

# *Newsletter on the JICA-IREDA initiative to promote renewable energy (RE) development in India*

*Wind Farm by Bindu Vayu Urja Private Limited,  
Kaladonger village, Jaisalmer*



## *Contents*

*IREDA*  
*02*

*JICA*  
*02*

*Launch of Union  
Budget 2016-17*  
*03*

*India's Solar  
Rooftop Status*  
*04*

*Recent  
Developments*  
*05-07*

# 1. IREDA

The Indian Renewable Energy Development Agency (IREDA) is a non-banking financial company (NBFC) under the administrative control of the Ministry of New and Renewable Energy (MNRE). It is a public limited government company and is classified as a 'Miniratna Category I' organisation by the Government of India.

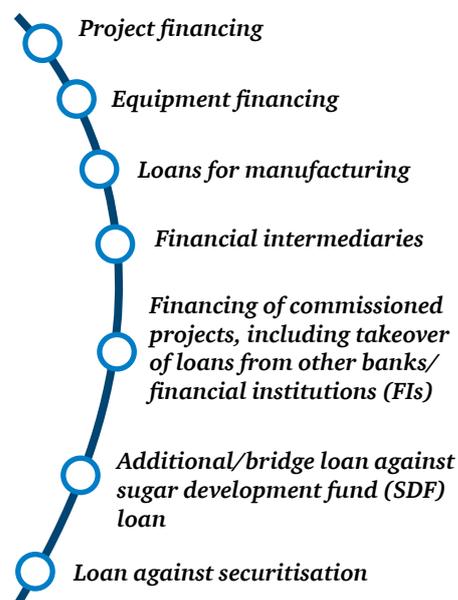
The organisation has been active in promoting, developing and extending

financial assistance for renewable energy (RE) and energy efficiency (EE) projects through innovative financial mechanisms. It is currently the biggest financial contributor of India's RE sector. Headquartered in Delhi, IREDA has its branches and camp offices in Chennai, Hyderabad and Ahmedabad. It caters to the wind, hydro, solar, biomass, cogeneration, waste to energy, EE, biofuel, new and emerging energy and hybrid sectors.

## New fund and non-fund based financing schemes

- Line of credit to NBFCs for on-lending to RE/EE projects
- Short-term loan assistance to RE developers/suppliers/contractors
- Bridge loan assistance to RE developers against capital subsidies/viability gap fund (VGF)/GBIs available under various state/central government schemes
- Policy on underwriting of debt/loan syndication
- Guarantee assistance scheme to RE suppliers/promoters

## IREDA's financing schemes

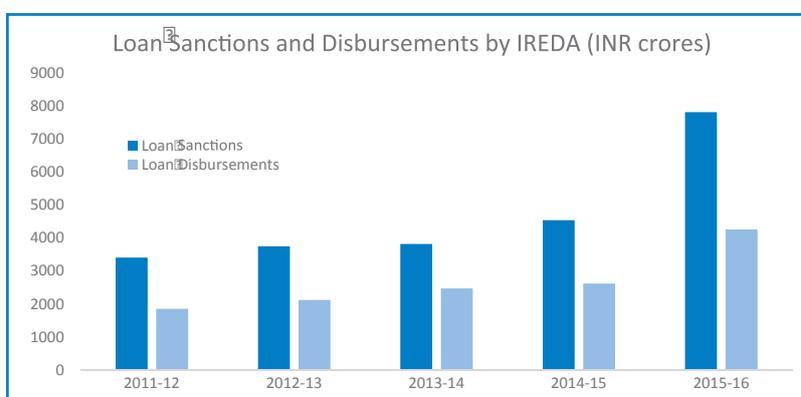


## IREDA's Splendid Performance during the FY 2015-16

During the previous FY 2015-16, IREDA has achieved highest ever loan sanction of INR 7,806 crores, registering an increase of over 71 % over the last year. Similarly, loan disbursement increased to INR 4,257 crores, with an increase of over 62 % over the last years. Several new schemes were introduced to cater emerging markets:

- Scheme for Solar Roof Top through Aggregator (RESCO) and;
- Scheme for discounting of Energy Bills.
- New Intermediary Loan Scheme - Financing to Farmers for SPV Water Pumps through an Aggregator SPV/ Sugar mills.

IREDA has received "Outstanding Performance Award – 2016" in the



category of Non-Banking Financial Companies (Public Sector), for highest lending by a Public Sector NBFC in Renewable Energy space for the period February 2015 to March 2016. Several other coveted awards were also

bestowed to IREDA during the year, including SCOPE Meritorious Award, Golden Peacock Award, Rajiv Gandhi National Quality Award, ET Award, HR Excellence Award, etc, for its continuous services to the Nation.

# 2. JICA

The Japan International Cooperation Agency (JICA) is the world's largest bilateral development organisation, operating in around 150 countries to help some of the globe's most vulnerable people. It coordinates official development assistance (ODA) for the Government of Japan and is globally the largest provider of ODA. Its work spans a broad spectrum

of issues—education, information communication and technology, healthcare, climate change, agriculture, energy, etc.

JICA has been supporting the development of India's RE sector since 2011 by supplying two lines of credit of 30 billion JPY to IREDA. This concessional credit,

coupled with technical expertise, has supported the growth of India's RE sector by almost 70% to around 42.75 GW in the last five years. The first line of credit was awarded for the years 2011–14 and the second line of credit (2014–2017) is now under implementation.

# 3. Launch of Union Budget 2016–17

India's Union Budget for 2016–17 was presented on 29 February 2016 by the country's Finance Minister, Arun Jaitley. The Budget presented

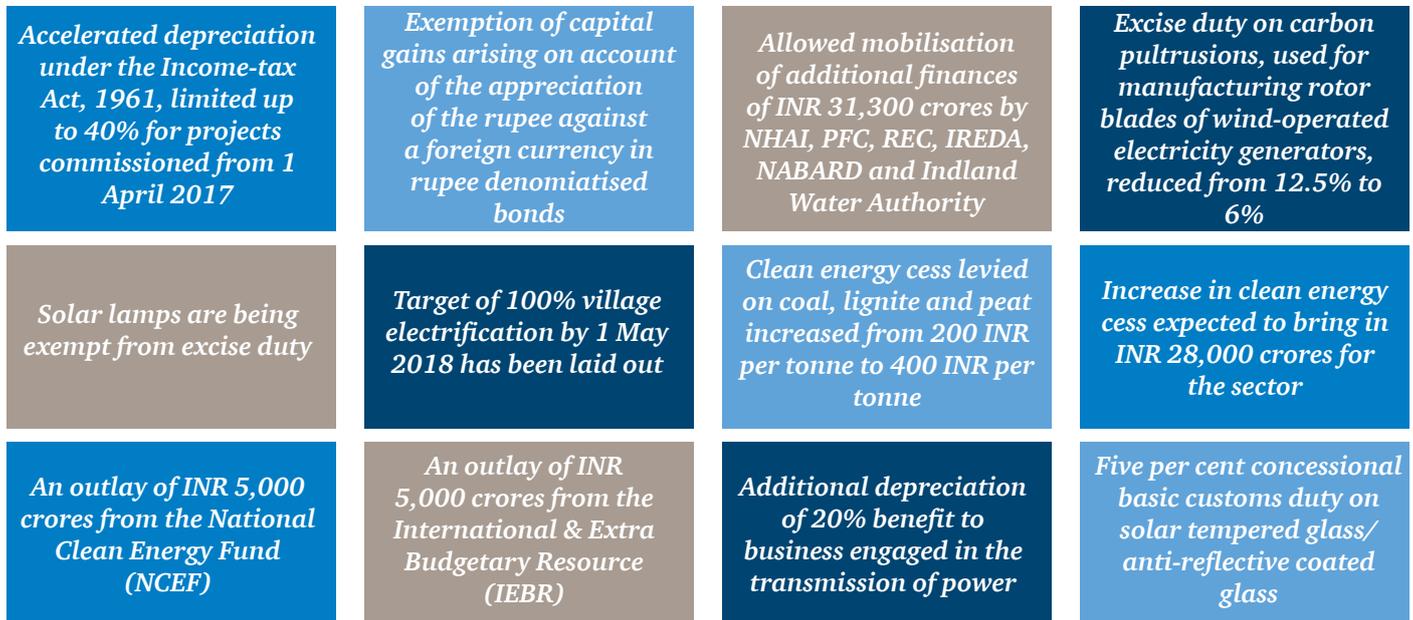
embodies the overall vision of the current government and its 'transform India' focus. As per an analysis released by PwC India on the Budget, it can be assessed that the

government is progressing towards a lower tax regime with a non-litigious approach.



## Key focus areas of the Budget

### Provisions for the RE sector



This waning away of accelerated depreciation (AD) is one of the major features of this year's Budget and may see solar tariffs go up in new bids by around 0.10 INR/kWh. In the immediate period, this cut in AD is expected to spur a higher level of wind and solar investment in the first-half of 2016 as companies will vie to

secure most of the remaining tax break. Both original equipment manufacturers (OEMs) as well as engineering, procurement, construction (EPC) firms are likely to do brisk business.

The government is also laying focus on solar-powered lamps, considering

their utility, especially in rural areas. Currently, organisations such as the Solar Energy Corporation of India (SECI) and state nodal agencies are entrusted with the responsibility of distributing solar-powered lamps.



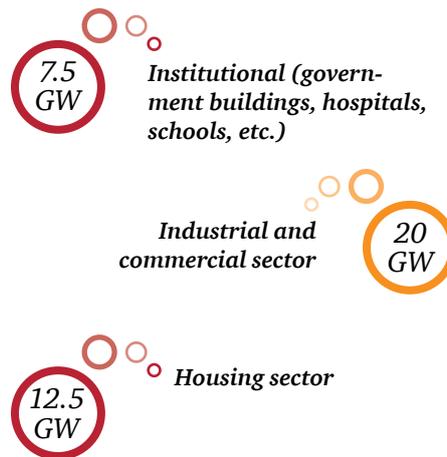
Wind energy Installations on Lattice Towers around Jaisalmer



## 4. India's Solar Rooftop Status

Rooftop solar photovoltaic (PV) systems can be an effective solution for addressing the growing energy demand—supply gap and distribution losses—in both urban and rural areas. Given the rapidly decreasing costs in the solar PV generation and increasing conventional energy tariffs, many Indian states have already taken active interest in promoting rooftop solar PV at a policy level. Twenty-seven Indian states have proposed some form of policy measures to support the deployment of rooftop solar PV systems. India has established targets of installation of 40 GW of grid-connected rooftop solar in the nation by 2022, against which only around 740 MW was achieved as of March 2016.

India has witnessed an annual increase of 5–10% in grid prices, which has been the primary driver of rooftop solar PV. This segment is segregated into three distinct categories—residential, commercial and industrial. India's current installation comprises of 248 MW, 296 MW and 196



MW under the industrial, commercial/ government and residential sectors respectively. Industrial and commercial consumers in a dozen states have already achieved grid parity with rooftop solar PV and residential consumers are on their way to do so. This is primarily because of the cross-subsidy surcharge which is levied

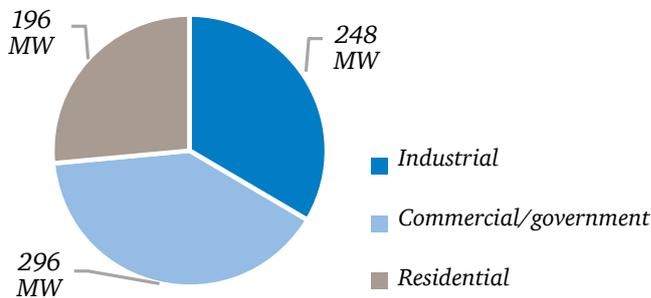
on commercial and industrial consumers while compensating the domestic consumers.

The modular nature of solar PV systems makes them highly adaptable for use on vacant rooftops. The benefits associated with rooftop solar PV systems are multifold. For a developer, it includes reduced land and interconnection costs, higher tariffs due to increasing commercial and industrial tariffs, and increased profitability. Rooftop solar PV assists distribution companies (DISCOMs) by reducing the peak demand during daytime and decreases transmission and distribution (T&D) losses as the power is consumed at the point of generation. Finally and most importantly, it reduces the dependence on grid power, diesel generators and is a long-term reliable power source for consumers.

### Central support to solar rooftops

The Government of India has put into place various policy enablers and incentives to increase the deployment of solar rooftops in the country. Net metering regulations exist in 26 Indian states and a 5,000 crore INR subsidy has been approved for solar rooftops from the National Clean Energy Fund (NCEF). In order to support the installation of solar rooftops, MNRE has also put in place a centralised facility that will enable customers to apply online for installation of these systems. Once a customer showcases his requirements on the system, he will be approached by service providers registered with MNRE for installation.

### Installed capacity grid connected rooftop



#### Capital subsidies

- 30% of the project cost on grid connected rooftop projects, in select segments, up to a limit of 500 kWp

#### Accelerated depreciation

- Accelerated depreciation of 80% of the invested capital into a rooftop solar PV project can be depreciated in the first year (2016–17) or 40% in the first year for later years

#### Lending

- Solar rooftops come under the priority sectors defined by the Government of India
- MNRE has issued notices to banks to include finance for such systems as a part of home loans

## 5. Recent Developments

### Launch of Scheme for setting up of 1000 MW Wind Power Projects through Solar Energy Corporation of India (SECI)

MNRE has launched a scheme for setting up 1,000 MW of wind power projects connected to the network of Central Transmission Utility (CTU), aiming to provide wind power to non-windy states. SECI will serve as the nodal agency for this process and will conduct bidding processes

to determine prices for the electricity sold. Scaling up of project sizes and introduction of efficient and transparent online bidding processes in the bids will result in increased competition and reduction in prices of the electricity sold. The projects will be set up by wind

project developers on a build, own and operate basis. The capacity under this bid may go higher than 1,000 MW if there is additional demand from distribution utilities of non-windy states.

### Launch of Scheme for setting up of over 5000 MW Grid-Connected Solar PV Power Projects with Viability Gap Funding

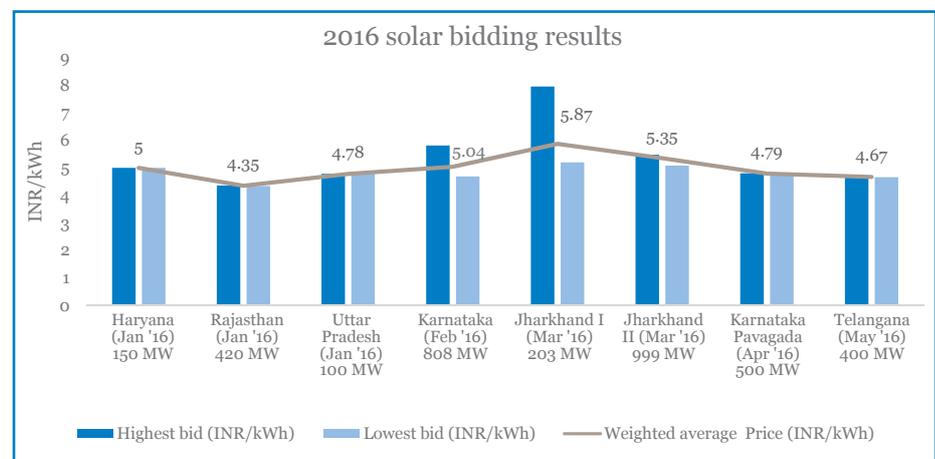
MNRE has issued guidelines for setting up over 5000 MW Grid-Connected Solar PV Power Projects with VGF (Viability Gap

Funding) under Batch-IV of Phase-II of the National Solar Mission (NSM). SECI has been entrusted as the implementation

agency for this scheme. The projects will be implemented in four trenches of 1,250 MW capacity each till the FY 2018-19.

### Record low tariffs of solar energy in India

The country saw its lowest ever tariff of 4.34 INR/kWh being quoted in January 2016 for a 70-MW solar project in Rajasthan. Subsequently, most of the tariffs being quoted in the sector fall below the 5 INR/kWh range. The reduction in tariffs is mainly attributed to the drop in prices of PV panels, access to cheaper finance and willingness of developers to operate on lower margins. This willingness is driven by developers wanting to establish themselves as forerunners in a 100 GW target market and drive out competition at the cost of sacrificing a substantial percentage of their profits for a period of 25 years. The drop in prices of PV panels is debated to be because of dumping of panels by international manufacturers, which in a sense has adverse effects on the growth of domestic manufacturers. Although market expectations are that the cost of generation will go further down as time



progresses, the viability of developers sustaining at the current low tariffs for periods of 25 years is also questionable. The recent bidding results have been depicted in the graph below along with the general trends of solar energy tariffs over the past few years.

### SECI releases 500 MW solar rooftop tender for availing subsidy

The 30% subsidy sanctioned for solar rooftop installations on select category of buildings, including the residential segment, educational institutions, hospitals, etc., is generally released by the concerned state nodal agency or SECI on behalf of MNRE. Recently, SECI

released a tender for 500 MW, wherein SECI will disburse this subsidy directly on behalf of MNRE. This is the largest-ever solar rooftop tender launched in India and signifies the increasing focus of the government towards this sector. For project implementation, developers

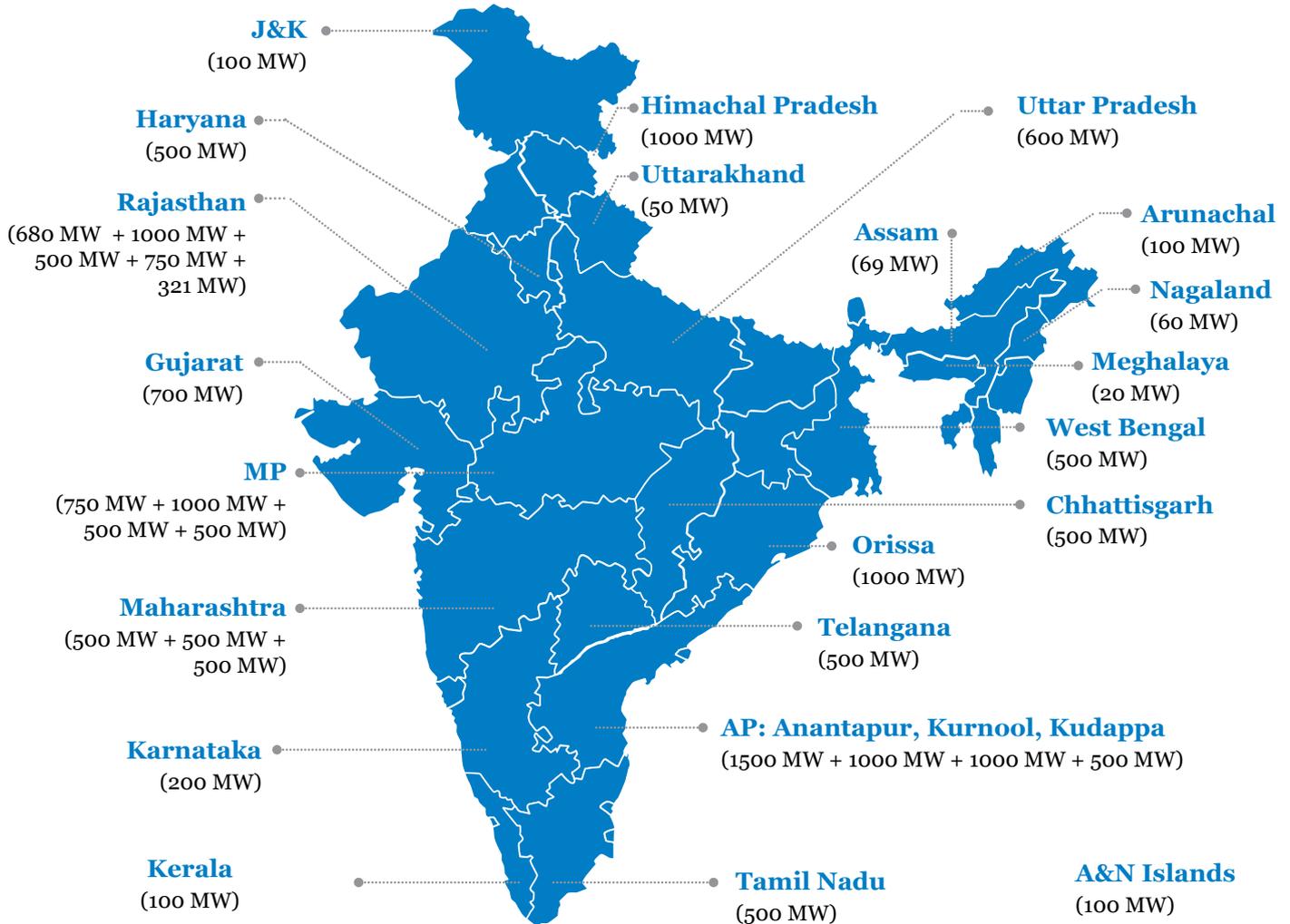
have to bid for a particular state initially, implement the project as per the state policies and obtain subsidy calculated on the lowest quoted rate by developers for that particular state. This tender also includes projects implemented under the energy services company (ESCO) mode.

## 34 Solar parks totalling 20 GW solar capacity approved across India

Thirty-four solar parks across 22 states have been approved by the Government of India as per the solar park scheme that was released in 2015. Incentives are offered for the development of these parks and various enablers have been established to support the deployment of projects, thereby resulting in the overall decrease

in the production cost of solar energy. Fiscal and financial incentives in the form of AD, concessional customs and excise duties, preferential tariffs and generation-based incentives (GBIs) are some of the incentives offered to these projects. The bidding that is underway in such parks mainly involves procurement by strong

intermediaries such as NTPC, a long-term vision and stable policy framework that increases the confidence of investors. As a result, a lot of foreign investment has been made in these parks, with these witnessing the lowest tariff of 4.34 INR/kWh, as quoted in a solar park in Rajasthan.



## India's clean energy investments exceed 10 billion USD in 2015

The country's clean energy investments jumped to 10.9 billion USD in 2015, with solar energy investments accounting for the lion's share and exceeding investments in the wind sector for the first time. In comparison, the average investments over

the past three years in the RE sector in India has been 8 billion USD.

These investments worth 10.9 billion USD are the fifth-highest globally for the year and are exceeded only by the UK, Japan,

the US and China. In the coming years, these investment figures are expected to substantially increase based on the bidding processes that are underway and will expectedly surpass India's previous record investments of 13 billion USD in 2011.

## Delhi Cabinet approves the state solar policy

Delhi's solar policy, which was released for comments in September 2015, was approved by Delhi's Cabinet on 6 June 2016. The solar policy aims to reach a capacity of 1 GW solar in the country by 2020 and reach a cumulative capacity of 2 GW solar energy by the year 2025. The

solar policy mandates the deployment of solar infrastructure for government and public institutions and introduces the concepts of virtual net metering (provides net metering facilities to consumers who do not have a suitable rooftop, such as those living in multistorey apartments) and

group net metering (net metering spread across multiple rooftops of buildings within the same DISCOM area). Other key highlights of the policy include GBIs for three years and amendment of building by-laws for rooftop solar installations.

## 33 Smart cities approved by the government

The Government of India has selected 33 cities for being developed as smart cities. The entire concept of smart cities aims to advance urban regions in terms of overall infrastructure, sustainable

real estate, communications and market viability. Information technology will be the main focus in such cities and serve as the basis for providing essential services to residents. As per information released

by the government of India, the core infrastructure of smart cities will include the following:

Adequate water supply	Assured electricity supply	Sanitation, including solid waste management	Efficient urban mobility and public transport	Affordable housing, especially for the poor
Robust IT connectivity and digitalisation	Good governance, especially e-governance and citizen participation	Sustainable environment	Safety and security of citizens, particularly women, children and the elderly	Health and education

The cities were selected in two rounds: the first involved a selection of 20 cities and the second 13 cities. The consolidated list includes Bhubaneswar, Pune, Jaipur, Surat, Kochi, Ahmedabad, Jabalpur,

Visakhapatnam, Solapur, Davangere, Indore, New Delhi, Coimbatore, Kakinada, Belgaum, Udaipur, Guwahati, Chennai, Ludhiana, Bhopal, Lucknow, Warangal, Dharamshala, Chandigarh, Raipur, New

Town Kolkata, Bhagalpur, Panaji, Port Blair, Imphal, Ranchi, Agartala and Faridabad.

## Other Developments

**Ujwal DISCOM Assurance Yojana (UDAY) bonds totalling over 1.1 lakh crore INR have been issued**

Bonds issued under the UDAY scheme for debt restructuring of distressed state distribution DISCOMs have raised over 1.1 lakh crore INR with 75% of the amount coming from banks and 8% from the private sector.

**Universal energy access targeted by 2019**

Minister of Power, Coal, New and Renewable Energy, Piyush Goyal, has said that India will achieve electrification of all villages by the end of 2017, as against the target of May 2018, and also achieve the electrification of all homes in villages by 2019.

**20,904 MW solar projects tendered in 2015–16**

A total of 11,209 MW projects were awarded in the financial year (FY) 2015–16 and another 9,695 MW were tendered and are in the process of being awarded.

**International Solar Alliance (ISA) of 121 countries' headquarters inaugurated in Gurgaon**

The Prime Minister of India, Narendra Modi, and the President of France, François Hollande, laid the foundation stone of the ISA headquarters in January 2016 in Gurgaon, India. The French Development Agency (AFD) also gave commitments to allocate 300 million EUR to achieving the alliance's objectives over the next five years.

**ISA targets mobilisation of 1 trillion USD for investment by 2030**

At the United Nations (UN) in New York in April 2016, an event on the ISA saw 25 countries agreeing to take concerted action to lower the cost of finance and facilitate the flow of more than 1,000 billion USD investment in solar assets in member countries.

**'Every DISCOM will be making profits by 2019.' — Piyush Goyal, New and Renewable Energy Minister**

Goyal said in a statement in February 2016 that the government is focussing on improving the operational efficiency of DISCOMS rather than their financial profits. He said that as a result of multiple factors, he is confident that all DISCOMs will make profits by 2019.

**In the first 10 months of fiscal 2015–16, the centre had released an amount of 1,930.94 crore INR for solar energy.**

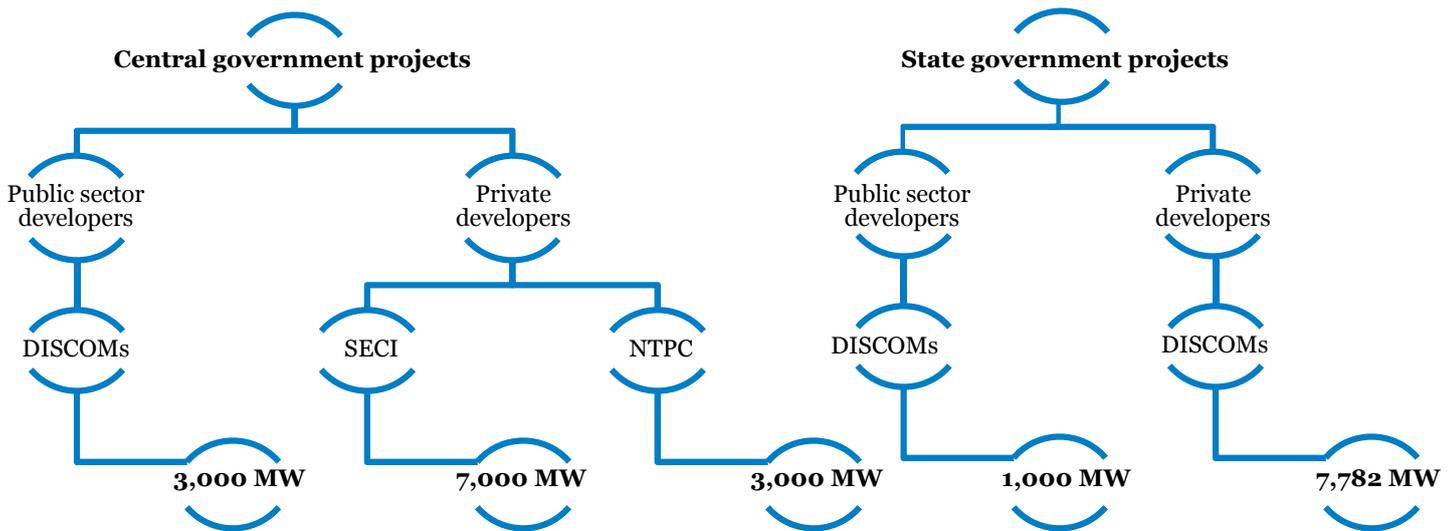
To encourage the deployment of solar energy in the country, the government had released 1,93,094 crore INR in the first 10 months ending January 2016 of FY 2015–2016 via multiple schemes.

*The Under Development Bhograi Site of the Odisha solar park*





## Utility Scale Projects in Pipeline



### Assignment Update

The Central Project Data Monitoring System (CPDMS) for wind projects has been developed and hosted. In consultation with IREDA's wind energy team, the modules and interface of the system were tailored to suit their requirements. Demos of the system have also been provided to familiarise IREDA's staff with the system. Additionally, the structure of a documentary on solar energy has been developed and finalised after incorporating the suggestions of all stakeholders.

## Contact Details

### Aditi Puri

Lead Development Specialist | JICA  
+91 (11) 47685500 | +91 9811123388  
Email: puriaditi.id@jica.go.jp  
Japan International Cooperation Agency  
2nd Floor, Dr. Gopal Das Bhawan,  
28 Barakhamba Road, New Delhi 110 001

### K.P. Philip

Senior Manager | IREDA  
+91 (11) 246 82206 (Ext-226) | +91 9810165918  
Email: kpphilip@ireda.gov.in  
Indian Renewable Energy Development Agency Ltd.  
Core 4 - A, 1st Floor, East Court  
India Habitat Centre, Lodi Road, Delhi 110 003

### Amit Kumar

Partner | PwC | Energy & Utilities  
+91 (124) 330 6001 | +91 9899452400  
Email: amit2.kumar@in.pwc.com  
PricewaterhouseCoopers Private Limited  
Building 10, Tower C, 17th Floor,  
DLF Cyber City, Gurgaon, 122002