Ad hoc Expert Group Meeting on
Domestic Requirements and
Support Measures in Green Sectors:
Economic and Environmental Effectiveness and Implications for Trade

13–14 June 2013
Salle XXI, Palais des Nations, Geneva

Policy implications of the case of Chinese renewable energy industry

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- Cases of Chinese wind power and solar PV
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The cases of Chinese Wind power and solar PV industry

Renewable energy development is the national strategy to mitigate climate change

- ***China's Agenda 21*** (issued in 1994)
- Signed ***Kyoto Protocol*** in 1998 and approved by NPC in 2002
- In 1998, set up ***National Climate Change Countermeasure Coordinating Group***
- ***Renewable Energy Law*** (Came into force in 2006)
- 2007, ***National Leading Group for the Coping with Climate Change***

Renewable energy development is the national strategy to mitigate climate change

Nov 2009, right before the Copenhagen Climate Conference, China committed:

- to reduce carbon intensity up to **40%—45%** by 2020.
- to increase the weight of **non-fossile energy** in primary the consumption to **15%** by 2020

Targets of China's 12th Five-Year Plan for National Economic and Social Development (2011-2015)

- CO_2 density (emission per unit GDP) reduced by 17%

- The weight of non-fossile energy in primary energy increases from 8.3% to 11.4%

Case of wind power industry

LCR in wind power industry

According to Global Wind Energy Council,

- 'Ride the Wind' Program in 1997 included a 20% LCR for two joint ventures.
- The requirements began in 2003 by requiring 50% LCR, which increased to 70% in 2005. In selecting winning projects, LCR percentages were a key basis of the evaluation.

(Under this scheme the tendered projects could get a score from 0.20 in 2005 to 0.35 in 2007 (out of a total of 1.0) for complying with the LCR)

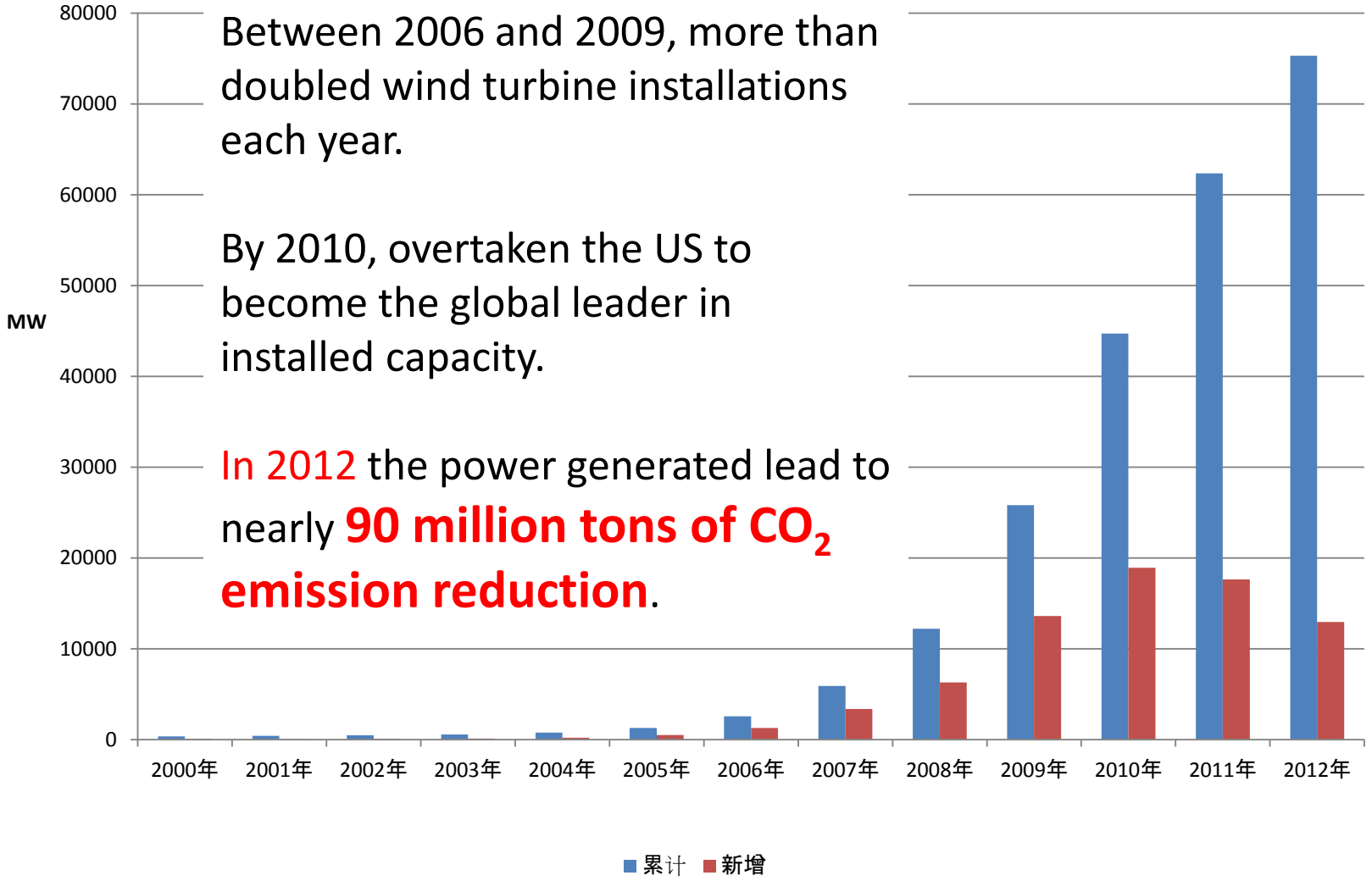
LCR and associated subsidy

- In 2005, NDRC of China regulated that, “only those wind power plant projects with over 70% of the facilities manufactured domestically can be issued construction permission.

  《国家发展改革委关于风电建设管理有关要求的通知》(2005年)

- In 2008, Ministry of Finance regulated that, the new products of wind turbine facility and installation kit (> 1.5 MW) developed and produced by Chinese manufactures were eligible of subsidy of 600Yuan RMB per KW, but only for the first 50 units produced.
- 《风力发电设备产业化专项资金管理暂行办法》(2008年财政部)

Wind power capacity installation

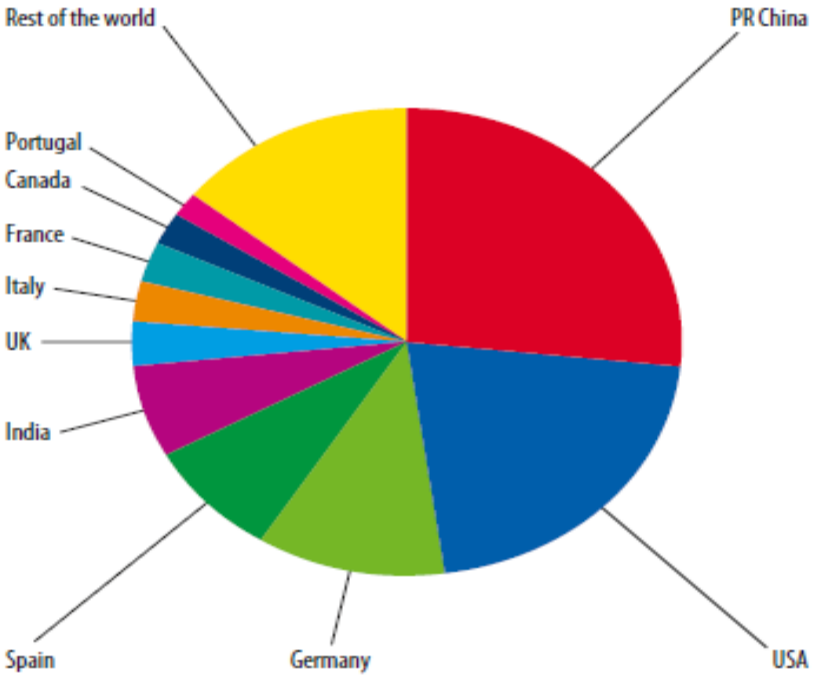


Between 2006 and 2009, more than doubled wind turbine installations each year.

By 2010, overtaken the US to become the global leader in installed capacity.

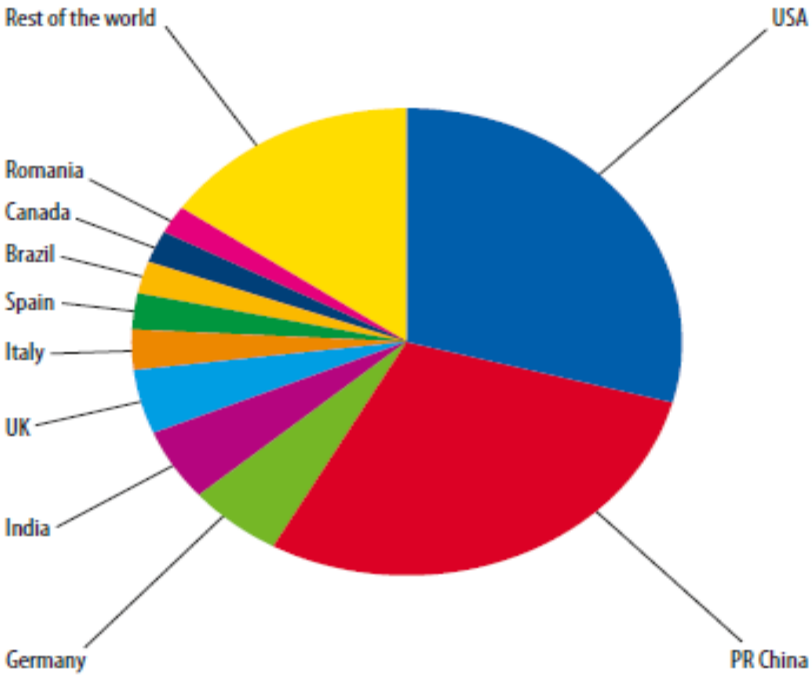
In 2012 the power generated lead to nearly **90 million tons of CO_2 emission reduction**.

Top 10 Cumulative Capacity (December 2012)



Country	MW	% SHARE
PR China	75,324	26.7
USA	60,007	21.2
Germany	31,308	11.1
Spain	22,796	8.1
India	18,421	6.5
UK	8,445	3.0
Italy	8,144	2.9
France	7,564	2.7
Canada	6,200	2.2
Portugal	4,525	1.6
Rest of the world	39,853	14.1
Total TOP 10	242,734	85.9
World Total	**282,587**	**100.0**

Top 10 New Installed Capacity (Jan-Dec 2012)



Country	MW	% SHARE
USA	13,124	29.3
PR China	12,960	28.9
Germany	2,415	5.4
India	2,336	5.2
UK	1,897	4.2
Italy	1,273	2.8
Spain	1,122	2.5
Brazil	1,077	2.4
Canada	935	2.1
Romania	923	2.1
Rest of the world	6,737	15.0
Total TOP 10	38,062	85
World Total	**44,799**	**100.0**

Source: GWEC

Source : Global Wind Energy Council

Cancellation of LCR for wind projects and subsidy to domestic producer

- In 2008, domestic and joint venture manufacturers produced 76% of the newly increased capacity, and taking the accumulated market share of 62%

- In November of 2009, National Energy Administration (subordinated to NDRC) cancelled the LCR of 70% for wind farm projects

- On 7 June 2011, Ron Kirk, US Ambassador to WTO, confirmed that China had agreed to stop subsidizing wind turbine firms using home made components （Reuters）

Enlarged wind power market provides business opportunity to foreign manufactures

Cancellation of LCR encourages **import** of higher quality and products, e.g.,

- **Vestas** received an order to deliver 20 units of its V90.2.0 MW to China Datang Renewable Power Co., a state-owned Corporation in December 2009.
- **Gamesa** collaborated with Wolanchabu City, in the Inner Mongolia Autonomous Region (IMAR), to construct a 49.5 GW wind farm.
- In January 2010, **GE** disclosed contracts to supply 88 1.5 MW wind turbines to China's HECIC New Energy Co., Ltd.
- In 2009, India's **Suzlon Energy Ltd.** received an order for 99 MW worth of wind turbines from Honiton Energy Group.
- In 2009, Germany's **Nordex** secured contracts to supply 22 1.5 MW wind turbines to the Chinese utility Ningxia Electric Power.

Enlarged wind power market provides business opportunity to foreign manufactures

The high demand attracts **foreign manufacturers to relocate production to China**, e.g.,

- **Gamesa** vowed to triple its investment in China by 2012, from 42 million Euro to 130 million.
- In 2009, **Vestas** completed build out of a factory in the Tianjin Economic Technological Development Area (TEDA), its largest integrated wind power production base in the world.
- **Vestas** indicated in 2009, that it would continue investing in China to achieve a total investment of $439 million.
- In 2009, South Korea's **Daewoo** Shipbuilding & Marine Engineering indicated to establish a plant to manufacture wind power equipment in China in 2010.

Chinese wind turbine manufacturers also speed up product export

- In 2010, China exported 13 wind turbine units only, with capacity of 15.6 MW,
- In 2011, this number mounted to 141 with total capacity of 220.6 MW, seeing an increasing rate of 1314%

US anti-dumping duty against Chinese wind turbines

- In December 2012, the U.S. Department of Commerce announced that it would levy additional tariffs up to **73%** on Chinese wind turbines, in response to an anti-dumping case brought by four American companies.

- The additional tariffs are expected to cut into the profits of wind developers and diminish demand for wind power.

US rules against Chinese wind farm investment project

- Ralls Corp. (affiliated to Sany Heavy Industry Co. , the Chinese company), was seeking to build a wind-farm using Sany-made turbines in Oregon.
- The U.S. Committee on Foreign Investment ruled against the plan as it was located in sites near or within restricted Navy airspace, the Treasury Department, which heads the agency, said Sept. 28 2012.

Issue raised: does LCR help?

- LCR was among the multi-drivers, making the domestic wind industry into the largest market globally, both in terms of manufacturing and installed capacity, namely, financial incentives, LCR, CDM, et.al.
- Although China used LCR, the underlying factors that allowed it to be successful were diverse:
  - wind energy resource,
  - size of the market,
  - large manufacturing industry,
  - large electricity consumption.
- With these factors, China is able to provide **stable long-term demand for wind turbines in the domestic market**, under which establishing local manufacturing makes business sense.

The case of solar PV

Majority of PV devices produced in China are exported

- In 2008, China became the largest producer of solar panels, shipping 2,600 megawatt of PV panels, roughly one-third of worldwide total PV cell shipments.
- Growth of production has far outstripped that of the installed solar capacity, meaning that the vast majority (>90%) of PV devices are exported; meaning roughly **14 million tons of CO_2 emission reduction** each year (based on 2012 export).
- Largely attracted by the huge demand from Europe, where there heavy subsidies were used

Domestic support to solar PV

- In mid-2009, China's National Energy Administration announced a subsidized price for solar power of 1.09 yuan per KWh which some consider to be still too low for profitable operations (almost three times what coal-fired power plants receive).
- In 2009, the government launched Golden Sun program to establish new grid-connected solar projects to create domestic market for PV panels and establish new sources of renewable power.

US and German PV firms invest to Chinese PV market

- In September 2009, US-based **First Solar Inc.** (the world's leading and lowest cost producer of PV cells) announced that it will build a two GW power plant, the world's largest at Ordos City, in Inner Mongolia, China. The company will also consider building a new manufacturing plant in China.
- In November 2009, **Evergreen Solar** announced that it planned to shift its production of solar panels from Massachusetts to China in mid-2010.
- In May 2009, Germany's **SolarWorld** AG entered into a licensing agreement with Suntech Power Inc. under which the Chinese company was to manufacture solar power modules on behalf of SolarWorld AG with the German solar company providing input materials and technological know-how.

US CVD tariffs and anti-dumping duty against Chinese PV product

- On October 19, 2011, **SolarWorld** Industries America Inc., filed a petition seeking anti-dumping and countervailing duties against Chinese manufacturers.
- The U.S. International Trade Commission ruled preliminarily in the petitioners' favor and the Department of Commerce announced in March 2012, that it would enact preliminary CVD tariffs of 2.9-4.73% against Chinese manufacturers.
- Two months later the Department of Commerce announced that it would impose anti-dumping duty, of 31-250% against Chinese manufacturers.
- These duties are among the largest ever levied against a product through a unilateral tariff and will increase the cost of solar panels significantly.

China fighted back

- A week after the U.S. Department of Commerce levied its preliminary anti-dumping ruling against Chinese solar panels, China's Ministry of Commerce responded with its own preliminary ruling against the subsidy programs of five U.S. states.
- In June 2012, China launched its own anti-dumping investigation into American and South Korean exports to China of polysilicon, the main ingredient used in solar cells.

A lose-lose situation

- A rival group of 150 solar companies formed the Coalition for Affordable Solar Energy (CASE) to lobby against tariffs on Chinese PV products.
- CASE argued that trade remedies would backfire, costing the U.S. up to 60,000 jobs as solar adoption rates and installation jobs decreased.

EU anti-dumping duty and CVD tariffs against Chinese PV product

- In July 2012, German manufacturer SolarWorld spearheaded a coalition of European solar panel companies to file an anti-dumping complaint with the European Commission against Chinese solar panels.
- In September 2012, European Commission announced that it would launch an investigation.
- Days later, European companies filed another complaint with the European Commission seeking countervailing duties against Chinese imports for allegedly illegal government subsidies.

EU anti-dumping duty and CVD tariffs against Chinese PV product

- 4 June 2013, EU announced temporary anti-dumping tariff of 11.8% to PV product produced in China
- The anti-dumping case is the largest ever, covering €21 billion worth of imports.
- This decision threats 300,000 job in Europe and 400,000 jobs in China

“WWF is opposed to these punitive import tariffs on solar panels from China”

- According to Stephen Singer, global policy director, WWF, the punitive tariff on solar panels imported from China are “**insensitive, counter-jobs and counter green energy**”,
- “There are around 300,000 jobs in the entire solar supply chain in Europe. Those which are outside the manufacturing sector provide the majority of jobs in the supply chain”.
- “We have small and medium-sized enterprises (SME) producing basic structural components and exported to China to be put in solar panels during manufacturing and re-exported to Europe, this leads to high price hike. These jobs might be at stake by the European Commission’s decision,”.

What do we learn?

Moderate LCR is acceptable

- Self-protection measures such as LCR could be useful for the infancy industry as renewable energy, but should be cancelled when local industry matures, because moderate foreign competing helps to stimulate technical and efficiency improvement

globalization or localization

- Production chain globalization could reduce production cost and speed up global renewable energy market expansion
- Local market must be developed in parallel with the local production capacity
- Production overcapacity and over-export-reliance attracts trade remedy cases

Supporting policy has benefits spilling over effects

- Supporting policy have played a key role in spurring the growth of renewable energy, with positive benefits spilling over beyond national borders
- Consumers around the globe are enjoying cheaper clean energy, often thanks to industrial policies elsewhere

Trade Benefit, Environmental Benefit, Fair Trade are the 3 pillars

we need to avoid or mitigate three things:

- reduced trade volume (trade benefit)
- lowered efficiency and high cost to emission mitigation (environment benefit)
- material injury (job position loss) to trade partners (fare trade)

Way to harmony

Way to harmony: dialogue and negotiation

- After the U.S. filed its WTO case against wind power equipment, China agreed to a settlement and dropped the local-content requirement .
- (Press Release, Office of the United States Trade Representative, Executive Office of the President, China Ends Wind Power Equipment Subsidies Challenged by the United States in WTO Dispute (June 2011).)

- Although trade interests prevailed, the environmental benefits of large-scale wind power manufacturing continued.

Way to harmony: Balance

- balancing environmental and trade benefits, local (country) and global benefits, and compensate materially injured smaller groups (unemployment)

- Joint effort to fight against climate change and other global environmental problem requires enhanced environmental consideration in multilateral WTO rule reform and in unilateral trade remedy rulings.

Way to harmony

Pareto Optimization

VS

Kaldor-Hicks Optimization

- Thank you very much for your attention!