

Indigenization of Renewable Energy Technologies : A Must for Pakistan

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Revolution is taking place...

▶ A Paradigm Shift

- Oil enriched countries are shifting their focus on renewable energy sector to keep their grip on energy leadership.
- UAE with its oil wealth aspire to become the leader in renewable energy.
 - MASDAR Initiative: Transforming Oil Wealth into Renewable Energy Leadership.

Revolution is taking place...

▶ A paradigm shift

- India: Energy Security and Self Reliance
 - wind power installed capacity, India is ranked 5th in the World.
 - 20 % to come from Renewable energy by 2020.
- China: 15 % (30,000 MW) energy production from renewable energy by 2020.
- USA: Creating Green Jobs
 - "We'll invest \$15bn a year over the next decade in renewable energy, creating five million new green jobs that pay well, can't be outsourced and help end our dependence on foreign oil." (Obama Pledge to American Voter in 2008 Elections)

Is it all about producing Energy?

- ▶ It's about Economics.
 - Industry,
 - Job Creation.
 - Technology development
 - Technology Exchange
 - Leadership for the 21st century and beyond.

Striving to Indigenize Technology

▶ **India**

- Separate MNRE and fifth largest wind turbine manufacturer.

▶ **China**

- World's third largest manufacturer of solar panels.
- Since 1990's, RE promotional policies.

▶ **Spain**

- Spanish government agencies have long mandated the incorporation of local content in wind turbines installed on Spanish soil;
- The creation of Gamesa in 1995 can be traced in part to these policies.

▶ **Canada:**

- Tenders (1000 MW and 2000 MW) to generate electricity through wind power mandated the use of local content to stimulate economic development by attracting international technology leaders in the wind power technology industry.

Policy Framework for Indigenization of Technology

▶ **Local Content Requirement**

- In 2006, Spain enacted a new building code.
- Since January 2005, Proinfa legislation requires 60% of the total cost of wind plant goods to be sourced in Brazil.
- In China Newly installed facilities such as wind turbines must contain 70 percent content that is manufactured in China. As a result, the Chinese now produce about 40 percent of wind turbines sold in China and 3 percent of wind turbines sold globally.

▶ **Financial and Tax incentives**

- US enacted 30 % tax credits for Solar PV and solar hot water.

▶ **Upfront Tariff**

- 41 countries, provinces and states including China and six Indian states.

▶ **Research and Development**

- Notably in Denmark, Germany, US, Netherlands.

Consequences

- ▶ Failing to develop such policies would further delay investments and hamper Pakistan's economic growth. (Vucetic & Adamantiades, 2009).

Short term v/s long term

- ▶ In the quest to solve energy problems of Pakistan we must keep an eye on the long term target of growth through renewable energy technologies.
- ▶ A seed, which would harvest into a domestic manufacturing base tomorrow.

An Ending Note

- ▶ The national renewable energy policy of Pakistan's primary objective should be:

“Development of a domestic manufacturing base of renewable energy technologies along with rapid market inception through private investments.”

Conclusion

- ▶ We do not want Pakistan to become merely a spectator in the expansion of world renewable energy markets but a contender.

THANK YOU ALL

