

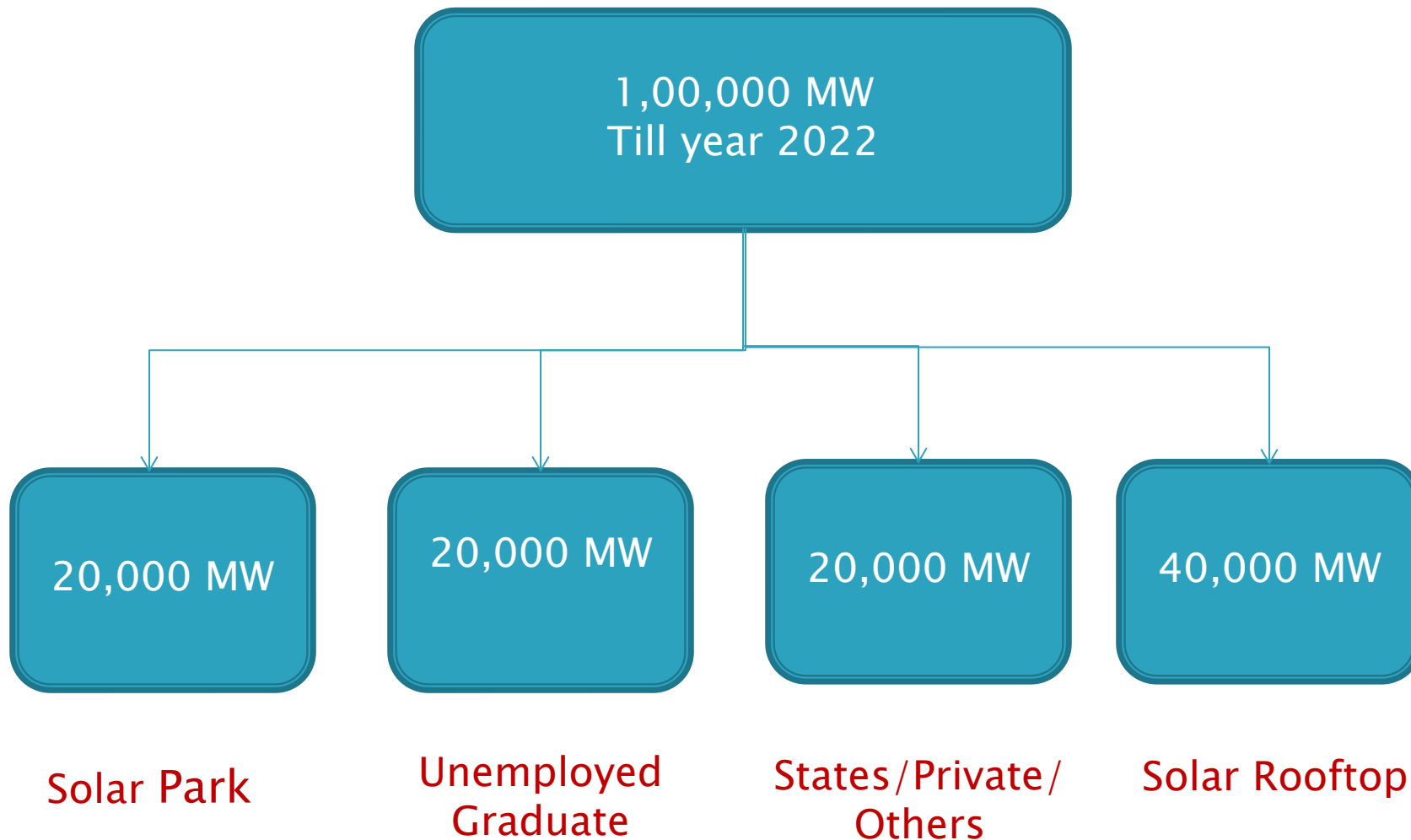


MNRE

Grid-connected SPV Rooftop systems

Government of India
Ministry of New and Renewable Energy

Road Map for Solar Power



Concept of Grid-Connected Rooftop PV



- ▶ Refers to SPV systems installed on rooftops of residential, commercial or industrial



- ▶ Electricity generated could be
 - fed into the grid at regulated feed-in tariffs or
 - used for self consumption with net-metering approach

Advantages of Rooftop Solar



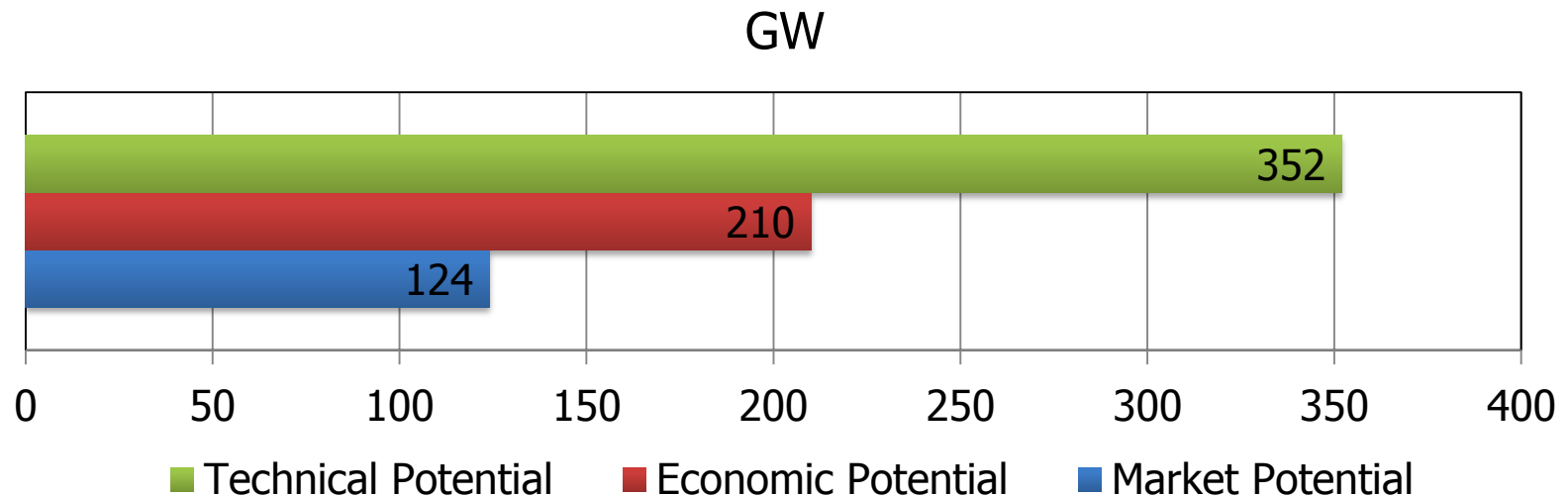
- ▶ Savings in transmission and distribution losses
- ▶ Low gestation time
- ▶ No requirement of additional land
- ▶ Improvement of tail-end grid voltages and reduction in system congestion with higher self-consumption of solar electricity
- ▶ Local employment generation
- ▶ Reduction of power bill by supplying surplus electricity to local electricity supplier
- ▶ Battery elimination makes easy installation and reduced cost of system
- ▶ No storage losses leads to effective utilization of power
- ▶ Savings in transmission and distribution losses for the utility
- ▶ No requirement of additional land
- ▶ Low gestation time
- ▶ Local employment generation



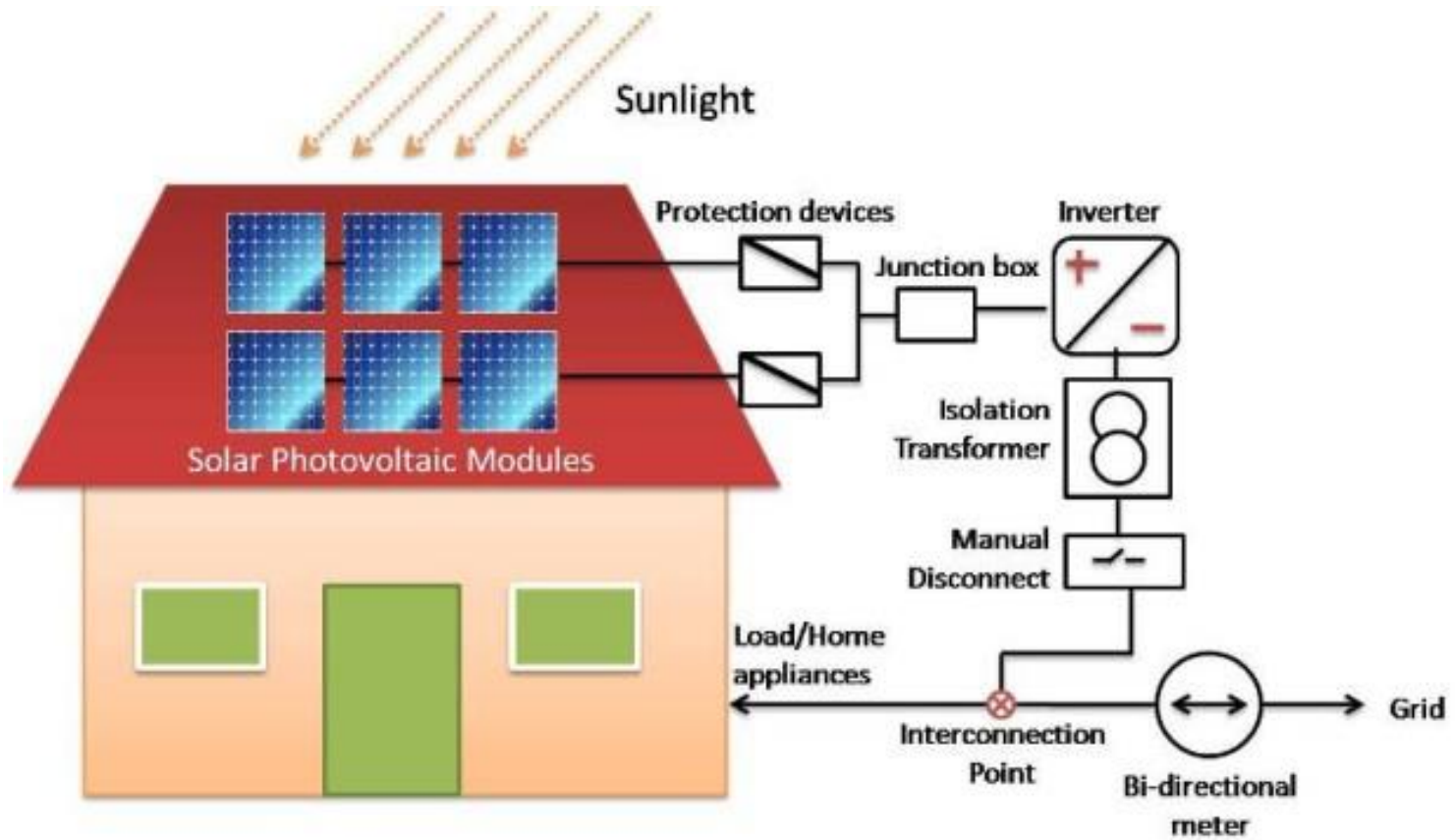
All-India Rooftop SPV Potential



In India market potential for rooftop SPV is 124 GW.



Components



Present Status of Grid Connected Rooftop Programme

- Estimated potential of 124 GW of Solar Rooftop in the country
- 358.43 MW of Solar Rooftop Projects sanctioned
- 41.239 MW of Solar Rooftop installed

Present Status of Grid Connected Rooftop Programme



- ▶ 13 States namely Andhra Pradesh, Chhattisgarh, Gujarat, Haryana, Karnataka, Kerala, Manipur, Punjab, Rajasthan, Uttar Pradesh, Tamil Nadu, Uttarakhand and West Bengal have come out with their Solar Policy supporting grid connected rooftop systems.
- ▶ 17 States/UTs namely Andhra Pradesh, Chhattisgarh, Delhi, Gujarat, Haryana, Karnataka, Kerala, Tamil Nadu, Uttarakhand and West Bengal, Andaman & Nicobar, Chandigarh, Dadra & Nagar Haveli, Daman & Diu, Lakshadweep, Pondicherry and Goa have notified the regulations that include promotion of grid connected rooftop solar systems with net metering/feed-in-tariff mechanism. have come out with their SERC's tariff orders and regulations.
- ▶ Remaining States being pursued to come out with their policies/regulations.

Present Status of Grid Connected Rooftop Programme



- 40,000 MWp targeted by 2022 of which 10,000 MWp during 2015-16, to 2017-18.
- The CFA to be provided through direct subsidy (15%) or equivalent interest subvention through banks.
- The present CFA of Rs. 24 per watt likely is being reduced to Rs. 12 per watt. The commercial entities availing AD benefits will not be eligible for subsidy.
- Efforts should be to develop this sector without CFA or through interest subvention.

Grid Connected Rooftops through Banks



- Department of Financial Services issued instructions to all public sector banks to provide loans under home loan/ home improvement loans.
- Nine Banks namely Bank of India, Syndicate Bank, State Bank of India, Dena Bank, Central Bank of India, Punjab National Bank, Allahabad Bank, Indian Bank and Indian Overseas Bank have given instructions to extend loan for Grid Interactive Rooftop Solar PV Plants as home loan/ home improvement loan.

Financing through International Funding Agencies



KfW	World Bank	Asian Development Bank
<ul style="list-style-type: none">• 1 Billion Euro loan for rooftop sector• Through banks with reduced interest upto 8%	<ul style="list-style-type: none">• USD 500 million loan for low cost infrastructure finance in rooftop sector• Through private developers to install systems on RESCO Mode, low cost EMI Mode. System to be owned by developer initially.	<ul style="list-style-type: none">• Proposed USD 5 million• Through banks, private developers, State Nodal Agencies.

What we expect from Channel Partners /New Entrepreneurs?



- Promote rooftop by availing AD benefits among profit making companies, industry.
- Promote rooftop to residential customers by availing bank loans.
- Promote rooftop through RESCO Model among housing societies, commercial establishments, institutions, industry.

What we expect from Channel Partners /New Entrepreneurs?



- Make marketing plans and use web enabled environment, E-marketing mechanism for sales and service of rooftop systems.
- Develop sales and service network.
- Get empanelled with MNRE and other State Nodal Agencies.
- Develop innovative business models.

What we expect from Channel Partners /New Entrepreneurs?



- Provide users training for end use customers.
- Prepare manuals and other advertising materials for their own publicity.
- Coordinate with MNRE to discuss and develop the ways for creating an environment for the subsidy free eco system for grid-connected rooftop system.

Government House, Sector - 7, Chandigarh



Punjab Engineering College, Sector - 1, Chandigarh



Government Hospital, Sector - 16, Chandigarh



Govt. College for Girls, Sector - 11, Chandigarh



IGP Office, Sector - 9, Chandigarh



Thank You

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