

PERC solar cell production

1733. SHRI K. J. ALPHONS: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) the objective of Passivated Emitter and Rear Cell (PERC) project;
- (b) whether it has been possible to develop PERC type solar cells; and
- (c) whether commercial production of these cell has been started?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI RAJ KUMAR SINGH): (a) The Ministry of New and Renewable Energy (MNRE) has sanctioned a R&D project "Development of high efficiency (21% 19%) PERC type of mono crystalline silicon (c-Si)/multi-crystalline silicon (mc-Si) solar cells" implemented by Bharat Heavy Electricals Limited (BHEL-ASSCP), Gurugram with the following objectives:—

- (i) Development of unit processes for large area (6" inch x 6" inch), PERC, c-Si / mc-Si solar cells with a targeted efficiency of 21 % and 19% for c-Si and mc-Si respectively.
- (ii) Demonstration of technology at pilot scale, enabling easy transfer to domestic manufacturing.

(b) and (c) While under the above-mentioned PERC project, PERC type solar cell domestic production line will be developed, similar PERC solar cells lines have been developed in other parts of the world with commercial production.

Solar MSMEs

1734. SHRI VIJAY PAL SINGH TOMAR: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

- (a) whether Government is taking any action to support the solar Micro, Small and Medium Enterprises which manufacture solar modules, ancillary products, raw material suppliers in the solar photovoltaic space to boost the sector of solar energy in the country so far; and
- (b) if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI RAJ KUMAR SINGH): (a) and (b) In order to encourage and support domestic solar equipment manufacturers, including Micro, Small and Medium Enterprises, the solar PV power projects being implemented under some of the Schemes of Ministry of New and Renewable Energy (MNRE) like Central Public Sector Undertakings Scheme (Government Producers Scheme), PM-KUSUM and Grid-connected Rooftop Solar Programme Phase-II are mandated to source their requirement of solar PV cells and modules from domestic sources, as per extant Guidelines, in a WTO compliant manner.

Further, Ministry of New and Renewable Energy (MNRE) *vide* its O.M. No. 146/57/2018-P&C dated 11.12.2018 regarding "Implementation of Public Procurement (Preference to Make in India) Order for Renewable Energy sector" has stipulated that apart from civil construction, preference shall be provided by Central Ministries/ Department and Central PSUs to domestically manufactured/produced products such as solar PV modules and other components such as inverters, etc. for Grid connected solar power projects. Minimum Percentage of local content required is 100% in case of solar modules and 40% for other components such as inverter, etc.

The small module manufacturers, whose annual module production capacity is less than 50MW, are further supported by way of exemption from Bureau of Indian Standards BIS certification for two years till 04.09.2020 provided they have a valid International Electrotechnical Commission (IEC) Certificate (either 2005 or 2016) for the period, or for the period for which IEC certificate is valid, whichever is earlier and further provided the IEC certificate has been obtained before 16.04.2018.

Solar power waste policy

1735. SHRI HUSAIN DALWAI: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether Government has formulated any policy of dealing with solar power waste, if so, the details thereof, if not, reasons therefor;

(b) whether Government has formulated appropriate quality standards for use of environmentally sustainable material in manufacturing of modules which will help in minimising potentially hazardous end-of-life module waste in India; and