

GOVERNMENT OF INDIA
MINISTRY OF NEW AND RENEWABLE ENERGY
LOK SABHA
UNSTARRED QUESTION NO. 237
TO BE ANSWERED ON 25.02.2016

MEMORANDUM OF UNDERSTANDING (MOU) IN NRE SECTOR

237. **SHRI NAGAR RODMAL**

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

- (a) whether the Government has signed Memorandum of Understanding (MoU) with other countries to enhance cooperation in renewable energy sector;
- (b) if so, the details thereof, country-wise;
- (c) whether joint research work has been initiated for the said purpose; and
- (d) if so, the details thereof along with the manner in which the domestic renewable energy sector will be benefitted there from?

ANSWER

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

(a)&(b): Yes, Madam. The Ministry of New and Renewable Energy (MNRE) has signed Memorandum of Understanding (MoUs) with 45 countries. In addition, Letter of Intent (LoI) and Joint Declaration of Intent with Egypt and Germany were signed. Country-wise details with broad areas of cooperation in the field of Renewable energy signed with various countries are given at **Annexure**.

(c): Joint research work has been initiated between National Institute of Solar Energy (NISE), India and Fraunhofer Institut fur Solare Energiesysteme (ISE), Germany in the area of solar and wind resource mapping. In addition, joint research work has also been initiated with Centre for the Development of Industrial Technology (CDIT), Spain on wind energy Forecasting and Development of Monitoring System for the energy reception elements in solar thermal plants.

(d): the cooperation in new and renewable energy sector helps domestic renewable energy sector through establishing technical collaborations aiming to acquire advance technical knowledge and capacity building required for technical personnel; wind and solar resource assessment; wind power forecasting training and application; testing and certification of wind turbines; photovoltaic module reliability; long term outdoor PV module exposure testing; performance and degradation analysis under precise meteorological data acquisition in Indian conditions etc.

Annexure referred to in reply to parts (a)&(b) of the Lok Sabha Unstarred Question No. 237 for answer on 25.02.2016 regarding Memorandum of Understanding (MoU) in NRE Sector

S. No.	Country	Ministry / Department Involved	Brief objectives of MoUs	Date of signing
1.	India-Mauritius	Ministry of Non-Conventional Energy Sources, Government of the Republic of India and the Ministry of Public Utilities, Government of the Republic of Mauritius.	To develop and promote the economic and scientific-technical cooperation in the field of non-conventional energy sources.	21 st November, 2003
2.	India-Italy	Ministry of New and Renewable Energy (MNRE) of the Government of the Republic of India and the Ministry for Environment, Land and Sea of the Republic of Italy.	Identifying areas of mutual interest and cooperation for development of new and renewable energy technologies, systems, sub-systems, devices, components etc. and monitoring and evaluating cooperation activities.	15 th February, 2007
3.	India-Cuba - Protocol of Cooperation (PoC)	MNRE of the Government of the Republic of India and the Ministry of Sciences, Technology and Environment of the Government of the Republic of Cuba.	To develop cooperation in renewable energy including wind, biomass, small hydro, solar and alternate fuels	24 th May, 2007
4.	India-Thailand	MNRE of the Government of the Republic of India and the Ministry of Energy, Government of the Kingdom of Thailand	To undertake collective efforts for the preparation and effective implementation of a "Programme for Cooperation" which will provide a systematic and organized outline of activities specifically in the areas of photovoltaic, solar thermal, biogas, biomass, small hydro, wind energy and any other technological application.	26 th June, 2007

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5.	India-Philippines (Memorandum of Agreement)	MNRE of the Government of the Republic of India and the Department of Energy, Republic of Energy of the Republic of the Philippines.	To collaborate in research, design and development of renewable energy technologies; solar photovoltaic, solar heating, biogas, biomass, geothermal, small hydro, wind, waste to energy, tidal ocean and any other renewable sources as identified through mutual discussions.	5 th October, 2007
6.	India-Iceland	MNRE of the Government of the Republic of India and the Ministry of Industry of the Republic of Iceland.	Identifying areas of mutual interest and cooperation for development of new and renewable energy technologies, systems, sub-systems, devices, components etc. and monitoring and evaluating cooperation activities.	9 th October, 2007
7.	India-IBSA (Bio-fuels, Wind Resources and Solar Energy)	The Government of the Republic of South Africa, the Government of the Federative Republic of Brazil and the Government of the Republic of India.	Cooperation in the field of Wind Power Resource Assessment through various measurement and modeling methodologies in order to the technical and economic potential of wind power.	17 th October, 2007
8.	India-Denmark	MNRE of the Government of the Republic of India and the Ministry of Climate and Energy, Government of the Kingdom of Denmark.	Identifying areas of mutual interest and cooperation for development of new and renewable energy technologies, systems, sub-systems, devices, components etc. and monitoring and evaluating cooperation activities.	6 th February, 2008
9.	India-Canada	MNRE of the Government of the Republic of India and the University of Saskatchewan, Canada.	- Do -	28 th March, 2008

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10.	India-Mexico	MNRE of the Government of the Republic of India and the Secretariat of Energy of the United Mexican States.	To identify and establish cooperation activities in the field of new and renewable energy between India and Mexican entities with the aim of developing new and renewable energy technologies.	17 th April, 2008
11.	India-USA (Bio-fuels)	MNRE of the Government of the Republic of India and the Department of Energy of the USA.	To establish a framework of cooperation covering scientific, technical and policy aspects of production, conversion, utilization, distribution and marketing of bio-fuels in a sustainable and environmentally friendly manner in accordance with national priorities and socio-economic development strategies and goals.	3 rd February, 2009
12.	India-Chile	MNRE of the Government of the Republic of India and the National Energy Commission of the Republic of Chile.	To identify and establish cooperation activities in the field of new and renewable energy between Indian and Chilean entities with the aim of developing and promoting the use of new and renewable energy technologies.	17 th March, 2009
13.	India-Spain	MNRE of the Government of the Republic of India and the Ministry of Industry, Tourism and Trade of the Kingdom of Spain.	To collaborate in the field of new and renewable energy.	22 nd April, 2009
14.	India- Scotland	MNRE of the Government of the Republic of India and the Ministry for Culture, External Affairs and the Constitution of the Government of Scotland.	To establish New and Renewable Energy Cooperation between India and Scottish entities with the aim of developing new and renewable energy technologies.	14 th October, 2009

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15.	India-USA	The Centre for Wind Energy Technology, Ministry of New and Renewable Energy of the Government of the Republic of India and the National Renewable Energy Laboratory, United States Department of Energy.	To collaborate in the area of Wind Energy.	23 rd November, 2009
16.	India-USA	The Solar Energy Centre, Ministry of New and Renewable Energy of the Government of the Republic of India and the National Renewable Energy Laboratory, United States Department of Energy.	To collaborate in the area of Solar Energy.	23 rd November, 2009
17.	India-Australia	MNRE, Govt. of the Republic of India and Department of Resources, Energy and Tourism, Government of Australia.	To identify areas of mutual interest and cooperation for development of new and renewable energy technologies, systems, sub-systems, devices, components, etc.	5 th February, 2010
18.	India-Sweden	MNRE of the Government of the Republic of India and the Ministry of Enterprise, Energy and Communications of Sweden.	To promote bilateral cooperation between the two countries towards development of bilateral, clean and renewable energy sources.	19 th April, 2010
19.	India-Iran	The MNRE of the Government of the Republic of India and the Ministry of Power of the Islamic Republic of IRAN.	To identify areas of mutual interest cooperation for development of new and renewable energy technologies, systems, sub-systems, devices, components, etc. and monitoring and evaluating cooperation activities.	9 th July, 2010

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20.	India-USAID (Agreement)	Government of India and the United States of America for Renewable Energy (USAID).	To take up USAID PACE-D Technical Assistance Contract (RE)	30 th September, 2010
21.	India-Egypt	The MNRE of the Government of the Republic of India and the Ministry of Electricity and Energy of the Arab Republic of Egypt.	To collaborate in the field of renewable energy pursued on the basis of equality and joint benefit as mutually agreed upon by the Parties	20 th January, 2011
22.	India-Uruguay	The MNRE of the Government of the Republic of India and the Government of Uruguay.	To encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	25 th February, 2011
23.	India-Bangladesh	The MNRE of the Government of the Republic of India and the Ministry of Power, Energy and Mineral Resources, Government of the People's Republic of Bangladesh.	To establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	6 th September, 2011
24.	India-Spain (Programme of Cooperation)	MNRE of the Government of the Republic of India and Centre for the Development of Industrial Technology, Government of Spain	To promote and fund innovative joint R&D projects	23 rd November, 2011
25.	India-Rwanda	The MNRE of the Government of the Republic of India and the Ministry of Infrastructure, Government of the Republic of Rwanda	To promote bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	15 th February, 2012
26.	India-Japan	New Energy and Industrial Technology Development Organization, Japan and Ministry of Finance, DEA, Government of India and	To demonstrate the implementation of integrated solar and smart micro-grid project at Neemrana, Rajasthan and to encourage the use of a sustainable,	30 th April, 2012

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		MNRE of the Government of the Republic of India and Delhi Mumbai Industrial Corridor Development Corporation Limited.	carbon neutral and efficient energy	
27.	India-Malaysia	MNRE of the Government of the Republic of India and the Ministry of Energy, Green Technology and Water of the Government of Malaysia.	To encourage and promote cooperation in renewable energy but not limited to Biomass and Biogas; Micro and Pico Hydropower, solar Energy including thermal and photovoltaic; Energy from domestic and agriculture waste; and Wind Power.	7 th November, 2012
28.	India-Belarus	The MNRE of the Government of the Republic of India and the State Committee on Science and Technology of the Republic of Belarus	To establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity	14 th November, 2012
29.	India-Egypt (Letter of Intent)	The MNRE of the Government of the Republic of India and the Ministry of Electricity and Energy of the Republic of Egypt.	To electrify one remote village using Photovoltaic Technology.	19 th March, 2013
30.	India-Germany	Solar Energy Centre of MNRE Government of the Republic of India and the Fraunhofer Institut Fur Solare Energiesysteme (ISE)	To transfer scientific expertise into applications of practical utility.	11 th April, 2013
31.	India-Germany (Joint Declaration of Intent)	The MNRE of the Government of the Republic of India and the Federal Ministry for Economic Cooperation and Development of the Federal The Republic of Germany.	Establishment of Green Energy Corridors	11 th April, 2013

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32.	India-UAE	The MNRE of the Government of the Republic of India and the Ministry of Foreign Affairs, DECC of the United Arab Emirates (DECC).	To establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	18 th January, 2014
33.	India-The Netherlands	The MNRE of the Government of the Republic of India and the Ministry of Economic Affairs Agriculture and Innovation of the Netherlands.	- do -	18 th February, 2014
34.	India-Japan	The MNRE of the Government of the Republics of India and Japan Bank for International Cooperation (JBIC).	To promote development of renewable energy projects, including canal-top solar power projects on pan-India basis in general, and in Gujarat in particular, set as the overall goals and the Objectives of MNRE is to develop and deploy new and renewable energy for supplementing the energy requirements of the country and increasing the share of renewable power in total electricity generation in India. To promote the overseas business having the purpose of preserving the global environment, such as preventing global warming by fully utilizing Japanese advanced technology and expertise in such field.	1 st September, 2014
35.	India-USA	The MNRE of the Government of the Republic of India and The Department of Energy of the Government of the United States of America.	To foster cooperation between India and USA in the area of renewable energy to Facilitate Clean Energy Access.	27 th September, 2013 at Washington USA and 19 th January, 2014 at New Delhi

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36.	India-Finland	The MNRE of the Government of the Republics of India and the Ministry of Employment and the Economic of the Government of the Republic of Finland.	To establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	15 th October, 2014
37.	India-Dominican Republic	The MNRE of the Government of the Republics of India and the Ministry of Energy and Mines, government of the Dominican Republic	- do -	17 th February, 2015
38.	India-Seychelles	The MNRE of the Government of the Republics of India and the Ministry of Environment, Climate Change and Energy, Government of the Republic of Seychelles	To strengthen, promote and develop renewable energy cooperation between the two countries on the basis of equality and mutual benefits.	11 th March, 2015
39.	India-France	The MNRE of the Government of the Republics of India and the Ministry of Ecology, Sustainable Development and Energy of the French Republic	To encourage and promote technical bilateral cooperation on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity.	10 th April, 2015
40.	Indo-German (Letter of Intent) on Indo-German Development Cooperation regarding an Indo-German Solar Energy Partnership	The MNRE of the Government of the Republics of India and the Federal Ministry for Economic Cooperation and Development of the Federal Republic of Germany	To expand bilateral development cooperation in the field of renewable energy and to foster the increased use of solar energy in India through technical as well as financial cooperation.	14 th April, 2015
41.	India-USA	Government of the Republic of India and the Government of the United States of America	A Fund to support the Promoting Energy Access Through Clean Energy (PEAC) track of the US-India Partnership to Advance Clean Energy (PACE) to accelerate the commercialization of	30 th June, 2015

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			innovative off-grid clean energy solutions by providing early-state grant funding that would allow businesses to develop and test innovative products, business model and systems.	
42.	India-Mozambique	The MNRE of the Government of the Republics of India and the Ministry of Mineral Resources and Energy of the Republic of Mozambique.	To encourage and promote bilateral technical cooperation on new and renewable energy on the basis of mutual benefit, equality and reciprocity.	5 th August, 2015
43.	India- Belgium	The MNRE of the Government of the Republics of India and the Competent Belgian Authorities at Federal and Regional level for Energy.	- do -	29 th September, 2015
44.	India-Indonesia	The MNRE of the Government of the Republics of India and the Ministry of Energy and Mineral Resources of the Republic of Indonesia	To encourage and promote bilateral technical cooperation on new and renewable energy on the basis of mutual benefit, equality and reciprocity.	2 nd November, 2015
45.	India-Germany	The MNRE of the Government of the Republics of India and the Federal Ministry for Economic Cooperation and Development of the Federal Republic of Germany	Indo-German Solar Energy Partnership- Cooperation in the field of solar rooftops, the development of solar parks or solar zones (if possible in close proximity to the Green Energy Corridors financed by KfW under Indo-German Financial Corporation) and solar off-grid applications To improve the access to clean and sustainable energy.	5 th October, 2015

