Low Carbon Development

Day 2: Plenary 6

Asian Development Bank Sustainable Asia Leadership Program | Manila | 11 - 14 September 2012

Achieving the Promise: Delivering on the Green Economy

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Agenda

- Opportunities: Clean Energy
- Key Challenges for Policymakers
- Assessment Framework
- Key Lessons for Policymakers
- In-country Challenges
- More Information on Assessment
- Beyond Renewable Energy

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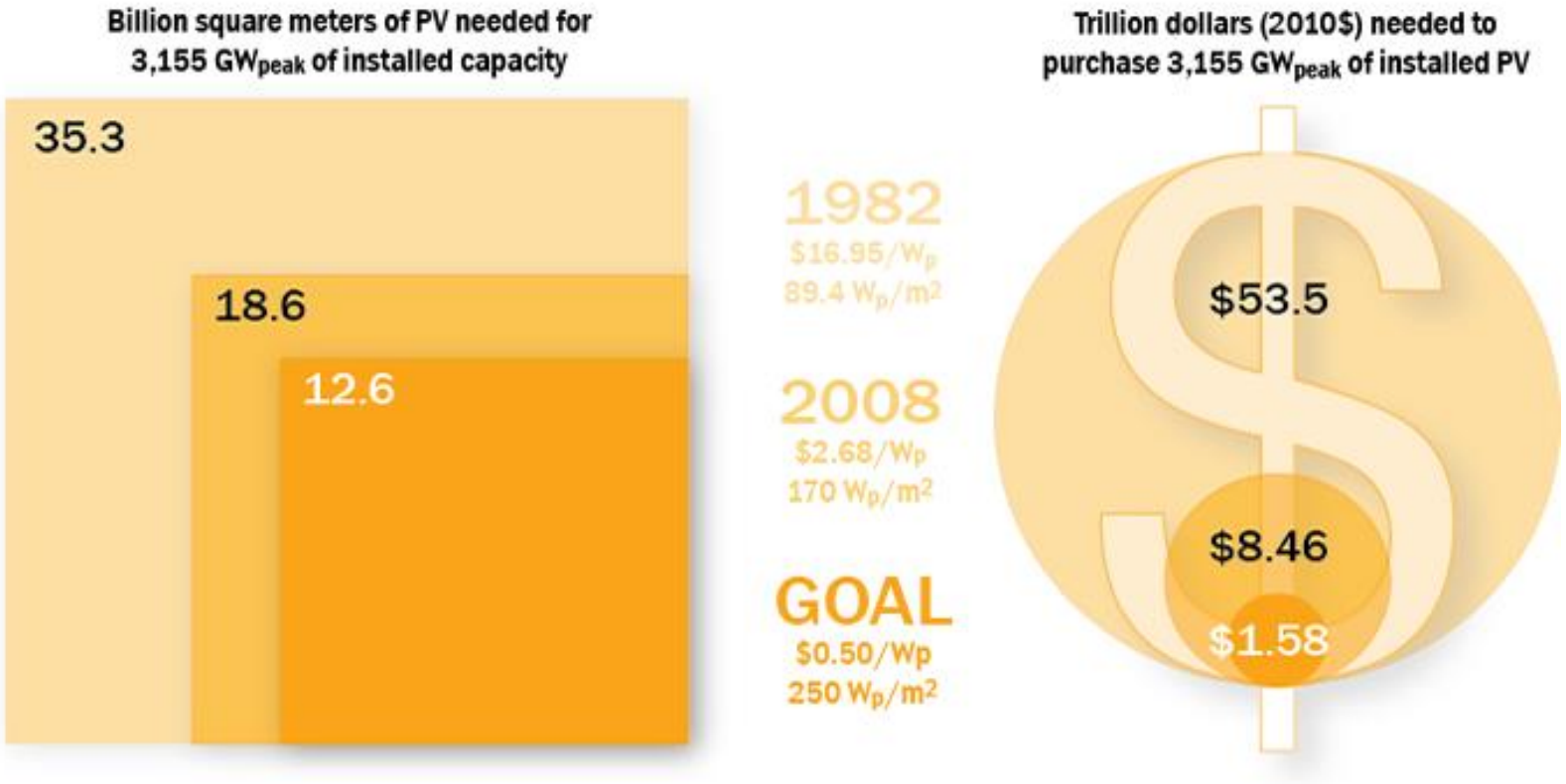
Opportunities: Clean Energy in Low Carbon Development

- Clean energy sector is growing rapidly:
  - In 2011, approx. ½ of new electric capacity installed from renewables; record investments
  - Growth in Asia has played important role

Opportunities: Clean Energy in Low Carbon Development

The Role of Solar PV in reducing emissions 50% by 2050
using past, present, and future technology



Key Challenges for Policymakers

- Delivering benefits of economic growth
  - Jobs, investments, market share of a growing industry
- Delivering low cost energy domestically

Assessment Framework: Methodology

- 2 technologies
  - Solar PV and on-shore wind
- 5 country cases
  - Comparable metrics from national and international sources

Assessment Framework: Countries and Partners

Assessment Framework: Policy Strategies and Co-benefits

- Policy strategies that support innovation - critical approach to driving competitiveness
  - Policies to support broader value chain (R&D, manufacturing, installation, power generation)
  - Looking beyond single interventions

Assessment Framework: Policy Strategies and Co-benefits

- Indicators of co-benefits:
  - Domestic industry growth; growth in installations; trade; lower average system costs

Key Lessons for Policymakers

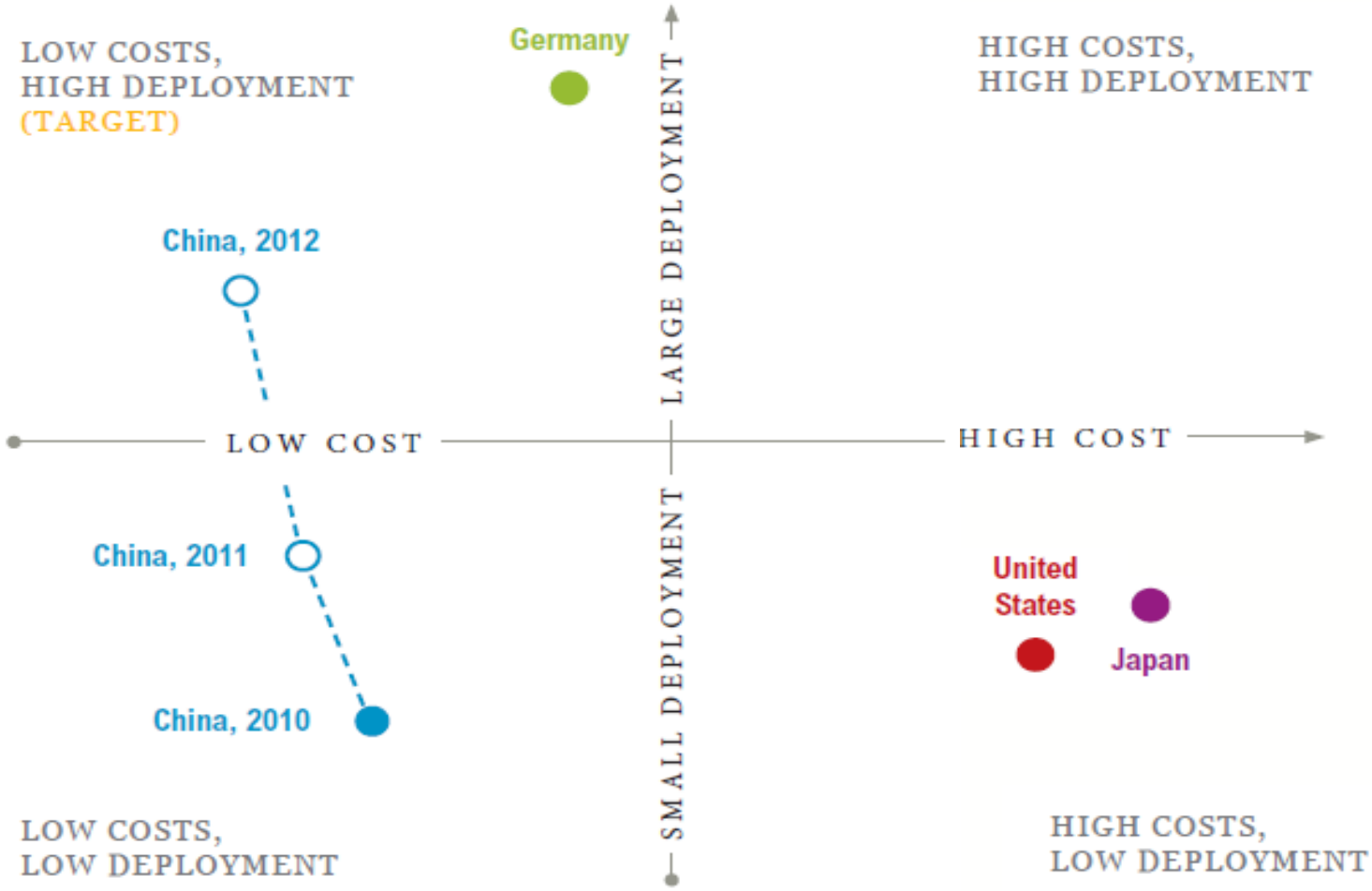
- Cannot use the same policy strategies for all clean energy sectors:
  - Size and tradability of components; structure of industry; grid integration considerations

Key Lessons for Policymakers

- Politics tend to focus on visible upstream manufacturing – need to draw attention to opportunities in broader value chain

Key Lessons for Policymakers: Solar PV

- Highest annual installation rates where lowest average system prices
  - Success seen where policies drive down vs. subsidize system prices
  - Creates a positive feedback loop


LOW COSTS,
HIGH DEPLOYMENT
(TARGET)
Germany
HIGH COSTS,
HIGH DEPLOYMENT
China, 2012
LOW COST
HIGH COST
LARGE DEPLOYMENT
SMALL DEPLOYMENT
China, 2011
United
States
Japan
China, 2010
LOW COSTS,
LOW DEPLOYMENT
HIGH COSTS,
LOW DEPLOYMENT

Key Lessons for Policymakers: Solar PV

- Large domestic manufacturing industry and significant domestic installations do not necessarily go hand-in-hand.
  - China, India and Japan have pursued export focused strategies

Key Lessons for Policymakers: Solar PV

- Domestic manufacturing industry driven through cost and niche competitiveness strategies

Key Lessons for Policymakers: Wind

- Unlike with solar PV, supporting domestic installations key to building both upstream (manufacturing) and downstream domestic industries

Key Lessons for Policymakers: Wind

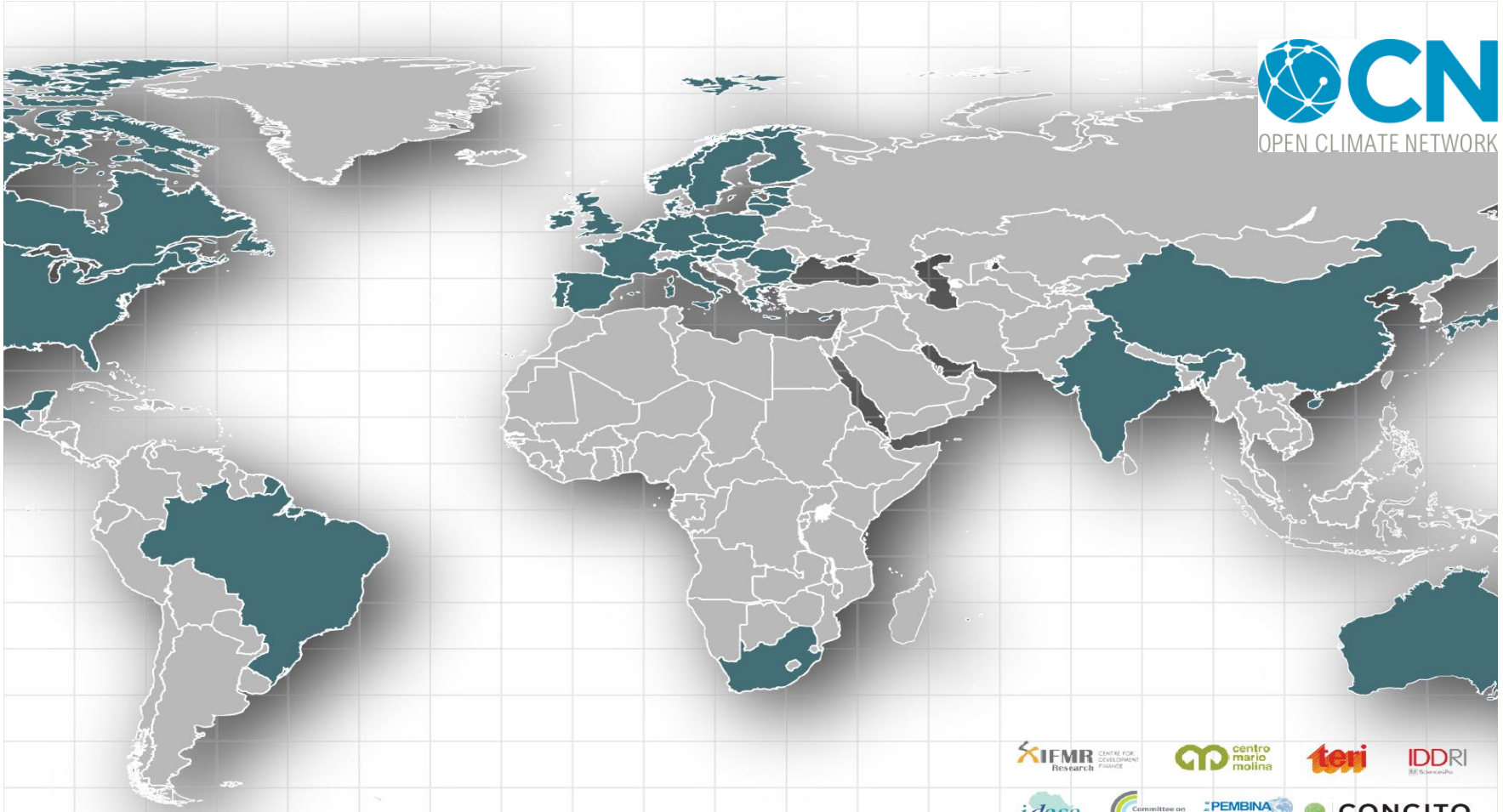
- Policy stability for at least 3-4 years seems critical to effectively supporting the wind industry

Key Lessons for Policymakers: Wind

- Most export opportunities emerge from strong domestic manufacturing industry

Remaining In-Country Challenges

More Information on Assessment



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Beyond Renewable Energy

- Looking at broader value chain for economic development opportunities and impacts
- Recognizing that there may be varying needs of individual sectors
- Looking beyond single interventions

Thank You!

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Additional Slides: Solar PV

Figure 31 | Installed Solar PV Capacity for Japan, 2000 – 2011[175]

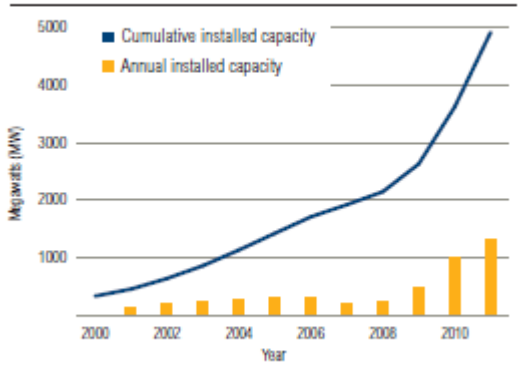


Figure 40 | Installed Solar PV Capacity for China, 2004 – 2011[214]

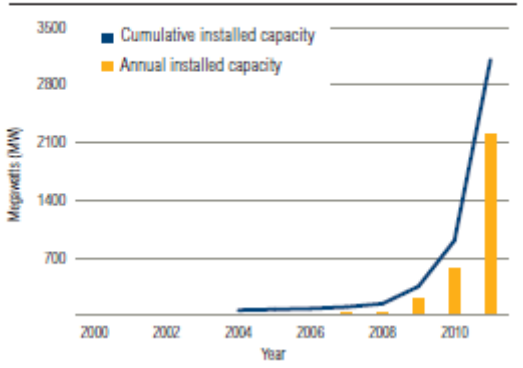
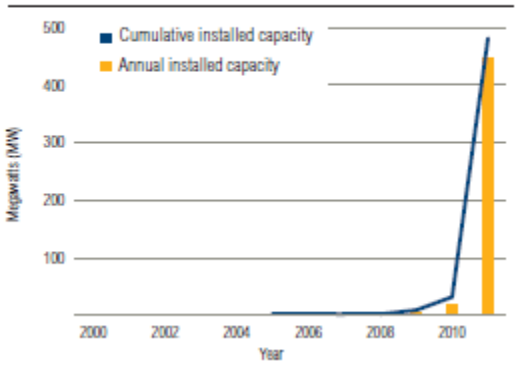
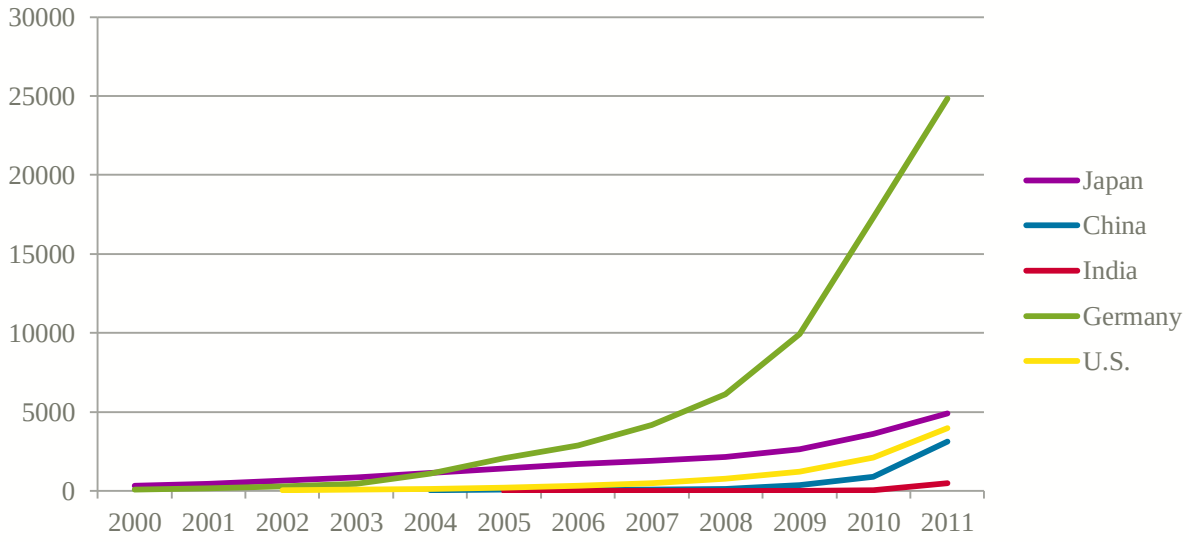


Figure 48 | Installed Solar PV Capacity for India, 2000 - 2011[272]





Additional Slides: On-shore Wind

Figure 7 | Cumulative Installed Wind Capacity, 2000–2011[59]

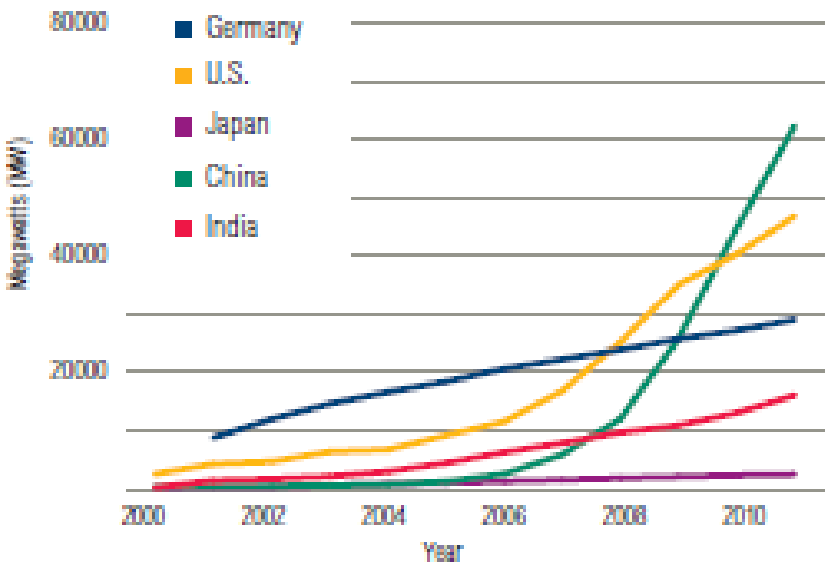
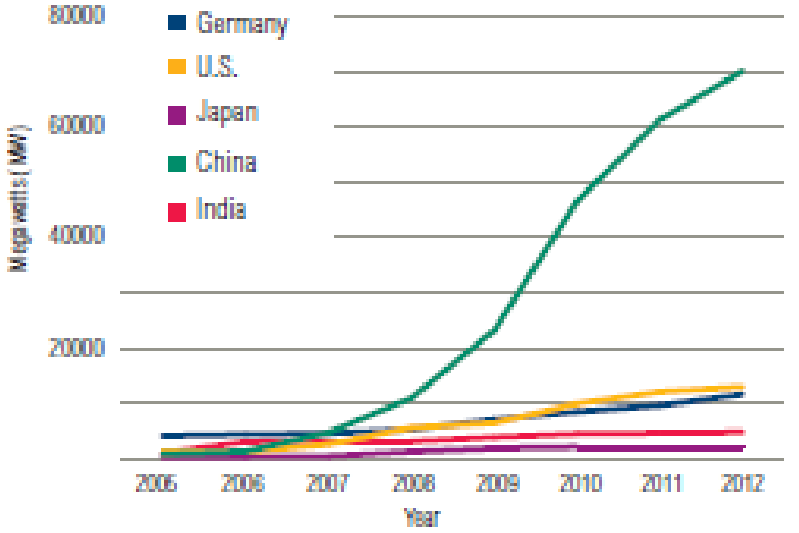


Figure 8 | Comparison of Wind Turbine Manufacturing (Final assembly) Capacity, 2005–2012[62]



PV Production vs. Deployment

Figure 1 | Comparing Solar PV Production to Deployment in Japan[36]

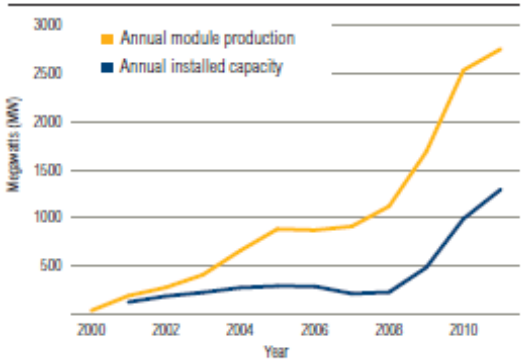


Figure 2 | Comparing Solar PV Production to Deployment in China[37]

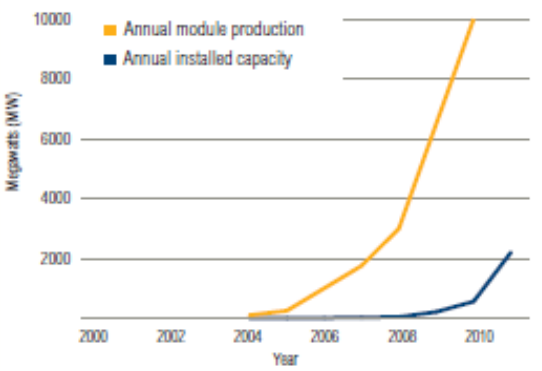
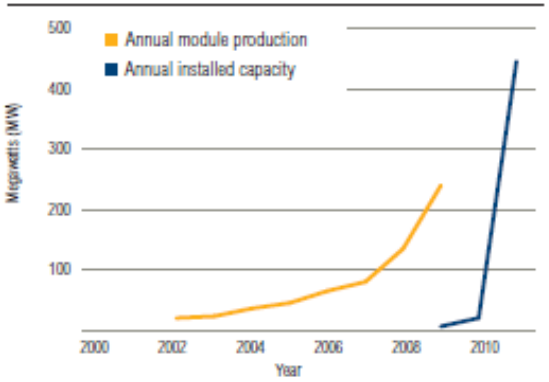


Figure 3 | Comparing Solar PV Production to Deployment in India[38]



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