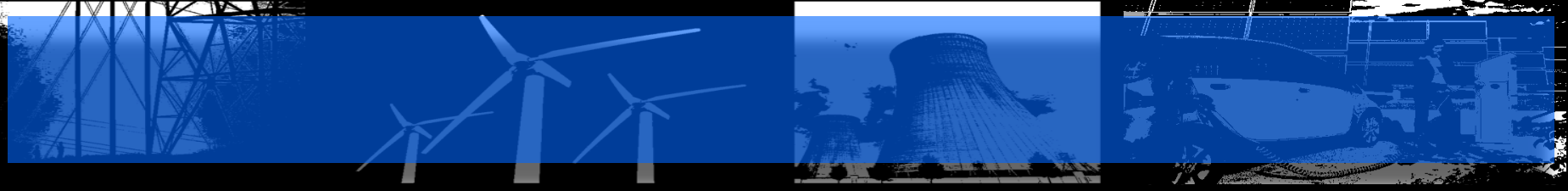




6th APEC Energy Demand and Supply Outlook

Business as Usual (BAU) Preliminary Scenario Results

Cecilia Tam
Deputy Vice President, APERC

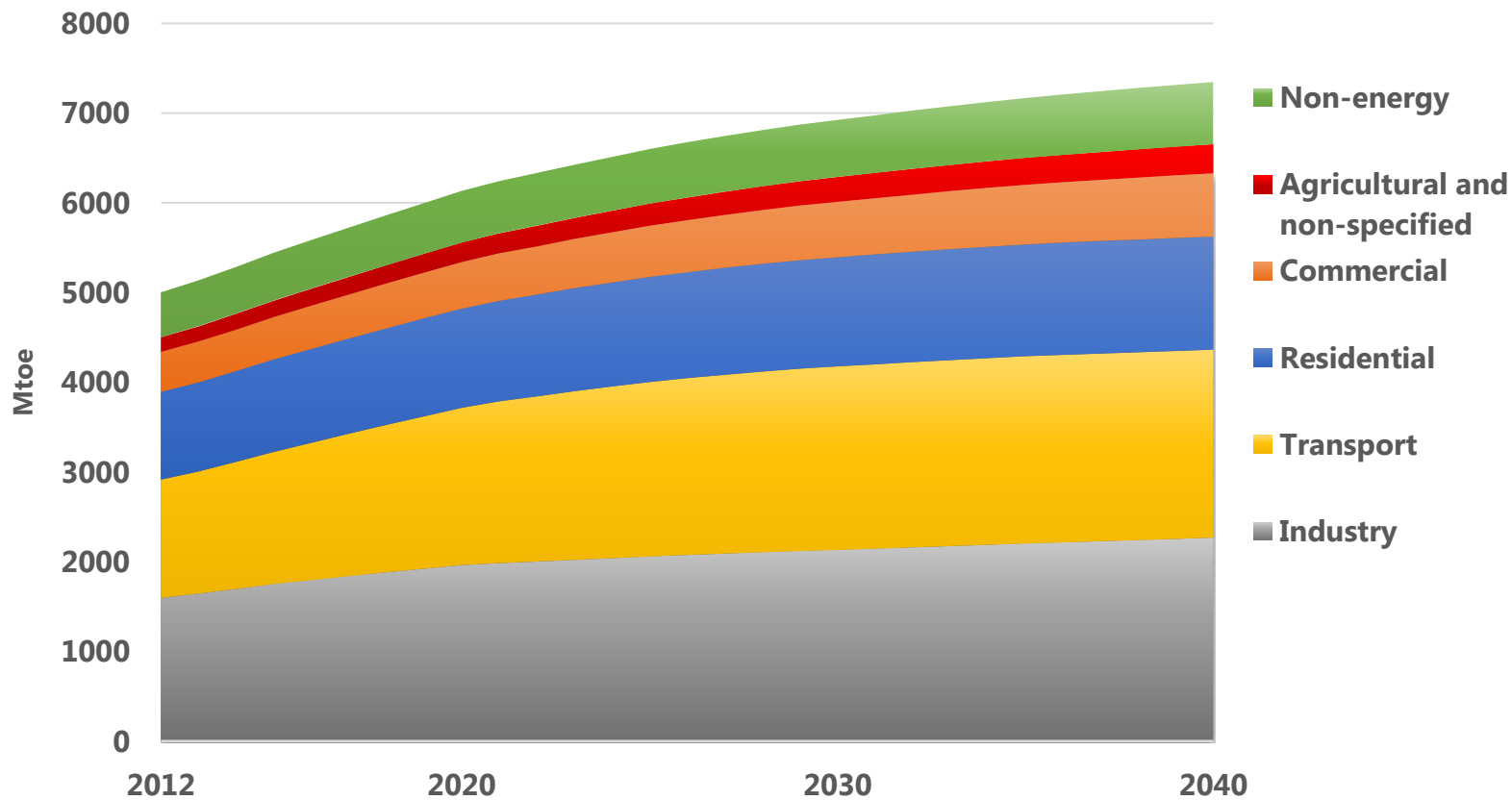


**This presentation is for review purpose.
Citation is not allowed.**



Business as Usual: Energy Demand

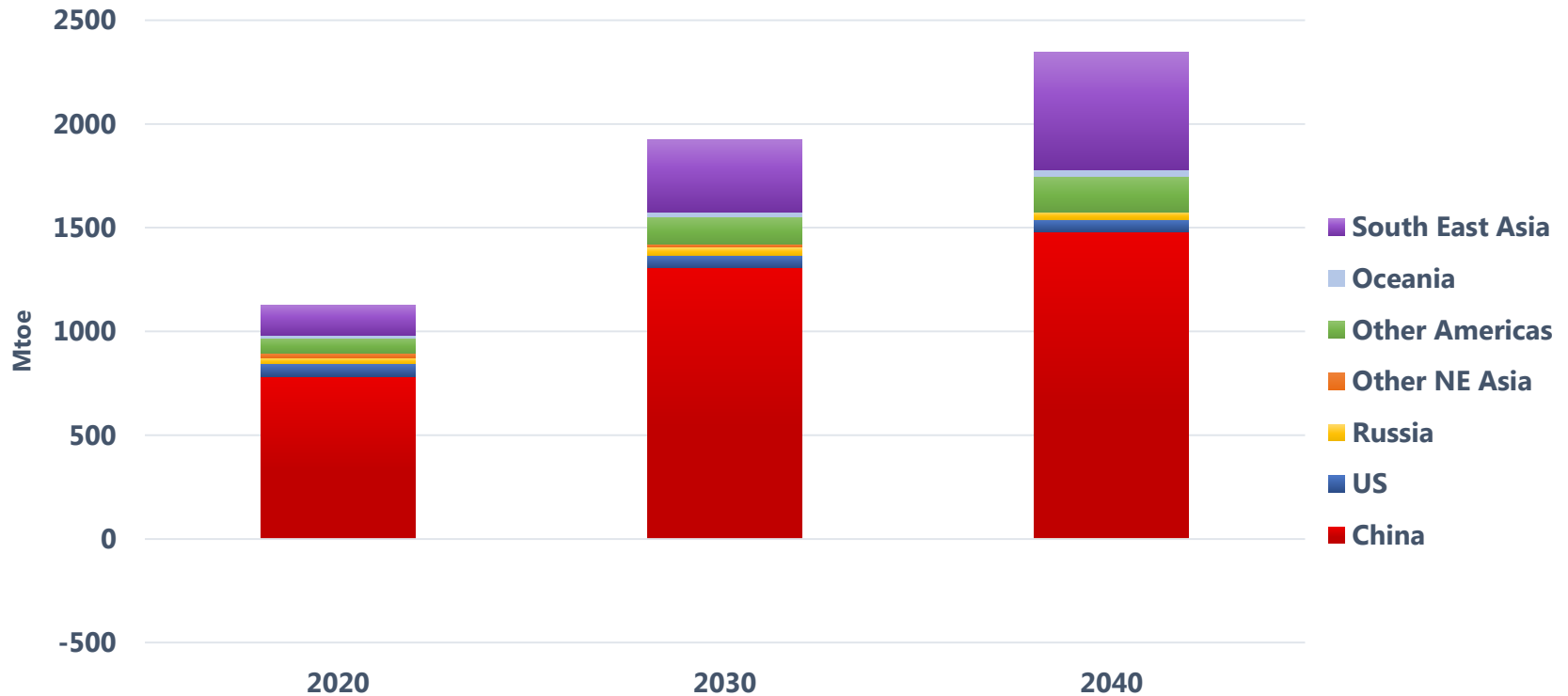
APEC Total Final Energy Demand



Source: APERC Analysis

Energy demand rises 50% by 2040, led by higher demand in transport

Growth in Final Energy Demand Compared to 2012

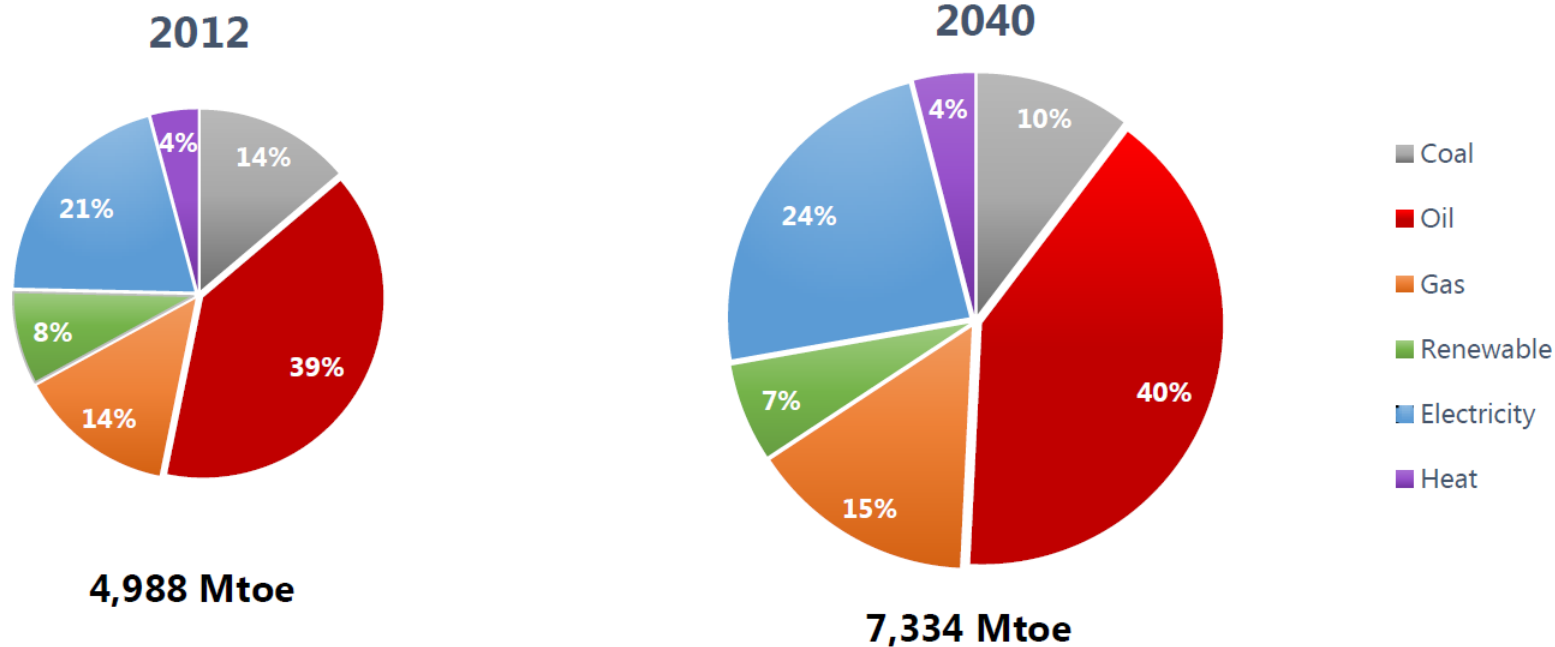


Source: APERC Analysis

China and South East Asia account for nearly 90% of all additional demand

Note: **Oceania** (Australia, New Zealand and PNG), **Other Americas** (Canada, Chile, Mexico and Peru), **Other North East Asia** (Hong Kong, Japan, Korea and Chinese Taipei), **South East Asia** (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam)

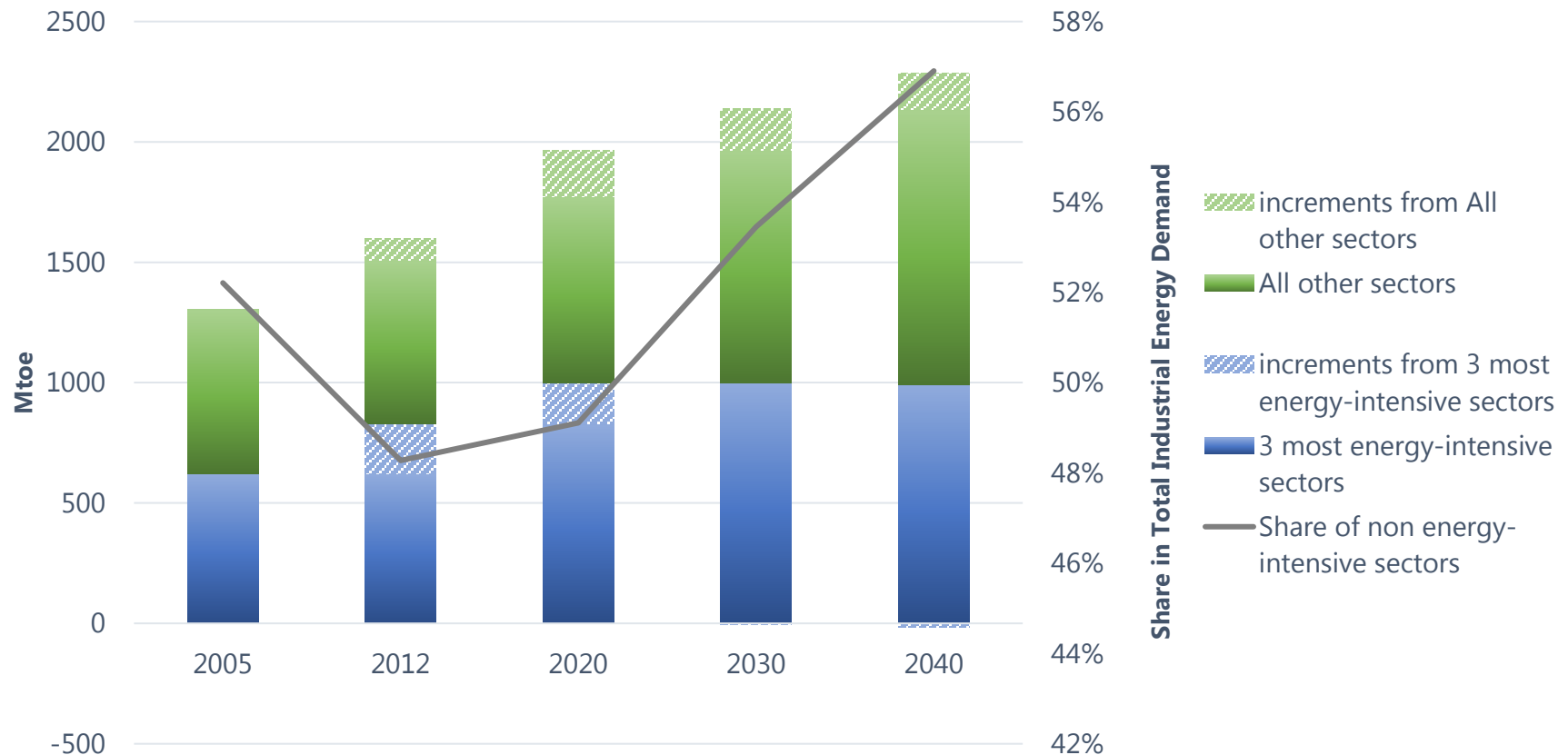
APEC's Final Energy Consumption



Source: APERC Analysis

Fuel mix remains relatively stable with electricity's share rising and coal's share declining

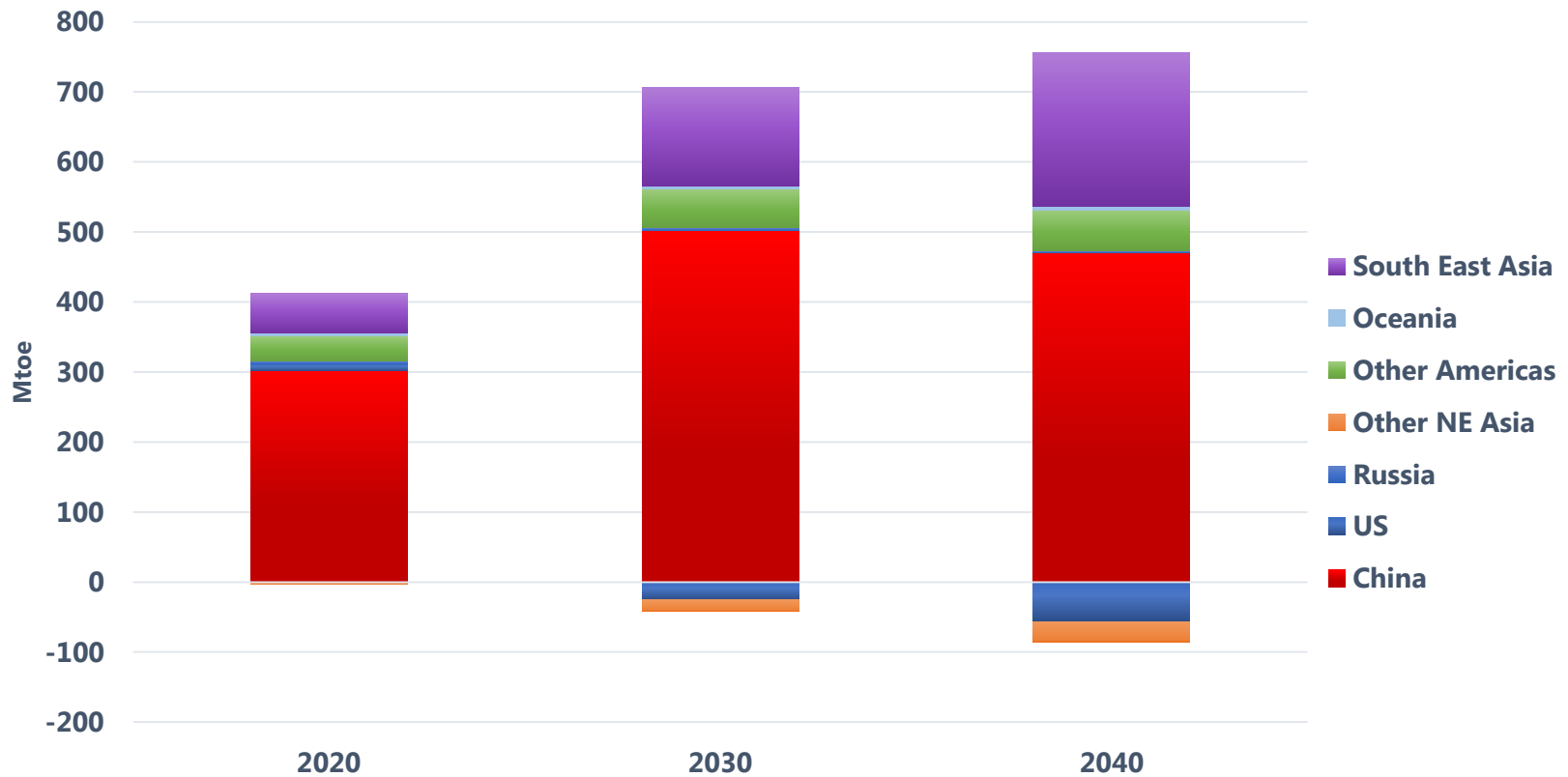
Changes in Industrial Energy Consumption



Source: APERC Analysis

Energy consumption in Cement and Steel decline as China's production peaks

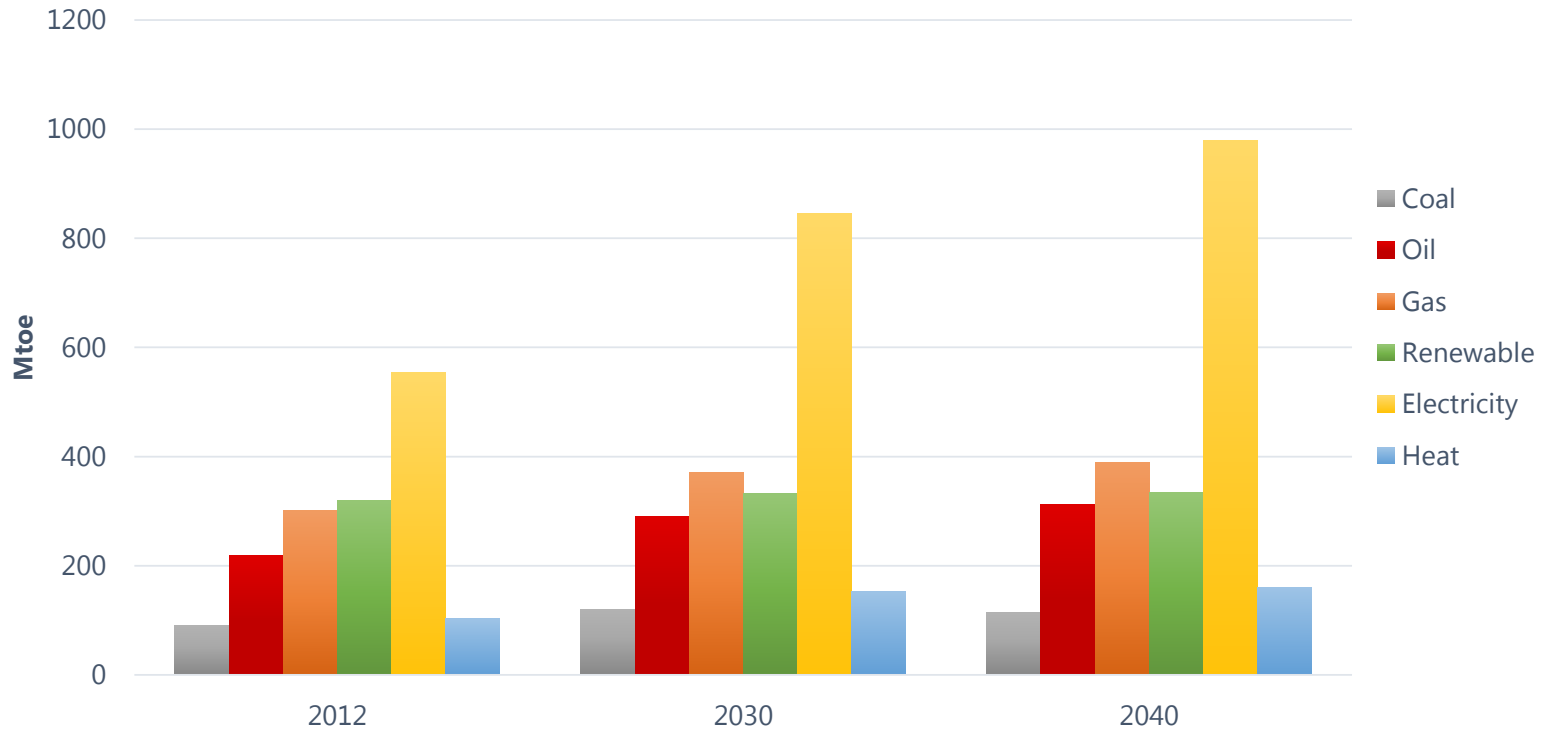
Regional Changes in Transport Energy Demand



Source: APERC Analysis

Transport energy demand rises sharply in China and South East Asia, while declining trends are seen in US, Russia and Other North East Asia thanks to slowing economic growth and tighter fuel efficiency

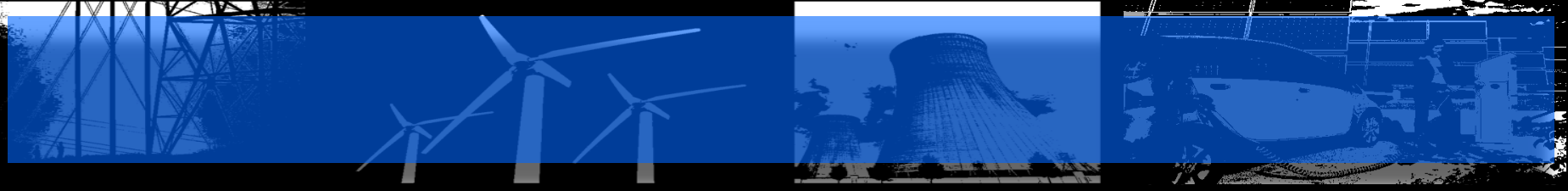
Final Energy Demand in Residential, Commercial and Agriculture



Source: APERC Analysis

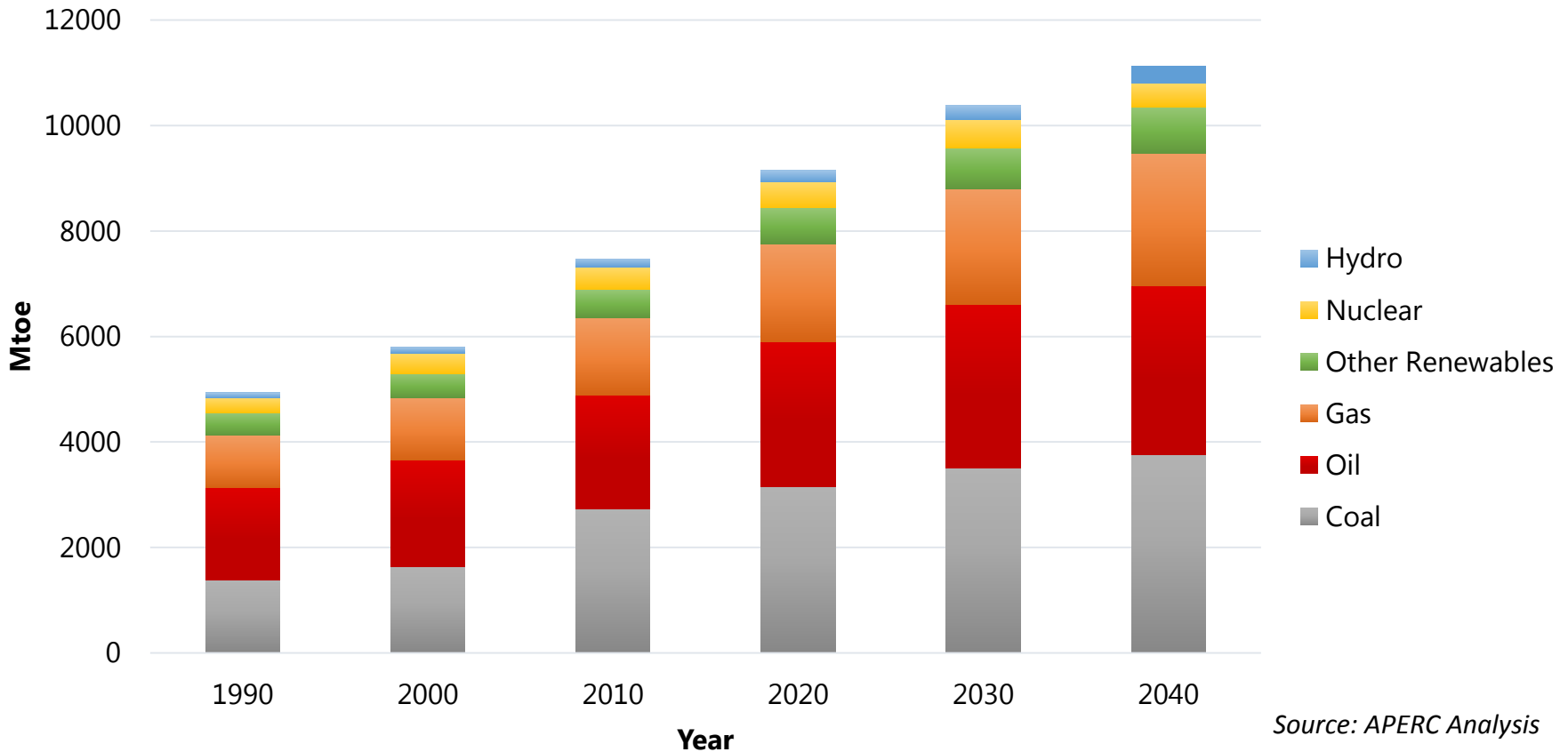
	Coal	Oil	Gas	NRE	Electricity	Heat
AAGR(2012~2040)	0.78%	1.27%	0.92%	0.15%	2.06%	1.59%

Electricity dominates energy use in residential, commercial and agriculture



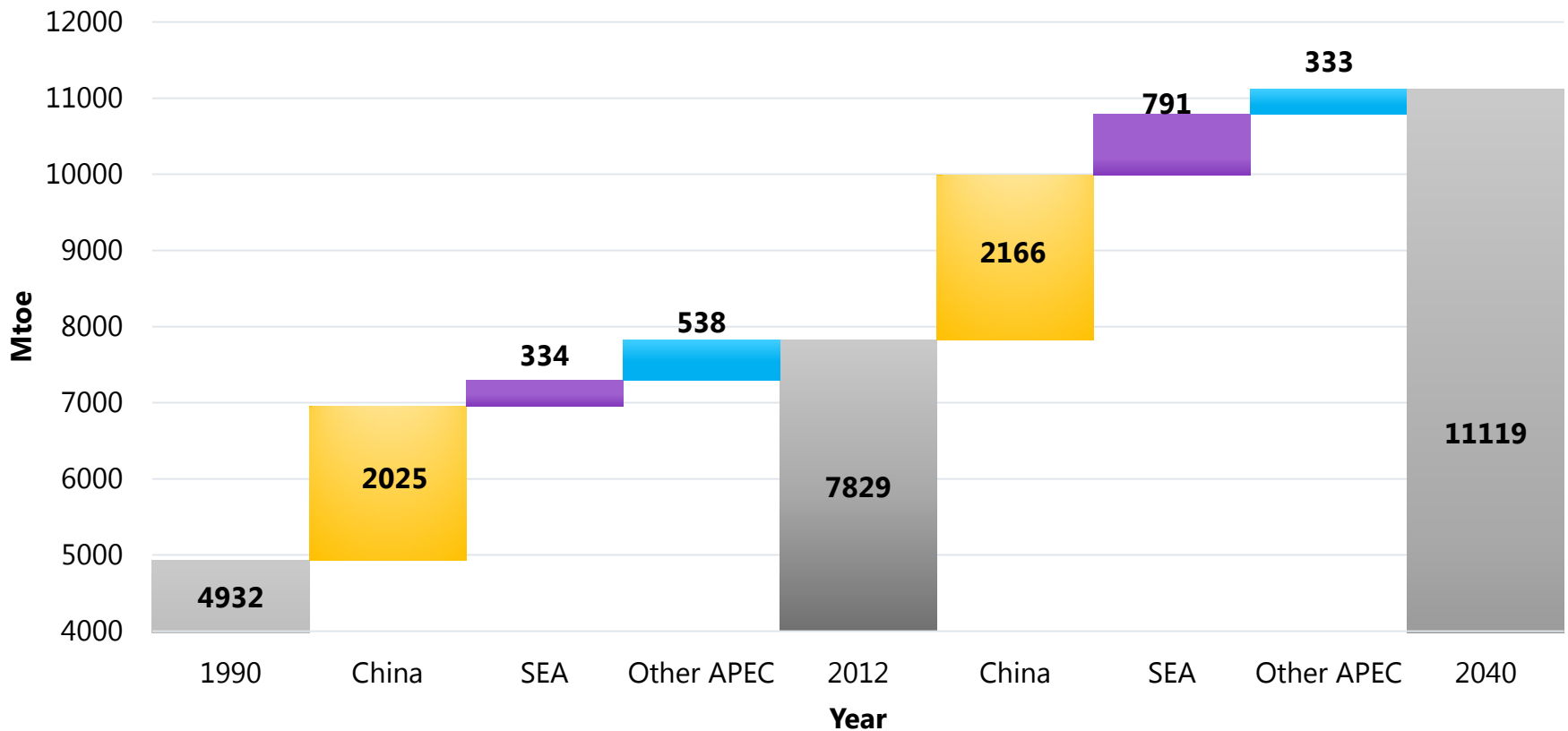
Business as Usual: Energy Supply

APEC Projected Energy Supply



Energy supply in APEC region will be more than double by 2040 from 1990 level.

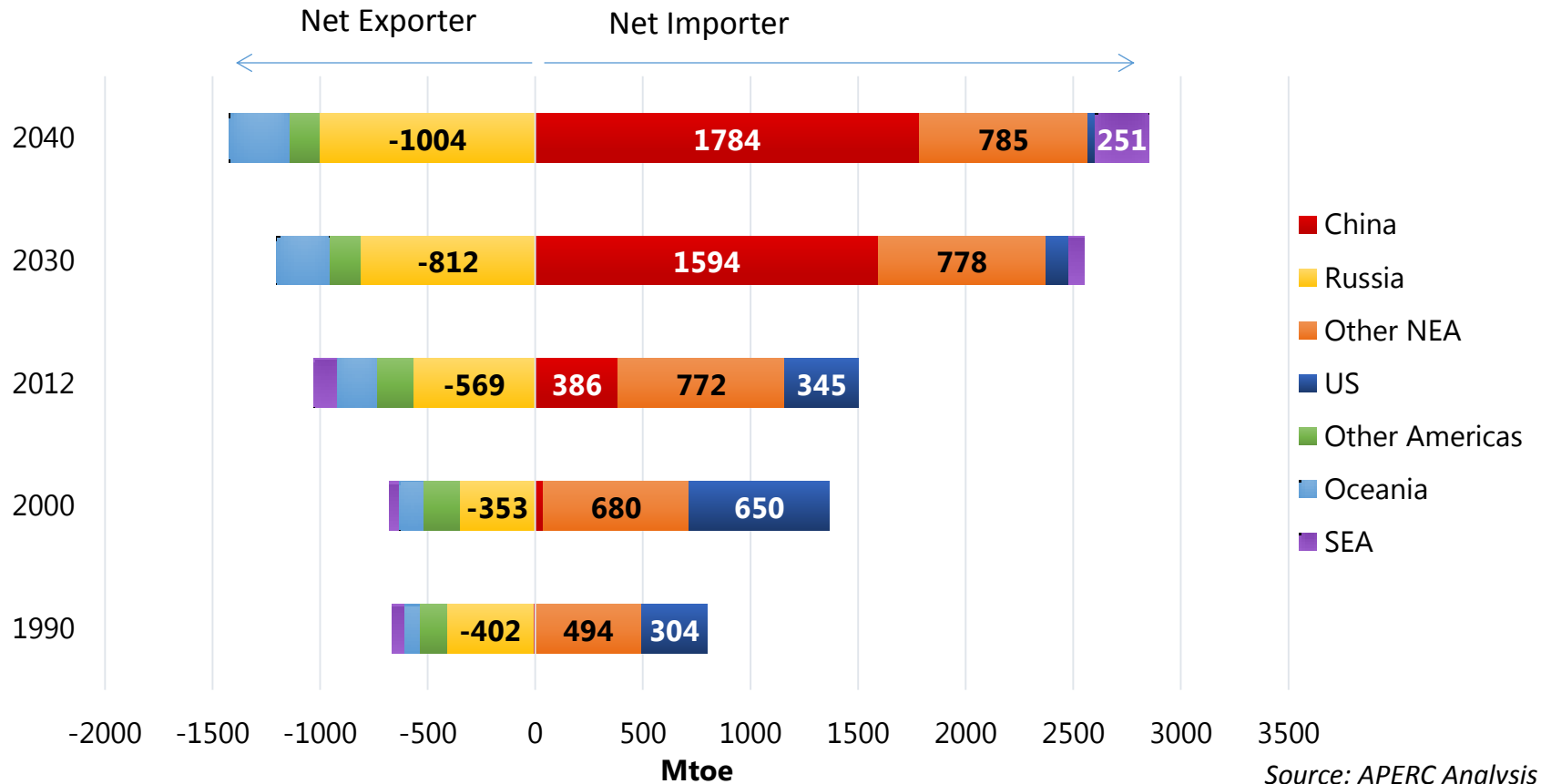
APEC Energy Demand Growth



Source: APERC Analysis

Energy demand in China will continue to grow while new demand in South East Asia will increased by more than 2 fold from 2012 to 2040 as compared to 1990 – 2012 level.

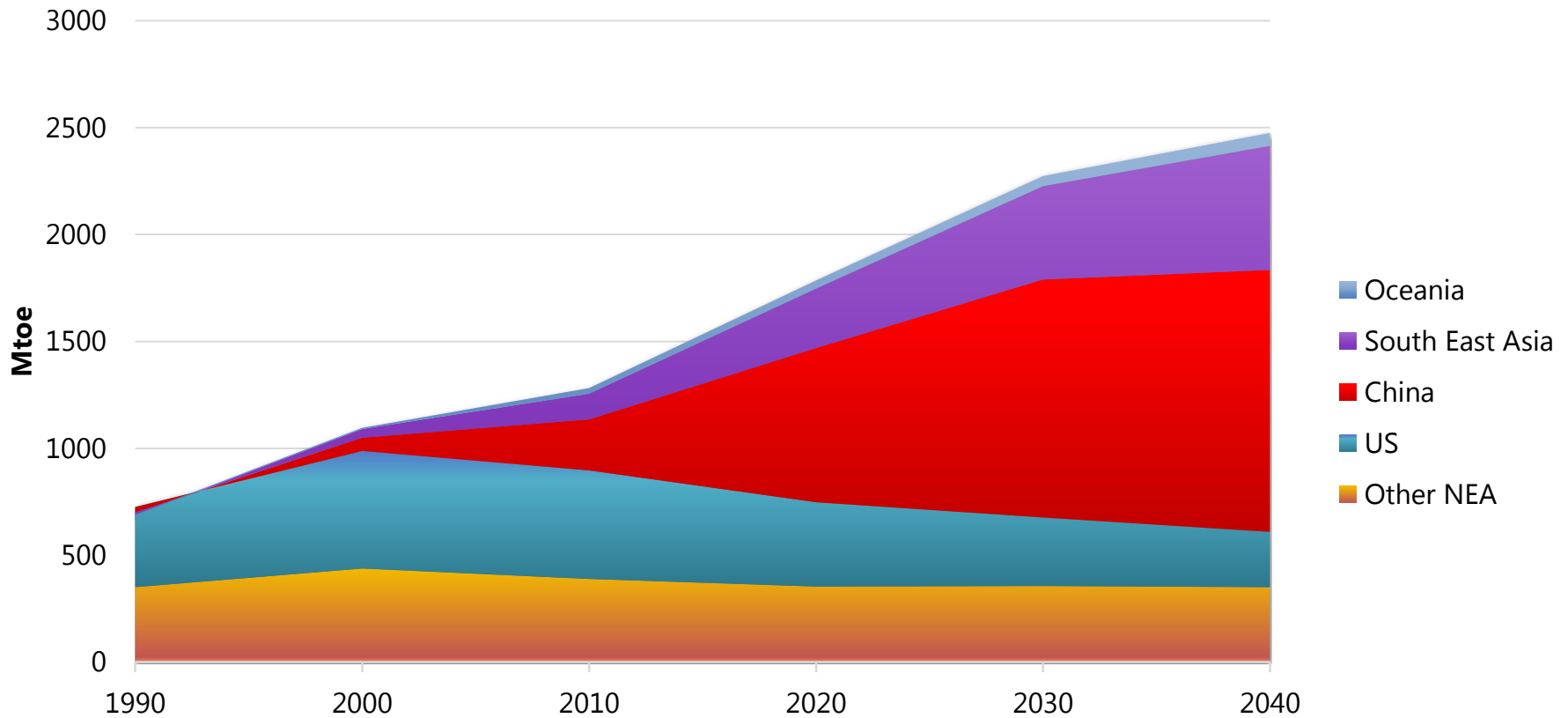
APEC ENERGY SUPPLY GAP



Supply gap is define as demand minus production.

SE Asia becomes net importer of energy as Malaysia and Vietnam move from net exports to net importers. Mexico also becomes a net energy importer.

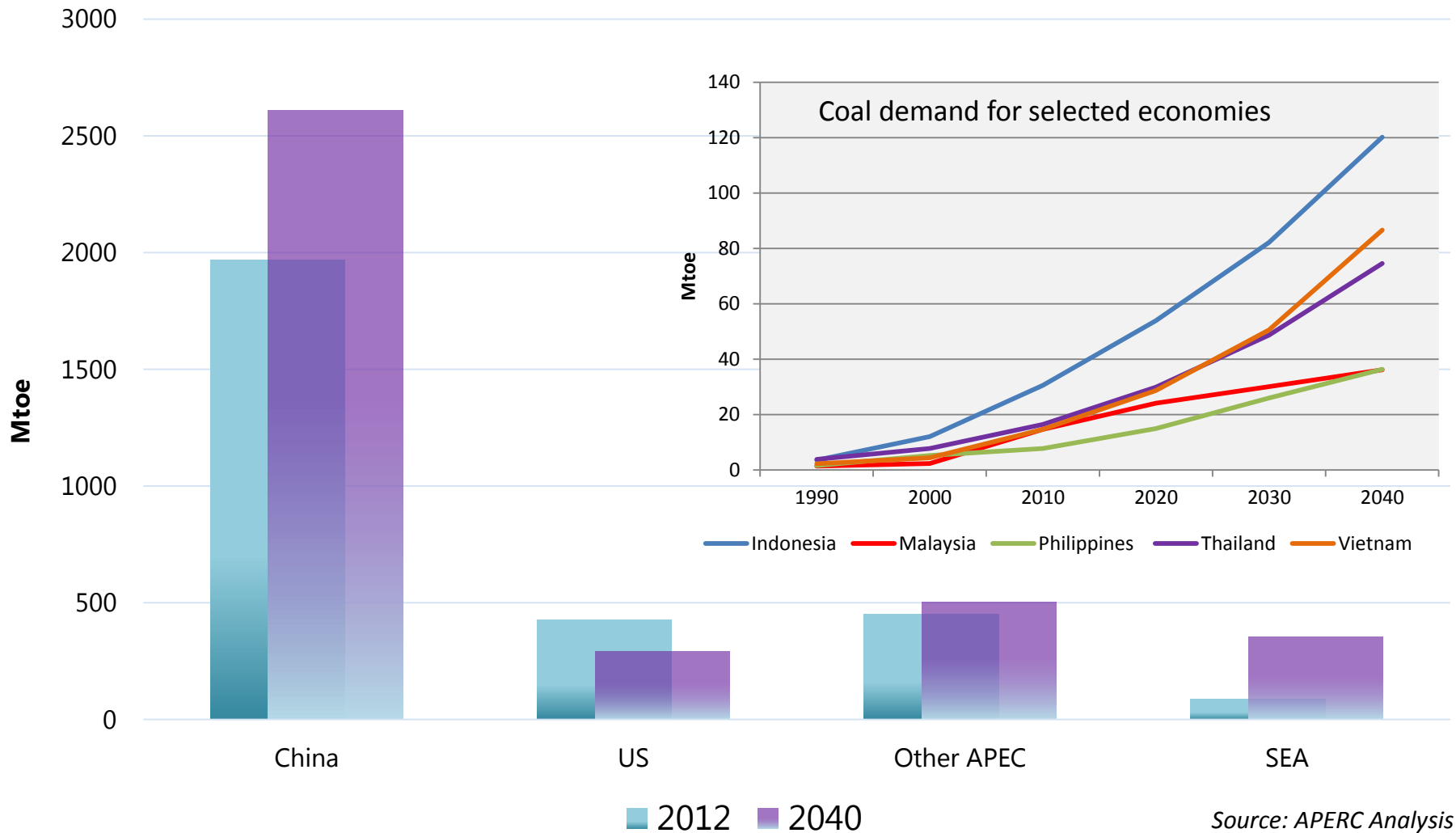
APEC Net Oil Imports



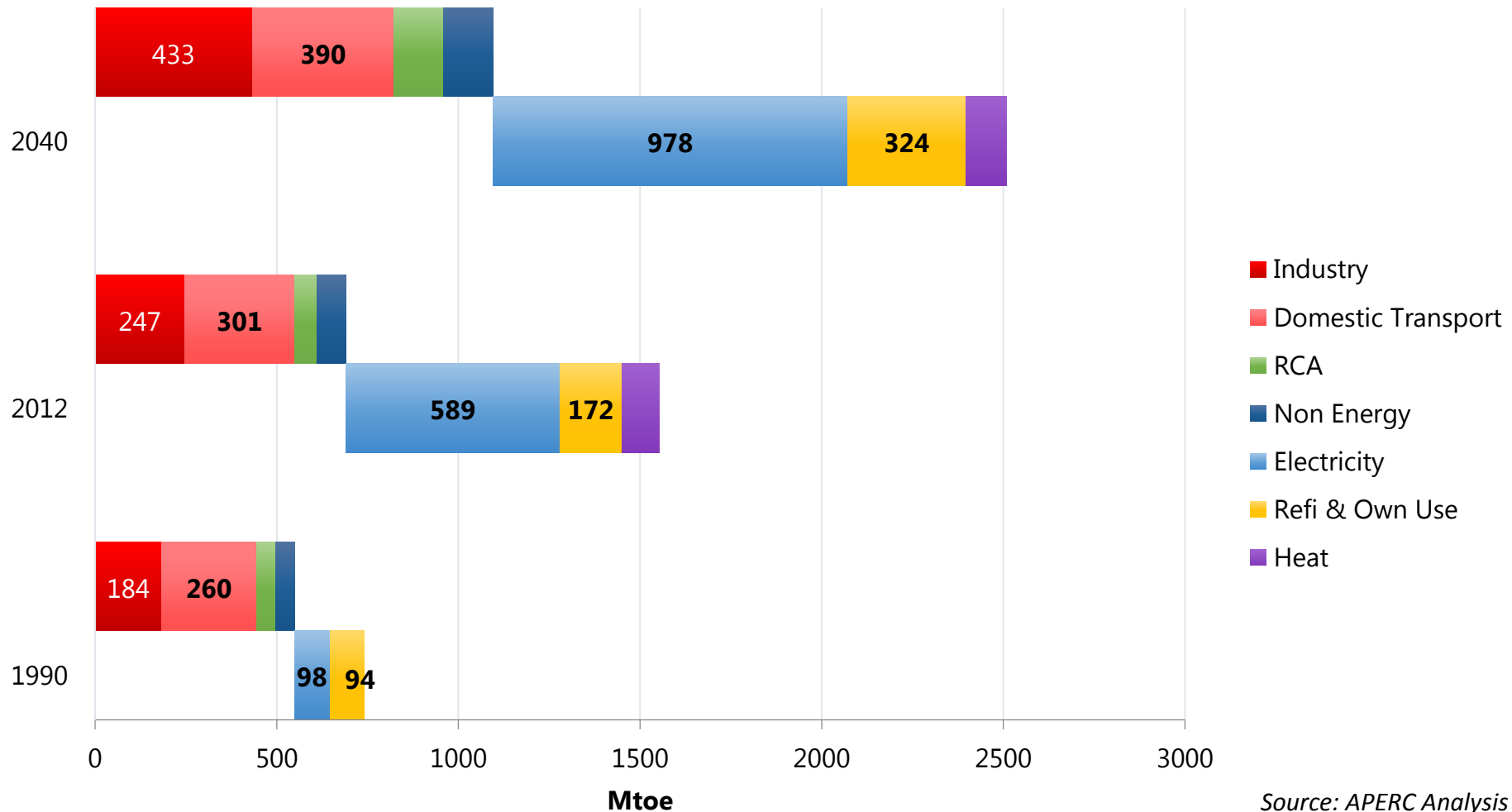
Source: APERC Analysis

Net oil imports will continue to rise as China & SEA add over 700 million cars

High Coal Demand In Asia Pacific

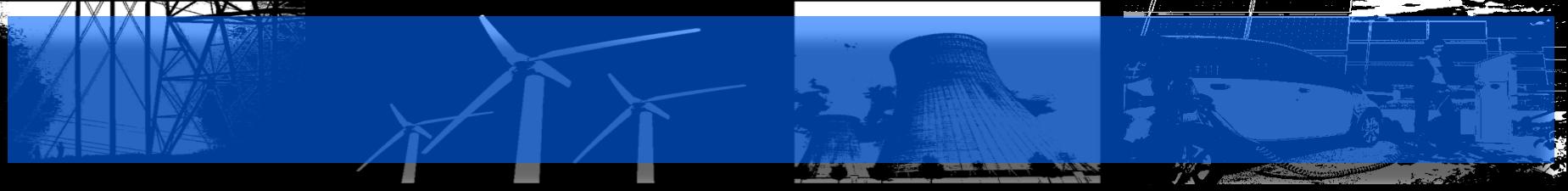


Electricity Will Drive Gas Demand



RCA: Residential, Commercial & Agriculture

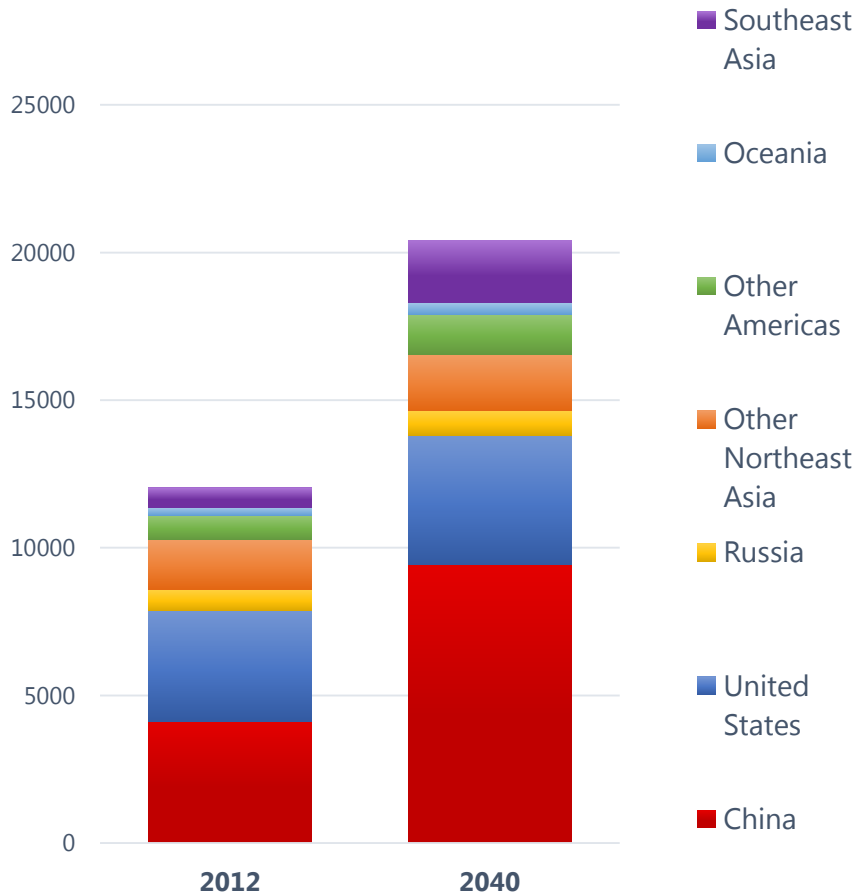
Source: APERC Analysis



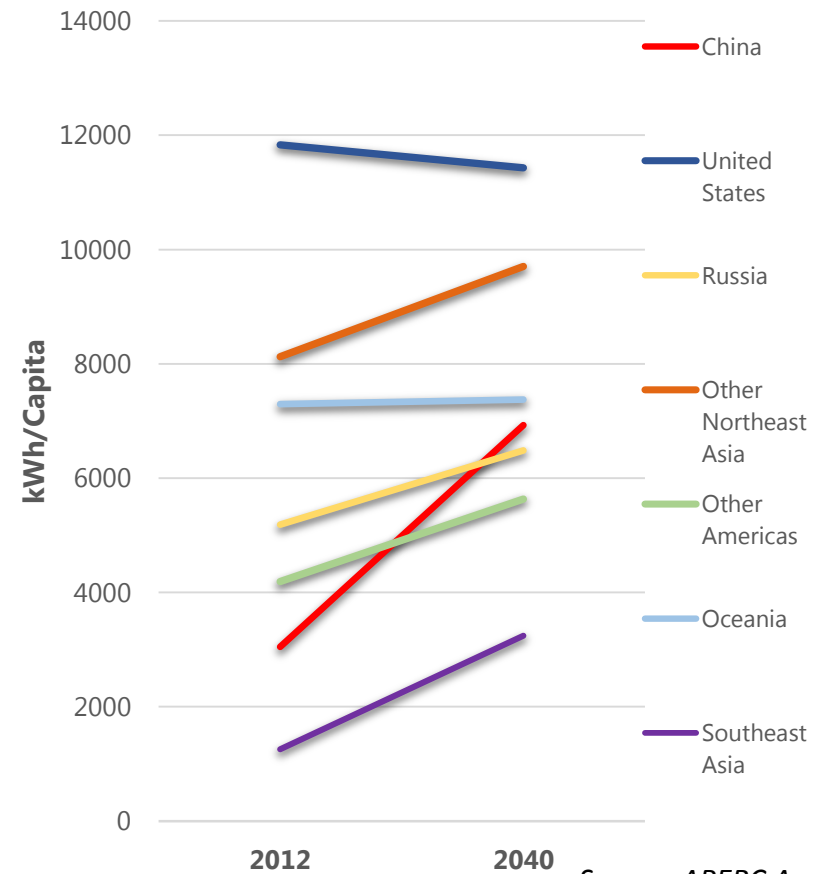
Business as Usual: Power Sector

Electricity Demand

Electricity demand [TWh]



Electricity consumption per capita

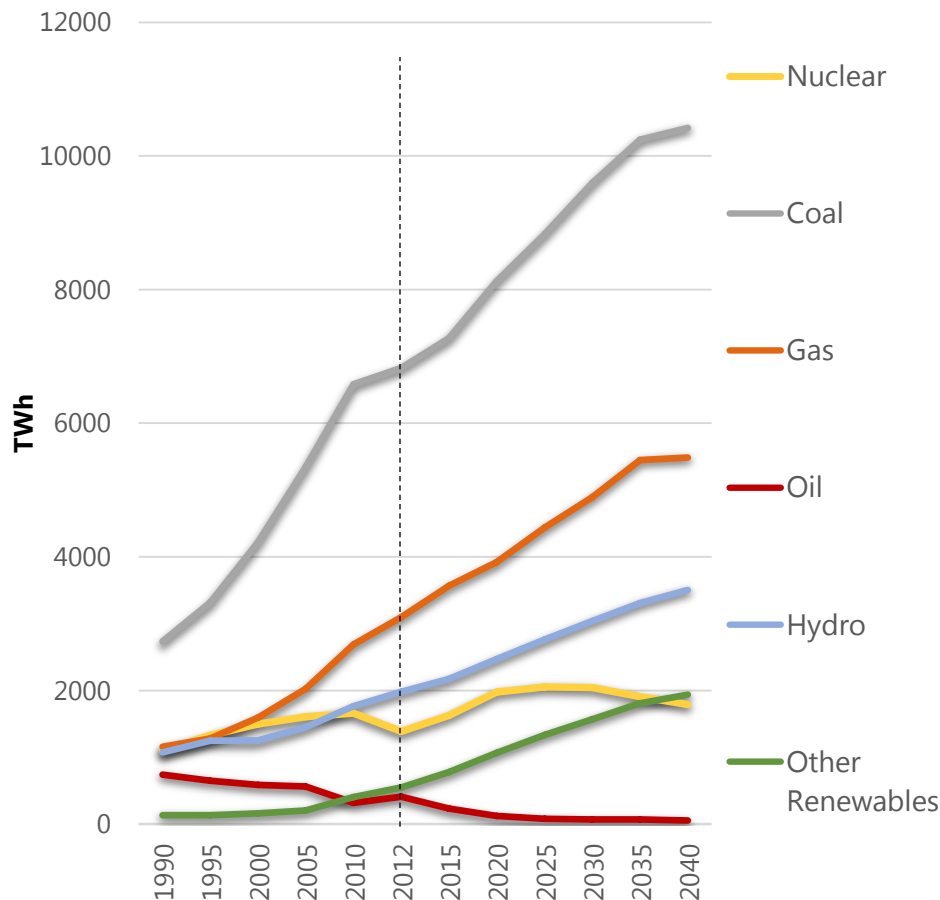


Source: APERC Analysis

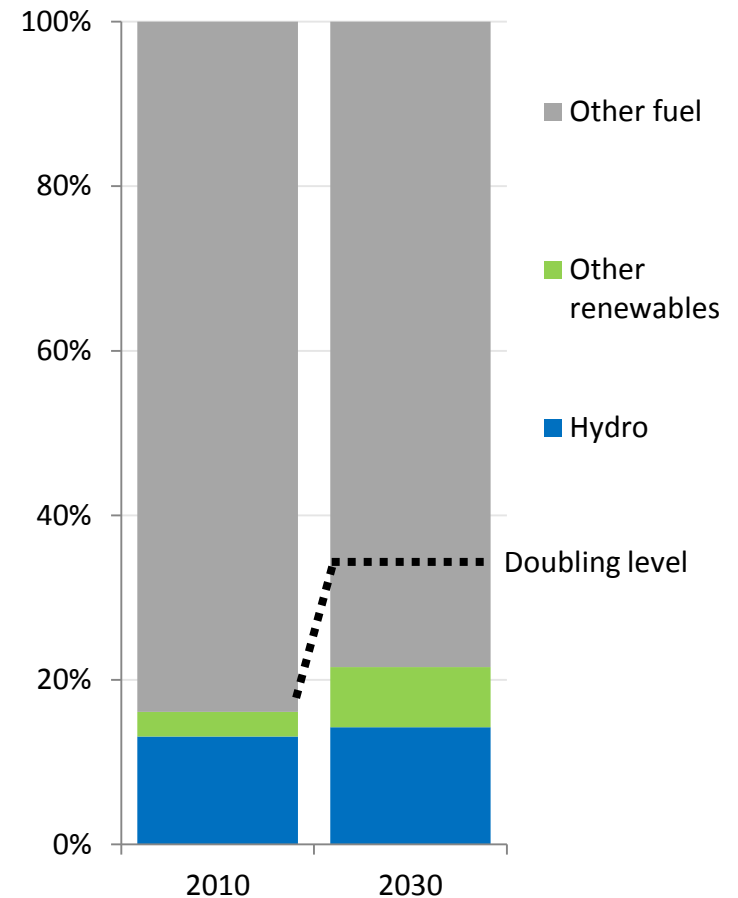
Note: **Oceania** (Australia, New Zealand and PNG), **Other Americas** (Canada, Chile, Mexico and Peru), **Other North East Asia** (Hong Kong, Japan, Korea and Chinese Taipei), **South East Asia** (Brunei Darussalam, Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam)

APEC Electricity Results

Power generation by fuel type

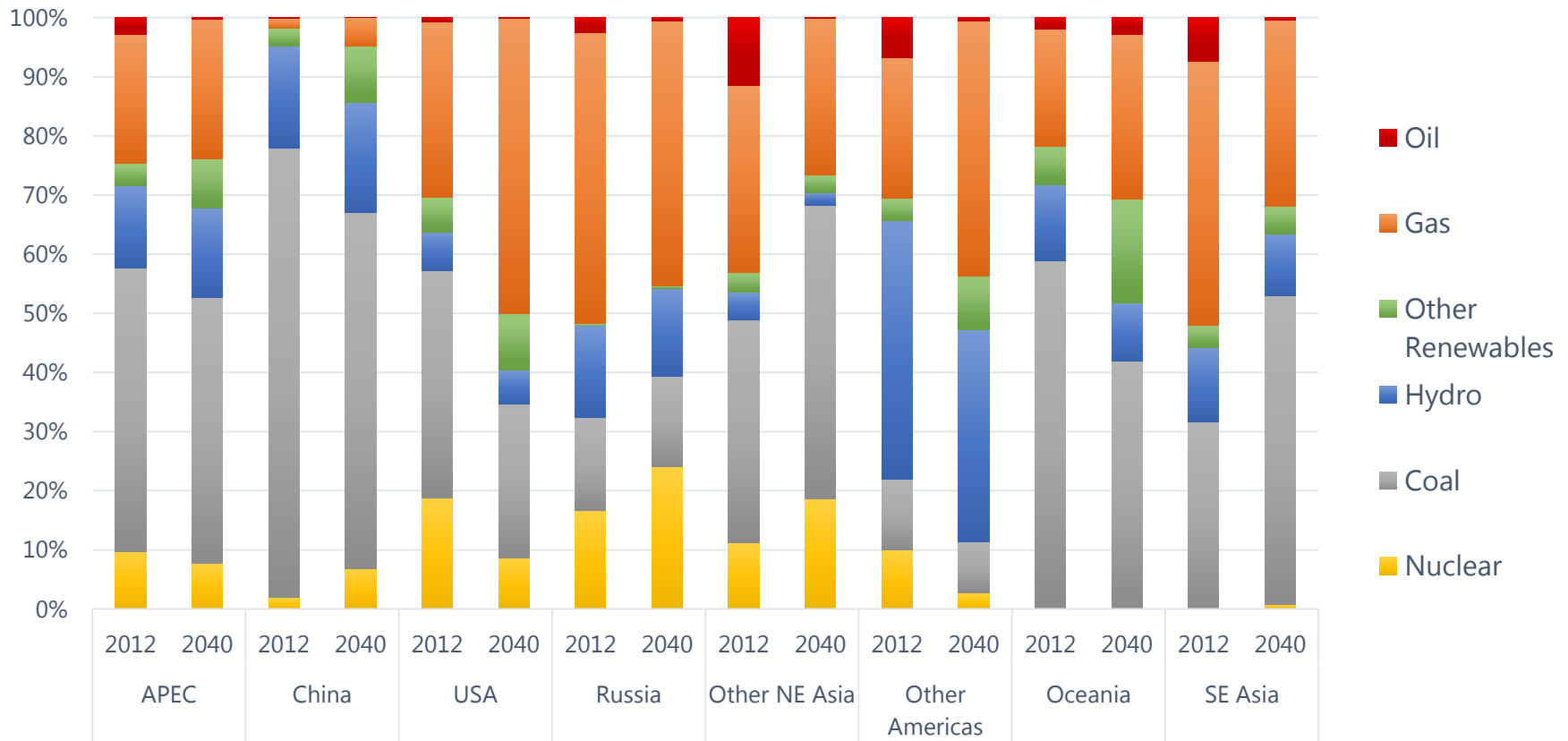


Renewables share in power mix



Source: APERC Analysis

Regional Electricity Generation

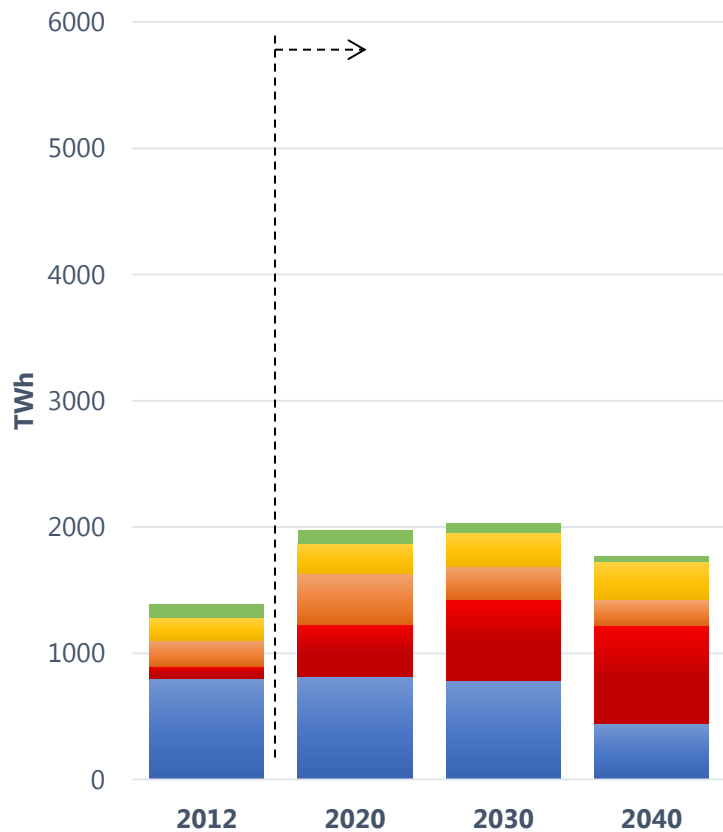


Source: APERC Analysis

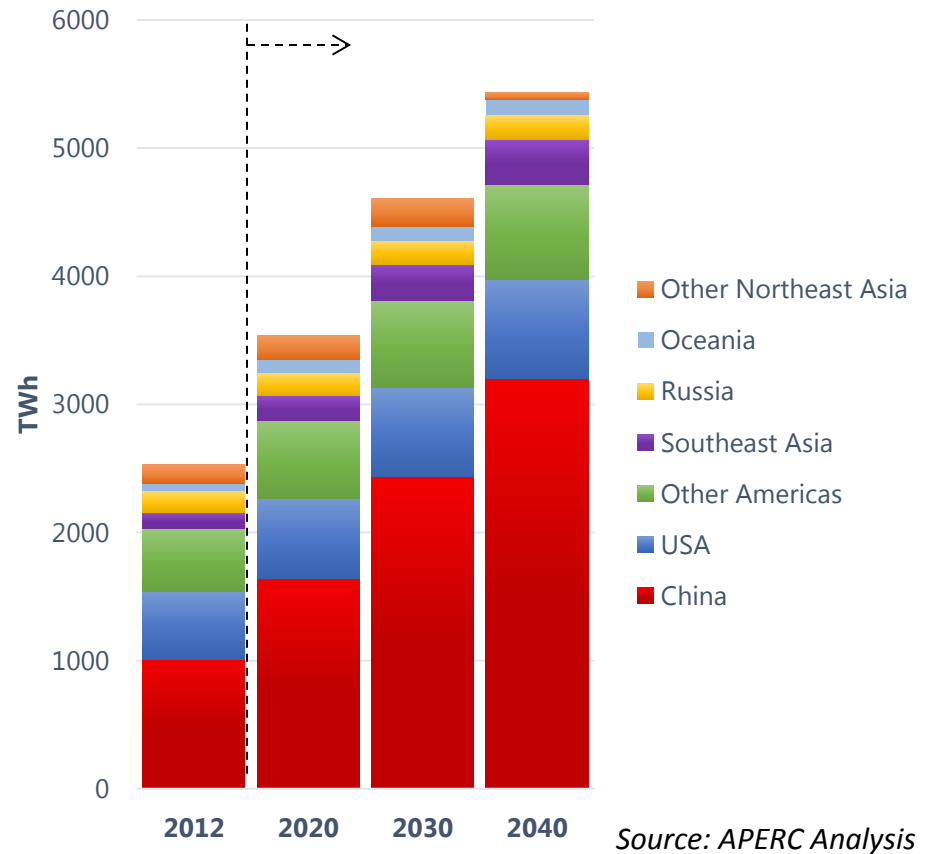
Power mix varies across APEC with coal and gas dominating in most regions

Nuclear and Renewables by Region

Nuclear generation



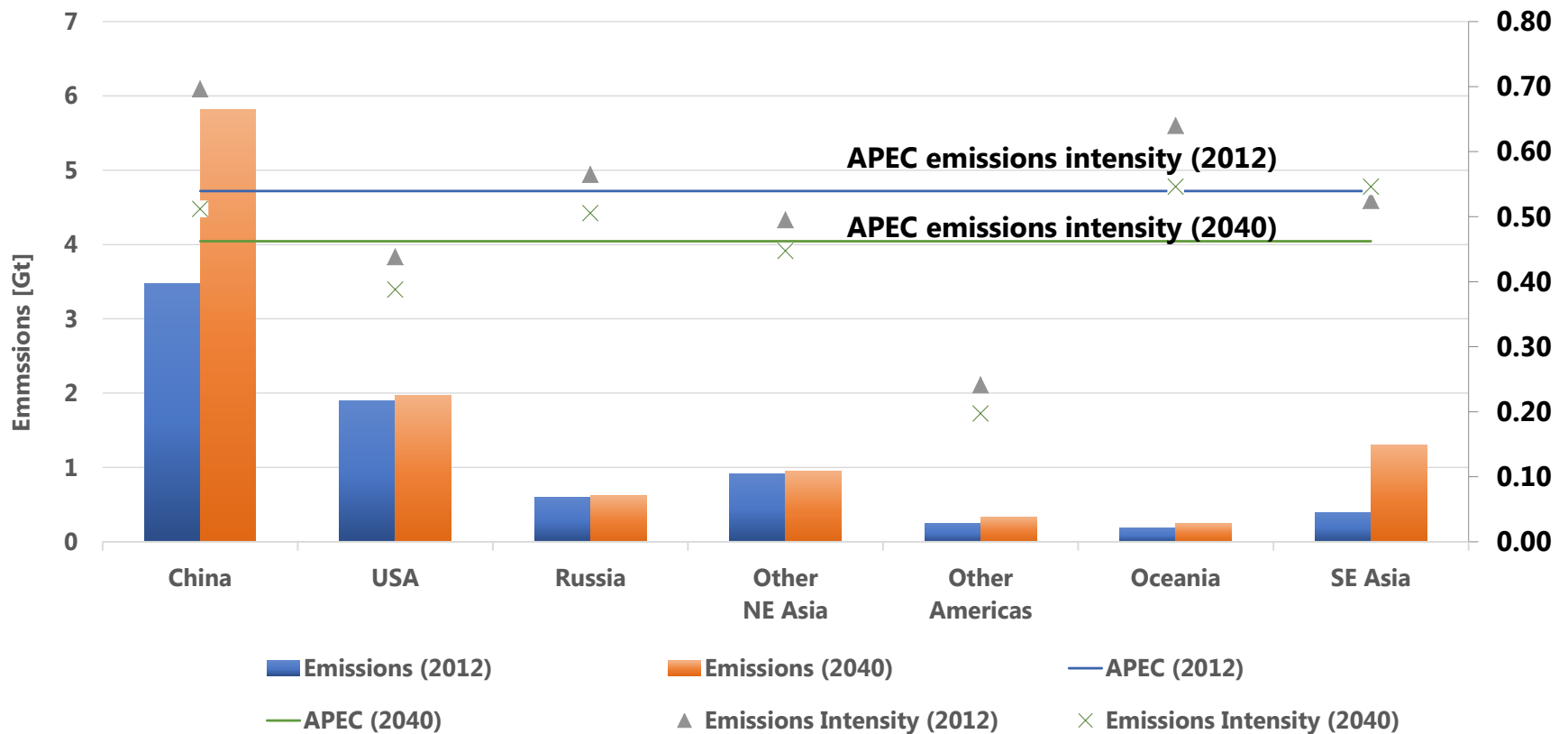
Renewables generation



Modest growth expected in nuclear and renewables under BAU

CO₂ Emissions and Intensity

Emissions and intensity by region, 2012 and 2040



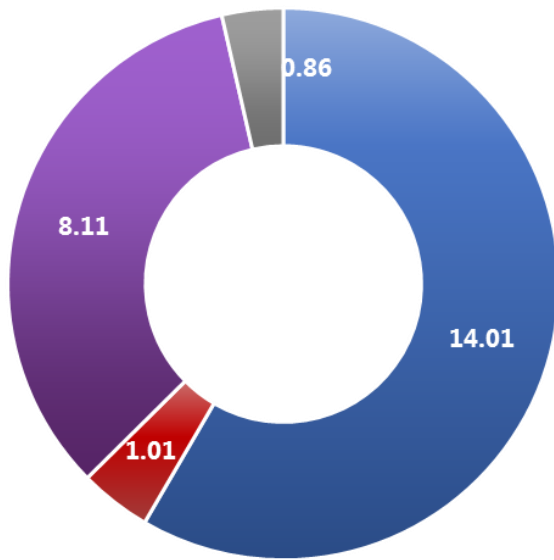
Most regions show improvements in emissions intensity

Source: APERC Analysis

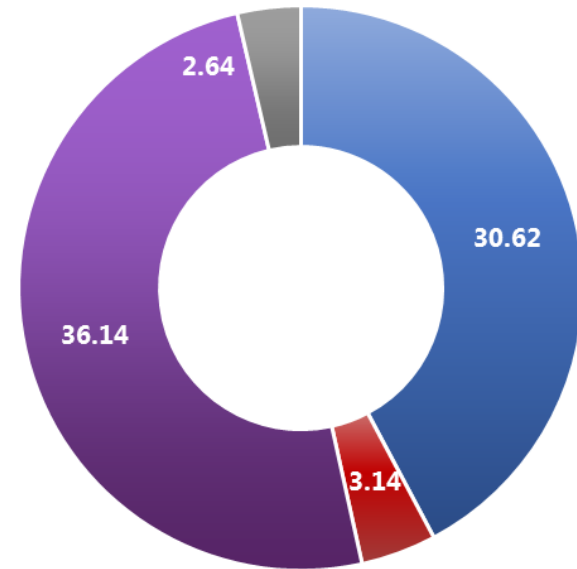
APEC Total Energy Investment in Energy Supply

Total Energy Investment by Sub-Sector

(In USD Trillion)



Low Cost Investment Case – USD 24 Trillion



High Cost Investment Case – USD 73 Trillion

Source: APERC Analysis

Note: Upstream (oil, gas and coal production), Downstream (refinery, LNG import and export terminals), Transport (oil, gas and coal) and Power (generation, transmission and distribution)

Investments in power and upstream dominate the energy sector. Power sector investments are estimated to range from US\$ 8 trillion to US\$ 36 trillion, while those for upstream production range from US\$ 14 trillion to US\$ 30.5 trillion

***We appreciate your review and
feedback on APERC's Outlook!***