

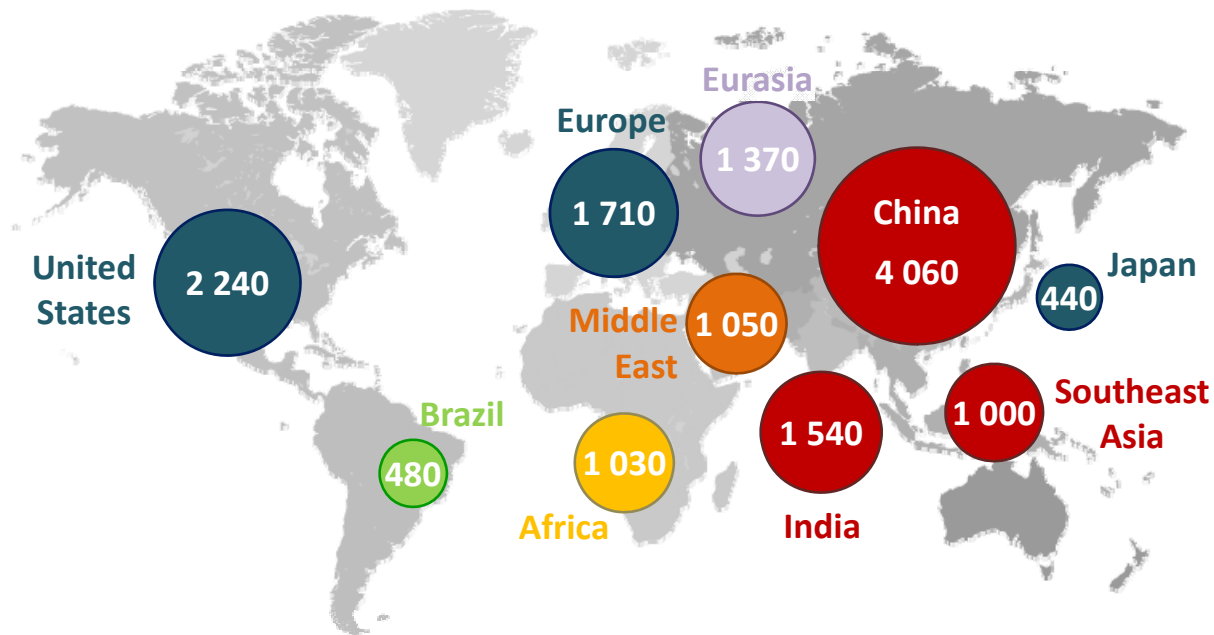
World Energy Outlook 2013: Key trends and drivers

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Directorate of Global Energy Economics, IEA
EPRG & CEEPR European Energy Policy Conference
Madrid, 2 July 2014

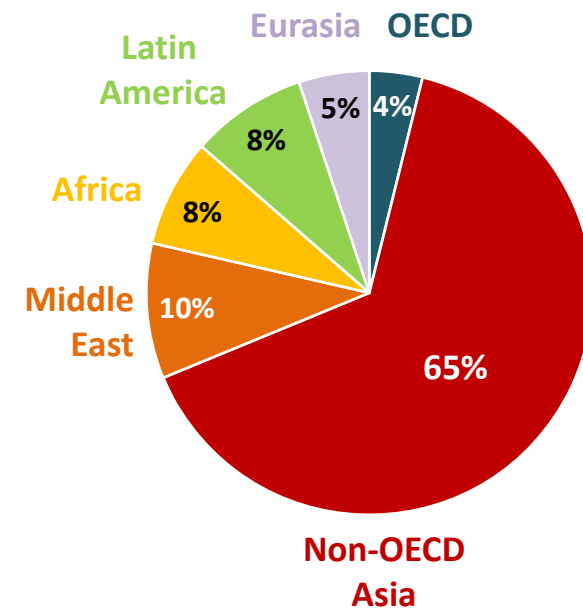
The engine of energy demand growth moves to South Asia

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Primary energy demand, 2035 (Mtoe)



Share of global growth 2012-2035

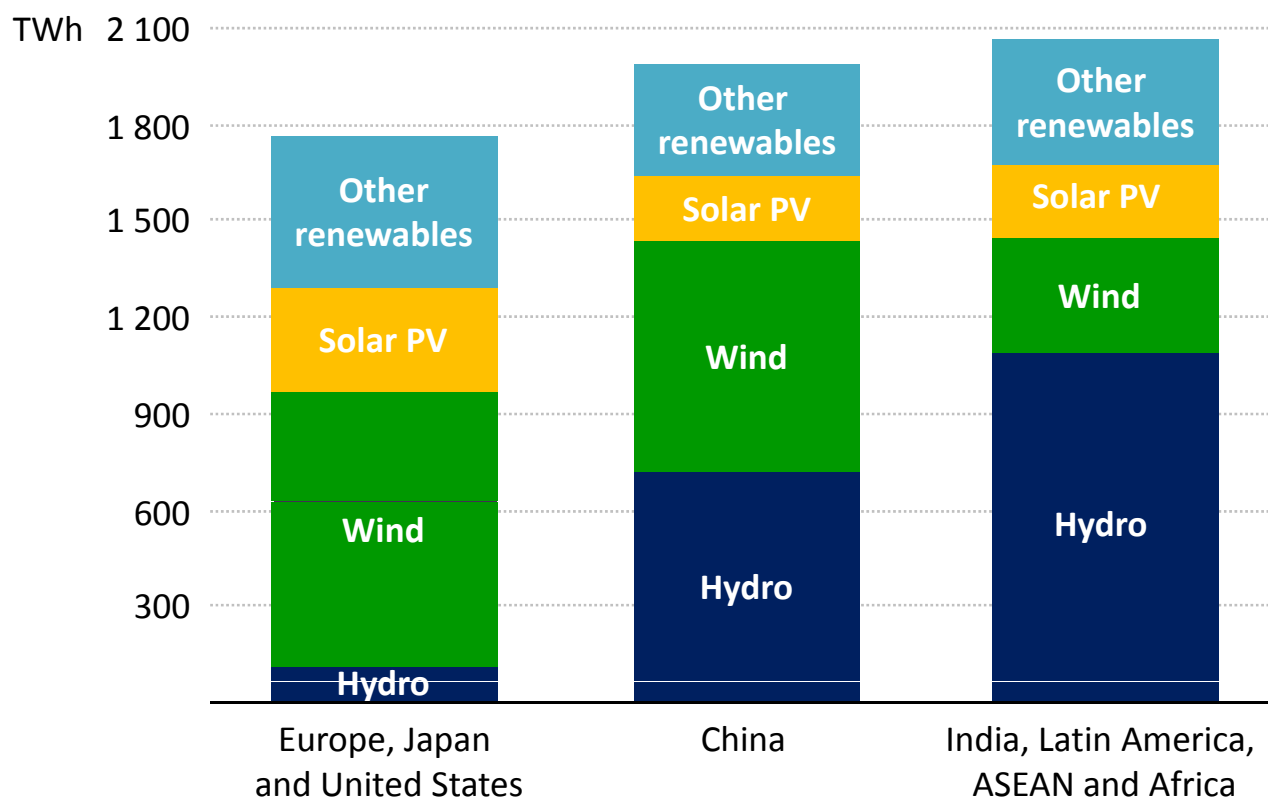


China is the main driver of increasing energy demand in the current decade, but India takes over in the 2020s as the principal source of growth

Renewables power up around the world

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Growth in electricity generation from renewable sources, 2011-2035

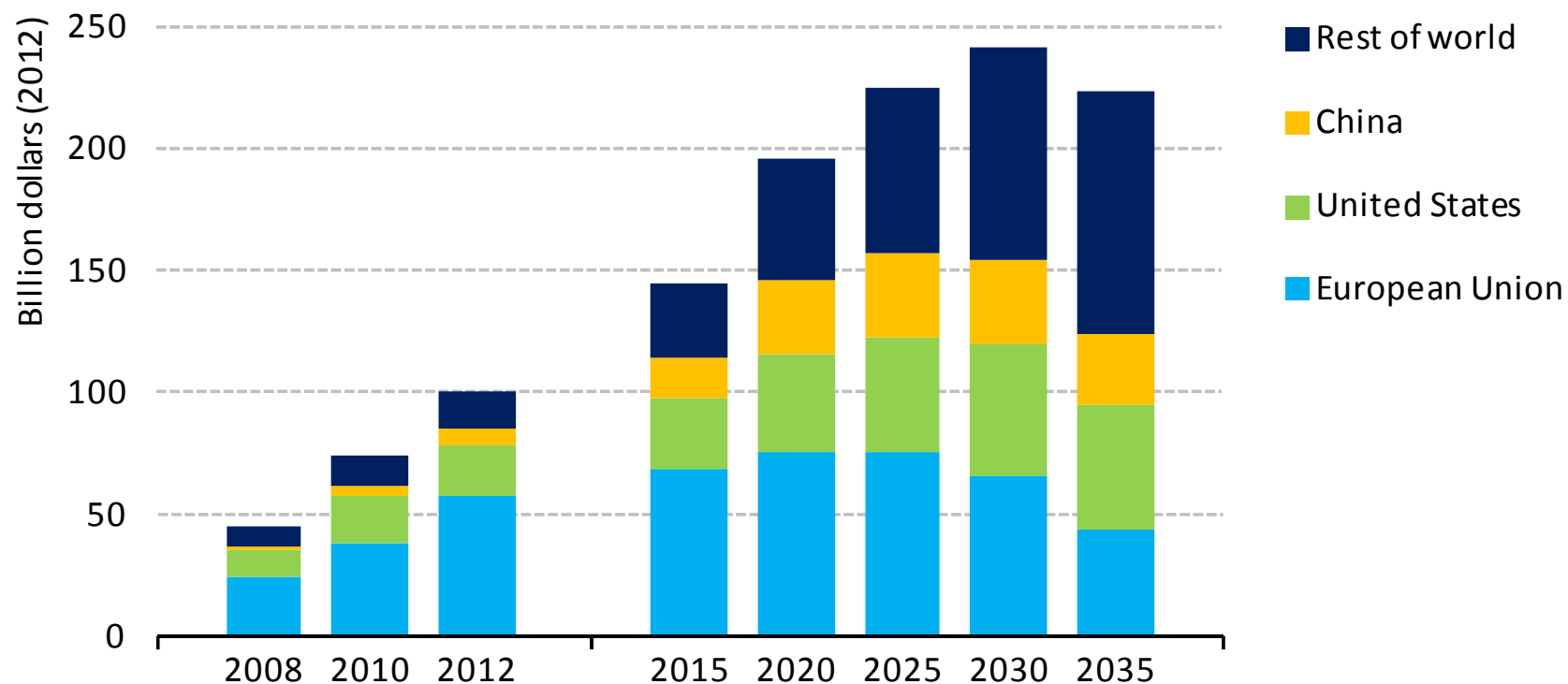


The expansion of non-hydro renewables depends on subsidies that more than double to 2035; additions of wind & solar have implications for power market design & costs

Increasing subsidies for increasing renewables

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Global renewable energy subsidies by region

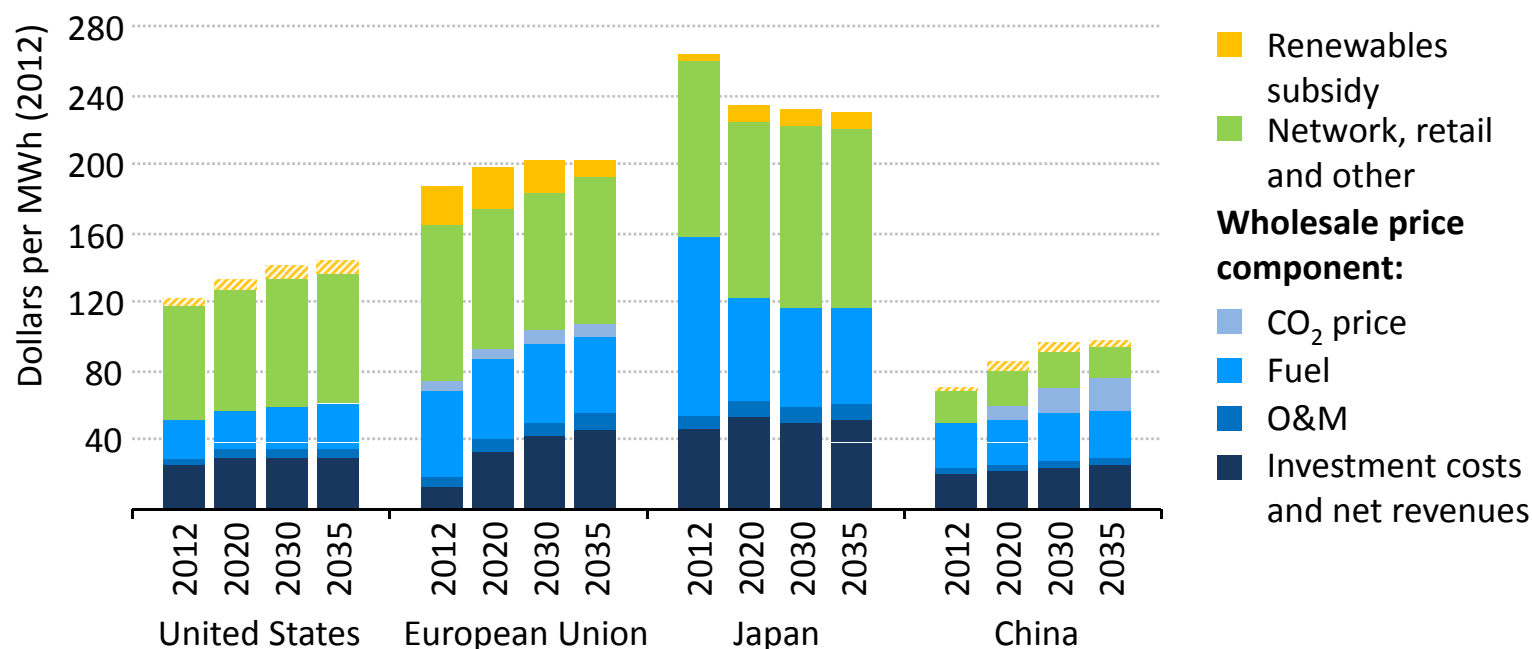


Almost half of the global electricity demand growth is met by renewables, pushed by growing subsidies that reach \$223 billion in 2035 from \$101 billion in 2012

Electricity prices are set to increase in most regions

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Average residential electricity prices (excluding taxes) by region and cost component in the New Policies Scenario

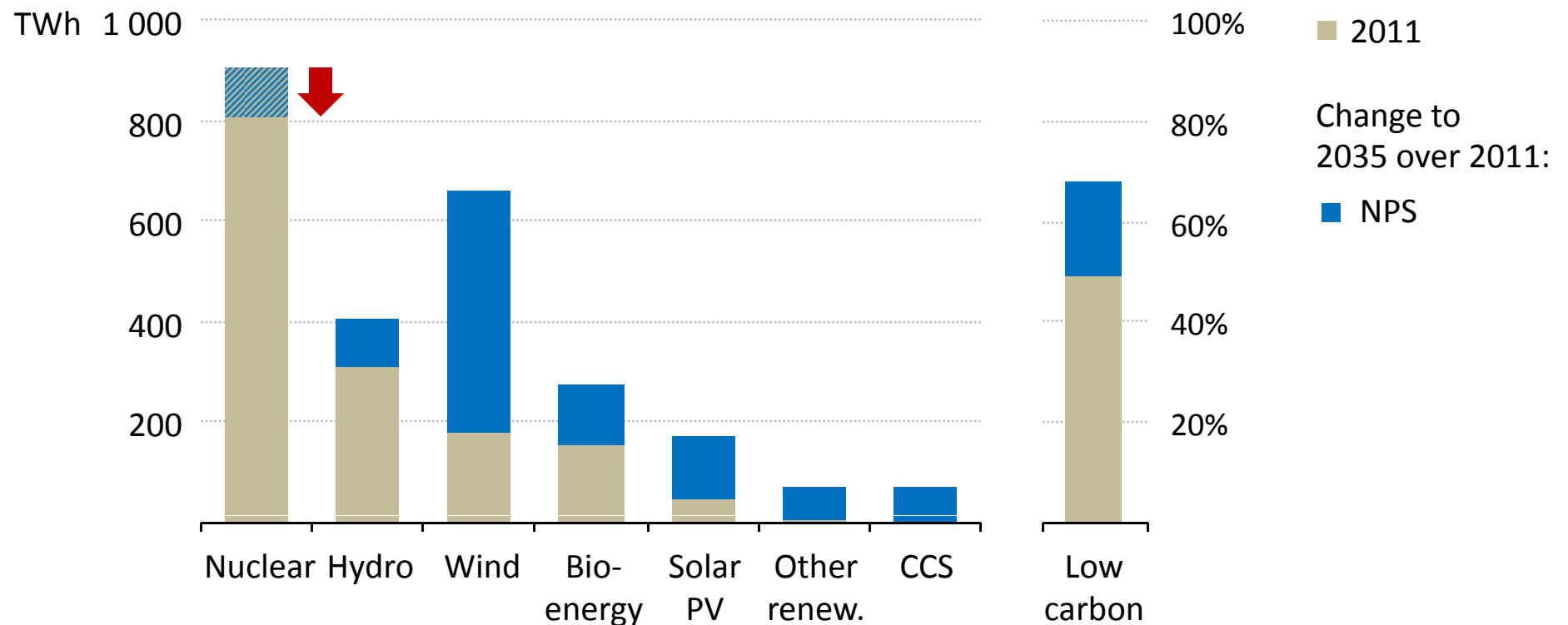


Electricity bills increase along with rising electricity prices and demand per capita in most regions, though economic growth outpaces these trends

EU keeps moving towards cleaner forms of electricity generation

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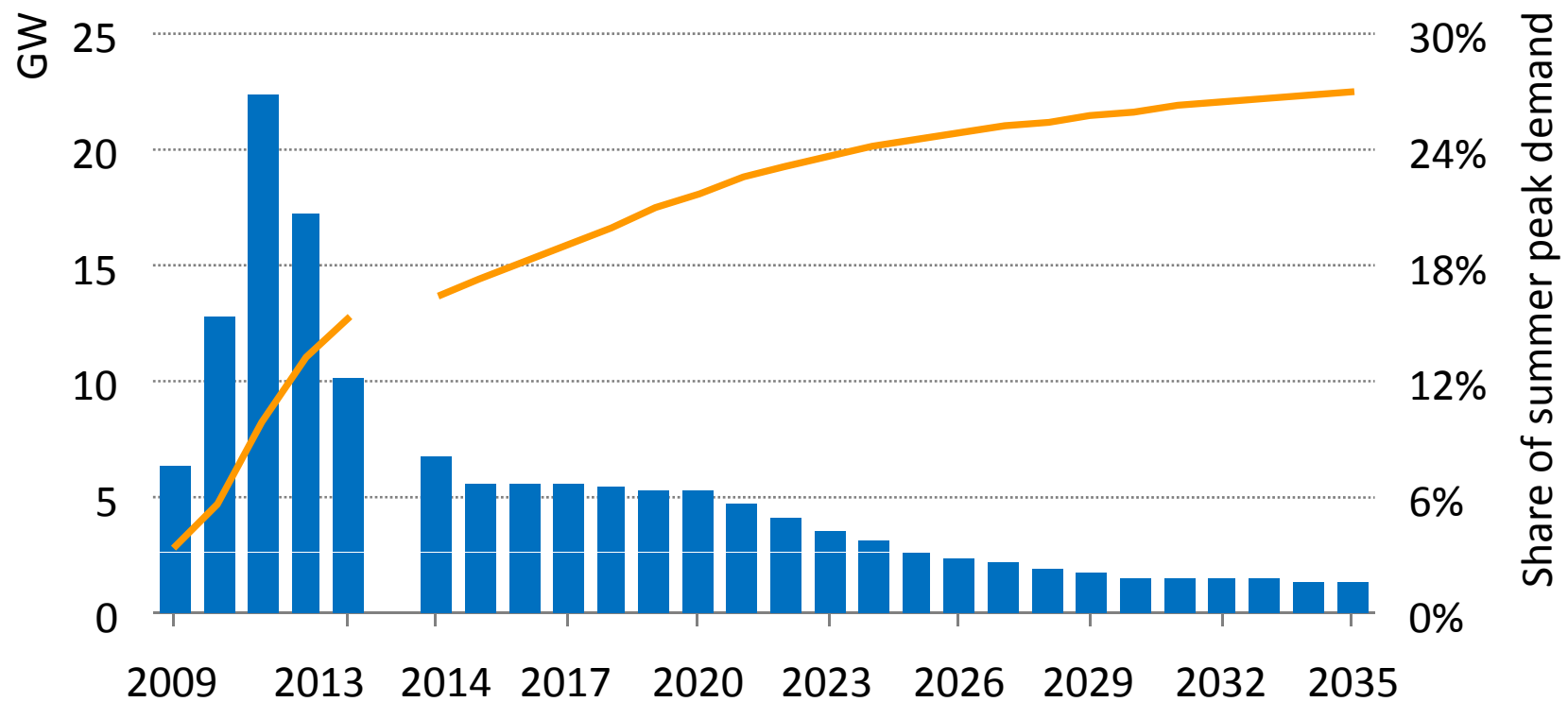
Electricity generation by selected low carbon technology and share of generation by scenario in the European Union, 2011 & 2035



Wind & solar push up the share of renewables, with low-carbon reaching two-thirds of total generation in the NPS

Solar PV continues to rise

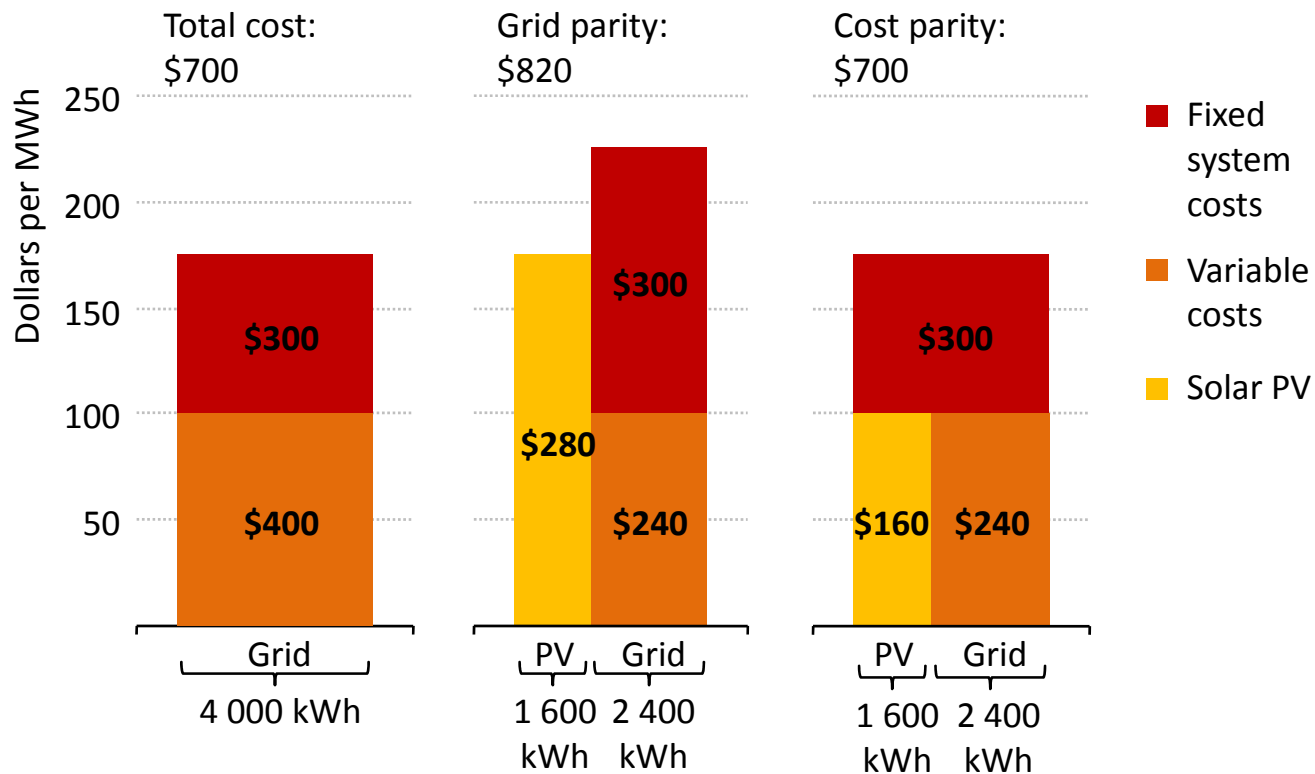
Annual deployment of solar PV and share of summer peak demand in the European Union



***Annual capacity additions of solar PV are set to slowdown in Europe,
but increase as share of summer peak demand***

Grid parity vs Cost parity

Indicative breakeven costs of residential solar PV using the “grid parity” and “cost parity” approaches



Grid parity does not adequately account for the fixed costs and brings higher overall costs

Orientation for a fast-changing energy world

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- **China, then India, drive the growing dominance of Asia in global energy demand & trade**
- **New opportunities and challenges arising in the power sector as the technology mix evolves**
- **Renewables are looking for their place in the market, but improvements to market design are key**
- **The transition to a more efficient, low-carbon energy sector is more difficult in tough economic times, but no less urgent**