

### Benefit achieved by Delhi

During the summer season of 2018, BRPL (BSES Rajdhani Power Ltd) took proactive action to manage its drawl from the grid and purchases from power exchange/bilateral contracts by utilizing the weather information. BRPL used meteorogram to predict fluctuations in intra-day demand and then requested SLDC Delhi to bring on bar additional units by avoiding costly power exchange purchases. Live radar imagery helped sending in timely revision for backing down of generating stations in anticipation of thunderstorms/ rain, which saved under drawl of power thereby also ensuring grid security. The DISCOM could avoid costly purchase of more than 2 MUs on certain days.

### Protection from Fog

The Northern Region of the power system faces foggy conditions during night and early morning hours of winter months. To mitigate the adverse effect of tripping of EHV lines due to fog coupled with pollution, Grid operators have taken successful action based on near real time colour composite satellite images of fog and managed the risk of tripping by switching over to alternate mode of transmission and by backing down generation and its transmission through high voltage transmission lines.

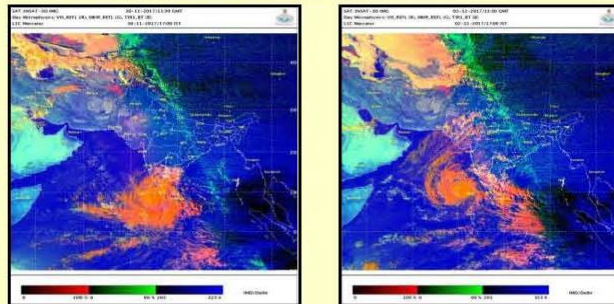
### Usages during tropical depressions and cyclone

- The Eastern Regional Load Dispatch Centre regulated down power generation in view of expected heavy rain over West Bengal and Odisha under influence of a depression over northwest Bay of Bengal on 09.12.17. It helped in maintaining frequency profile. Bihar could improve the demand prediction remarkably making use of portal.
- Forecasts of strong wind and rain for 09.10.17 due to an approaching depression helped in better load assessment by W.B State Load Dispatch Centre. West Bengal demand went down from 7051 MW to 5929 MW due to change in weather conditions. Accordingly, purchase of power through STOA (day-ahead) & Power Exchange was reduced from 22.86 MU (on the previous day) to 18.23 MU for 09.10.17 resulting in saving power procurement cost. Safety measure for restoring any damage to the infrastructure were also taken.
- During Cyclone OCKHI, the weather portal for Southern Region helped the system operator and the system reliability team to prepare for a bad weather.

Important Aspects for the system operation :

- Total internal generation of the Region was reduced by 2500 MW.
- Precautions to counter expected voltage rise due to load loss were taken. All the transmission line outages were deferred during the cyclone.
- Kudankulam Nuclear Power Station was prepared for restoration of supply in-case of any emergency.

iv. All important feeder points were identified for South Western Railways for immediate restoration. There was no loss of traction supply in Tamilnadu and Kerala.



- In view of heavy rainfall warning on 29.05.17 for the states of Assam, Manipur, Meghalaya, Mizoram, Nagaland and Tripura under the influence of cyclonic storm "MORA", the NER Load Dispatch Centre informed all the concerned for preparedness for extensive load crash and generation loss in the NER. Load crash due to adverse weather conditions was reported by Assam, Manipur, Mizoram and Meghalaya. The load loss was 558 MW on 30.5.2017 and 194 MW on 31.5.2017. Proactive steps ensured that there was no disruption in power system in the region.

### INTERACTIVE WORKSHOP WITH RE SECTOR



An Interactive Workshop with Renewable Energy Industry (Solar and Wind) on use of Weather Information was conducted by IMD in association with ASSOCHAM on 22.11.2019 at MoES, New Delhi. The objective of the workshop was to better understand industry's issues and concerns, implementation challenges, requirements from the Government of India, recent developments, current status and future plans of weather & climate services in context of RE sector and way forward for smooth integration of RE (Solar and Wind) power into the grid so that the weather forecasts and products can be appropriately customized for the RE sector. The workshop was inaugurated by Dr. M. Mohapatra, DGM and was attended by senior officers /Scientists/ Executives from MoES, IMD, NCMRWF, MNRE, NIWE, POSOCO, NTPC, CEA, CERC, RLDCs/SLDCs RE Industry, ASSOCHAM etc.



भारत मौसम विज्ञान विभाग

**India Meteorological Department**

1875 में स्थापित

(Established in 1875)

पृथ्वी विज्ञान मंत्रालय

**Ministry of Earth Sciences**

भारत सरकार

**Government of India**

**Weather and Climate Services for  
Power & Energy Sector**



The India Meteorological Department (IMD), Ministry of Earth Sciences (MoES), in its endeavor towards providing weather and climate services to the **weather sensitive sectors of national economy** has expanded its services to power sector for efficient scheduling of generation, transmission and distribution of power.

### Objectives

- Assessment of production potential (particularly for hydro and renewable)
- Long-term supply planning and production units designs
- Power Generation
- Operation of the network infrastructure
- Transmission and generation of electricity
- Demand Forecast



## STAKEHOLDERS

- Power System Operators
- Load Dispatch Centres
- Power Generators (Renewable / Non-Renewable)
- Power Distributors
- Others

## SERVICES TO POWER SECTOR

IMD and Power System Operation Corporation Ltd. (POSOCO) signed a Memorandum of Understanding for optimum use of weather information / forecast in the power sector on 18 May 2015 for utilization of weather & climate services for uninterrupted, efficient and economic operation of power sector in the country; and for providing institutional support at all scales to the sector.

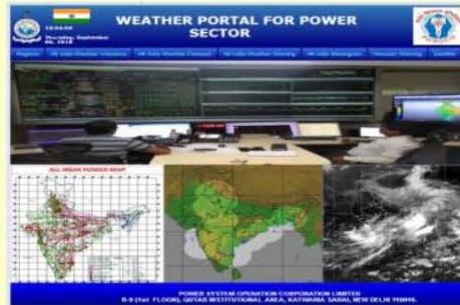


### Weather Portal for Power Sector

IMD and POSOCO have launched a web portal dedicated exclusively to energy sector. The portal was launched by Shri Piyush Goyal, Hon'ble Union Minister of State (IC) for Power, Coal, and New & Renewable Energy on 23rd June 2017.

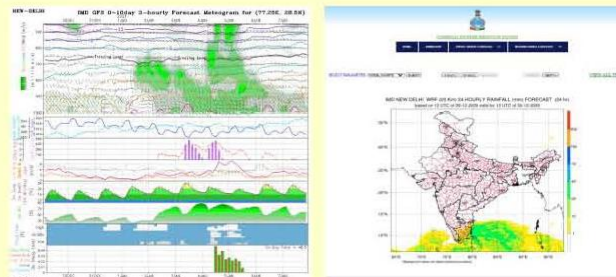


Weather information provided on the Portal is being used by the Power System Operators across India for better management of Power System. Regional Weather portals for all the five regions are also operational.



The Portal (<http://amssdelhi.gov.in/NRLDC/index.html>) contains:

- Weather forecasts and warnings for all meteorological sub-divisions
- Nowcast warnings
- City weather forecasts & meteograms
- Satellite & RADAR information
- Colour coded warnings for severe weather events
- Forecasts for special weather phenomena such as fog, cold wave, heat wave and cyclone.



### Capacity Building and continued Consultations

Workshops on use of meteorological data in power sector were organized at National and Regional Load Dispatch Centres (RLDCs) for officers of power sectors to better understand use of weather information in efficient scheduling of generation, transmission and distribution of power. IMD Scientists delivered lectures during these workshops.

## Reference Document on Weather Portal

POSOCO has released a Reference Document for use of the dedicated weather portal for the power sector. The document was launched by Hon'ble Minister of State (IC), Ministry of Power and New & Renewable Energy, Shri R.K Singh on 29 August, 2018.



## IMPACTS OF USAGES OF THE FORECASTS

Weather portal has been beneficial to the system operators and provided them with adequate and timely weather forecast & real time weather information and helps to take proactive steps such as demand estimation, decisions on STOA (Short Term Open Access) real time decisions related to Grid operation etc.

### Benefit achieved by Uttar Pradesh

Forecasts of rain and thunderstorm for 27/28/29-05-2017 helped in better load assessment As UP demand went down from 19000 MW to 17000 MW due to change in weather conditions, STOA & purchase from power exchange of 2000 MW was reduced i.e. backing down of approximately 13 MU of costly thermal generation.

