

73.86 acres of land for establishment of National Institute of New Energy and Innovation near IIT, Bhubaneswar. However, ownership of land is yet to be transferred to the Government of India.

(b) Odisha Renewable Energy Development Agency has forwarded three projects to this Ministry under UNDP-MNRE-GEF project. Since, these projects are not covered under the guidelines of the Ministry, it will not be possible to release any assistance.

MoUs in the field of renewable energy

1661. SHRI DEREK O'BRIEN: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) the MoUs signed by the Ministry with various countries in the field of renewable energy during the last three years and the current year and if so, the details thereof;

(b) whether the Ministry has initiated the process to strengthen off-grid clean energy, if so, the details thereof and the location of the unit thereof;

(c) the role played by 'PEACE' (Promoting Energy Access through Clean Energy) Agreement for development of off-grid clean energy and if so, the details thereof; and

(d) the funds allocated for the development of off-grid clean energy and if so, the details thereof?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI PIYUSH GOYAL): (a) Details of MoUs signed by this Ministry with countries during the last three years, alongwith the objective and validity are given in Statement-I (*See* below).

(b) Under the present scheme for Off-Grid and Decentralized Solar Applications, the Ministry of New and Renewable Energy provides 30% capital subsidy for installation of solar PV applications such as solar home lights, student lamps, solar street lights, solar pumps and solar power packs in various parts of the country.

(c) A Memorandum of Understanding (MoU) between India and USA was signed on 27th September, 2013 in Washington and 29.01.2014 in New Delhi, to launch Promoting Energy Access through Clean Energy (PEACE) as new track under the Partnership to Advance Clean Energy (PACE), alongside PACE-D (deployment) track. A copy of MoU is given in Statement-II (*See* below).

(d) Under the Off-grid and Decentralized Solar Application Programme, an allocation of ₹700 crore has been made for the year 2017-18.

*Statement-I**Status of implementation of Memorandum of Understandings (MoUs)/signed with foreign countries in last 3 years.*

Sl. No.	Country	Ministry/Department involved	Brief objective (s)	Year of initial signing and validity and validity period/tenure (clause of duration and terms and conditions)	Status
1	2	3	4	5	6
1.	India-Seychelles	MNRE and the Government of the Republic of Seychelles Protocol on the framework of cooperation in the field of Blue Economy b/w the Gol & the Government of the Republic of Seychelles	To Strengthen, promote and develop renewable energy cooperation between two countries on the basis of equality and mutual benefit To Cooperate in the field of Blue Economy on the basis of equality, reciprocity and mutual benefit	11.03.2015 (Validity: Till Termination) 26.08.2015 (Validity: 10 Years) Automatically renew after 10 years	In force

2	India-Netherlands	MNRE and Ministry of Economic Affairs Agriculture and Innovation of the Netherlands	To establish the basis for 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	11th February, 2014 (Validity: 5 years) (Automatically renewed after 5 years)	In force
3	India-Mozambique	MNRE and The Republic of Mozambique	To establish the basis for a cooperative institutional relationship to encourage and promote technical bilateral cooperation, investment promotion and partnership on new and renewable energy issues on the basis of mutual benefit, equality and reciprocity	05.08.2015 (Validity: 5 years) Further renewable (Can be done by mutual written consent of the parties)	In force
4	India-Finland	MNRE and the Ministry of Employment and the Economy of the Government of the Republic of Finland	To establish the basis and institutional cooperation to encourage and promote bilateral cooperation on new and renewable energy issues on basis of mutual benefit, equality and reciprocity	15.10.2014 (Validity: 5 years)	In force

Written Answers to

[31 July, 2017]

Unstarred Questions 627

1	2	3	4	5	6
5.	India-Indonesia	MNRE and 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	Signed on 2nd November, 2015 Valid for 5 years	Inforce
6.	India-Myanmar	MNRE-Ministry of Education of the Government of Republic of Myanmar	To establish basis for cooperative institutional relationship to encourage and promote bilateral technical cooperation on new and renewable Energy on the basis of mutual benefit	MoU signed on August, 2016	Inforce
7.	India-Portugal	MoU between Ministry of New and Renewable Energy and the Ministry of Economy of the Portuguese Republic on Renewable Energy	The MoU aims to promote the establishment of the basis for a cooperative institutional relationship and to encourage programmes and activities between the signatories in the field of renewable energy.	Signed on 6th January, 2017 (New Delhi)	Inforce
8.	India-Peru	MoU between the Ministry of New and Renewable Energy and the Ministry of Energy and Mining of the Republic of Peru on Indi-Peru Cooperation	----	June, 2017 (Copy is yet to be received from MEA)	Inforce

628

Written Answers to

[RAJYA SABHA]

Unstarred Questions

9.	India-Russia	MoU between Solar Energy Cooperation of India and Russian Energy Agency, regarding construction of Solar power Plants in Republic of India	The Parties agreed to cooperation in good faith to realize the potential projects in India of construction of large-stage photovoltaic power plants (PVP) during year 2016-22. To Setup the 500 MW in the year 2016-17 (Pilot Project as per Government Scheme Norms)	Signed on 24th December, 2015	Inforce
10.	India-Japan	MoU among DEA, NEDO, VIOM MeiTY, MNRE, GTL Infrastructure	The objectives of this project are to contribute to the efficient use of energy and the protection of environment in India by installing PV Power Generation.	Signed on: 30th April, 2012 (Renew on 6th August, 2014)	Inforce
11.	India-Japan	MoU signed between MNRE and Japan Bank for International Cooperation (JBIC)	To Development of Renewable Energy Projects, Including Canal-Top, Solar Power projects in pan India.	Signed on 1st September, 2014	Inforce
12.	India- SPAIN	MNRE and Ministry of Industry, Tourism and Trade of the Kingdom of Spain	To collaborate in the field of New and Renewable Energy	30th May, 2017	Inforce

1	2	3	4	5	6
13.	India-Dominican Republic	MNRE and the Ministry of Energy and Mines Government of the Dominican Republics	To establish Cooperation between the India and the Dominican Republic entities with the aim of developing new and Renewable Energy Technologies in the field of Solar Energy, wind Energy and Biomass Energy.	17.02.2015 (Validity: Till termination)	Inforce
14.	India-USA	To establish and administer the PACEsetter Fund to assist commercial business, NGO and other grantees as deemed appropriate to access and develop the off-grid market for renewable energy.	The fund should grants for direct support of innovative technology, business models, and programs including but not limited to rural energy services companies, rural distribution companies/franchisees etc.	30th June, 2015	Inforce
15.	India- France	MNRE and the Ministry of Ecology, Sustainable Development and Energy of the French Republic	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	10.04.2015 (Validity: 5 Years) (MoU can be renewed by mutual consent of the parties	Inforce

630

Written Answers to

[RAJYA SABHA]

Unstarred Questions

16.	India-Germany	MNRE and the Federal Ministry of Economic Cooperation and Development of Federal Republic of Germany Solar Energy Center (SEC), MNRE and Fraunhofer Institute for Solar Energy Systems (FISE)	To establish the cooperation in the field of Solar Rooftop, Development of Solar parks and Solar Zones and Solar Off-grid application to improve the access to clean and sustainable energy To implement research/demonstration/ pilot projects between SEC and FISE in mutually identified areas.	05.10.2015 (Validity: 5 Years) (Renewed 11.04.2013 (Validity: 5 years) Renewed automatically for similar period of 5 years)	Inforce Inforce
17.	India-Belgian	Intending to establish a successful cooperation between their respective countries in matter relating to the development and utilization of new and renewable energy.	Endeavor to take necessary steps to encourage and promote cooperation in renewable energy with exchange of scientific and technical personnel.	Signed on 29th September, 2015	Inforce
18.	India-Mongolia	MNRE and Ministry of Energy of the Government of Mongolia	To encourage and promote bilateral technical cooperation on new and renewable energy on the basis of mutual benefit, equality and reciprocity.	Signed on 17th May, 2015 Valid for 5 years	Inforce

Written Answers to

[31 July, 2017]

Unstarred Questions

631

1	2	3	4	5	6
19.	India-USA (PEACE)	MNRE and the Department of Energy of the Government of USA	To foster cooperation between India and USA (PEACE) in the area of renewable energy to facilitate Clean Energy Access.	27th September, 2013 at Washington USA and 19th January, 2014 Validity: 5 years, thereafter it will automatically extend for further period of 5 years	Inforce

Statement-II

**Memorandum of Understanding
Between
The Government of the Republic of India
And
The Government of the United States of America
On
Cooperation in New and Renewable Energy to
Facilitate Clean Energy Access**

Recalling the November, 2009 Memorandum of Understanding between the Government of India and the Government of the United States of America to Enhance Cooperation on Energy Security, Energy Efficiency, Clean Energy, and Climate Change;

Further recalling the desire of the Government of the Republic of India and the Government of the United States of America (the "Governments") to intensify collaboration on energy security, clean energy, focusing efforts on increasing energy efficiency, renewable energy, and clean energy technologies through the US-India Energy Dialogue;

Recognizing that the Governments launched the U.S.-India Partnership to Advance Clean Energy (PACE), a clean energy research and deployment initiative;

Welcoming the progress that the Governments have made thus far under PACE through both the Research (PACE-R) and Deployment (PACE-D) tracks, including mobilizing significant public and private resources to support clean energy, creating a new Joint Clean Energy Research and Development Center, and successfully implementing several activities to accelerate the deployment of clean energy technologies, policies, and practices;

Noting the important role the New Technology and Renewable Energy Working Group (NTREWG) has played in enabling the success of PACE;

Acknowledging that energy access is crucial for improving the quality of lives of people and their economic conditions, and that energy access remains an important economic development priority for the Indian Government;

Recognizing the tremendous potential of advanced clean energy technologies, combined with innovative financing models, market-based solutions, and appropriate policies, to

become an engine for poverty alleviation and economic development through energy access;

Emphasizing the need for promoting reliable, high-quality technology-based solutions for energy access, especially in the area of new and renewable energy;

Noting that the availability of reliable and cost-effective off-grid, including mini-grid and micro-grid, energy solutions powered by new and renewable energy makes it possible, where appropriate, to provide energy access to rural households and communities; and

Affirming the need to match technological innovation with commercially viable, replicable and scalable business solutions to reach hundreds of millions of people without energy access,

Therefore, both countries have come to the following understanding:

OBJECTIVES

The Governments, through this Memorandum of Understanding ("MoU"), intend to launch a new bilateral initiative aimed at harnessing commercial enterprise to bring clean energy access to un-served and underserved Indian villages and develop best practices and lessons learned. Specifically, the Governments intend to expand the Partnership to Advance Clean Energy by launching a new track known as "Promoting Energy Access through Clean Energy" ("PEACE").

FOCUS AREAS

The Governments intend for PEACE to have the following broad focus areas in new and renewable energy:

- a. **Sharing best practices and approaches:** Sharing best practices and institutional and other approaches that can accelerate the market development of off-grid clean energy access solutions in new and renewable energy, including those that can support the transition from mini-grids/micro-grids to grid-connected systems;
- b. **Finance:** Developing and implementing approaches to increase financing in new and renewable energy and smart infrastructure for clean energy access, including but not limited to: identifying and/or promoting commercially viable business models and financing vehicles; creating one or more

mechanisms to stimulate and leverage private investment; developing investment incentives for early-stage innovations; fostering mechanisms to link entrepreneurs to financial institutions; and establishing mechanisms to aggregate projects to reduce transaction costs or investment risks. This could include support from Government agencies, public sector banks and financial institutions, multilateral institutions, private banks, or other institutions;

- c. **Technology innovation, standards, testing, and certification:** Supporting continued technological innovation and transfer, including by promoting the development and implementation of pilot and demonstration projects as well as quality assurance and control standards and performance benchmarks that can facilitate the delivery of high quality products to the market;
- d. **Skill development and information sharing:** Building technical capacity to implement off-grid renewable energy access solutions, including operations and maintenance, and promoting dissemination of information about available policy, technology, and financing options.

This list of focus areas is not exhaustive, and can be modified by mutual consent of the Governments.

INITIAL PRIORITY ACTIVITIES

In support of the objectives and focus areas of "Promoting Energy Access through Clean Energy" ("PEACE"), the Governments intend to launch several priority activities, including but not limited to the following:

- a. **Establishing an alliance/network to encourage off-grid clean energy access:** Recognizing the need to strengthen India's off-grid ecosystem to bring existing interventions to scale and attract new businesses and commercial enterprises, the Governments intend to establish an alliance of businesses, not-for-profit organizations, and Government to build partnerships and deliver services to further common objectives. The objectives and structure of the alliance are to be developed by the Governments, along with other relevant stakeholders. The Governments of the Republic of India and the United States of America will endeavour to mobilise appropriate financial contributions for the alliance, including from the public and private sectors.

- b. **Financial support for innovative off-grid clean energy solutions:** A voluntary fund is to be created by the Governments to support the development of early-stage, innovative clean energy solutions in new and renewable energy for un-served and underserved populations in India. The Governments of the Republic of India and the United States of America will endeavour to make appropriate contributions to this fund, and it may also include private sector participation from both countries.
- c. **Mobilizing investment:** The Governments intend to work together and, where appropriate, with other relevant stakeholders to develop and apply appropriate financing models for the promotion, replication and scale-up of clean energy off-grid systems, including promoting innovative and low cost financing. Joint Ventures in the public and private sector would also be promoted, and the Governments intend to seek to leverage the participation of other donors and financial institutions, as appropriate.
- d. **Technological and technical collaboration to develop improved off-grid solutions** including, but not limited to, mini-grid and micro-grid systems based on integration of new and renewable energy technologies. The Governments intend to also cooperate to promote research and development of new and renewable energy technologies and smart enabling technologies in these areas.
- e. **Cooperation to develop strategies for the transition from mini-grids to grid-connected systems.**
- f. **Sharing best practices and approaches for increasing access to new and renewable energy.** Through the Coordination and Follow-up modalities outlined below, as well as other modalities as mutually developed, the Governments intend to share best practices and institutional and other approaches that can accelerate the market development of off-grid clean energy access solutions.
- g. **Other areas of cooperation:** Through the Coordination and Follow-up modalities outlined below, the Governments intend to identify additional areas of cooperation in support of the Objectives of this MoU.

COORDINATION AND FOLLOW-UP

The Governments intend to discuss the implementation of this MoU under the New Technology and Renewable Energy (NTRE) Working Group. The NTRE Working Group is charged with:

- a. Identifying areas of mutual interest and cooperation on off-grid clean energy access and preparing an Action Plan for implementation in identified areas;
- b. Monitoring and coordination activities; and
- c. Any other activity as may be specified in writing.

A Joint Implementation Committee is to be set up in India for implementation of the Action Plan prepared and approved by the NTRE Working Group. This Committee is to be located in the Ministry of New and Renewable Energy, Government of India and is to have participants from relevant Ministries and Bodies, as well as the Diplomatic Representation of the Governments concerned in each country, and such Experts as may be decided through mutual consultation. In this context, the NTRE Working Group is to meet as decided mutually between the Governments.

Modalities for cooperation may include, but are not limited to, the following:

- a. Exchange and training of personnel including scientific and technical personnel;
- b. Exchange of scientific and technical information and data;
- c. Organization of workshops, seminars and working groups; and
- d. Other modalities as may be developed by the NTREWG.

This MoU, does not create any obligation to provide contributions, and does not represent a commitment of funds.

CONFIDENTIALITY OF INFORMATION

The Governments may freely use any information exchanged in conformity with the provisions of this Memorandum of Understanding, except in cases where the Government or the authorized persons providing such information has previously made known the restrictions and reservation concerning its use and dissemination.

The Governments are to take appropriate measures in accordance with their legal systems to respect the restrictions and reservations and to protect intellectual property rights, including commercial, and industrial secrets transferred between authorized persons within the jurisdiction of the State of either Government.

SPECIFIC ARRANGEMENTS

Cooperative activities under this Memorandum of Understanding would be established in specific arrangements in writing by mutual consent of the Governments and are to be implemented in accordance with the laws of the Governments.

EXCHANGE OF PERSONNEL

Each Government is to make the necessary arrangements with the competent authorities for entry, stay and departure permits that may be required for personnel officially involved in the cooperation activities pursuant to this Memorandum of Understanding. Furthermore, such personnel are to be subject to the laws and regulations of the receiving country.

OTHER AGREEMENTS

Cooperation under this Memorandum of Understanding does not affect the rights and obligations of the Governments under any international agreements to which either Government is party- All documents arising from this Memorandum of Understanding are to be drawn up in the English language.

SETTLEMENT OF DISPUTES

The Governments intend to amicably settle any disputes concerning the interpretation or application of this Memorandum of Understanding by mutual consultations between the Governments.

INTELLECTUAL PROPERTY

The treatment of intellectual property created or furnished in the course of cooperative activities in furtherance of the objectives of this MoU is to be in accordance with Annex I of the Agreement on Science and Technology Cooperation between the Government of the United States of America and the Government of the Republic of India signed October 17, 2005.

DURATION AND DISCONTINUATION

Cooperation under this MoU is intended to commence on the date of signature and continue for a period of five years. Upon expiry of the five-year period, the MoU is to be automatically extended for further periods of five years each unless discontinued by one or both Governments. This MoU may be revised at any time by mutual written consent of the Governments. A Government may discontinue this MoU in writing and should endeavor to provide ninety days' notice. Such discontinuation is not to affect activities already underway under this MoU.

Signed, in two originals, at Washington on the 27th day of September 2013 and at New Delhi on the 29th day of January 2014 in the English language. A Hindi language text is to be signed at a mutually convenient future date.

For and on behalf of the Government
of the Republic of India:

Sd/-

For and on behalf of the Government
of the United States of America:

Sd/-

Renewable energy from wastes in major cities

†1662. SHRI AMAR SHANKAR SABLE: Will the Minister of NEW AND RENEWABLE ENERGY be pleased to state:

(a) whether it is a fact that an averages 300-400 gram waste is generated per person daily in major cities including Metro Cities out of which most of waste is bio waste and this waste can be used to generate eco-friendly and renewable energy like bio gas (methane) which can be used to light about 6,50,000 houses; and

(b) if so, the steps taken by Government to generate power from waste, State-wise?

THE MINISTER OF STATE OF THE MINISTRY OF NEW AND RENEWABLE ENERGY (SHRI PIYUSH GOYAL): (a) and (b) No authentic data is available for per capita daily generation of waste in major cities. However, as per report of Central Pollution Control Board (CPCB), the average rate of waste generation in India is about 0.11 kg/capita/day. The MSW contains about 47.43% of bio-degradable fraction on an average. The combustible fraction of Municipal Solid Waste (MSW) can be used in several processes to generate electricity. Similarly, the biodegradable fraction of MSW can also be used through biomethanation to generate electricity or bio-CNG. At present, five waste-to-energy plants using Municipal Solid Waste (MSW) with cumulative

†Original notice of the question was received in Hindi.