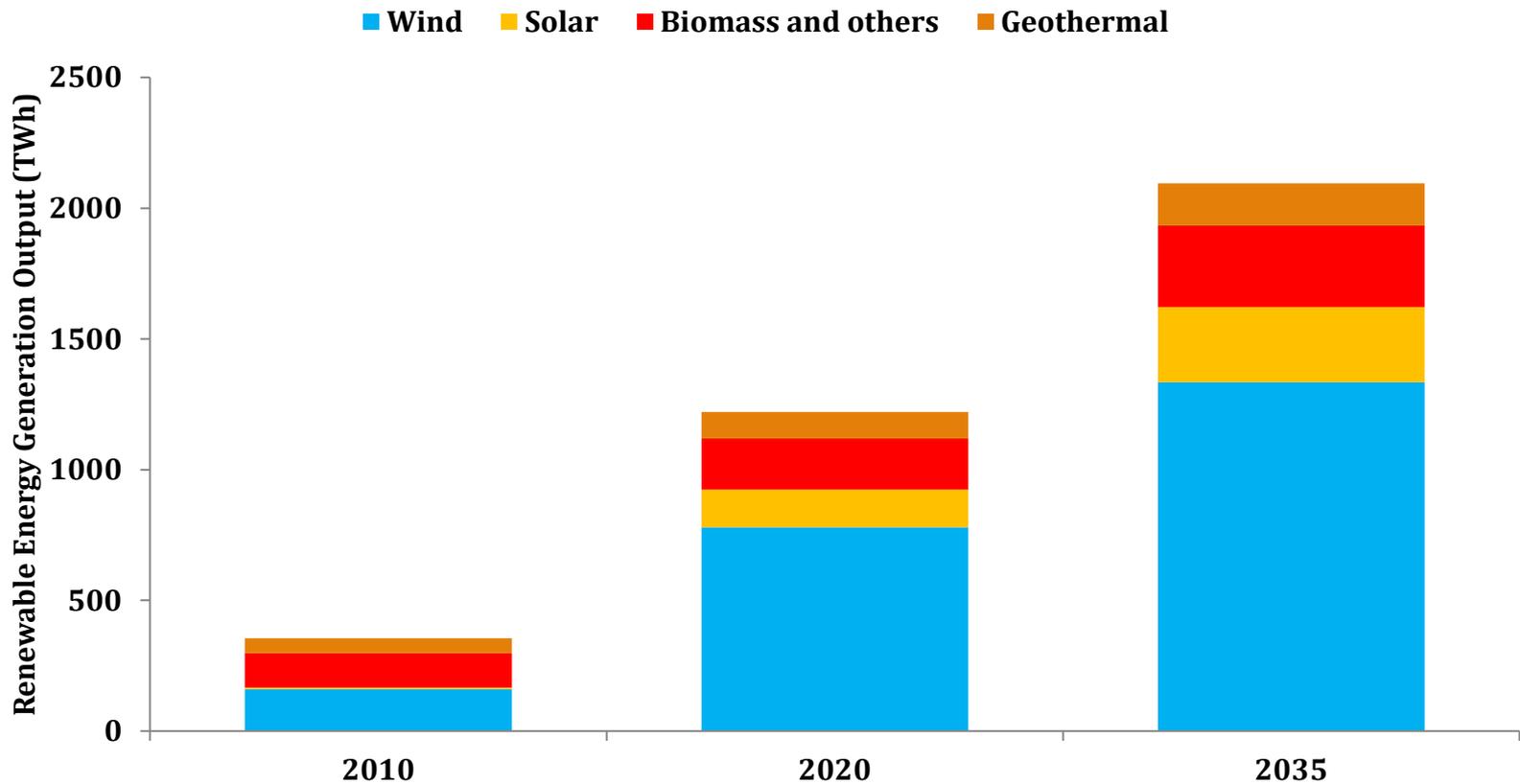
1. **Feed-in-tariffs** – utilities required to buy electricity from renewables at a guaranteed price
2. **Renewable portfolio standards** – Requirement of utilities to obtain a minimum fraction of their electricity from renewable sources
3. **Carbon pricing** – Tax on CO₂ emissions, which discourages the use of fossil fuels
4. **Regulations limiting greenhouse gas emissions** – Laws which limit the level of GHG emissions on certain fossil generation
5. **Phasing out fossil fuel subsidies for power generation** – As a strategy for several APEC developing economies

A collage of images including a train, a globe, a keyboard, a cloud, and a parking lot, overlaid with a blue semi-transparent rectangle containing the title text.

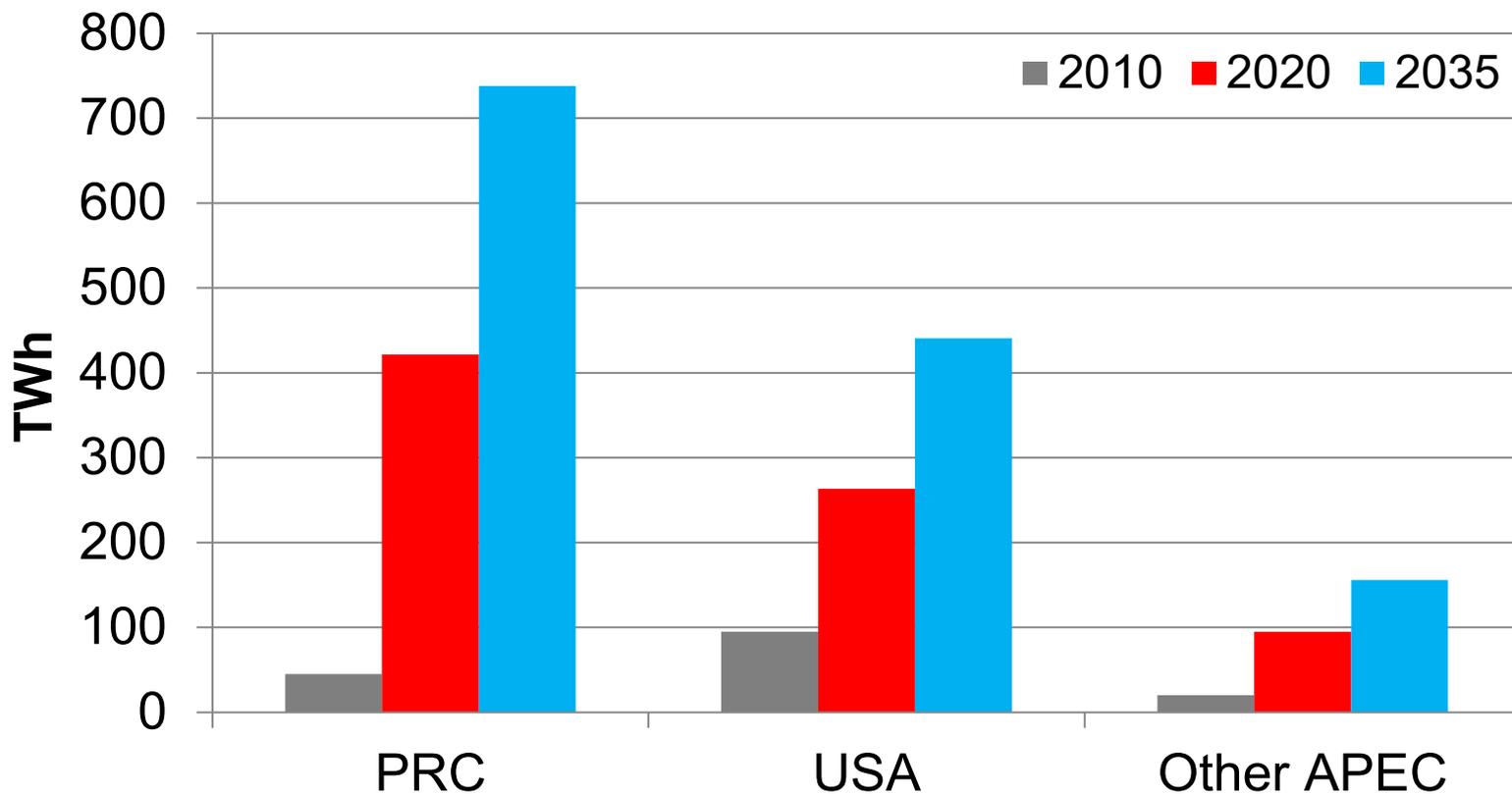
Rapid Declining RE technology costs

- Trend of module production costs for Solar PV declined sharply. USD 4.5/W in 2000 to USD1.00 /W in 2012 (LBNL) event less USD1.00/W
- Wind turbine prices had *doubled* during 2002 - 2008 then have fallen ~20%-30% in recent years and continues down for the long-term (LBNL)

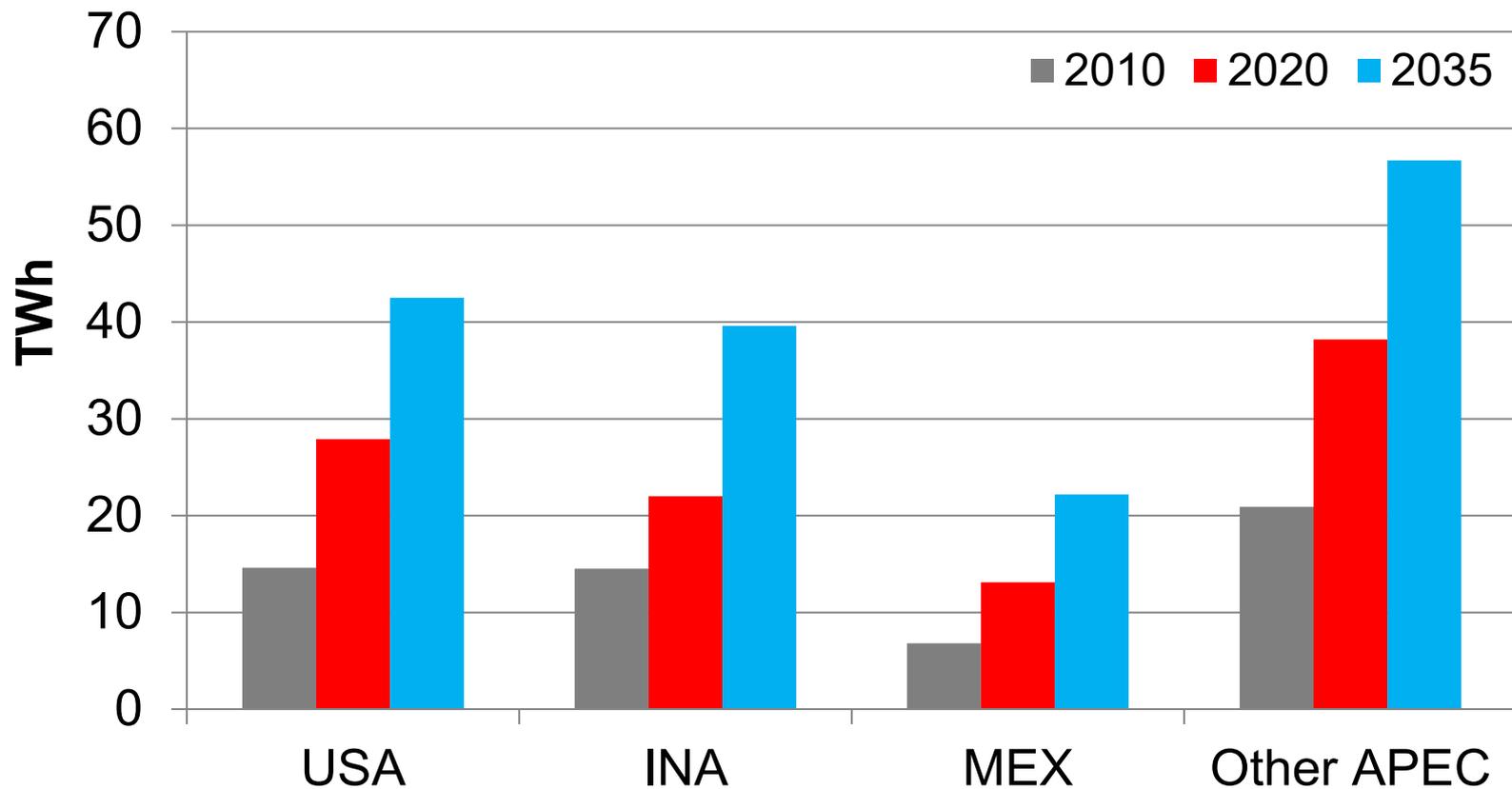
Key finding: Significant wind power addition expected in APEC Region



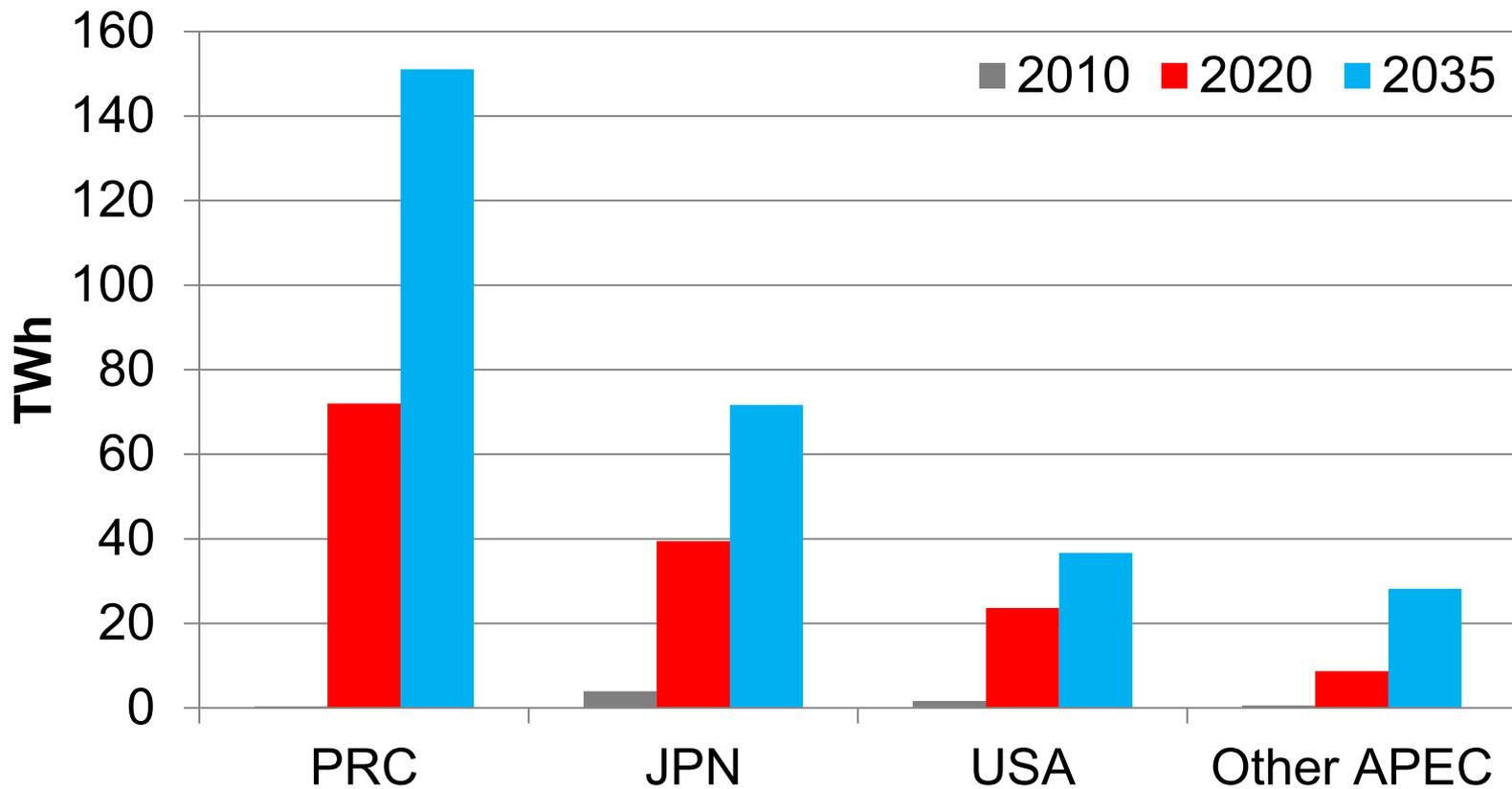
Wind power Generation by Economies



Geothermal-based Generation by Economies



Solar- Based Generation by Economies





APEC Energy Demand and Supply Outlook 2013

Thank you for your kind attention

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