

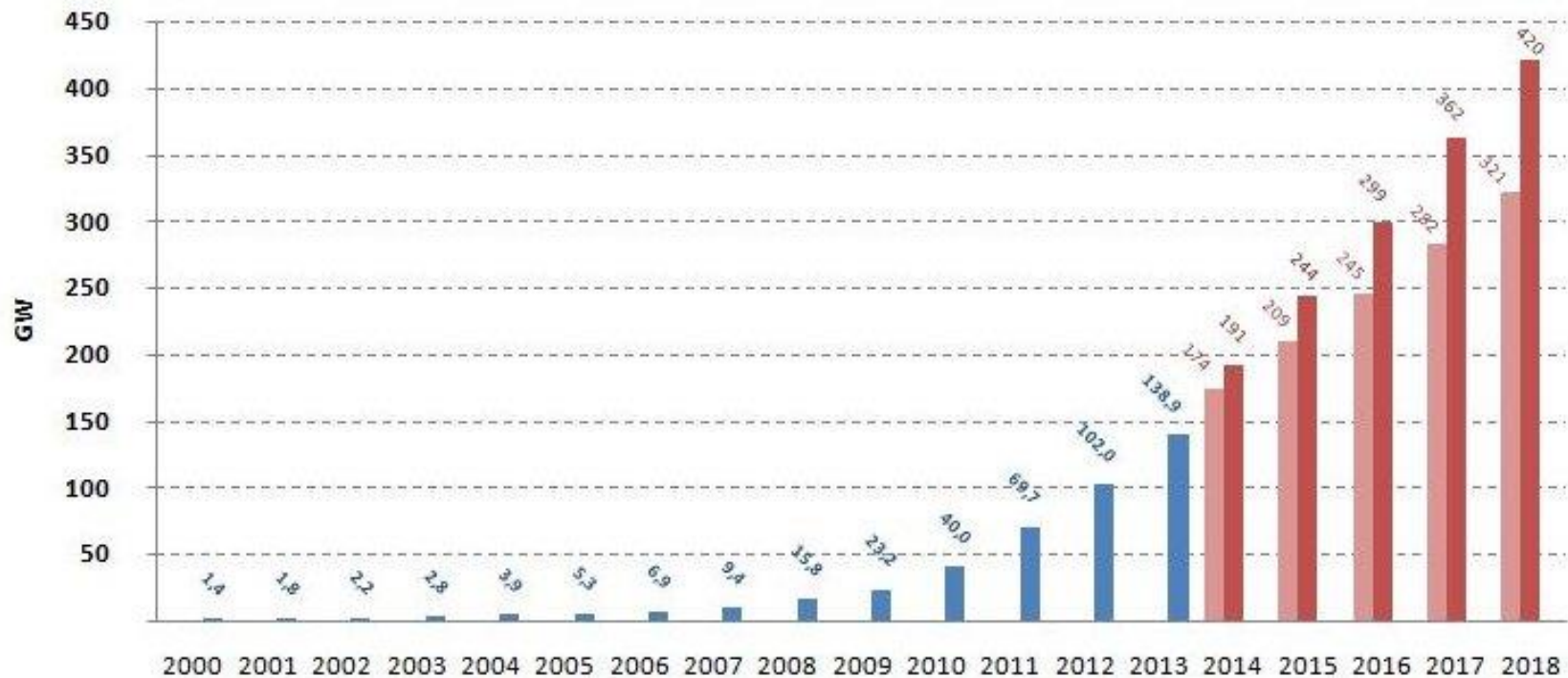
Private sector engagement – Qatar case study

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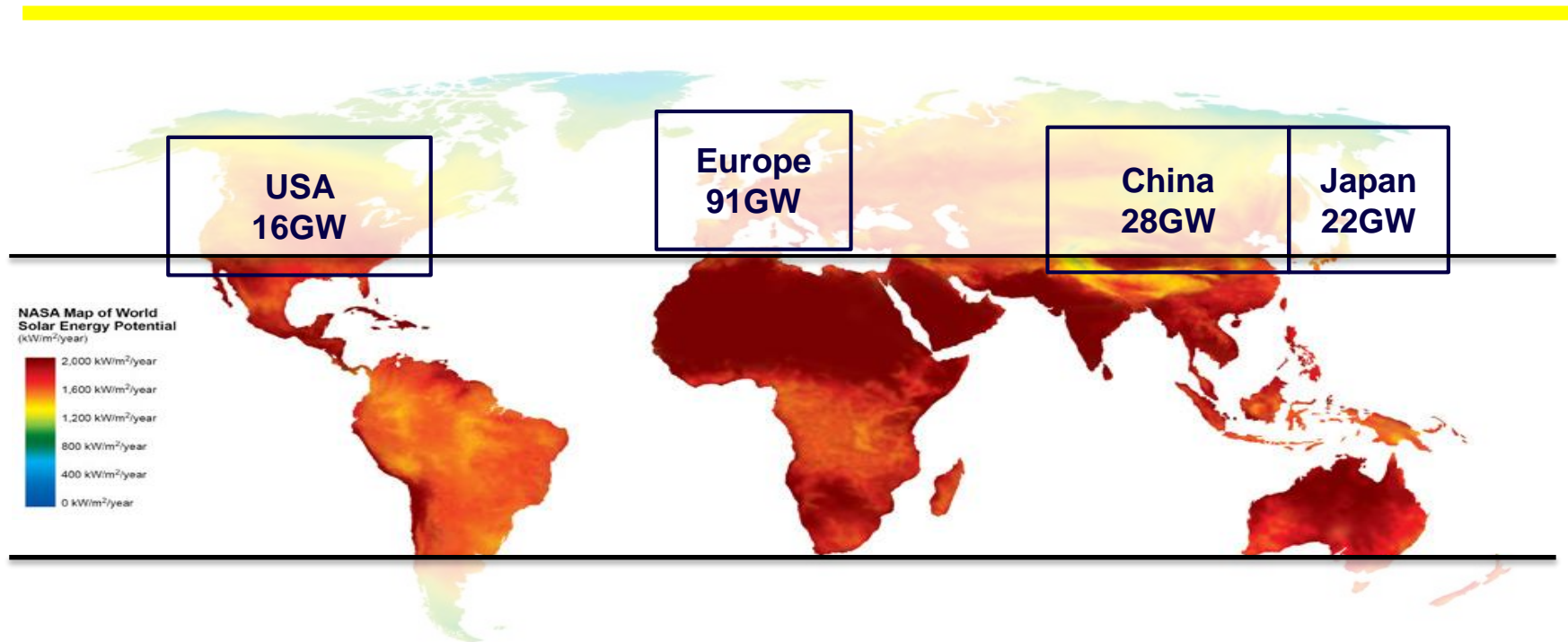
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Global market outlook for PV



2014: 182 GW world total

Market trends: Solar belt



2014: Outside the Solar belt installed



157 GW

2014: Inside the Solar belt installed



25 GW



Qatar introduction

Qatar energy context

- Largest exporter of liquefied natural gas (LNG) in the world
- Hydrocarbons sector is more than half government revenues
- Electrical generating capacity is natural gas-fired
- Desalination responsible for as much as 40 % of domestic gas use
- Huge focus on new power and water projects over the next half decade
- Large potential for solar power projects and well situation in the region for exports



Qatar solar resources

- Germany:
 - 6.9% of total electricity generation by Solar Energy
 - 40 GW installed
 - 1.5 Million systems installed
 - Outlook: 35% by 2020, 50% by 2030 and 80% by 2050
- Qatar:
 - Qatar's solar energy potential equals 1.5 million barrels of crude oil annually
 - Presently installed 9 MW
 - Solar irradiance twice the amount of Germany
 - Outlook: 1.8 GW of solar power by 2018

Government support

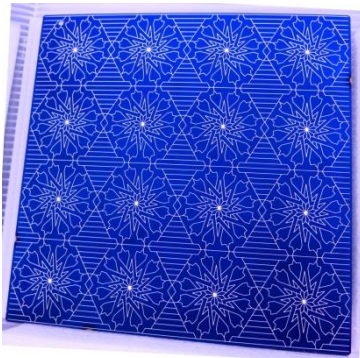
- **Targets**
 - Qatar nationally aiming for 16% electricity from solar by 2018 (1.8 GW)
 - Qatar General Electricity and Water Corporation (Kahramaa) targeted a generation capacity of 200MW solar power at 60 sites across the country by 2020
- **Pilot/demonstration installations**
 - Qatar Foundation has the largest pipeline of PV installations in the country and is producing around 85 percent of Qatar's total solar energy.
 - Carbon neutral stadiums for the World Cup including solar PV
- **Cross cutting strategy**
 - Qatar National Food Security Programme (QNFSP) has placed a strong emphasis on solar power as part of its master plan to devise a holistic solution to food security
- **Public Private Research Partnerships**
 - Center for Sustainable Energy Efficiency at QSTP and Chevron have established a test facility at QSTP, which will evaluate 10 to 20 different solar technologies



Private solar PV manufacturing in Qatar

The role of ECN

- Solar technology provider
- Technology transfer solar cells & desert compatible panels
- Consultancy on most recent solar cell and panel manufacturing
- Supporting start up of Al Jazari research facility liased with QSE



Qatar Solar Energy private sector company



- Solar hub in the region
- No tax regime
- No penalty tax to deliver into EU and USA
- Export into MENA region
- Colaboration with Kazakhstan regarding high grade Silicon
- Export to Kazakhstan (3 GW demand)
- Start of QSE research facility on site, named Al Jazari for capacity building



Lessons learned from working with the private sector



- Government signals are vital to encourage climate technology providers to establish in a country
- Qatar government creating the enabling environment for private Qatari companies (Qatar Development bank)
- Massive Government investment into new Solar projects
- No policy framework for supporting renewable Energy
- The model of an international NGO working with a private technology firm can be a successful one
- In contrary to China, Middle East has high investment potential for new technology

Lessons learned from working with the private sector

- Private sector liased with Qatar Foundation (fully government oriented)
- Real Private liased with Qatar development bank or local/foreigen investors
- Private sector companies prefer Solar technology from Europe
 - Qatar Solar adopted Dutch/German consortium for co-operation
- Al thiqatul mutabaadilah: Mutual trust is everything in Arabic country

Thank you for your attention

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