



**Asia-Pacific
Economic Cooperation**

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Dissemination of Clean Power Sector Technologies

Submitted by: World Resources Institute



**Seminar on Dissemination of
Environmental Technologies
Big Sky, United States
11 May 2011**



Dissemination of Clean Power Sector Technologies

APEC Seminar on Dissemination of Environmental Technologies
May 11th, 2010, Big Sky, Montana
Lutz Weischer
World Resources Institute

Agenda

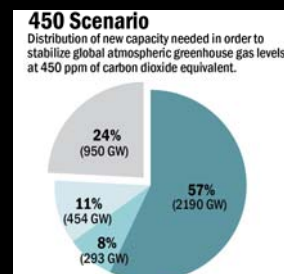
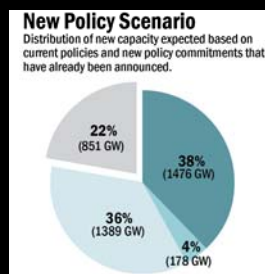
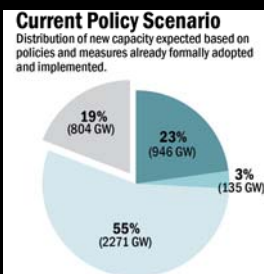
- The need for faster and broader technology dissemination
- Wind power case study
- Solar PV power case study
- Conclusions

Innovation spreads slowly in the energy sector

- Shell estimates that it takes 25 years after an invention has been commercialized for it to reach a market share of 1 percent.
- Chatham House study found that it takes 24 years on average for patented energy innovations to be taken up.
- World Bank found only 9 percent of developing countries had reached the 50 percent penetration threshold for technologies invented between 1975 and 2000.

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The need for faster and broader dissemination



Projected Growth in Global Electricity Capacity, 2008-2035

Source: International Energy Agency, World Energy Outlook 2010



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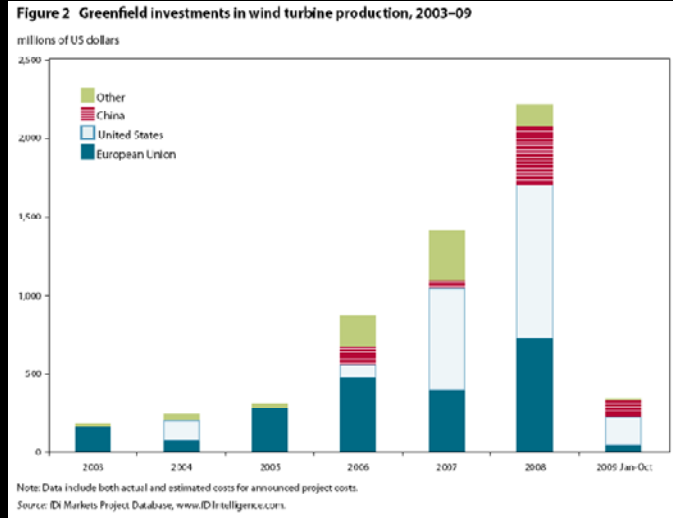
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The global wind power market

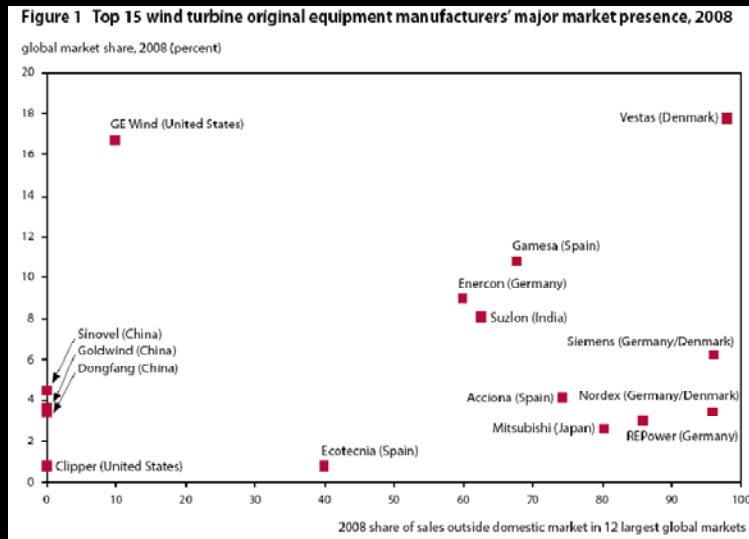
- 4 main wind power markets and equipment producers:
 - China
 - United States
 - European Union
 - India
- Investment-driven global integration
- Policy-driven market

Wind manufacturing follows wind power demand



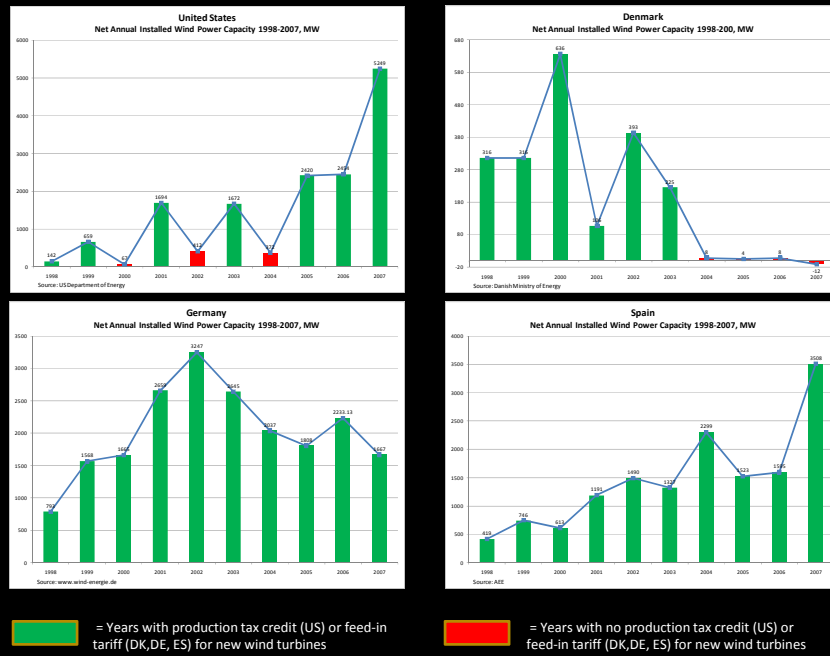
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Leading wind turbine manufacturers are all from the large markets



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Government support drives the wind market



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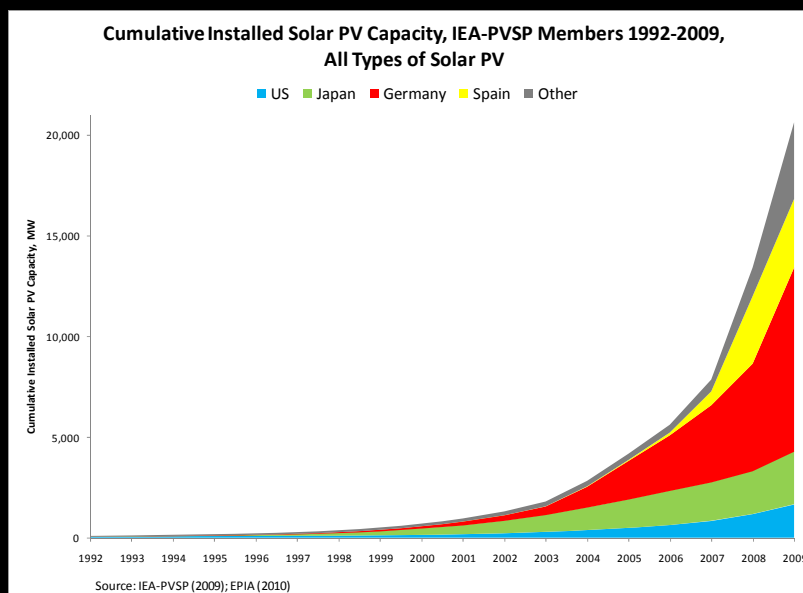
- The need for faster and broader technology dissemination
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The global solar PV market

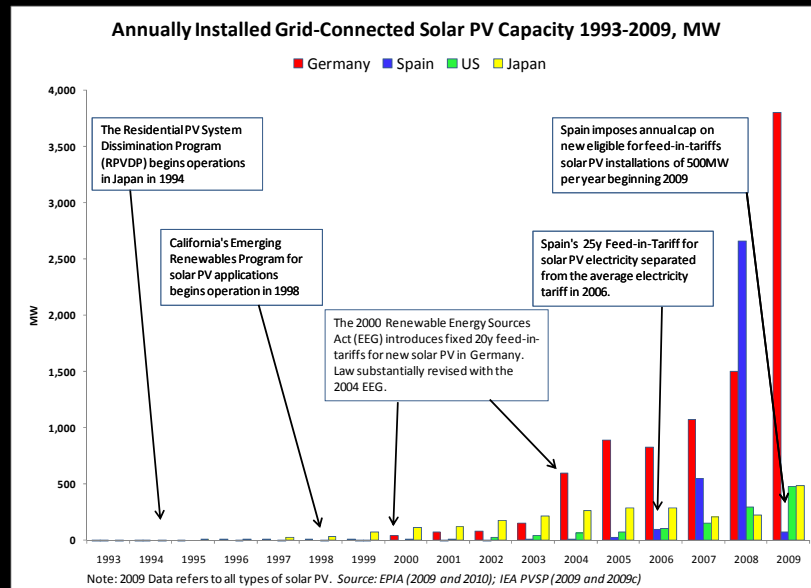
- 4 main markets:
 - Germany
 - Spain
 - United States
 - Japan
- Manufacturing in Asia
- Trade-driven global integration
- Policy-driven market

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Solar PV Growth and Country Distribution



Government Support Drives PV Demand



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Barriers identified in the wind and solar market

- Tariffs are a less significant barrier
- Non-tariff barriers more important:
 - Explicit Local Content Requirements
 - Implicit Political Quid-Pro-Quo Expectations
 - Divergent Standards and Costly Certification Requirements
 - Nontariff Surcharges and Taxes
 - Customs Procedures and Inspection
- Investment Barriers could become more significant



Conclusions

- There are different channels of international technology dissemination (trade, investment, direct government involvement)
 - technology-specific analysis is needed
- Policy is both a main driver of dissemination and a barrier to international trade and investment
 - Could APEC organize a dialogue on good renewable energy support policy?



Questions?

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