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Domestic content vis-à-vis Manufacturing Sector for Solar Power Plants in India

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Domestic content - Photovoltaics

- **Is Domestic content requirement a solution to development of the manufacturing sector in India for Solar Power Generators?**

- **Though Solar Power Generator contains many electro-mechanical components, domestic content requirement is more specified for the Photovoltaic Industry and hence the discussion is restricted to this manufacturing sector only.**

Current status of Indian Manufacturing Sector

- Current manufacturing Capacity is 2,000 MW for solar modules and 900 MW for solar cells

- There are loopholes in the taxation. While foreign manufacturers dump their products with “ZERO” duty, domestic manufacturers “PAY” duty for all components that go into manufacture of Solar Cells and Modules – both at Central and State level.

- 80 per cent of the country’s manufacturing capacity is shut.

- It should have been heydays for Indian manufacturers. Instead, there is bankruptcy, loan restructuring and pleas to the government for support against international competition,

Current status of Indian Manufacturing Sector

- Nineteen cell makers are registered with the Ministry of New and Renewable Energy (MNRE). The country has more than 50 module makers.
- Industry is on the verge of collapse. The solar power sector has turned into a purely import business.
- According to estimates by Bloomberg New Energy Finance, the current global demand is about 30,000 MW. But the manufacturing capacity is double that.

Current status of Overseas Manufacturing Sector

- Its not only the Indian manufacturing Industry but even many Western PV suppliers are exiting the industry or filing for insolvency.
- The solar industry has now become dependent on the volume of supply from China to move from a 30 GW industry to above 50 GW over the next two years.
- This raises further questions over the effectiveness of domestic protectionism measures being considered within most regions or countries today.
- The Only Exception is China's Manufacturing Sector

China's Manufacturing Sector – Government Initiatives.

- China produces 32 times more modules than the Chinese market needs.

- China illegally subsidizes its solar industry
  - by providing cash grants;
  - discounted polysilicon and aluminum necessary for production of solar panels;
  - heavily discounted land, power and water;
  - multi-billion dollar preferential loans and direct credit;
  - tax exemptions, incentives and rebates;
  - export grants and insurance; and by holding its currency under value

Current status of setting up of Solar Power Plants

- The competition is between imported thin-film technology and domestically assembled crystalline silicon modules. But the competition has been far from fair.

- Almost 60 per cent of the projects under JNNSM's first phase have opted for imported thin-film modules. Only 14 per cent of the modules produced globally are thin-film and in India it is about 56 per cent of the total modules

- Indian developers have bent backwards to import from the US given the US Exim Bank support and our government has been silent

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Pushing for their own

Many countries mandate developers to buy domestic equipment

Country (or province)	Domestic content requirement
Ontario (Canada)	60 per cent of the goods and labour has to come from Ontario to qualify for solar tariff
Italy	60 per cent of the components sourced from European facilities get 10 per cent extra on solar tariff
Greece (proposed)	80 per cent of the components sourced from European facilities get 10 per cent extra on solar tariff
France (proposed)	60 per cent of the components sourced from European facilities get 10 per cent extra on solar tariff
Ukraine	15 per cent (commissioned before 2013), 30 per cent (between 2013 and 2014) or 50 per cent (after 2014) of total construction volume from Ukraine
Malaysia	Bonus to tariff if local modules (US $0.01/kWh) and inverters (US $0.003/kWh) are used
Turkey	Up to 50 per cent bonus on tariff of solar components are made in Turkey

Compiled from multiple sources

Domestic Manufacturing is the lack of Scale

- Vertical integration in the manufacturing process, from sand to module, lowers their production cost. India does not have this advantage.
- The largest Indian manufacturer has the cell production capacity of less than half GWp (500 MWp), Chinese manufacturers have the average capacity of more than 1 GW.
- China's total annual production is 20 GW.
- Today, four of the world's largest photovoltaic cell manufacturers are Chinese,
- Chinese companies can survive despite selling below production cost and suffering huge losses as they have good support programmes

Government Initiatives - both at Centre and State level

- Levy Duty on imported Solar Cells & Modules or remove the duty for all the components that go into manufacture of Solar Cells & Modules.
- Restore the era of "ZERO" tax by State & Cetre for all Solar Cells & Modules.
- Make mandatory use of Locally made Solar Cells & Modules for all Solar Power Projects in India.
- Convert RPOs as RPMs.
- Declare Solar Power Generators under Priority Sector for lending with ease of terms.
- Assist in building up capacities in the complete Supply chain
- R & D by the National Labs in the Technology Up gradations

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Project Finance – Deficiencies

- Many banks do not lend, or limit lending, to renewable energy projects
- Availability of debt and longer tenor debt is generally unavailable
- The high general interest rate environment in India - Fixed interest rate debt is rare.
- Debt is not strictly non-recourse
- Technology risks – bankable projects
- Limits on foreign lending - Capital controls on foreign debt

Declare Solar Power Generators under Priority Sector for lending with ease of terms.

Developer Perspectivs

Capex cost as minimum as possible – its good for viability point of view – BUT,

- Quality and Reliability of the Components.
- Engineering and Design of the System
- Installation Standards
- Operation and Maintenance.
- Avoid Fly-by-night operators
- Bankable PPA's to be available to attract overseas investments.

Industry perspectives

- Industry to gear up for keeping up the Quality with assured guaranteed power generation.

- Concentrate more on the longevity of the Project rather than working on how to get the project. Never compromise Quality for the sake of Cost, as the Power plant has to sustain for 25 years.

- Anticipate ecological changes that might occur during the next 25 years and design the system to withstand such eventualities.

- Setting up of the power plant is the beginning of the problem not the end.

Solar power sector in India is clearly divided into two camps over the government policy on manufacturing. While manufacturers say they are running out of business because of dumping by foreign manufacturers, project developers criticize the domestic content requirement policy.

Developers want to import at zero duty which they say will lead to large solar installations which, in turn, will lead to quick development of the sector, while manufacturers demand a level-playing field with global industry.

India must decide today what it wants—a purely import-driven solar power industry that compromises energy security, or a robust domestic manufacturing base

THANK YOU

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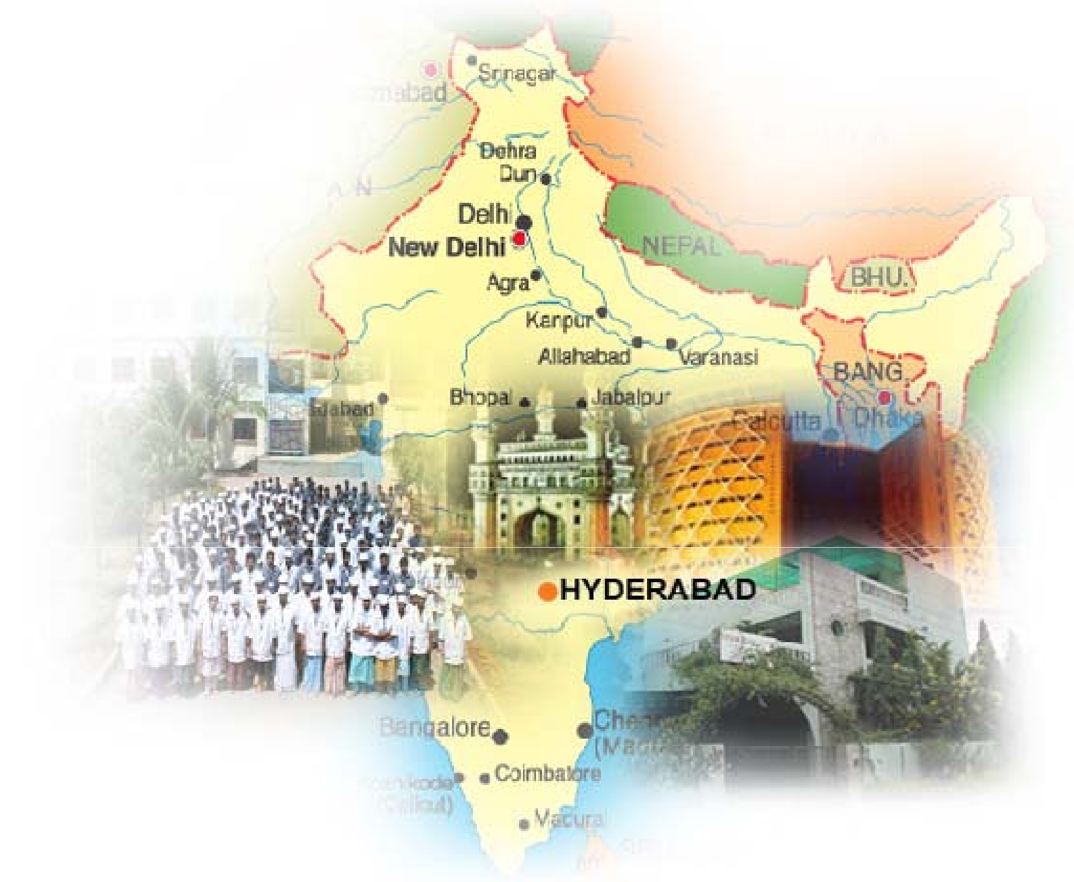

THE MOMENTUM IS FINALLY HERE!

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Solar Power – Grid Parity

- No wonder, the prices of solar equipment plunged between 2008 and 2011. Photovoltaic modules cost 60 per cent less, estimates Bloomberg.

- Polysilicon has fallen from US $500 per kg in 2008 to US $25 per kg now.

- In spite of fall in Capex prices, major concern both by FIs & Developers was the fear that governments facing economic hardship may go back on the previously promised deals for the existing projects, damaging returns for equity investors and banks