GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 1443
TO BE ANSWERED ON 24.11.2016
SUBSIDY FOR POWER GENERATION

1443. PROF. SAUGATA ROY

Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the amount of subsidy being given to the producers and consumers for power generation from wind, solar and other renewable energy sources;

(b) whether the Government has taken or proposes to take any steps to speed up research and development activities to bring down the cost and to develop technologies in the renewable energy sector; and

(c) if so, the details thereof?

ANSWER

THE MINISTER OF STATE FOR POWER, COAL, NEW AND RENEWABLE ENERGY & MINES (INDEPENDENT CHARGE) (SHRI PIYUSH GOYAL)

(a): The Ministry of New and Renewable Energy (MNRE) provides incentives/subsidy/central financial assistance to the producers and consumers for power generation from wind, solar and other renewable energy sources under various Renewable Energy Programmes as per details given in Annexure.

(b): Yes, Madam. The MNRE has been supporting Research and Development (R&D) to various R&D/academic institutions, NGOs, industries, etc. in the field of solar, wind, biogas, biofuel, Hydrogen, Fuel Cells, geothermal, etc. for technology development and demonstration leading to commercialization. A comprehensive policy and guidelines for research, development and demonstration (RD&D) for new and renewable energy sector is in place. It has a provision for financial assistance of up to 50% of the project cost for the projects that involve partnership with industry / civil society. However, for a proposal from academic institutions, Government/non-profit research organizations and NGOs, the MNRE provides upto 100% funding. In addition, the MNRE has established three institutes, namely, National Institute of Solar Energy (NISE), National Institute of Wind Energy (NIWE) and National Institute of Bio Energy (NIBE) for R&D, testing and evaluation in solar, wind and bioenergy, respectively.

In order to review the progress of on-going projects and to identify thrust areas for RD&D, the MNRE organized a day long "Brainstorming Consultation Meeting on RD & D" on 5th January 2016, which was attended by key subject experts from R&D/academic institutions, industries and concerned MNRE Group/Divisional Heads. In the meeting, "Thrust Areas with Action Plan for RD&D" for support by MNRE was prepared and uploaded at MNRE web for project preparation and implementation. It has strong emphasis on industry association and also collaboration for R&D projects for technology development leading to commercialization.

The MNRE has spent Rs. 306.65 crores on R&D projects in solar, small wind and hybrid, biogas, biofuel, hydrogen, fuel cells and small hydro implemented by various R&D/academic institutions, industries during the last four years and the current year.

(c): The focus areas for R&D are solar energy, wind hybrid systems, biogas, biofuels, hydrogen, fuel cells and related components. R&D projects undertaken have strengthened R&D/ academic institutes, industries for furthering RD&D for technology development for commercialization. In solar photovoltaics, the focus has been on indigenous development of solar cells with improved efficiency at par with international level, with cost reduction. Crystalline silicon solar cell of 18% efficiency has been developed at lab scale. R&D efforts are continuing for improvement of efficiency with cost reduction. R&D in solar thermal power provided feedback on operational aspects of the technology for further development. R&D in hybridization of solar and wind is being pursued for ensuring improved energy supply from renewable energy. In addition, R&D efforts are going on for design, development and demonstration of hydrogen and fuel cells for power generation and other uses.

The R&D efforts have led to design and development of solar water heating system, solar cookers, solar photovoltaic system, biogas plants, improved biomass cookstoves, gasifiers, biomass cogeneration, etc.

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Annexure

Incentives/Subsidy/Central Financial Assistance (CFA) available under various schemes/programmes for power generation from wind, solar and other renewable energy systems.

A. GRID-INTERACTIVE RENEWABLE POWER PROGRAMMES:

1. Wind Power Projects:

Generation Based Incentive (GBI)	Rs.0.50 per unit subject to max of Rs.1.00 crore/MW for producers.

2. Solar Power Projects:

Solar PV Power projects under Jawaharlal Nehru National Solar Mission (JNNSM) Phase-II, Batch-I of total 750 MW with Viability Gap Funding (VGF) support from National Clean Energy Fund (NCEF).	Minimum Project Capacity 10MW Maximum Project Capacity 50MW	VGF support up to 30% of Project Cost limited to Rs.2.50 Cr/MW based on reverse bidding process for power producers.
Grid Connected Rooftop Solar PV Power Projects in residential, institutional and social sector.	Benchmark support cost Rs.75,000/- per kWp.	Central Financial Assistance (CFA) up to 30% of benchmark cost for the General Category States/UTs and up to 70% of benchmark cost for Special Category States/UTs, i.e. North Eastern States including Sikkim, Uttarakhand, Himachal Pradesh, Jammu & Kashmir and Lakshadweep, Andaman & Nicobar Islands is provided to consumers for installation of grid connected solar rooftop projects. Incentives are also provided for promotion of roof top SPV power in Government sector. No subsidy is provided for commercial and industrial establishments in private sector.
Grid connected Solar PV Power Projects by Central Public Sector Undertakings (CPSUs).	Total size of the scheme 1000MW.	VGF support to the CPSUs/Govt. Organisations (producers) at a fixed rate of Rs.1 crore/MW for projects where domestically produced cells and modules are used and Rs. 0.50 crores/MW in cases where domestically produced modules are used.

3. Small Hydro Power (SHP) Projects

Support to new SHP projects (producers) in State sector:

Category	**Above 100 KW and up to 1000 KW**	**Above 1 MW – 25 MW**
Special category and NE States	75,000 per KW.	7.5 Crores / MW limited to `20 crore per project.
Other States	35,000 per KW.	3.5 Crores / MW limited to `20 crore per project.

Support to new SHP projects (producers) in private / co-operative / joint sector:

Areas	**Upto 25 MW**
N E Region, J & K, H.P. & Uttarakhand (Special Category States)	1.5 crore/ MW limited to `5.00 crore per project
Other States	1.0 crore/ MW limited to `5.00 crore

4. Biomass Power and Bagasse Cogeneration Projects (producers):

Private / Joint / Cooperative / Public Sector Sugar Mills:

Type of Projects	**Special Category and NE States**	**Other States**
Biomass Power projects	Rs.25 lakh per MW*	Rs.20 lakh per MW*
Bagasse Co-generation	Rs.18 lakh per MW*	Rs.15 lakh per MW*
Co-generation projects by cooperative/public sector sugar mills 40 bar & above 60 bar & above 80 bar & above	Rs.40 lakh Rs.50 lakh Rs.60 lakh Per MW of surplus power (maximum support Rs. 6.0 cr / project)	Rs.40 lakh Rs.50 lakh Rs.60 lakh Per MW of surplus power (maximum support of Rs. 6.0 crore per project)

*Maximum support of Rs. 1.50 crore per project.

5. Waste to Energy Projects:

Type of Waste	**Central Financial Assistance to Producers**
Municipal Solid Waste	Rs.2.00cr./MW, Max. Support 10 Cr. /project.
Urban Waste	Rs.2.00cr./MW, Max. Support 5 Cr. /project.
Industrial waste	Rs. 0.20cr to Rs. 1.00cr/MW, Max. Support Rs.5.00cr/project.

B. OFF-GRID / DECENTRALIZED RENEWABLE ENERGY PROGRAMMES

S.No	Programme	CFA/Subsidy to consumers (limited to following ceiling or 40% of the cost of the system, whichever is less)
1.	**Biogas Power (off-grid)** 3kW – 20kW 20kW – 100kW 100kW – 250kW	 Rs.40,000/- Per kW Rs.35,000/- Per kW Rs.30,000/- per KW
2.	**Solar Photovoltaic Systems**	CFA/subsidy to consumers: ➢ Subsidy of 30% of project cost. ➢ For solar light through NABARD, Regional Rural Banks (RRB) and other commercial bank 40% subsidy is available.
3.	**Small Aero-Generators and Hybrid Systems**	CFA/Subsidy: Rs.1.00 lakh per kW to consumers
4.	**Micro-hydel plants/ Water mills**	Subsidy/CFA to producers: ➢ Rs. 1.25 lakh/kW for Micro-hydel upto 100 kW. ➢ Rs.0.50 lakh per watermill for mechanical application ➢ Rs.1.50 lakh per watermill for electrical application
5.	**Biomass Gasifier**	CFA/Subsidy to consumers: ➢ Rs. 15,000 /kW (with 100% producer gas engine) ➢ Rs. 2,500/kW for duel fuel engine ➢ Rs. 2.0 lakh per 300 kW for Thermal Applications ➢ 20% higher CFA for special category states