

**GOVERNMENT OF INDIA  
MINISTRY OF SCIENCE AND TECHNOLOGY  
DEPARTMENT OF SCIENCE AND TECHNOLOGY  
LOK SABHA  
UNSTARRED QUESTION NO.2762  
TO BE ANSWERED ON 2/08/2017**

**RESEARCH IN ENERGY**

**2762. DR. SANJAY JAISWAL:**

Will the Minister of SCIENCE AND TECHNOLOGY *विज्ञान और प्रौद्योगिकी मंत्री* be pleased to state:

- (a) the list of Government/ Government funded institutes currently involved in research in energy and allied areas and if so, the details thereof;
- (b) the funds allocated to these institutes over the past three years, their achievements and the details thereof;
- (c) whether the Government has any plans of expanding energy research in India especially in new and emerging areas; and
- (d) if so, the details thereof?

**ANSWER**

**MINISTER OF STATE IN THE MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTER OF  
STATE IN THE MINISTRY OF EARTH SCIENCES  
(SHRI Y.S. CHOWDHARY)**

*विज्ञान और प्रौद्योगिकी मंत्रालय में राज्य मंत्री और पृथ्वी विज्ञान मंत्रालय में राज्य मंत्री*

(श्री वाई. एस. चौधरी)

(a) Madam, there are several Government / Government funded academic and research institutes under Ministry of New and Renewable Energy, Ministry of Power, Ministry of Science & Technology, Department of Atomic Energy, Department of Space, Department of Defence Research & Development, Ministry of Human Resource Development etc. currently involved in research in energy and allied areas. A list of select Government / Government funded institutes and their research fields supported during last three years is enclosed at Table-I.

(b) The funds allocated to the three energy research institutes, viz., National Institute of Solar Energy (NISE), Gurugram, Haryana; National Institute of Wind Energy (NIWE), Chennai, Tamilnadu and National Institute of Bio Energy (NIBE), Kapurthala, Punjab for carrying out research and development, testing and evaluation in solar, wind and bio-energy, during the last three years were Rs. 63.19 crores., Rs. 40.5 crores and Rs. 39 crores, respectively. In addition, Rs. 594.66 crores have been spent on R&D projects in solar, small wind and hybrid, biogas, biofuel, hydrogen, fuel cells, electric vehicles, energy storage, smart grids, clean coal and small hydro implemented by various R&D/academic institutions, industries during the last three years. The funds provided to these institutes for conducting national, bilateral and multilateral research projects in various energy domains have resulted in standards, testing, evaluation and performance certification, advanced research infrastructure, test beds for technology demonstrations, specialized research manpower, publications in peer reviewed journals and knowledge disclosures / patents.

(c) & (d): The Government has plans to further expand energy research in the country in the new and emerging areas such as clean energy materials, converting sunlight to create storable solar fuels, affordable heating and cooling of buildings, alternate fuels (e.g. methanol and sustainable bio fuels) etc. besides promoting existing areas. The Government has plans to double its investments on research & development in clean energy over five years with 2014-15 as base year.

**TABLE-I**

**LIST OF SELECT GOVERNMENT / GOVERNMENT INSTITUTES INVOLVED IN 'RESEARCH IN ENERGY' AND THEIR RESEARCH FIELDS SUPPORTED DURING LAST THREE YEARS AS STATED IN RESPONSE TO PART (a) OF LOK SABHA UNSTARRED PARLIAMENT QUESTION NO 2762 FOR 2<sup>ND</sup> AUGUST 2017**

Sl.No.	Institute	Research Field
(1)	(2)	(2)
<b><u>R &amp; D Institutes</u></b>		
<b>A. Department of Science and Technology (DST)</b>		
1	DST-International Advanced Research Centre for Powder Metallurgy and New Materials (ARCI), Hyderabad	Energy Storage, Solar Photovoltaics, Methanol Research, Solar Thermal
2	DST-Jawaharlal Nehru Centre for Advanced Scientific Research, Bengaluru	Solar Photovoltaics, Energy Storage, Energy Materials
3	DST-S. N. BOSE Centre for Basic Sciences, Kolkata	Energy Storage
4	DST-Indian Association for the Cultivation of Science, Kolkata	Energy Materials, Solar Photovoltaics
<b>B. Department of Bio Technology (DBT)</b>		
1	DBT-Institute Of Bioresources& Sustainable development, Imphal	Bio Energy
2	DBT-Institute of Chemical Technology-Centre for Energy Biosciences, Mumbai	Bio Fuels
3	DBT-Indian Oil Corporation-Centre for Advanced Bioenergy Research, Faridabad	Bio Fuels
4	DBT-International Centre for Genetic Engineering and Biotechnology-Centre for Advanced Bioenergy Research, New Delhi	Bio Fuels
5	DBT-Pan IIT Centre for Bioenergy	Bio Fuels
<b>C. Council of Scientific &amp; Industrial Research (CSIR)</b>		
1	CSIR-Central Electronics Engineering Research Institute, Pilani	Building Energy Efficiency, Solar Thermal
2	CSIR-Central Electro Chemical Research Institute, Karaikudi	Solar Photovoltaics, Energy Storage
3	CSIR-Central Institute of Mining and Fuel Research, Dhanbad	Clean Coal, Methanol Research
4	CSIR-Central Building Research Institute, Roorkee	Building Energy Efficiency
5	CSIR-Indian Institute of Chemical Technology, Hyderabad	Clean Coal, Bio Energy, Alternate Fuels
6	CSIR-Indian Institute of Petroleum, Dehradun	Methanol Research & Alternate Fuels
7	CSIR-National Environmental Engineering Research Institute, Nagpur	Solar Thermal
8	CSIR-National Physical Laboratory, New Delhi	Solar Photovoltaics
9	CSIR- Indian Institute of Chemical Technology, Hyderabad	Solar Photovoltaics
(1)	(2)	(2)
10	CSIR-National Institute for Interdisciplinary	Solar Photovoltaics

11	CSIR-National Aerospace Laboratories, Bengaluru	Solar Thermal
12	CSIR-Structural Engineering Research Centre, Chennai	Building Energy Efficiency
<b>D. Ministry of Earth Sciences (MoES)</b>		
1	MoES-National Institute of Ocean Technology (NIOT), Chennai	Wave Energy, Ocean Thermal Energy Conversion (OTEC)
<b>E. Ministry of New and Renewable Energy (MNRE)</b>		
1	MNRE-National Institute of Solar Energy, Gurugram	Solar Thermal & Solar Photovoltaics
2	MNRE-National Institute of Wind Energy, Chennai	Wind Energy
3	MNRE-Sardar Swaran Singh National Institute of Renewable Energy SSS-NIBE, Rasulpur	Biomass, Bio Fuels
<b>F. Ministry Of Power (MOP)</b>		
1	MOP-Central Power Research Institute (CPRI), Bengaluru	Research infrastructure and R&D Projects specific to power sector
<b><u>Academic Institutions</u></b>		
<b>A. IISc, IITs, NITs, IISER and IIST</b>		
1	Indian Institute of Science, Bangalore	System Integration, Energy Storage, Solar Thermal, Building Energy Efficiency, Solar photovoltaics, Thermal energy storage, Bio-fuels
2	Indian Institute of Information Technology Allahabad	Solar Photovoltaics
3	Indian Institute of Technology Bombay	Solar Thermal, Solar Photovoltaics, Energy Storage, Building Energy Efficiency, Renewable Energy Systems, Clean Coal
4	Indian Institute of Technology BHU, Varanasi	Energy System Integration
5	Indian Institute of Technology Bhubaneswar	Energy System Integration
6	Indian Institute of Technology Delhi	Solar Photovoltaics, Energy System Integration, Building Energy Efficiency, Alternate Fuels, Solar Thermal, Clean coal, Methanol Research
7	Indian School of Mines, Dhanbad	Clean Coal, Methanol Research
8	Indian Institute of Technology Guwahati	Solar Materials, Clean Coal, Methanol Research, Bio-Energy, Solar Thermal
9	Indian Institute of Technology Gandhinagar	Building Energy Efficiency, Smart Grids
10	Indian Institute of Technology Hyderabad	Energy Storage, Building Energy Efficiency, Alternative fuels,
11	Indian Institute of Technology Indore	Solar Photovoltaics, Building Energy Efficiency
12	Indian Institute of Technology Jodhpur	Solar Energy, Building Energy Efficiency
13	Indian Institute of Technology Kanpur	Solar Photovoltaics, Energy System Integration, Alternate Fuels and I.C. Engine, Building Energy Efficiency
14	Indian Institute of Technology Kharagpur	Solar Photovoltaics, Building Energy Efficiency, Energy Storage

(1)	(2)	(3)
15	Indian Institute of Technology Madras	Solar Thermal, Solar Photovoltaics, Building Energy Efficiency, Energy Storage
16	Indian Institute of Technology Mandi	Solar Photovoltaics, Renewable Energy Sources
17	Indian Institute of Technology Ropar	Solar Photovoltaics, Building Energy Efficiency, Clean Coal
18	Indian Institute of Technology Roorkee	Alternate Hydro Energy, Solar Energy, Wind Energy, Renewable Energy, Building Energy Efficiency,
19	National Institute of Technology Calicut	Solar Photovoltaics
20	National Institute of Technology Goa	Building Energy Efficiency
21	National Institute of Technology Jaipur	Solar Photovoltaics
22	Maulana Azad National Institute of Technology, Bhopal	Building Energy Efficiency
23	Malaviya National Institute of Technology, Jaipur	Solar Thermal Energy, Energy from Bio-mass, Renewable Energy , Photovoltaic Plants, Building Energy Efficiency
24	National Institute of Technology Nagpur	System Integration
25	National Institute of Technology Rourkela	System Integration, Building Energy Efficiency
26	National Institute of Technology Tiruchirappalli	Solar Photovoltaics, Building Energy Efficiency
27	National Institute of Technology Surathkal	Solar Photovoltaics, Building Energy Efficiency
28	National Institute of Technology Warangal	System Integration
29	Indian Institutes of Science Education and Research, Pune	Solar Photovoltaics, Energy Storage
30	Indian Institutes of Science Education and Research, Thiruvananthapuram	Solar Photovoltaics
31	Indian Institute of Engineering Science and Technology, Shibpur	Solar Photovoltaics, Building energy Efficiency
<b>B. Central Universities</b>		
1	Central University of Jharkhand, Ranchi	Solar Photovoltaics
2	Pondicherry University, Puducherry	Solar Photovoltaics, Energy Storage
3	University of Hyderabad, Hyderabad	Solar Photovoltaics
<b>C. State Universities</b>		
1	Anna University, Chennai	Solar Photovoltaics& Thermal, Energy Storage, Building Energy Efficiency
2	Indraprastha Institute of Information Technology, New Delhi	Building Energy Efficiency
3	Indira Gandhi Institute of Technology, Sarang	Clean Coal
4	Jadavpur University, Kolkata	Solar Photovoltaics, System Integration, Building Energy efficiency
5	Maharaja Sayajirao University of Baroda, Vadodara	Solar Photovoltaics
6	Pune University, Pune	Solar Photovoltaics, Solar Thermal
7	Tumkur University, Tumkur	Solar Photovoltaics

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