ENERGY RESEARCH INSTITUTE

Technical Expert Meeting for ADP

Renewable Energy in China: Progress, Perspectives, and Challenges

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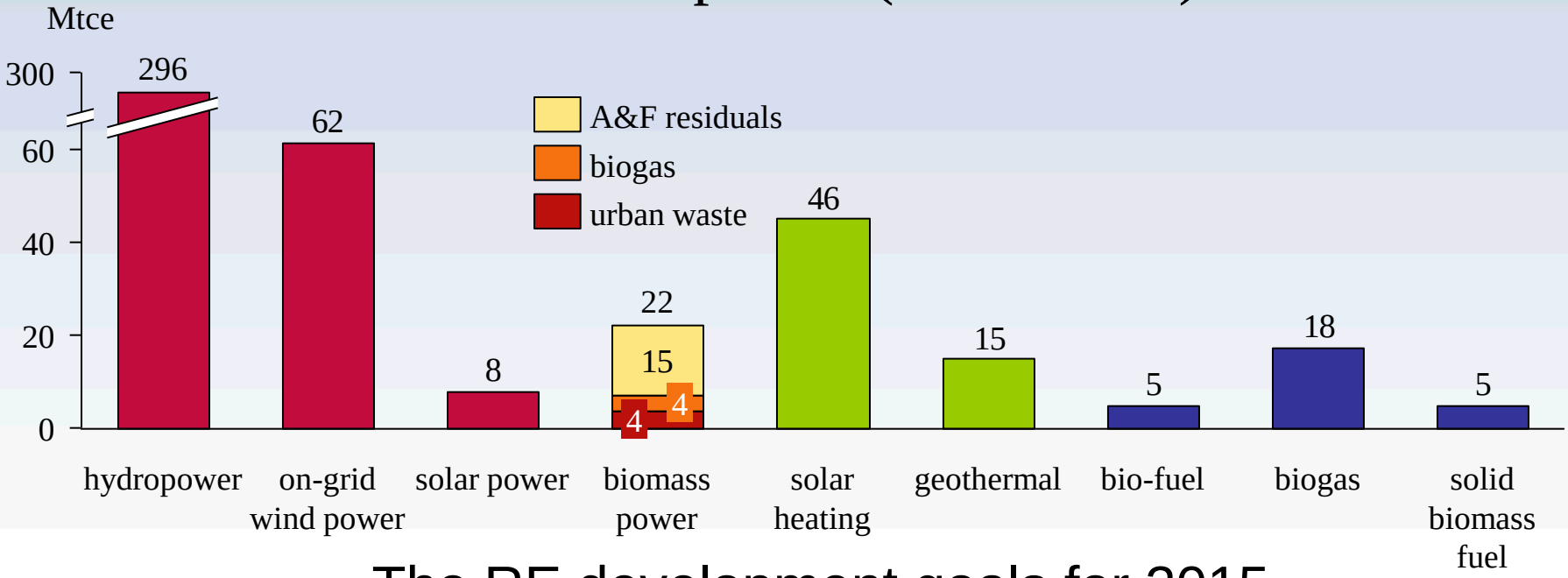
1. The rationale for RE in China

- Low carbon transition for the economy
- Address climate change
- Improve local environment quality
- Improve energy security

2. Perspectives for RE in China

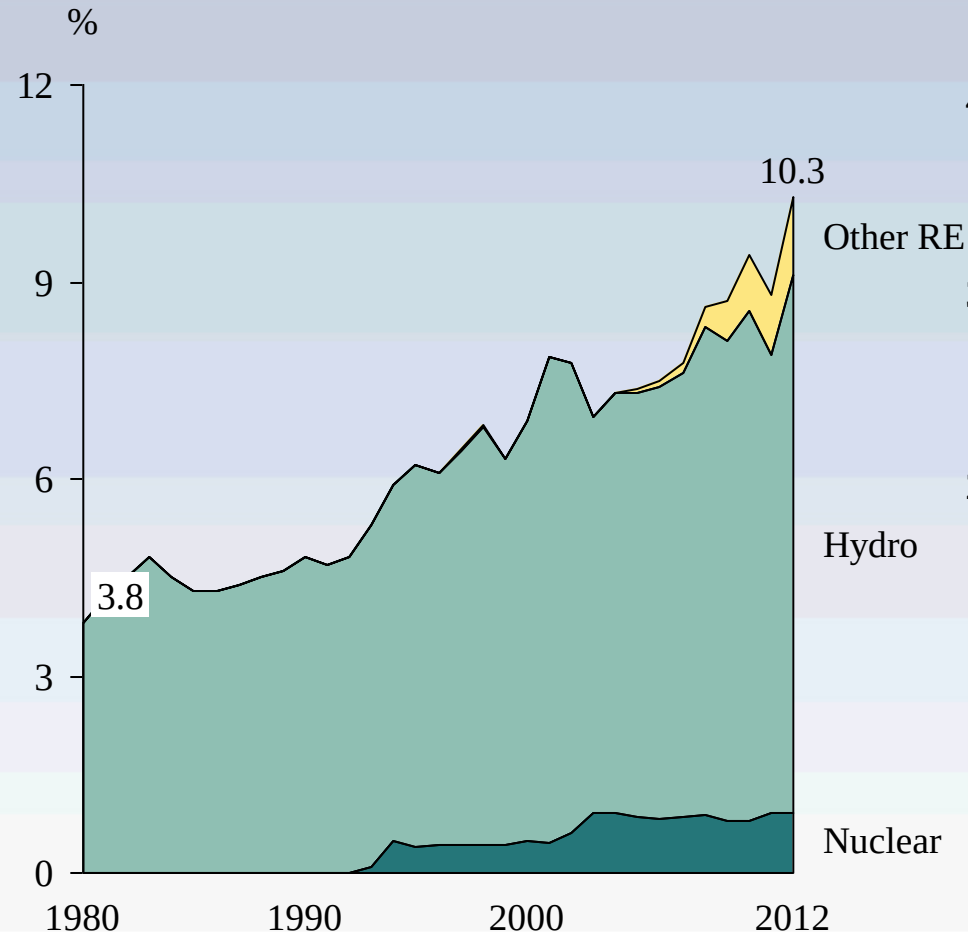
- 2020 goal for non-fossil energy: 15% in primary energy mix
- 12th FYP for RE development (2011-2015)



The RE development goals for 2015

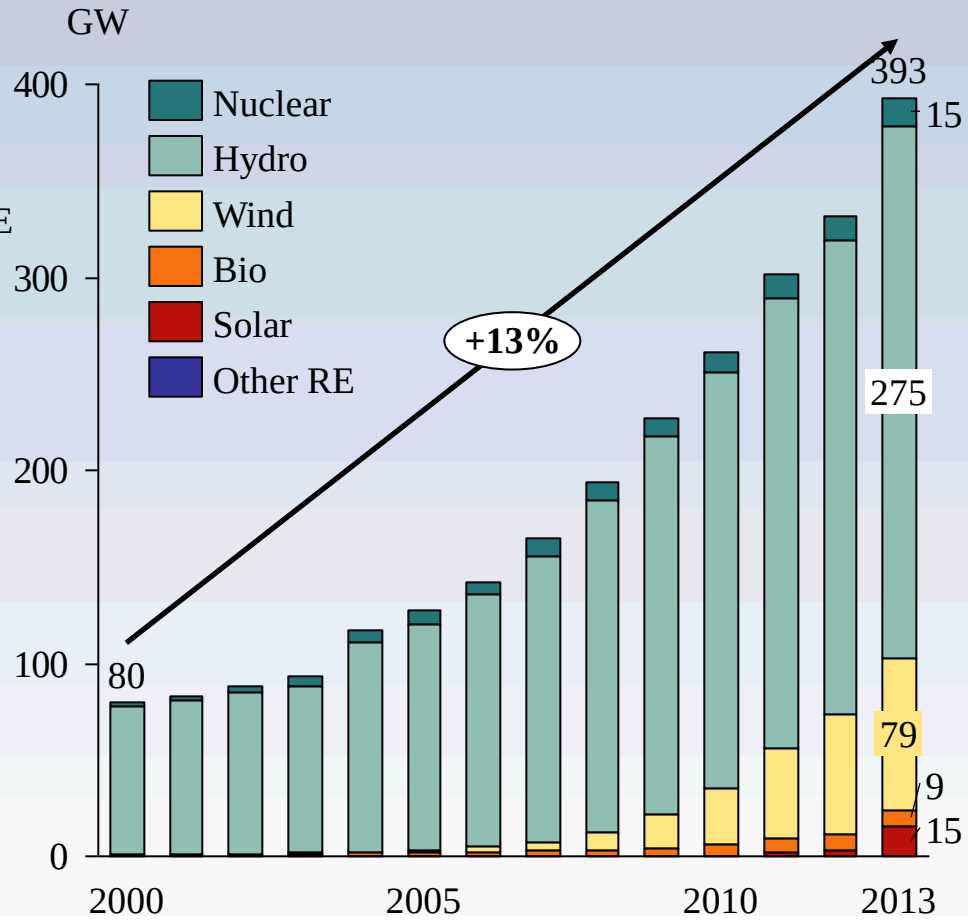
Source: http://en.cnrec.info/tools/2012-10-10-344.html

3. Progress of RE in China



Share of non-fossil energy consumption

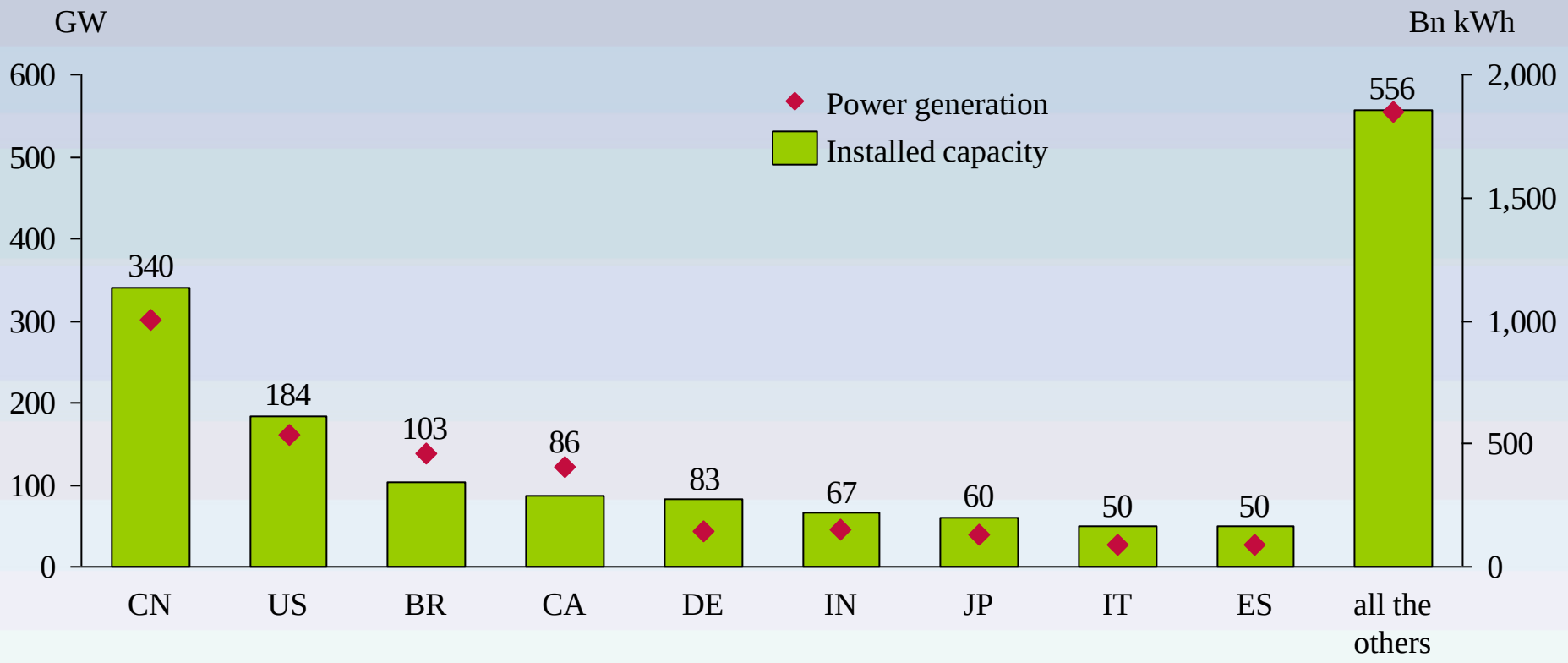
Source: China Energy Statistical Yearbook 2012



Installed capacity

Source: Dept. RE, NEA, 2014

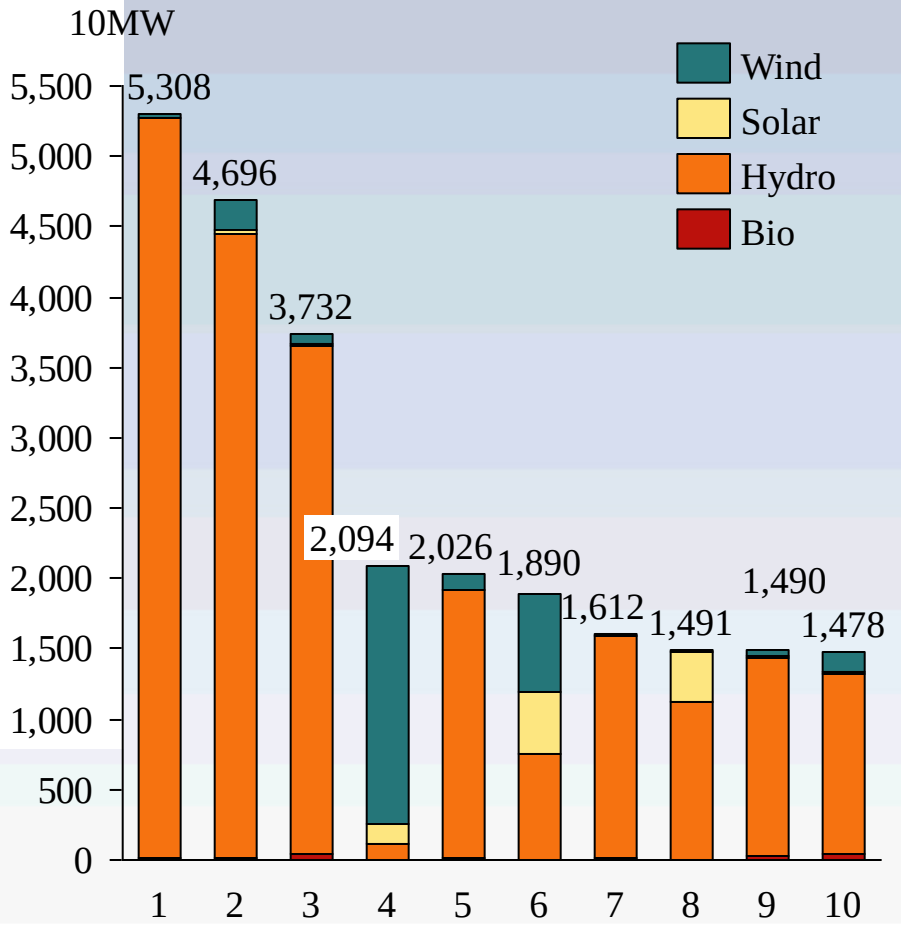
3. Progress of RE in China (cont.)



Installed capacity and power generation from renewable energy in 2012

Source: Dept. RE, NEA, 2014

3. Progress of RE in China (cont.)



Top 10 provinces accounted for 67% of the country.

The geographical distribution of renewable capacity, 2013

Source: Dept. RE, NEA, 2014

4. Policies for RE in China

Laws & Regulations

The RE Law and its amendment

- National goals for RE
- Mandatory access of RE by the grid
- Categorized electricity price
- Cost sharing
- Special funds

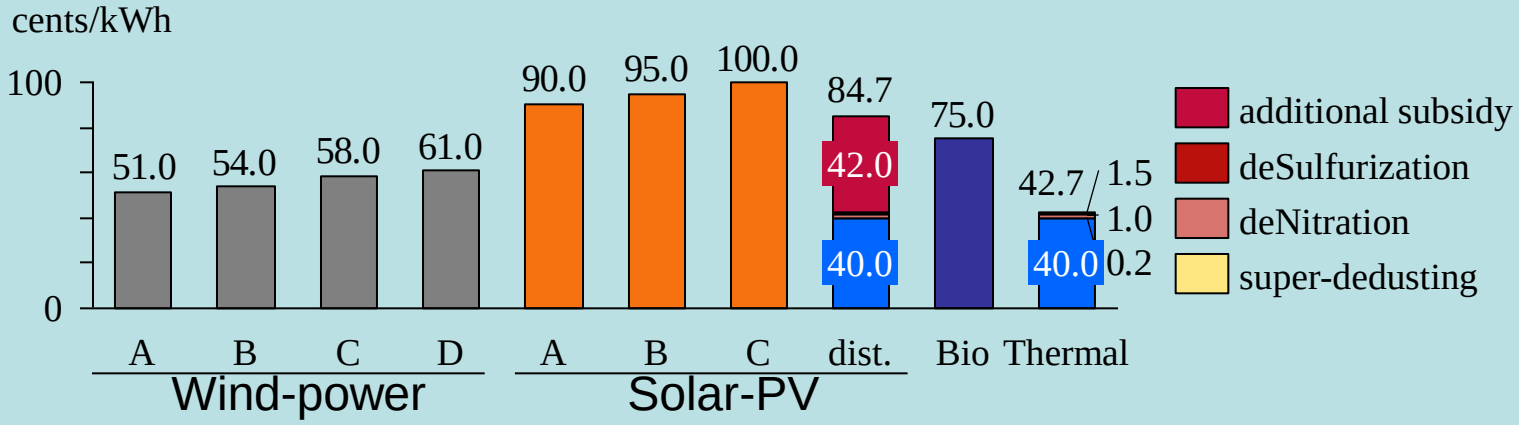
Plans

- FYP goals: share of RE, installed capacity
- Pilot projects
- Distributed RE for the rural area
- Non-electricity RE

4. Policies for RE in China (cont.)

Incentives

- Additional RE tariff shared by electricity consumers: 0.1 cent/kWh (2006)→ 1.5 cents/kWh (2013)
- Feed-in tariff:



Standards

- Technical code for solar water heating system of civil buildings (GB 50364-2005)
- Biodiesel blend stock (BD100) for diesel engine fuels (GB/T 20828-2007), etc.

5. GHGs Reduction from RE use

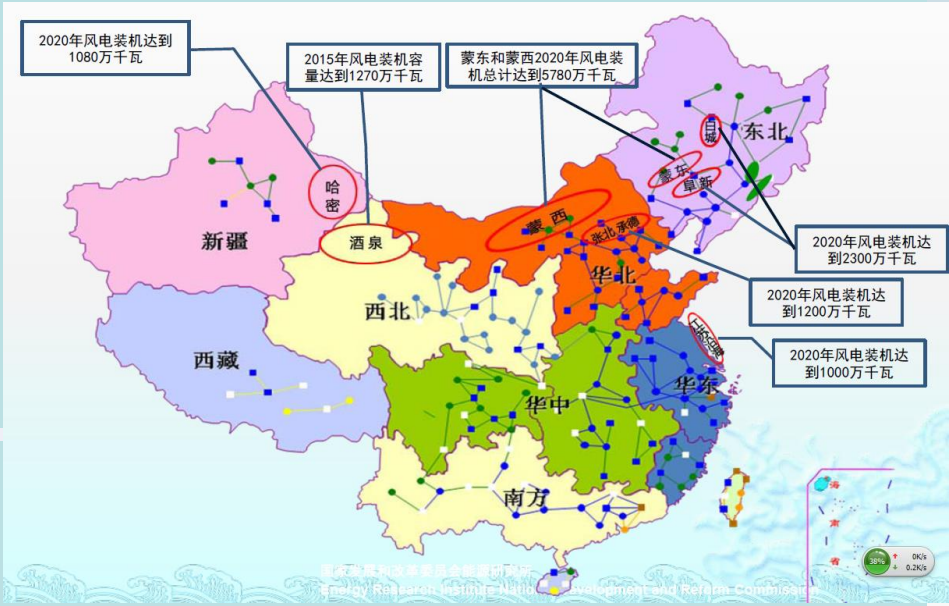
GHGs emission avoided by RE use in China

Source: China Energy Statistical Yearbook 2009, 2012; SNC of China

6. Challenges for RE in China

Technical aspects

- Discontinuous supply: *the need for peak shaving*
- Geographical isolation of the power supply and the load
  1) Lack of large scale power storage technology
     RE+FF increase FF
  2) Weak grid connection
  3) Small grid
     Electric vehicle
- Large scale collection of A&F residual, etc.



Cost

- Higher cost (esp. PV) v.s. thermal power
- Potential additional cost for new tech, etc.

7. Implication for RE development under the Convention

- Support for R&D of country specific technology is crucial
- Technology transfer is a must to advance RE
- Financial support is needed to the diffusion
- Capacity building is needed to ensure the utilization

谢谢！
Thank you!

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