India-Japan Partnership towards a Low-Carbon Economy: An Indian perspective

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*Outline of presentation*: The global and national policy thrusts on low-carbon growth in the run-up to the post-Kyoto negotiations. It is imperative for India to balance between high economic growth, poverty reduction and carbon emission reduction. Since higher energy use is associated with higher economic growth, the Indian policy focus has turned on promoting low-carbon renewable forms of energy (like solar, wind, hydro, biomass, geothermal, etc) and increasing energy efficiency. I will take up the case of solar energy in particular since there is scope for partnership between India and Japan, given the commonality in the strong national commitments in lowering cost of solar energy and increasing capacity and deployment of solar power in the two countries.

I. The attention on low-carbon growth in the run-up to the post-Kyoto negotiations. The multilateral trade negotiation (Doha Round) has also turned its focus on clean technology trade liberalization under the environmental goods agenda.

II. Indian Prime Minister's 2008 National Action Plan on Climate Change addresses the priority areas like clean energy, energy efficiency in industry, building, etc.
   - Investment incentives for carbon-free power generation (e.g. in wind, solar) in the form of accelerated depreciation, concessional custom duty for specific critical components, excise duty exemption, etc.
   - Other policy support instruments like feed-in-tariff, renewable portfolio standard in power generation.
   - Energy efficiency standards and incentives to increase energy efficiency.

III. Prime Minister Taro Aso's 2009 vision of Japan to lead in world in low-carbon emission revolution. In particular for Japan to become the "Number One Solar Power Nation in the World". Domestic focus to enhance demand of solar energy through policy, in order to increase supply capacity and reduce costs through scale economies.
   - Policy support instruments including subsidy, feed-in tariff, etc. also envisioned for increasing solar electricity generation.

IV. In India the specific focus on development and deployment of solar power is evident in the National Solar Mission:
   - Target to increase solar power capacity to 20,000MW by 2020 (current capacity in solar power is about 50MW), achieve interim grid parity with coal-based thermal power by 2020 and parity by the year 2030.
   - Special Economic Zone-type of incentives to be offered for the establishment of solar technology manufacturing parks

V. Scope for cooperation between India and Japan, given India's challenge of investment in new solar technology and Japan's technology advantage.

- For instance, Japanese companies have the highest number of patent applications for solar energy technology (e.g. Canon, Sanyo Electric, Sharp, Matsushita Electric, and Kyocera).
- Although India has emerged as an exporter of solar modules, domestic production is largely import-dependent (critical components like PV cells are imported). The larger enterprises in India have engaged in joint ventures (e.g. Tata Power with BP Solar in photovoltaic, Moser Baer India Limited in crystalline silicon cell technology and thin-film technology) in order to access technology-intensive solar equipment manufacturing.

The price of Solar Photovoltaic technology has reduced over the years it continues to be economically unviable for power generation in India. Japan and India have scope for collaborative work as both continue to pursue the goal of making solar energy more cost-effective and commercially viable.