RENEWABLE ENERGY

Medium-Term Market Report 2013

International Energy Agency

Outlook for STE/CSP deployment to 2018

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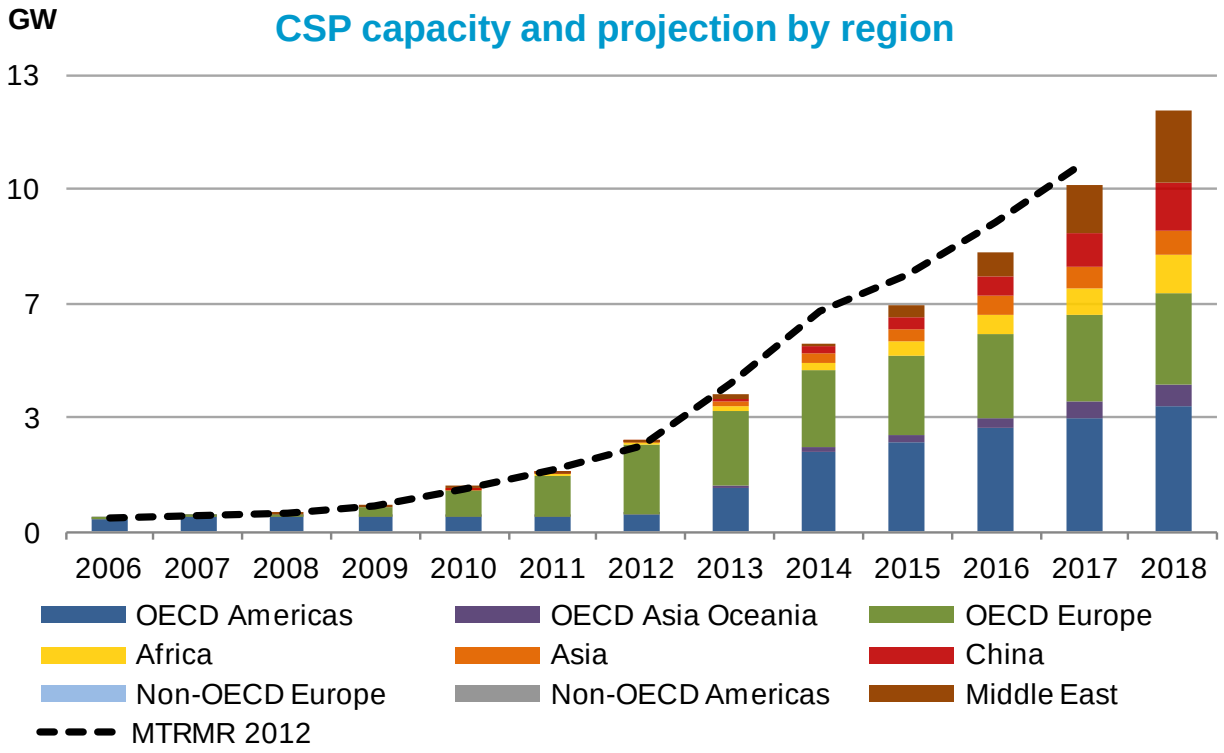
Market Trends and Projections to 2018

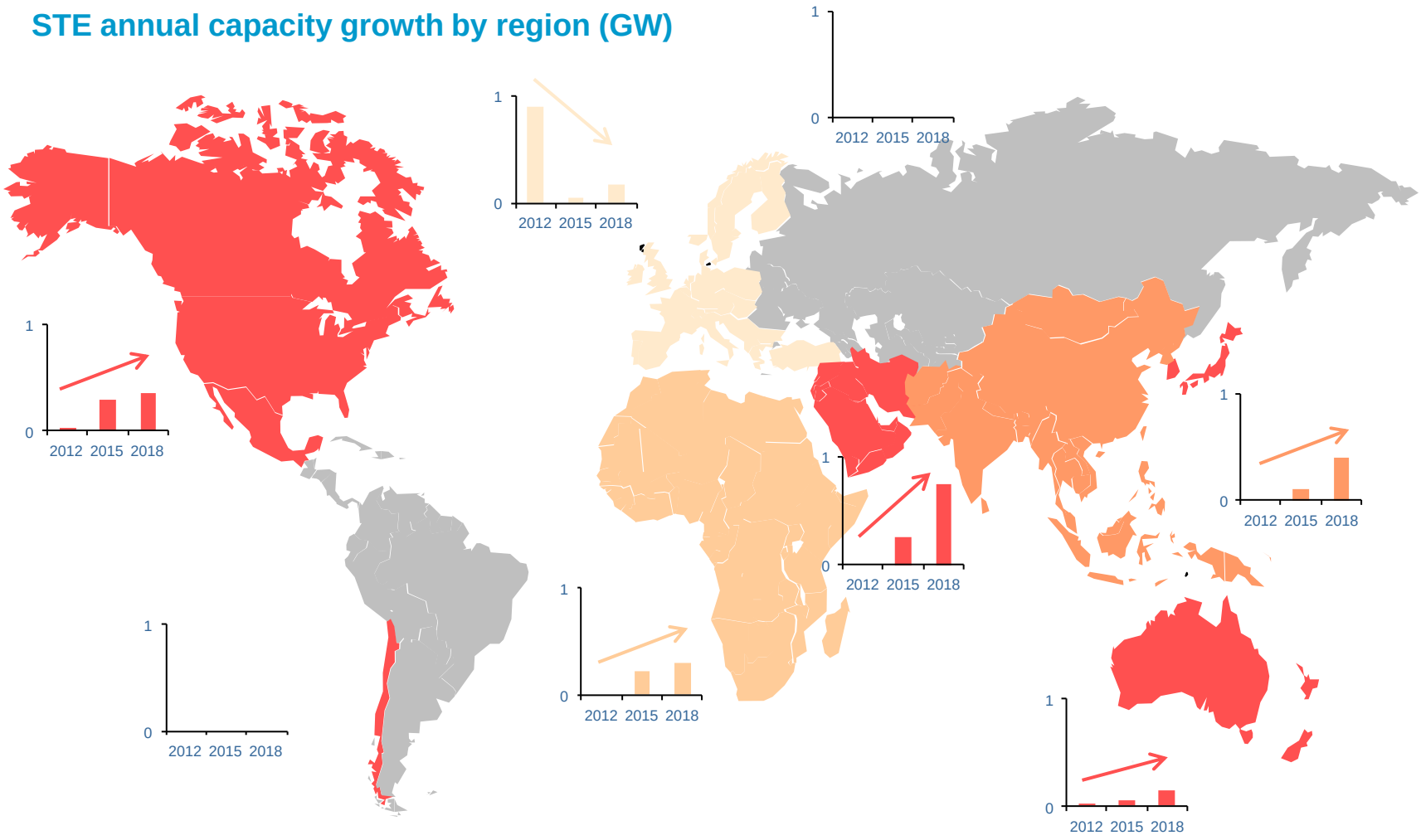
STE capacity expected to scale up significantly over the medium term

- Global CSP capacity seen rising from 2.7 GW in 2012 to 12.4 GW in 2018
- Growth led by USA, but some project-level challenges raise uncertainties
- Storage adds value to CSP, but deployment held back by high up-front costs
- Non-OECD areas with LT policies and excellent resources begin to emerge



Outside of USA, STE capacity to grow fastest in emerging non-OECD markets

STE annual capacity growth by region (GW)



- **Non-OECD regions – Middle East, China, other Asia, Africa – seen increasingly driving deployment**

Middle East countries among the most rapid growing markets over the MT

Top five countries, projected increase in generation (TWh) over 2012-18 by technology

Solar PV	CSP	Geothermal	Ocean
China	United States	Indonesia	Korea
Japan	China	Kenya	China
United States	Saudi Arabia	Mexico	Canada
Germany	Spain	United States	United Kingdom
Italy	India	Japan	Mexico

Top five countries, projected increase in generation (%) over 2012-18 by technology

Solar PV	CSP	Geothermal	Ocean
Saudi Arabia	Saudi Arabia	Chile	Mexico
Chile	South Africa	Australia	Sweden
Qatar	United Arab Emirates	Korea	Ireland
Turkey	Qatar	France	Australia
Oman	Jordan	Ethiopia	United States

Note: countries are ordered from highest to lowest, for hydropower, onshore wind, offshore wind, bioenergy, solar PV and CSP, percentage increase calculated only for countries with expected capacity of at least 100 MW in 2018.

Drivers and challenges for key STE deployment markets over the MT

Key market	Drivers	Challenges	Expected capacity growth, 2012-2018
USA	- Large project pipeline - Storage value for evening peak demand - Fed. incentives; PPAs with local utilities	- Environmental permitting and grid connections - Price competition from solar PV	+3.0 GW
China	- 5Y plan deployment target - Ample availability of low cost financing - Flexibility from hybridisation with coal or storage	- Limited deployment experience; potential supply chain constraints - Resource far from demand areas	+1.4 GW
Saudi Arabia	- Excellent resource and strong power diversification needs /demand growth - Ambitious deployment targets (25 GW by 2032), backed by tenders with LT PPAs	- Uncertainty over timeline and execution for tenders - High local content requirements	+1.0 GW
India	- Targets under JN National Solar Mission - Dedicated auctions with LT PPAs; other incentives - Storage value for evening peak demand	- Limited deployment record; solar resource measurement challenges to early plants; delays to some current phase 1 projects - Cost and availability of financing	+0.6 GW
Morocco	- Excellent resource and strong power diversification needs/demand growth - Moroccan Solar Energy Plan, backed by tenders with LT PPAs - Storage value for evening peak demand	- Project bankability depends on availability of concessional financing - Uncertain timeline for projects following Ouarzazate	+0.5 GW
South Africa	- Excellent resource and strong power diversification needs/demand growth - Target backed by auctions with LT PPAs under REIPP - Storage value for evening peak demand	- Cost and availability of financing; concessional loans currently needed for bankability - Current target small relative to potential	+0.4 GW