

MINUTES OF THE 51ST MEETING
OF
FORUM OF REGULATORS (FOR) HELD AT NEW DELHI.

VENUE : **“MAGNOLIA” HALL
INDIA HABITAT CENTRE (IHC)
LODHI ROAD
NEW DELHI.**

DATE : **30TH NOVEMBER, 2015**

LIST OF PARTICIPANTS : **AT ANNEXURE-I (ENCLOSED).**

The meeting was chaired by Shri Gireesh B. Pradhan, Chairperson, Central Electricity Regulatory Commission (CERC) / Forum of Regulators (FOR). In his opening remarks, the Chairperson, CERC / FOR, extended a warm welcome to all members of the Forum to the 51st meeting of the Forum, introduced the Chairpersons of BERC, HPERC and NERC who were attending the meeting of the Forum for the first time as its Members. Chairperson, CERC / FOR brought to the notice of the Forum about the medical treatment being taken by Chairperson, AERC. The Forum extended good wishes to Chairperson, AERC for his speedy recovery.

The forum thereafter took up the agenda items for consideration.

AGENDA ITEM NO. 1 : **CONFIRMATION OF THE MINUTES OF THE 50TH MEETING OF “FOR” HELD DURING 29TH SEPTEMBER, 2015 – 01ST OCTOBER, 2015 AT PUNE (MAHARASHTRA).**

The Forum noted and endorsed the minutes of the 50th Meeting of "FOR" held at Hotel Le Meridien, Pune (Maharashtra) during 29th September, 2015 – 01st October, 2015.

AGENDA ITEM NO. 2 : PRESENTATION ON “RPO COMPLIANCE FRAMEWORK FOR CAPTIVE / OA TRANSACTIONS AT STATE LEVEL”
- BY USAID / INDIA.

The representatives of USAID – PACE-D team made a presentation (copy **enclosed** at **Annexure – II**) before the Forum on “RPO Compliance Framework for Captive / OA Transactions at State Level” with a focus on RPO framework prepared for Rajasthan Renewable Energy Corp. Ltd. The presentation included,

- Historical Developments of RPO Regulations
- Status of RPO Compliance in Rajasthan and Other States
- RPO Compliance: Implementation Framework Requirements
- Key Design Considerations for RPO Compliance Framework
- Approach for RPO Compliance Reporting Framework
- RPO Compliance Report Cell & Design of Data formats / information Requirements
- Need for Co-ordination Forum & Way Forward

As per provisions contained in Section 86(1)(e) of the Electricity Act, 2003, the obligated entities are mandated to fulfil their Renewable Energy Purchase Obligations (RPO). In this context, the appropriate State Electricity

Regulatory Commission / Joint Electricity Regulatory Commission is required to specify RPO targets for necessary fulfilment by the obligated entities. Accordingly, most of the SERCs / JERCs have notified the RPO targets for compliance.

In this backdrop, the USAID – PACE-D team initiated a program with a focus on strengthening the organizational, institutional and resource capabilities of the state nodal and designated agencies in four states: Rajasthan, Madhya Pradesh, Haryana and Karnataka. As part of this initiative, a framework for RPO Compliance Monitoring and Reporting for the Rajasthan SNA (RRECL) for monitoring OA consumers and Captive Power Producers, is being developed by the USAID – PACE-D team, with the objective of providing,

- Assistance in RPO compliance reporting cell formation in RRECL
- Assistance in designing the data collection forms/formats and approval from RERC
- Assistance in developing a *RPO Information Manual* for obligated entities
- Assistance in design of basic framework for RPO compliance reporting
- Assistance in development of a web based tool for RPO compliance reporting (*work in progress*).

It was also presented that as part of the framework, the USAID – PACE-D team is preparing a web-tool consisting of functionalities for RPO compliance monitoring.

The Forum appreciated the presentation. The Forum advised RERC / implementing agency to expand the scope of the framework to include

distribution utilities of the States as well. Further, it was requested to share the web-tools / formats etc. with the Forum of Regulators for replication in all other States.

Shri P.K. Pujari, Secretary (Power), Government of India joined the proceedings.

**AGENDA ITEM NO. 3 : PRESENTATION ON - “UDAY SCHEME”
- BY REPRESENTATIVE OF MINISTRY
OF POWER.**

Chairperson, CERC and FOR welcomed Shri P.K. Pujari, Secretary (Power), Government of India. Thereafter Joint Secretary (Distribution), MoP made a presentation on ”UDAY Scheme” (copy **enclosed** at **Annexure – III**).

The Ministry of Power has recently launched the Ujwal Discom Assurance Yojana (UDAY Scheme) which is aimed at reviving the financially loss making distribution licensees, thereby enabling them with an environment to provide quality power to the consumers.

In their presentation, the Ministry of Power brought to the notice of the Forum that the total accumulated discom losses touched ₹ 3.8 lac. Cr. mark, which includes ₹60,000 lac. Cr. alone for FY 2014-15. The discoms are in a debt-trap majorly owing to average debt interest rate of 12% (in certain cases reaching the level of 14%) as against the borrowings of States where the interest rate is around 8%.

In this backdrop, the MoP while underscoring the need for urgent intervention to rationalise outstanding debt, presented the Ujwal Discom Assurance Yojana (UDAY Scheme) which is aimed at devising a long-term

solution to the financial ill-health of the distribution utilities. The scheme would broadly include, State take-over of past debts, improvement in operational efficiency leading to lower cost of power and quarterly tariff revision to minimize carrying cost and budgetary discipline.

During the presentation, Secretary (Power) intervened to explain the following measures intended to be taken up as part of the Ujwal Discom Assurance Yojana (UDAY Scheme).

- States shall take over 75% of debt in two parts i.e. 50% in 2015-16 and 25% in 2016-17, which shall not be included in the fiscal deficit of the States. States will issue non-SLR bonds (SDL) with maturity period of 10-15 years with a moratorium on principal up to 5 years at a rate 10-year G-Sec+0.5%+0.25%.
- As regards ongoing discom financing, Loss financing is to be carried out only as per loss trajectory finalized with MoP and only through DISCOM bonds backed by State guarantee.
- Working capital will only be allowed up to 25% of the DISCOM's previous year's annual revenue.
- States will fund future losses (of DISCOMs in a graded manner) which will ensure permanent resolution of the issues of the DISCOMs through the State's control mechanism.
- There are proposals to make enabling provisions in the Tariff Policy for quarterly revisions so as to mitigate the burden of cost increase.
- States to be mandated to ensure compulsory metering of feeders and Distribution Transformers which will facilitate tracking losses at the feeder and DT level for corrective action.
- Consumer Indexing & GIS Mapping of losses to be taken up for identification of loss making areas and corrective action thereafter.

- Upgradation or change transformers, meters etc. to reduce technical losses and minimize outages.
- Installation of smart meters to all consumers consuming above 200 units / month which will facilitate remote reading and thus helping to reduce theft.
- Proposal for commencing an awareness campaign against theft to ensure “honest do not pay for dishonest”, which is expected to enhance public participation to reduce power theft.
- Assurance for increased power supply in areas where the AT&C losses reduce, which will encourage local participation to reduce losses.
- Reduce peak load and energy consumption through Demand Side Management (DSM) with energy efficient equipment (by the year 2018-19).

In addition to the above, the following measures are also proposed to be taken with an aim to reduce cost of power,

- Initiatives such as rationalization of coal linkages and increased supply of domestic coal, supply of washed coal (G10 grade and above), supply of 100% crushed coal, besides liberally allowing coal swaps from inefficient plants to efficient plants and from plants situated away from mines to pithead plants are expected to minimize cost of coal.
- Rationalization of coal price (based on Gross Calorific Value) along with correction in Coal grade slippage through re-assessment of each mine are expected to act in favour of reduction of cost of coal.

In order to avail the benefits under UDAY Scheme, the State and respective discoms are required to enter into an MoU with Ministry of Power, wherein responsibilities to be discharged, operational activities etc. of the parties will be specified.

By the end of FY 2018-19, the outcomes owing to the Ujwal Discom Assurance Yojana (UDAY Scheme) are expected to include,

- Reduction of AT&C loss to 15% in 2018-19.
- Reduction in gap between Average Revenue Realized (ARR) & Average Cost of Supply (ACS) to zero by 2018-19.
- Almost all DISCOMs to be profitable by 2018-19.
- Finally, combination of the above outcomes is expected to provide power for all.

The Forum deliberated various provisions of the UDAY Scheme and appreciated the initiative of the Government. The Members of the Forum reiterated their support and cooperation in making the initiative a success.

**AGENDA ITEM NO. 4 : PRESENTATION AND DISCUSSION ON
“VISION OF 24x7 POWER SUPPLY :
DESIRABLE POLICY AND
REGULATORY INTERVENTION”.**

Secretary (Power), Ministry of Power, initiated the discussion by informing the Forum that an ambitious initiative has been undertaken by Government of India jointly with States and Union Territories with an aim to provide 24x7 power supply to consumers ensuring uninterrupted supply of quality power to existing consumers by the end of 12th plan besides providing access to electricity to all unconnected households by 2019. The plan for strengthening the generation, transmission and distribution sector was prepared at Central level in coordination with respective State Governments and roll out plans for the eight States are currently under implementation.

In this context, a presentation on “Vision for 24x7 Power Supply and Desirable Policy and Regulatory Interventions”, was made by the Joint Secretary (R&R), Ministry of Power (copy **enclosed** at **Annexure – IV**).

Some of the salient features of the initiative as presented by MoP are as per the following:

The State specific Power For All (PFA) documents were prepared jointly by the teams of Central and respective State Governments. The intended methodology included (i) assessment of power requirements vis-à-vis available power generation sources, adequacy of ISTS and distribution infrastructure to provide 24x7 power to all and (ii) State specific action plan to meet the adequacy levels in generation / transmission / distribution infrastructure along with mechanism for review of progress. All States were covered under this initiative and roll out plans in respect of Andhra Pradesh, Rajasthan, Uttarakhand, Goa, Meghalaya, Assam, Jharkhand, Chhattisgarh are in progress.

The intended generation planning includes, identifying future generation plans along with capacity to meet peak demand, fuel procurement plans, allocation of coal linkages, additional gas allocation etc. Apart from the above, year-wise capacity addition plan from renewable source (separately for Solar, Wind, etc.) also forms part of the generation planning.

As part of the transmission planning, it is aimed at taking action in respect of capacity augmentation including intra-State projects, gap identification through load-flow studies, system for integration of renewable energy generation etc.

The plan for augmentation of distribution infrastructure includes, identification of schemes to bridge the gap, Quarterly targets to meet 24 x 7

power for all, Target of AT&C losses, IT initiatives targets, regulatory compliance and KPIs etc. The plan would be met through feeder segregation for agriculture consumers, system strengthening, smart metering etc.

Apart from the above, the Power For All initiative also includes, State-level renewable energy plan, connecting remote locations with RE power, rooftop solar generation, usage of solar pumpsets, energy efficiency measures, LED lighting, other demand side management measures.

Government of India is also providing assistance to States that are implementing the Integrated Power Development Scheme (IPDS) and Deen Dayal Upadhyay Gram Jyoti Yojana (DDUGJY) so as to create the requisite infrastructure for electricity supply in both rural and urban areas.

The above Schemes cannot succeed until all stakeholders including the Regulators lend their support. In order to ensure success of the initiative, the following regulatory interventions are sought :

- Approval of capital investment plan envisaged in the Power For All roadmaps.
- Support and monitoring of the State Action Plan envisaged in 24x7 PFA.
- Enforcement and monitoring of AT&C loss reduction trajectory as agreed by States with MoP.
- Enforcement and monitoring the Performance Standards notified by SERCs and placing the performance indices on website of SERCs.

It was also made out that the Discoms' financial health is presently not sound and in order to ensure financial turnaround, specific result oriented steps are required to be taken including 100% metering and energy auditing upto

Distribution Transformer levels. Further, discoms may avail the opportunity to participate in the GoI scheme of Ujwal Discom Assuranace Yojna (UDAY) for their financial revival.

While appreciating the presentation, the Forum suggested that in order to ensure progress of the initiative in its totality, MoP may seek feedback from appropriate SERC / JERC and take the same into consideration while finalizing the State specific plan.

AGENDA ITEM NO. 5 : DISCUSSION ON “STATUTORY ADVICE GIVEN BY CENTRAL ELECTRICITY REGULATORY COMMISSION – ROAD MAP FOR STATES TO ACHIEVE RELIABLE GRID MANAGEMENT AND LARGE SCALE INTEGRATION OF VARIABLE RENEWABLE ENERGY SOURCES”.

Joint Chief (Regulatory Affairs), CERC made a presentation on the “Statutory Advice given by the Central Electricity Regulatory Commission (CERC) on Road Map for States to achieve reliable grid management and large scale integration of variable renewable energy sources” (copy **enclosed** at **Annexure – V**).

In the backdrop of ambitious renewable energy target of 175 GW set by the Government of India and to enable reliable and secure operation of large interconnected grid operation while meeting the targets of RE generation, the Central Electricity Regulatory Commission has taken various initiatives.

The Regulations notified by the Central Commission with regard to Deviation Settlement Mechanism and Grid Code have together created a

conducive environment and set the rules of the game. The CERC also come up with Ancillary Services Regulations, which are also aimed at supporting variable generation. On the other hand CERC created an enabling market environment through notifying regulations on PoC Tariff, Open Access and Inter-State Transmission etc. These two sets of regulatory interventions together aimed at facilitating secure and reliable grid management and effective power market development. CERC also came up with a *suo-motu* order, charting out the roadmap for operationalization of reserve capacity. This roadmap is analogous to Ancillary Services for handling the variable of generation and load.

The Framework on Forecasting, Scheduling and Imbalance Handling for Variable Renewable Energy Sources (Wind and Solar) was brought before the Forum. The Forum agreed with the need to replicate the same at State level, requested the FOR Secretariat to come up with Model Regulations for States on Forecasting, Scheduling and Deviation Settlement for Solar & Wind Generation.

CERC received demands particularly from renewable energy rich States for relaxing the deviation settlement norms who argued that the deviation limit of 12% or 150 MW is likely to be counter productive. Some of the States pleaded with the Government of India that if relaxation in DSM norms is not provided, they would not be able to integrate such large scale RE power into the grid. CERC has proposed amendments to the DSM Regulations by relaxing the norms upto 2017. The Central Commission, however, feels that relaxation of DSM norms is not a long-term solution. The international experience also indicates that load and generation are not allowed to deviate as such relaxation would impact the grid security and stability.

CERC felt the need to sensitize the Government of India on the regulatory initiatives taken in the context, while highlighting the need for engaging with the States in this process for reliable grid management and also to achieve high scale integration of renewable energy sources. There is an urgent need to replicate the central level interventions at the States as well.

Accordingly, the CERC advised the Government of India to issue an advisory to the States to execute detailed energy accounting along with procedures for DSM pool in the State as well as for implementation of ABT. It was stated that ring fencing the SLDCs is important and a special scheme for capacity building of SLDCs is required to be evolved. It is also necessary to advise the States to adopt Model Regulations on Forecasting, Scheduling and Deviation Settlement for Solar & Wind generators as evolved by the Forum of Regulators. However, to cover deficit owing to deviation charges on account of variable RE generation, funds from PSDF / NCEF may be deployed till March, 2019. It was also highlighted that the States may be advised to evolve regulations on Ancillary Services & Reserves aligned with timelines provided in CERC's order on reserves.

The Forum noted the details.

AGENDA ITEM NO. 6 (i) : DISCUSSION ON "REFERENCE RECEIVED FROM MINISTRY OF COMMUNICATIONS AND INFORMATION TECHNOLOGY – SPECIAL CATEGORY OF POWER TARIFF FOR TELECOM TOWERS".

The Forum considered the reference received from the Ministry of Communications & Information Technology (MCIT) seeking views on the representation of the Tower & Infrastructure Association (TAIPA) for

preferential tariff for the usage of electricity by the telecom towers. MCIT also requested for the views on creation of separate category of power tariff for telecom towers to be applicable throughout the nation. The Forum, after due deliberations on the matter decided that a Working Group consisting of Members of the Forum may be constituted by the Chairperson, FOR with a mandate to study the issue and submit its report before the Forum for further discussion and decision.

AGENDA ITEM NO. 6 (ii) : DISCUSSION ON "REFERENCE FROM MINISTRY OF POWER – MONITORING PENDING / DISPOSAL STATUS OF PETITION FILED BEFORE IT AND PLACING STATUS ON ITS WEBSITE AT STATE LEVEL".

The Forum noted the reference received from the Ministry of Power (D.O. Letter dated 8.10.2015) for adopting the practice of monitoring the pending / disposal status of petitions filed before the SERCs / JERCs and placing the same on their respective websites, as is being practiced in CERC.

AGENDA ITEM NO. 6 (iii) : DISCUSSION ON “REQUESTS FOR NON-FINANCIAL SUPPORT OF 'FOR' FROM VARIOUS ORGANIZATIONS ”.

The Forum noted, in the light of proposals / requests received from various organizations seeking non-financial support from the Forum of Regulators (FOR) for conducting their events / programmes etc., and felt the necessity for evolving a broad criteria for taking decisions on such requests received in the FOR Secretariat from time to time. The Forum, after deliberations, decided that requests received from Government / Statutory

Bodies / Multi-lateral funding agencies may be considered for non-financial support of the Forum.

AGENDA ITEM NO. 7 : ANY OTHER ITEM WITH THE PERMISSION OF THE CHAIR – PRESENTATION & DISCUSSION ON “INDIAN POWER SCENARIO – ISSUES & WAY FORWARD”.

Chairperson, WBERC made a presentation to the Forum on “Indian Power Scenario – Issues & Way forward” (copy **enclosed** at Annexure – VI). The presentation included a snap shot of the power sector scenario in West Bengal and the following was discussed ,

- Issues in distribution sector
 - Quality of Power
 - Unreliable and weak distribution network
 - Load shedding

- Way forward
 - Separation of carriage & content
 - Common tariff for all categories
 - Better Load management
 - Healthy relationship between discoms & consumers

Various initiatives required to be taken by the distribution utilities for effective reduction of aggregate technical and commercial loss levels were also elaborated. The details related to measures in terms of better load management and transforming utility to provide a consumer friendly environment were also discussed.

The Forum appreciated the presentation.

Chairperson, CERC/FOR thanked all the dignitaries present in the meeting. He also thanked the staff of “FOR” Secretariat for their arduous efforts at organizing the meeting.

The meeting ended with a vote of thanks to the Chair.

LIST OF PARTICIPANTS ATTENDED THE 51ST MEETING
OF

FORUM OF REGULATORS (FOR)

HELD ON 30TH NOVEMBER, 2015 AT NEW DELHI.

S. No.	NAME	ERC
01.	Shri Gireesh B. Pradhan Chairperson	CERC – in Chair.
02.	Shri Digvijai Nath Chairperson	APSERC
03.	Shri S.K. Negi Chairperson	BERC
04.	Shri Narayan Singh Chairperson	CSERC
05.	Shri P.D. Sudhakar Chairperson	DERC
06.	Shri Jageet Singh Chairperson	HERC
07.	Shri S.K.B.S. Negi Chairperson	HPERC
08.	Shri Basharat Ahmed Dhar Chairperson	J&KSERC
09.	Justice (Retd.) Shri N.N. Tiwari Chairperson	JSERC
10.	Shri S.K. Chaturvedi Chairperson	JERC for Goa & All UTs except Delhi
11.	Shri R.K. Kishore Chairperson	JERC for Mizoram and Manipur
12.	Shri M.K. Shankaralinge Gowda Chairperson	KERC
13.	Dr. Dev Raj Birdi Chairperson	MPERC
14.	Shri Anand Kumar Chairperson	MSERC

15.	Shri Imlikumzuk Ao Chairperson	NERC
16.	Shri Vishwanath Hiremath Chairperson	RERC
17.	Shri I.A. Khan Chairperson	TSERC
18.	Shri Niharendu Chakraborty Chairperson	TERC
19.	Shri Subhash Kumar Chairperson	UERC
20.	Shri Desh Deepak Verma Chairperson	UPERC
21.	Shri R.N. Sen Chairperson	WBERC
22.	Shri Dipak Chakravarty Member	AERC
23.	Shri K.M. Shringarpure Member	GERC
24.	Shri S. Venugopal Member	KSERC
25.	Shri Deepak Lad Member	MERC
26.	Shri A.K. Das Member	OERC
27.	Shri Gurinder Jit Singh Member	PSERC
28.	Shri Sushanta K. Chatterjee Joint Chief (RA)	CERC
SPECIAL INVITEES		
01.	Shri A.K. Singhal Member	CERC
02.	Shri A.S. Bakshi Member	CERC
03.	Dr. M.K. Iyer Member	CERC
04.	Shri P.K. Pujari Secretary	MOP
05.	Smt. Jyoti Arora Joint Secretary (R&R)	MOP

06.	Dr. Arun Kumar Verma Joint Secretary (Distribution)	MOP
07.	Shri R.K. Verma Chief Engr.	CEA
08.	Shri A.K. Saxena Chief (Engg.)	CERC
09.	Shri M.K. Anand Chief (Fin.)	CERC
10.	Smt. Geetu Joshi Chief (Eco.)	CERC

**Renewable Purchase Obligation - Compliance Monitoring
and Reporting Framework (RPO - CMR) for
Rajasthan Renewable Energy Corp. Ltd.**

**Partnership to Advance Clean Energy-Deployment
(PACE-D)
Technical Assistance Program**

**Presentation for FOR Meeting
(November 30 , 2015)**

Contents

- Historical Developments of RPO Regulations
- Status of RPO Compliance in Rajasthan and Other States
- RPO Compliance: Implementation Framework Requirements
- Key Design Considerations for RPO Compliance Framework
- Approach for RPO Compliance Reporting Framework
 - RPO Compliance Report Cell
 - Design of Data formats/information Requirements
 - Need for Co-ordination Forum
- Way Forward

Electricity Act 2003

Section 86(1): The State Commission shall discharge the following functions, namely:

“(e) promote cogeneration and generation of electricity from renewable sources of energy by providing suitable measures for connectivity with the grid and sale of electricity to any person, and also specify, for purchase of electricity from such sources, a percentage of the total consumption of electricity in the area of a distribution licensee”

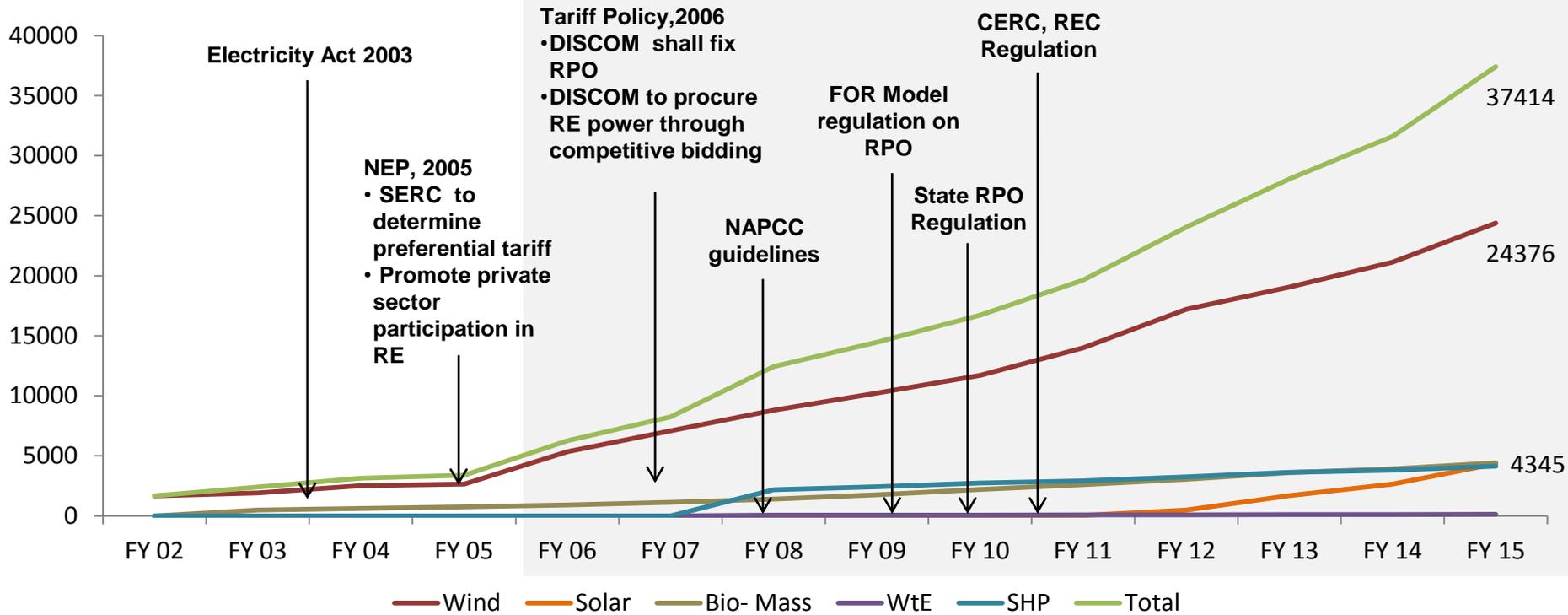
National Action Plan on Climate Change (NAPCC)

At the national level for FY 2010, target for **RE Purchase** may be set at **5% of total grid purchase, to be increased by 1% each year for 10 years**

National Tariff Policy (NTP)

“Clause 6.4(1) Pursuant to provisions of section 86(1)(e) of the Act, the Appropriate Commission shall fix a minimum percentage for purchase of energy from such sources taking into account availability of such resources in the region and its impact on retail tariffs. Such percentage for purchase of energy should be made applicable for the tariffs to be determined by the SERCs latest by April 1, 2006”

In January 2011, MOP amended the NTP to require the SERCs to fix a percentage of energy purchase from solar power under the RPO regime (starting from 0.25% by 2013 to 3% by 2022)



- Maharashtra and Rajasthan were among the initiators of RPO movement in the country
- By 2009-10, almost all the Indian states notified their RPO regulations
- The RE installed capacity has increased from around 15 GW to 37 GW in the last five years with a CAGR of ~22%
- Compliance of RPO by the obligated entities is a critical factor for sustainable growth of RE sector in India

- In line with mandate under EA 2003 and policies thereof, 29 States/UTs have specified obligation for purchase of Renewable energy by obligated entities
- RPO compliance monitoring is crucial to ensure that RPO targets are met and to ensure that the non-compliance is brought to the regulators in a timely manner
- While RPO compliance monitoring for DISCOM takes place through the annual performance review exercise before the SERC, the compliance monitoring for other obligated entities like captive consumers and OA consumers is far from satisfactory.
- Out of 29 Commissions only 10 State ERCs have initiated Suo-Motu proceedings for reviewing the compliance status of RPO by Open access and captive consumers.
- Moreover, the RPO compliance review process is undertaken with significant time lag. Presently, RPO compliance reporting up to FY14 (or FY12 in few cases) has been undertaken.
- Hence, there is a need to evolve innovative, process driven and technology-based solutions to address this challenge on regular basis.

Possible solution could be in the form of a web-based tool to monitor, record and report the real time compliance status of RPO by obligated entities to State Commissions

	Maharashtra	Gujarat	Chhattisgarh	Madhya Pradesh	Uttarakhand	Rajasthan
CPP/OA consumers recognized as OEs in RPO regulations	Y OA: 1 MVA and above CPP: 1 MW and above	Y CPP: 5 MW and above and OA	Y CPP/OA: 1 MW and above	Y	Y	Y CPP/OA: 1 MW and above
Suo-moto initiatives / order by SERC on RPO compliance monitoring	Y	Y	N	Only for Solar RPO (order on petition)	Y	N
Enforcement on OEs for non compliance of RPO	Y	N	N	Rs. 25,000	Rs. 20,000	Surcharge of INR 3.59/kWh
SNA initiatives for RPO compliance data collection and reporting	Y	N	Y	N	Y	Y
Standard forms / formats for RPO compliance data collection	Y	N	Y	N	Y	Y



***PACE-D TA support to Rajasthan in
developing RPO Compliance
framework***

RPO Trajectory

CPP & OA Consumers with total capacity of 10 MW & above:

S.No.	Year	Obligation expressed as % of Energy Consumption		
		Non Solar	Solar	Total
1	2014-15	7.5	1.5	9.00
2	2015-16	8.2	2.00	10.20
3	2016-17	8.9	2.5	11.40

CPP & OA Consumers with capacity of 1MW and above, but less than 10 MW:

S.No.	Year	Obligation expressed as % of Energy Consumption
1	2014-15	9.00
2	2015-16	10.20
3	2016-17	11.40

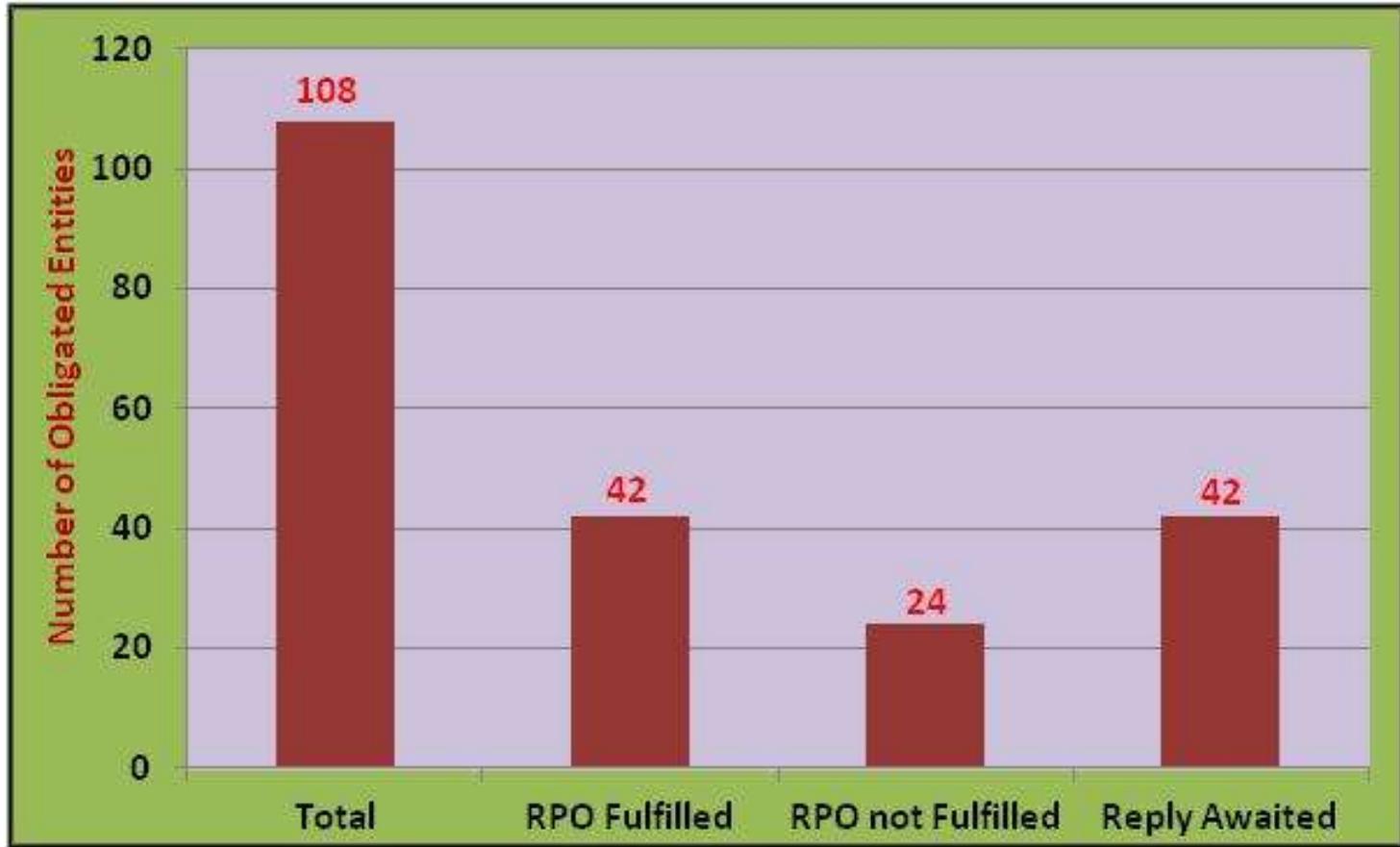
Obligated Entities

1. Distribution Licensee including deemed licensee
2. Open access consumer
3. Captive consumer of a Captive Power Plant of installed capacity one MW and above

Penalty on Non Compliance

- OE to deposit into a separate fund, to be created and maintained by such OE, as RPO charge as the Commission may determine on the basis of the shortfall in units of RPO and the forbearance price decided by CERC
- Liable for penalty as may be decided by the Commission under section 142 of EA-03
- *Section 142: ...such person shall pay, by way of penalty, which shall not exceed one lakh rupees for each contravention and in case of continuing failure with an additional penalty which may extend to six thousand rupees for every day during which the failure continues ...*

S.No	Regulation No./Order & Date	Name of the Regulation/Order	Highlights
1	2015	Supreme Court Judgment upholding Hon'ble Rajasthan High Court Judgment and RERC RPO Regulations & applicability to CPP / OA Users	<ul style="list-style-type: none"> RERC RPO regulations falls within the Act and the regulation have been enacted to promote RE which principle is enshrined in the Act, The National Electricity policy, 2005 and the Tariff Policy 2006.
2	31-Aug-2012	Date of pronouncement of High Court Order on CPPs & OAs	CPPs approached Rajasthan High Court against the RERC obligation on CPP and OA consumers to purchase minimum energy from renewable sources and to pay surcharge in case of shortfall in meeting out the RE obligation, which High Court rejected
<p><i>Pursuant to issuance of Hon'ble Supreme Court Judgment, RERC has directed RRECL to ensure RPO compliance by CPP/OA Users. To collect surcharge @ Rs 3.59/unit for shortfall from 23.03.2007 to 22.12.2010. To seek compliance up to FY2014-15 by 31.12.2015 otherwise report non-compliance to RERC for further actions.</i></p>			
3	86/24-May-2011	Renewable Energy Obligation (1 st Amendment)	RPO targets for year 2011 to 2014 were stipulated
4	82/23-Dec-2010	Renewable Energy Certificate and Renewable Purchase Obligation Compliance Framework	Details of REC & RPO Compliance framework for Rajasthan
5	16-Jun-2010	State agency for RE projects	RRECL nominated as the State Agency for Accreditation and Recommending the RE Projects



- Clean energy **policy and regulatory support** is one of the **focal areas** of the **USAID PACE-D TA Program**.
- The Program is focusing on **strengthening the organizational, institutional and resource capabilities** of the **state nodal and designated agencies** in four states: **Rajasthan, Madhya Pradesh, Haryana and Karnataka**.
- As a part of this initiative, the Program is supporting Rajasthan SNA (RRECL) in development of RPO Compliance Monitoring and Reporting Framework (RPO - CMR)
 - Assistance in RPO compliance reporting cell formation in RRECL
 - Assistance in designing the data collection forms/formats and approval from RERC
 - Assistance in developing a *RPO Information Manual* for obligated entities
 - Assistance in design of basic framework for RPO compliance reporting
 - Assistance in development of a web based tool for RPO compliance reporting (*work in progress*)

DISCOMs

- Submit following RPO data in soft as well as in hard Copy to RRECL
- ✓ CPP RPO verification and validation data quarterly
- ✓ OA consumer RPO verification and validation data quarterly
- ✓ Their own RPO data quarterly
- Comply RPO obligation annually
- Attend quarterly RPO meeting at RREL

RRECL

- Quarterly collect RPO data from CPP, OA consumers & DISCOMs
- Verify & validate RPO data from DISCOMs, SLDC
- Arrange quarterly meetings of DISCOMs, SLDC
- Submit quarterly & annually compiled data to RERC for approval
- Accredited CPP & OA consumers data
- Publish annually CPP, OA consumers & DISCOMs data

SLDC

- Submit following RPO data in soft as well as in hard copy to RRECL
- ✓ OA consumer RPO verification and validation data quarterly.
- Attend quarterly RPO meeting at RRECL

Open Access

- To submit RPO accreditation application
- To submit quarterly data in format specified by RREL in soft as well as hard copy
- To Comply RPO obligation annually

Captive Consumer

- To submit RPO accreditation application
- To submit quarterly data in format specified by RRECL in soft as well as hard copy
- To Comply RPO obligation annually

1. Identification of Obligated Entities and listing
2. Verification of Data submission by CPP consumers
3. Verification of Data submission by OA consumers
4. Practical difficulties in monthly data submission
5. Lack of standard data Formats
6. Standard methodology for Energy Accounting for computing RPO compliance of Obligated Entities
7. Lack of check on Double accounting of RPO compliance
8. Lack of streamlined RPO related data flow between OEs and RRECL
9. Lack of awareness among Obligated Entities

- **Possible Solution**

- Accreditation process to be formulated by RRECL (on similar lines of REC accreditation), for various CPP and OA consumers as Obligated Entities.
- DISCOMs to provide support to RRECL in identification and listing of OA consumers.
- Electrical Inspectorate (EI) to provide support to RRECL in identification and listing of CPP consumers.

- **Entities Responsible**

- Initial list Preparation: DISCOMs to provide data to RRECL
- RRECL to formulate accreditation mechanism for identification and listing of all CPP and OA obligated entities in the State with continued support from respective DISCOMS and the Electrical Inspectorate

- **Action Points for deliberations**

- Exact accreditation process/mechanism, documentation requirement to be developed.

- **Issue Description**

- Energy generation data submitted by CPP is self certified and may not be authentic for the purpose of RPO compliance
- Data submission by OA consumers for RPO compliance is currently not verified

- **Possible Solutions**

- **Resources of EI** could be utilized to verify energy generation data **of CPPs**
- **Quarterly reporting & verification** to be insisted upon for accredited obligated entities
- **Option of third party verification** through energy auditors exists
- Since OA billing is done by DISCOMS, they are rightly placed to verify the energy consumption data of OA consumers

- **Entities Responsible**

- DISCOMs, RRECL and EI

- **Action Points for deliberations**

- Whether verification to be done by: JMR, Third Party Verification, CAs
- Processes to be devised for exchange/reporting of energy consumption data of obligated entity by concerned DISCOM and EI to RRECL.

- **Issue Description**

- For CPP/OA consumers other than those having in-situ CPPs, the base energy to be considered for RPO compliance could be computed either based on the net energy or based on the gross energy at the generation point after accounting for the wheeling/transmission losses incurred during the wheeling of power from the source of generation

- **Possible Solution**

- For the purpose of RPO for captive/OA **wheeling case, energy consumption on gross basis** (after grossing up of transmission/wheeling loss) may have to be considered
- In case of **in-situ captive power plants losses are negligible** and this issue does not arise
- This issue may have **to be clarified upon due regulatory scrutiny**

- **Entities Responsible**

- DISCOMS to provide necessary consumption details of Captive/OA wheeling based Obligated entities

- **Action Points for deliberations**

- Clarity on regulatory provisions necessary before devising protocol

- **Issue Description**

- No check exist to verify that RPO compliance by CPP/OA is not counted towards RPO compliance of the host Distribution Licensee
- Wheeling of RE projects registered under REC is not considered for RPO

- **Possible Solution**

- **DISCOMs to ensure such duplication is avoided** during reporting of RPO compliance of DISCOMs. **RRECL to re-verify the same.**
- RPO Data submission formats finalized for data submission by **DISCOM to include specific note/declaration** on the same
- Accreditation of obligated entities and coding of RE generation facilities/their transactions would be necessary to avoid duplication in the credit of RE energy towards RPO compliance accounting

- **Entities Responsible**

- DISCOMs, RREL

- **Action Points for deliberations**

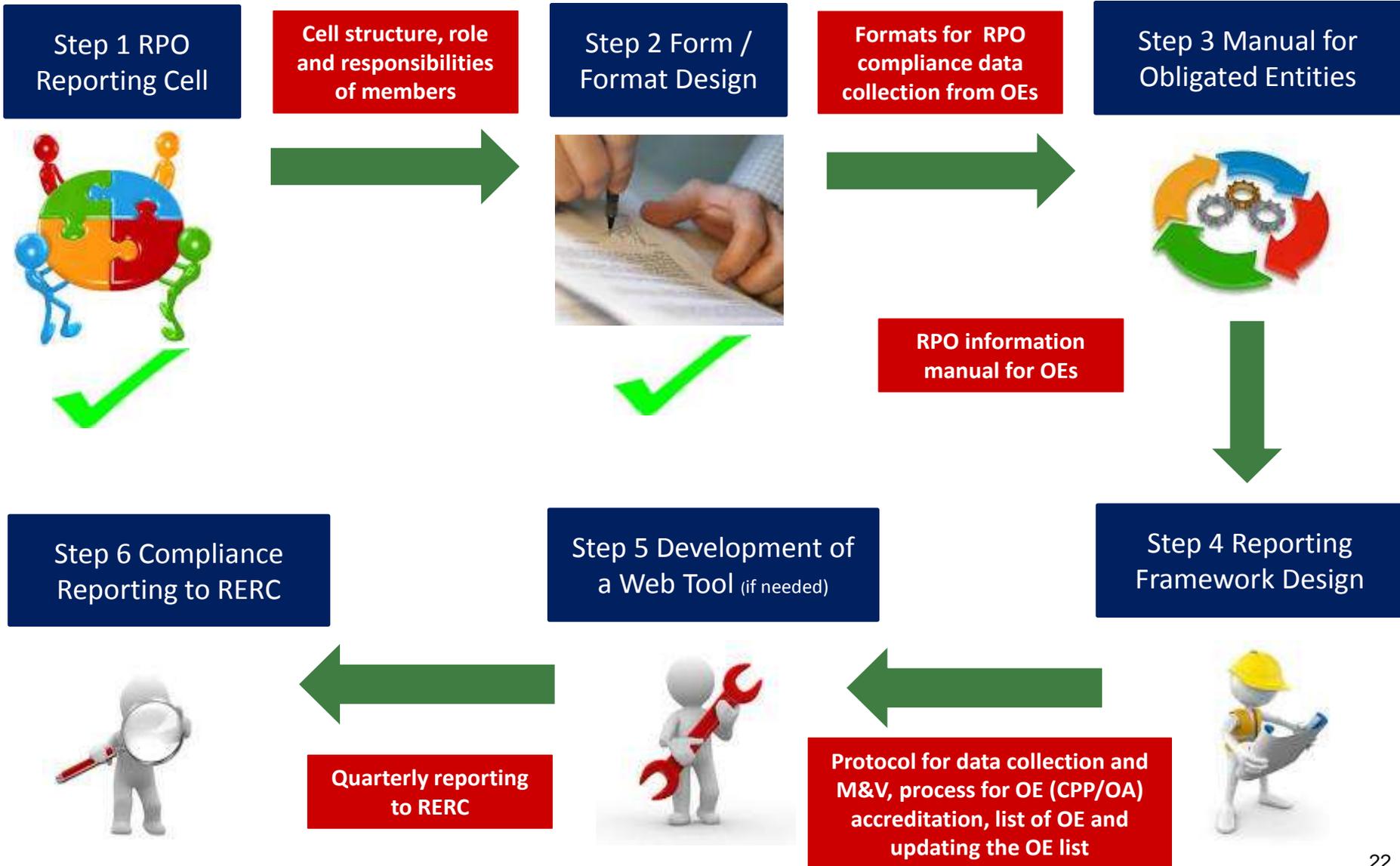
- Alternative mechanism for avoiding double accounting
- Data to be referred for re-verification by RREL
- Requirement of CA verification for declaration by DISCOMs

- **Possible Solution**
 - RRECL to design **web portal based data submission** to enable obligated entities and other supporting agencies (DISCOMS and EI) to make periodic submissions regarding RPO compliance
- **Responsible Entities**
 - RRECL to design appropriate web based tool
- **Action Points for deliberations**
 - Systems and tools to be included in the web portal

- **Practical difficulties in monthly data submission**
 - Consensus was evolved for making data submission **on quarterly basis**
 - **Regulation 11.1 may have to be suitably amended** to revise the frequency of data submission from monthly basis to quarterly basis with month-wise break-up for the quarter
- **Lack of Standard Data Formats**
 - RRECL **need to formulate standard formats** in consultation with DISCOMS and EI (To be deliberated and evolved)
- **Lack of awareness among Obligated Entities**
 - **RRECL should initiate periodic consultation** process for generation awareness among CPP & OA consumers
 - **RRECL also prepared a Draft Manual for Obligated entities** (To be finalized)
 - **DISCOMS should sensitize OA consumers** about RPO compliance requirement at the time of grant of Open Access permission
 - **E.I. should sensitize CPP consumers** about RPO compliance requirement at the time of registration of CPP



*Designing RPO Compliance
Reporting framework including
CPP/OA Users*



- To Develop mechanism for **listing and accreditation** of CPP & OA Consumers and **set rules for accreditation** of CPP & OA Consumers
- To **Develop mechanism for establishing data flow and information exchange** between various entities involved (OA Consumers to DISCOMs, CPPs to Electrical Inspector's Office, DISCOMs to RRECL and Electrical Inspector's Office to RRECL), and to verify RPO compliance by CPP & OA Consumers.
- To **Meet on bi-monthly basis** to review and, modify the mechanism, if found necessary
- To **Provide continued assistance to RRECL** in verification of RPO compliance by CPP & OA Consumers
- **RRECL shall act as convener** of the Co-ordination Forum, it shall arrange for secretarial support to Co-ordination Forum, maintain minutes of Co-ordination Forum meetings and be responsible for co-ordinating and reporting the developments to Commission on bi-monthly basis
- The Co-ordination Forum shall **submit its report to the Commission within six months** from the date of formation of the Co-ordination Forum based on the above mentioned terms of reference.

- A working group needs to be formed to address various possible issues faced in monitoring, verification and compliance of RPO of all the obligated entities including the captive consumers and OA consumers
- Proposed Structure of the working group could be as follows:
 - Director (Planning) STU, RVPN - Chairman
 - Chief Engineer From SLDC
 - Director (Technical) or Representative(s) from RERC
 - Chief Engineer (Commercial) from Distribution Licensee - JVVNL
 - Chief Engineer (Commercial) from Distribution Licensee - JdVVNL
 - Chief Engineer (Commercial) from Distribution Licensee - AVVNL
 - Chief Electrical Inspector (CEI)
 - Director (Technical), RRECL - Member Convener
 - Representative From PACE-D TA Program as Consultant
- The working group would work under the guidance of DoE, GOR and would deliberate upon the modalities of smooth data circulation among various stakeholders
- RRECL would provide administration secretarial support to the working group

- 1 Defining System Users and their categories and access rights (Accreditation Process)
- 2 Regular update of data - consumption, generation and procurement (Forms/Formats)
- 3 Representation of data to web based online user interface
- 4 Presentation of Data in user friendly format (Excel/Graph/Interactive Map)
- 5 Classification of data based on Obligated Entity/Type/DISCOM/location
- 6 Alarm, trends, Report generation
- 7 Monitoring, Verification and Validation Protocol and Information Exchange
- 8 Scalable system to incorporate future/Upcoming Obligated Entities
- 9 Mail services, System security and Compliance Reporting, Report Generation,
- 10 Admin Interface for Incorporating new systems and changes



*Current Status
&
Way Forward*

Current Status

- Institutional structure at RRECL is put in place
- Standard forms and formats for RPO compliance data collection are shared with RRECL
- Collection of data for identification of obligated entities (captive power plants and open access consumers) is under process
- RPO Information Manual for Obligated Entities has been developed
- Design of basic framework for RPO compliance monitoring and reporting for RRECL (members of RPO compliance reporting cell will be involved in this activity) will be developed

Next Steps

- Establishment of State level Co-ordination Forum is under process
- Development of Functional requirement specification for web based tool for RPO compliance monitoring will be initiated

Thank You

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सत्यमेव जयते

भारत सरकार

Government of India

Ministry of Power

UDAY – Ujwal DISCOM Assurance Yojana

Presentation to Forum of Regulators

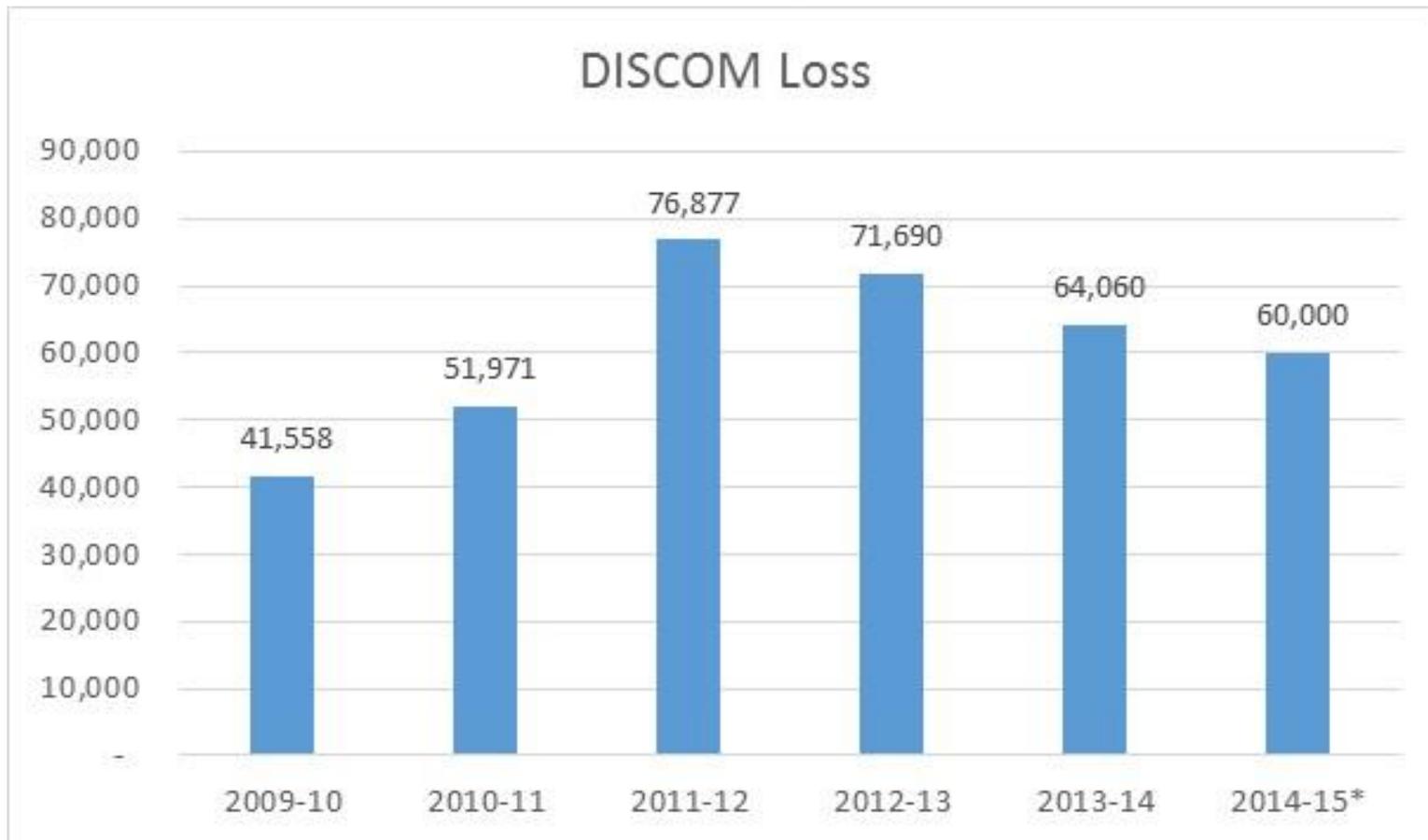
30th November, 2015

UJWAL
BHARAT

Accumulated DISCOM losses & debt

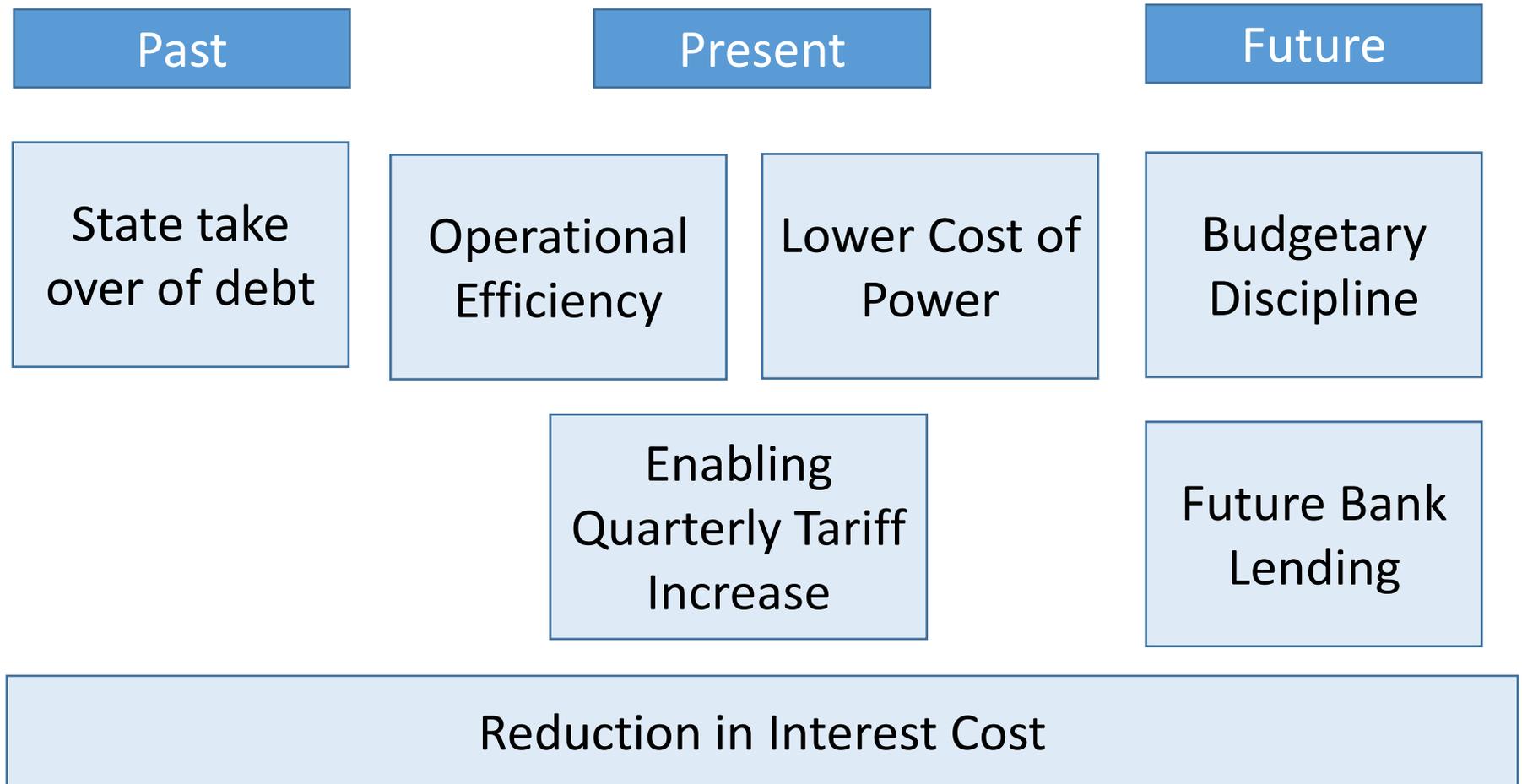
Accumulated Loss ~ Rs. 3.8 lakh crore (Mar 15)

Total Loss in last 6 years – Rs. 3.66 lakh crore



Source: Audited DISCOM Accounts * 2014-15 figure is a projection based on provisional reporting by States

UDAY seeks permanent solution of DISCOM issues



Expected Outcomes

- Reduction of AT&C loss to 15% in 2018-19
- Reduction in gap between Average Revenue Realized (ARR) & Average Cost of Supply (ACS) to zero by 2018-19
- Almost all DISCOMs to be profitable by 2017-18, 3-4 by 2018-19
- **POWER FOR ALL**

DISCOM in a debt trap

- DISCOM debt interest rate – Average $\sim 12\%$, as high as 14-15% for many DISCOMs while States borrow at $\sim 8\%$
- Regulators don't allow pass through of interest on past losses in tariff
- Surgical intervention required to rationalise outstanding debt

State takeover of DISCOM debt

- DISCOM debt is de facto borrowing of States which is not counted in de jure borrowing
- States shall take over 75% of DISCOM debt as on 30 September 2015

	2015-16	2016-17
Debt taken over	50%	25%

- Principal debt taken over will not be included in fiscal deficit of States.
- Interest would count for FRBM limits
- Scheme applicable to State DISCOMs (unbundled also)

Debt takeover mechanism

- States will issue non-SLR bonds (SDL) with maturity period of 10-15 years with a moratorium on principal up to 5 years at a rate 10-year G-Sec+0.5%+0.25%
- Debt of DISCOM will be taken over in the priority of debt already due, followed by debt with highest cost
- Transfer to DISCOM by State will be as grant/loan with an option to spread the grant over three years*
- In exceptional cases, up to 25% of the grant can be given as equity
- DISCOM debt to be taken over by the State will include DISCOM bonds committed to be taken over as part of FRP 2012
- It would cover bonds already taken over in 2015-16

* MoP can further relax by 2 years for high debt States like Raj and TN

State takeover of DISCOM debt

Illustration

	As on 30 Sep, 2015	2015-16	2016-17	2017-18
DISCOM Debt	40,000			
Debt taken over by State		20,000	10,000	
Option A) 2yr Grant				
Grant		20,000	10,000	
Option B) 3 yr Grant				
Grant		10,000	10,000	10,000
Loan from State to DISCOM (at same rate as State borrowing)		10,000		-10,000

Treatment of residual debt

- Bonds to be issued against the loan of FIs including REC/PFC first offered to the market
- Balance, if any, would be taken over by Banks in proportion to their exposure
- Residual DISCOM debt to be converted into bonds to be offered to market at a likely rate of State Bond + 0.2% (\leq bank base rate + 0.1%). If not converted into bonds, Banks can lend @ interest \neq Base rate + 0.1%

Ongoing DISCOM financing

- Loss financing only as per loss trajectory finalized with MoP and only through DISCOM bonds backed by State guarantee
- Working capital will only be allowed up to 25% of the DISCOM's previous year's annual revenue

States will fund future losses (of DISCOMs in a graded manner)

Year	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21 ...
Previous Year's DISCOM loss to be taken over by State	0% of loss of 2014-15	0% of loss of 2015-16	5% of loss of 2016-17	10% of loss of 2017-18	25% of loss of 2018-19	50% of previous year loss

Ensures permanent resolution of DISCOM issues through State control mechanism

Stage wise Tariff Increase

Activity	Benefit	End Date
Enabling provision for quarterly revision to mitigate cost increase burden	Such periodic tariff revision will be easier to implement and absorb by consumers	Necessary changes in tariff policy in a month

Improving billing efficiency through metering and tracking of losses

Activity	Benefit	End Date
Compulsory feeder and Distribution Transformer (DT) metering by States	Ability to track losses at the feeder and DT level for corrective action	Feeders - 30 th Jun 2016 DTs – 30 th Jun 2017
Consumer Indexing & GIS Mapping of losses	Identification of loss making areas for corrective action	30 th Sep 2018

Infra augmentation & Smart Metering

Activity	Benefit	End Date
2 a) Upgrade or change transformers, meters etc.	Reduce technical losses and minimize outages	31 st Dec 2017
2 b) Smart metering of all consumers consuming above 200 units / month	Smart meters will be tamper proof and allow remote reading thus helping reduce theft	Consumption > 500 units / month - 31 st Dec 2017 Others – 31 st Dec 2019

Improving collection efficiency through public participation

Activity	Benefit	End Date
Awareness campaign against theft to ensure “honest do not pay for dishonest”	Enhance public participation to reduce power theft	One year awareness programme jointly with States up to 31 st December 2016
Assure increased power supply in areas where the AT&C losses reduce	Encourage local participation to reduce losses	31 st March 2018

Demand Side Management to improve efficiency

Activity	Benefit
Demand Side Management (DSM) with energy efficient equipment (by 18-19):	Reduce peak load and energy consumption
• LED bulbs: 77 cr. HH bulbs & 3.5 cr. streetlights	45,000 cr.
• Agricultural pumps – 1 crore	12,000 cr.
• Fans & Air-conditioners – 16 cr. Fans & 18 lakh A/Cs	1,500 cr.
• Industrial equipment through PAT (Perform, Achieve, Trade)	7,600 cr.

Reducing Cost of Power

- Increased supply of domestic coal – 200 mt – Rs 20,000 cr.
- Coal linkage rationalization – 500 mt – Rs 6,000 cr.
- Liberally allowing coal swaps from inefficient plants to efficient plants and from plants situated away from mines to pithead plants to minimize cost of coal transportation – Rs 10,000 cr.
- Coal price rationalization based on Gross Calorific Value (GCV)*
- Correction in Coal grade slippage through re-assessment of each mine*

* Correct tariff fixation and reduce coal theft

Reducing Cost of Power

- Coal India to supply 100% washed coal for G10 grade and above at plants > 500 km from mines by 1st October 2018
- 100% crushed coal from Coal India by 1st Apr 2016
- Faster completion of delayed transmission lines
- Award of works of about Rs. 1 lakh crore by 31st March 2016

Agreement & Monitoring

- MoU to be signed between MoP, State and DISCOM(s)
- Clear identification of responsibilities of each of the three parties
- Details of specific operational activities to be undertaken in the State
- Division level targets of loss reduction with responsibilities, resources and timelines
- MoU targets to be reviewed monthly by MoP (with MoF)

Role of Regulators remains key

- Reform would require alignment of all stakeholders (Central & State Govt, DISCOMs, Regulators etc.) towards efficiency improvement
- Strict monitoring of efficiency parameters
- Access to electricity & HH connection towards 24x7 power supply
- Timely passage of tariff order and enabling quarterly tariff increase provision
- Ensuring DISCOM losses are not camouflaged in GenCos and TrasCos losses
- Alarm bell against slippage

Your comments & suggestions are solicited

Thanks



Ministry of Power
Government of India

24x7 Power For All

A Joint Initiative by Government of India and State Governments

Regulatory interventions required

AIM OF JOINT INITIATIVE

- Electricity is a concurrent subject and distribution of electricity falls under the purview of respective State Governments. It is the responsibility of distribution companies to provide reliable & quality power to all the consumers in their area of operation.
- To supplement the efforts of State Govts, Government of India has decided to take a joint initiative with the states to provide 24X 7 power to all households/houses, commercial & industrial consumers and adequate supply to agriculture consumers as per state policy. The hours of supply to agriculture consumers will be decided by the State Government.
- The joint initiatives aims at –
 - ❖ ensuring uninterrupted supply of quality power to existing consumers by the end of 12th plan
 - ❖ providing access to electricity to all unconnected households by 2019.
 - ❖ to enhance the satisfaction levels of the consumers, improve the quality of life of people, and increase the economic activities resulting into inclusive development of the States.

PREPARATION OF PFA DOCUMENT

- The following Central Team has been constituted by MOP to guide and oversee/ supervise the preparation of state specific documents –
 - ❖ Chief Engineer(DPD), CEA – Team Leader
 - ❖ Director (OM) , MOP
 - ❖ Director, Ministry of Coal
 - ❖ Director, MNRE
 - ❖ Secretary, BEE
 - ❖ Director (IRP/DMLF/SP&PA), CEA
 - ❖ GM,REC
 - ❖ ED, PFC
 - ❖ AGM, PGCIL
 - ❖ ED, PTC

The work of the Central team is being overseen by Member(GO&D) , CEA and is being coordinated by OM division of MOP.

State Team

Each state Govt has been requested to nominate their representatives for assisting in preparation of PFA document for the respective state.

METHODOLOGY

- State specific exercise is being carried out to assess the energy requirement of the state upto 2018-19 for providing 24x7 power supply to all households (including electrification of un-electrified HHs) and other than domestic consumers including industrial, commercial & Agriculture consumers in the state.
- An assessment of the adequacy of availability of power to the states from various sources i.e. owned by the state, central sector, common projects, private sector and PPAs made etc. is being made.
- The adequacy of Inter State Transmission System (ISTS), Intra state Transmission System and distribution infrastructure is being reviewed to ensure their adequacy for providing 24x7 power in the states.
- Renewable energy & energy efficiency potential in the state along with other measures like capacity building is also being examined in the document.

ACTION PLAN

- Based on the requirement, an action plan including year wise roll out plan, is being drawn which will be executed by the State Govt. with the support of Govt. of India, wherever necessary, as per their approved plans, schemes and policies.
- The intervention required at Central Govt level and State Govt level are also being included in the PFA document.
- The central and state governments would meet regularly to review the progress of the program and would strive to achieve the objectives of the program by taking the necessary steps as envisaged in the PFA document.

STATUS

- 24x7- Power For All (PFA) Documents for the state of Andhra Pradesh, Rajasthan, Uttarakhand, Goa, Meghalaya, Assam, Jharkhand, Chattisghar have already been prepared in consultation with State Governments and these documents are available on the website of MOP.
- The preparation of other state specific PFA documents are under preparation and are expected to be completed in a phased manner.
- To prepare these documents, the country has been divided in to 3 packages and 3 consultants M/s Crisil, M/s Mecon and M/s Deloitte have been appointed.

Time line for preparation of 24x7 PFA documents

Consultant	Phase 1	Phase 2	Phase 3
M/S Crisil	Uttarakhand	Uttar Pradesh	Tripura
	Goa	Odisha	Daman and Diu
	Meghalaya	Madhya Pradesh	Puducherry
	Chhattisgarh	Karnataka	
M/S Mecon	Bihar	Gujarat	Nagaland
	Telangana	Punjab	Manipur
	Haryana	Kerala	Mizoram
		Delhi	Lakshadweep
			Dadra & Nagar Haveli
			Chandigarh
M/S Deloitte	Jharkhand	West Bengal	Himachal Pradesh
	Assam	Sikkim	J&K
	Maharashtra	Tamil Nadu	A&N Island
	Arunachal Pradesh		

Roadmap for providing 24 X 7, Power for All (PFA)

- To prepare state specific Roadmap for providing 24 X 7, Power for All (PFA) in various states & UTs of India, the detailed document would include the following :

1 Power Supply Scenerio and Demand Estimation

2 Generation Plan

3 Transmission Plan

4 Distribution Plan

5 Renewable Energy and Energy Efficiency Plan

6 Financial Sustainability

7 New Initiatives, Monitoring Mechanism & Capacity Building

8 Road Map and Fund Requirement

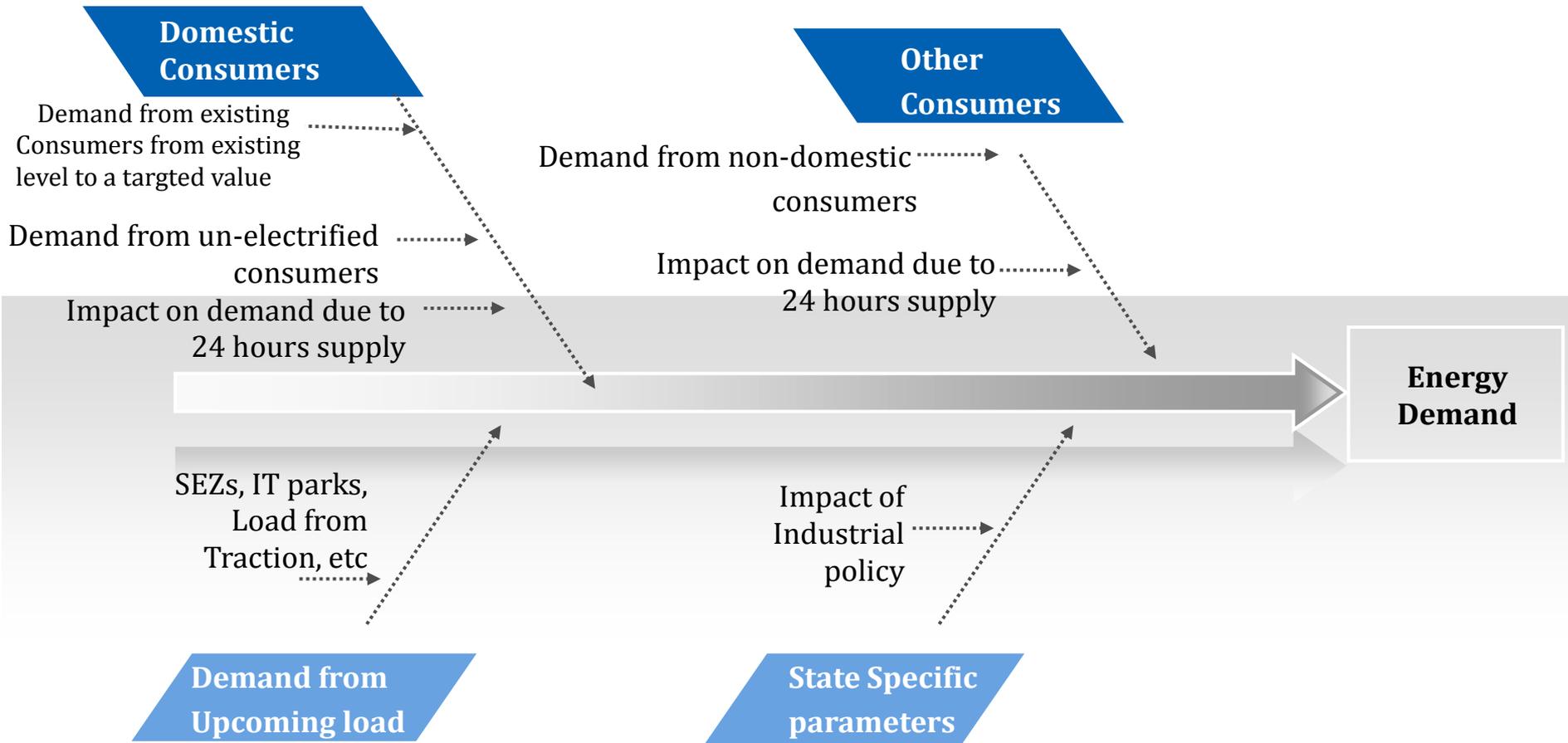
POWER SUPPLY SCENARIO & DEMAND ESTIMATION

The requirement of electricity, both in terms of energy consumption and peak demand are expected to increase significantly in the state from the present level. The document would include:

- Present power supply position
- Estimation of future demand in view of reliable 24x7 power supply to all connected consumers in view of aspiration level of energy consumption.
- Energy requirement for unconnected households which will be provided access to electricity in a time bound manner
- Potential reduction in peak demand due to energy efficiency measures

Demand Estimation

Approach towards demand estimation



Projections to be done based on state's plan to achieve 24 x 7 Power For All target

Generation Plan

Supply plan to be designed considering estimated demand

Existing Supply *(In state and outside state)*

1

- Availability to the state from existing plants and future plants (Conventional and un-conventional)

Future Capacity Available *(In state and outside state)*

2

- Availability from plants to be commissioned in future (Conventional and un-conventional)
- Gap in power requirement and availability

Gap in Existing Plan

3

- Gap in demand and supply based on existing planning
- Plan to bridge the existing gap

Central Assistance

4

- Fuel required to meet the gap (Coal or Gas)
- Fund requirement if any
- Intervention required from Gol

Road Map

5

- Action plan Yearly/Quarterly targets for state intervention to bridge the gap

GENERATION PLAN

Study of generation plan will ensure adequate capacity addition planning & tie ups for power from various sources at affordable price to meet the projected increase in power demand for future. Area of studies are :

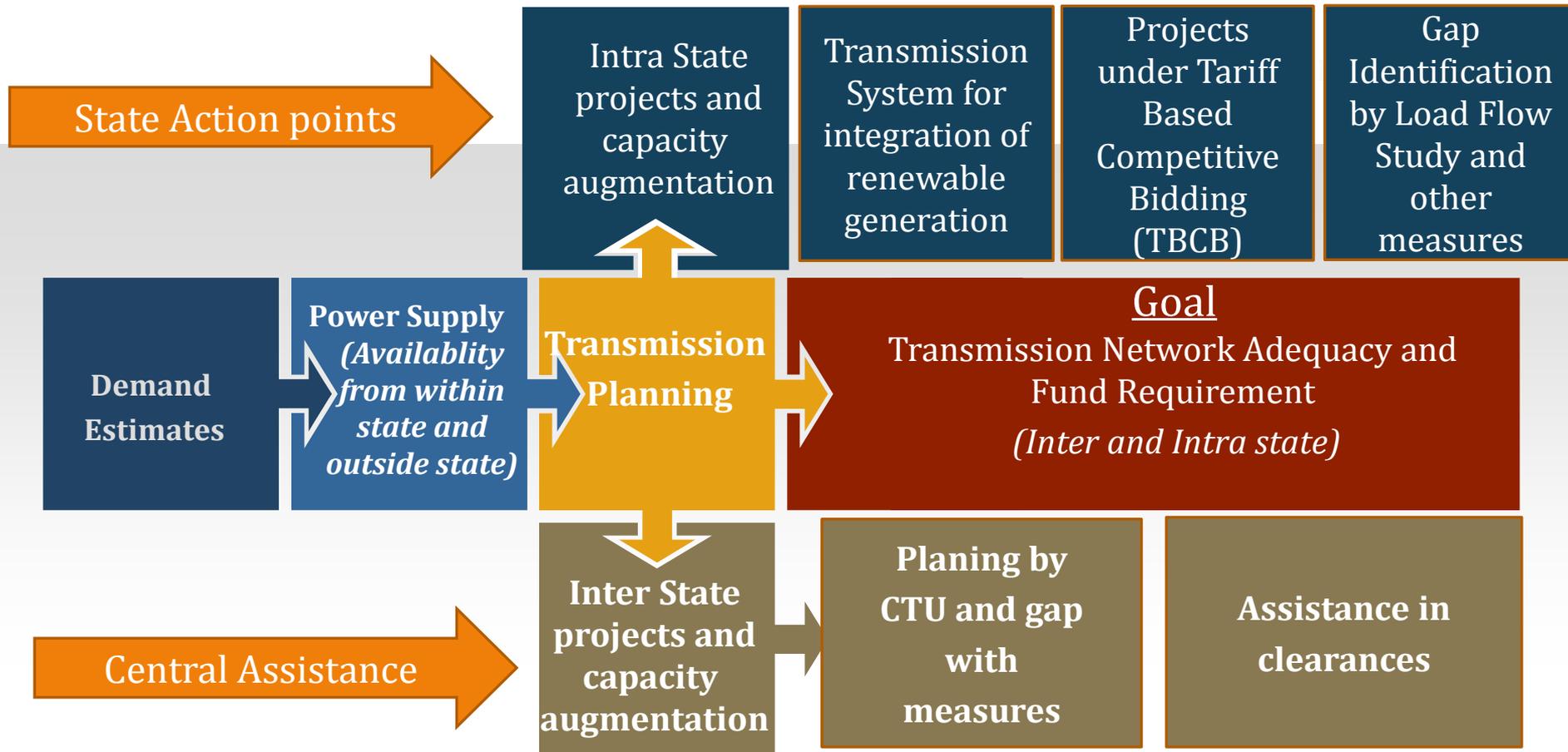
- Existing Generation
- Future Generation Plans (Projects under construction and future projects)
- Generation capacity required to meet Peak Demand
- Power procurement costs
- Fuel Requirement
 - Coal requirement based on linkage with CIL
 - Coal Imports to meet shortfall of Coal
 - Issues regarding coal procurement plan

GENERATION PLAN...

- Coal requirement based on coal blocks allotted for on going projects
 - allocation of coal linkage/coal blocks for future power projects
 - For Gas based thermal power plants additional gas allocation
 - Hydro Plant issues
-
- Year-wise capacity addition plan from renewable source (separately for Solar, Wind, etc.)
 - Action plan of the state
 - Fund Requirements
 - GoI / State Govt Interventions

Transmission Plan

To meet the expected demand as per “24 x 7 Power For All” target, a robust & reliable transmission network is required both at Inter-state & Intra state level

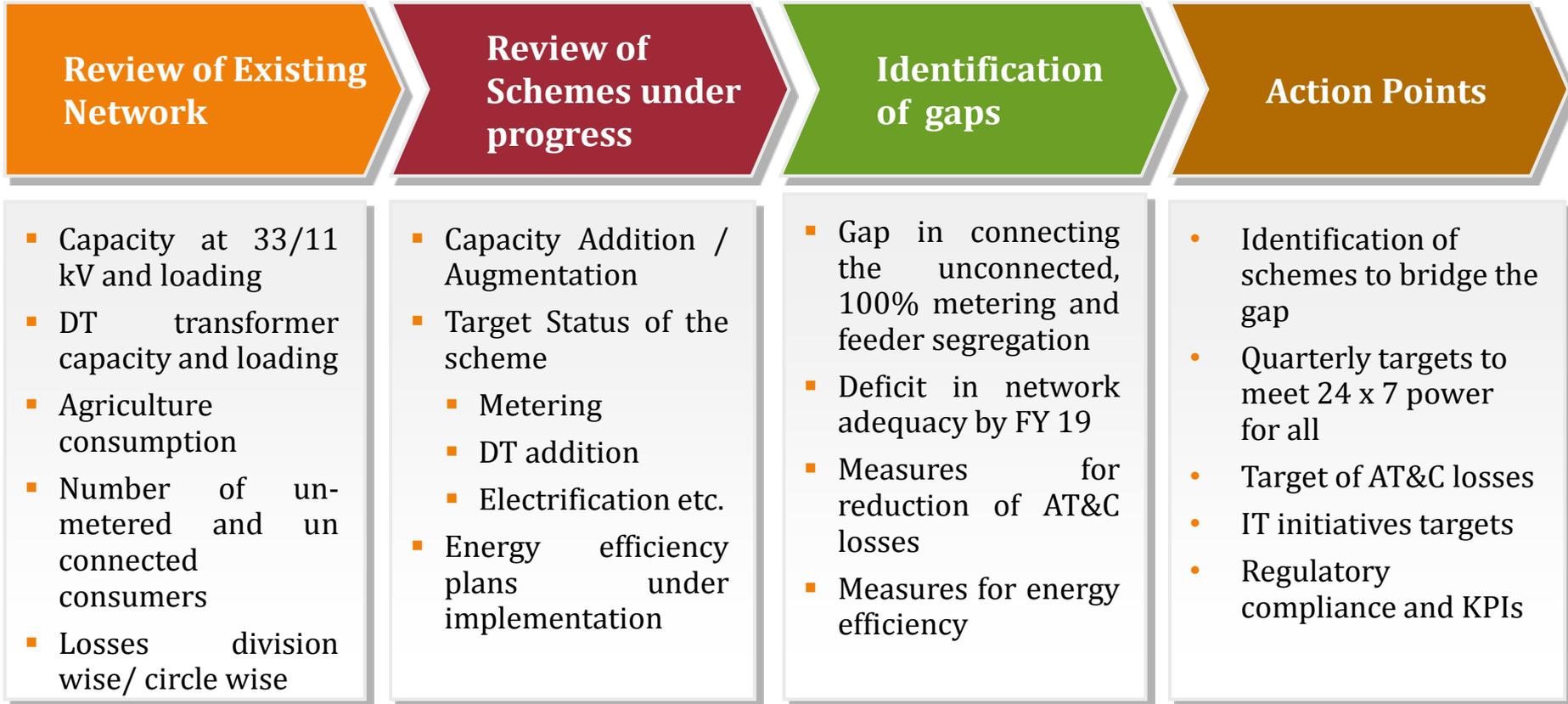


TRANSMISSION PLAN

- To meet the expected demand by 2018-19, a robust & reliable transmission network is required both at Inter-state & Intra state level.
- Plan for Strengthening of Transmission network would include:
 - Inter /Intra State Transmission System
 - Inter/ Intra state Projects under construction
 - Substations and their transformation capacity, existing & proposed
 - Transmission System for integration of renewable generation as part of Green Energy Corridor
 - Renewable Energy Management Centres (REMC)
 - Adequacy of ISTS / STU
 - Projects under Tariff Based Competitive Bidding (TBCB)
 - Action plan of the state
 - Action plan of CTU/ STU
 - Fund Requirements (for both inter state and Intra State)
 - GoI/ State Govt Interventions

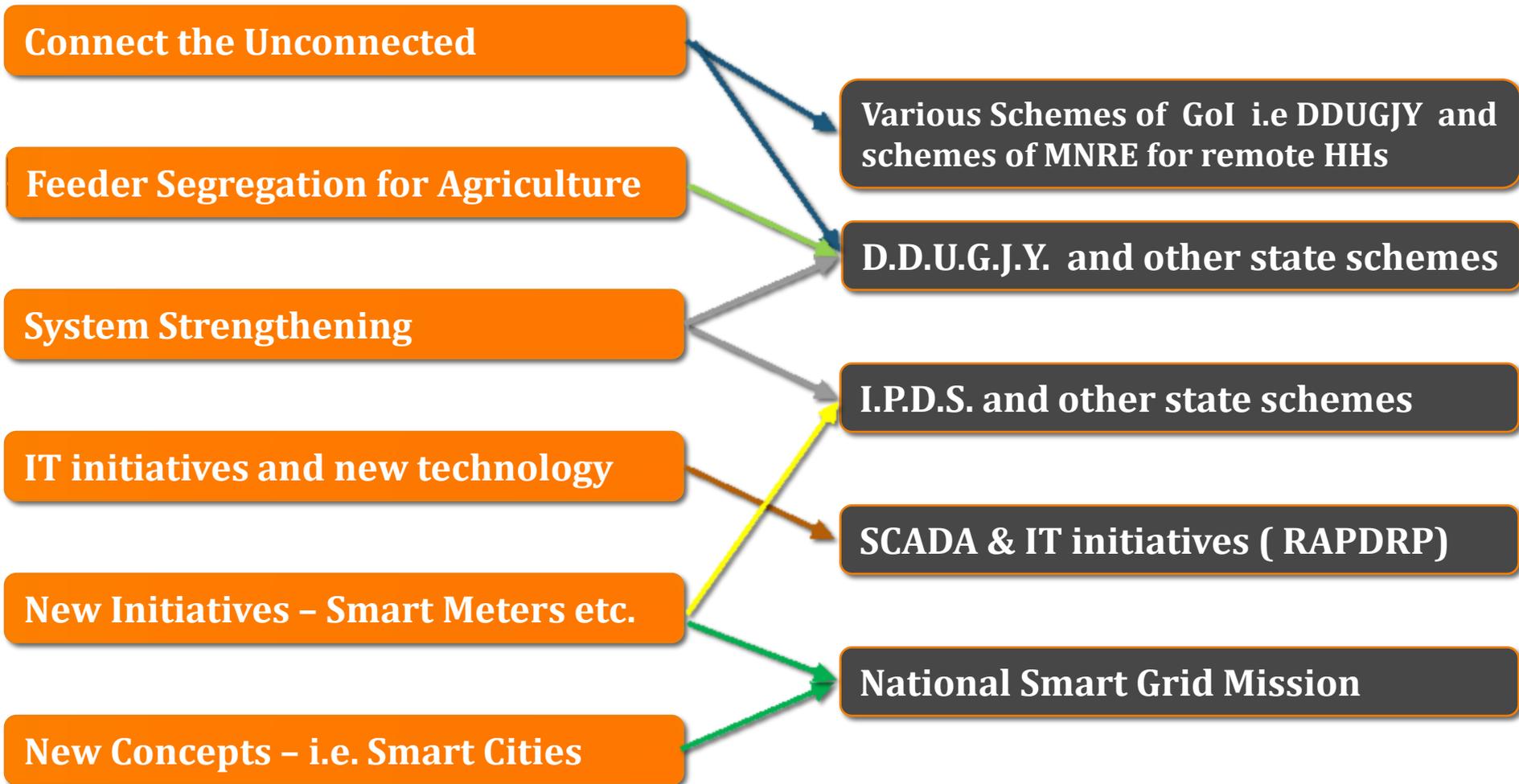
Distribution Plan

The existing distribution infrastructure would be required to be strengthened and augmented to meet the demand estimated for 24 x 7 Power For All



Distribution Plan

Schemes Available to Bridge the Funding Gap



DISTRIBUTION PLAN

- The existing distribution infrastructure would require to be strengthened and augmented to cater to the load growth, increase in electrification of un electrified households and higher quantum of supply to all households. Further reliable distribution system will ensure reduction in AT&C losses.

The area of studies would include: DISCOM WISE-

- Existing distribution system & its adequacy
- Distribution schemes under implementation
- Proposed system under DDUGJY/IPDS
- Present status of RGGVY/RAPDRP
- Feeder separation/Improvement Program
- Providing three phase supply to villages near to the existing 33/11 kV sub-stations

DISTRIBUTION PLAN...

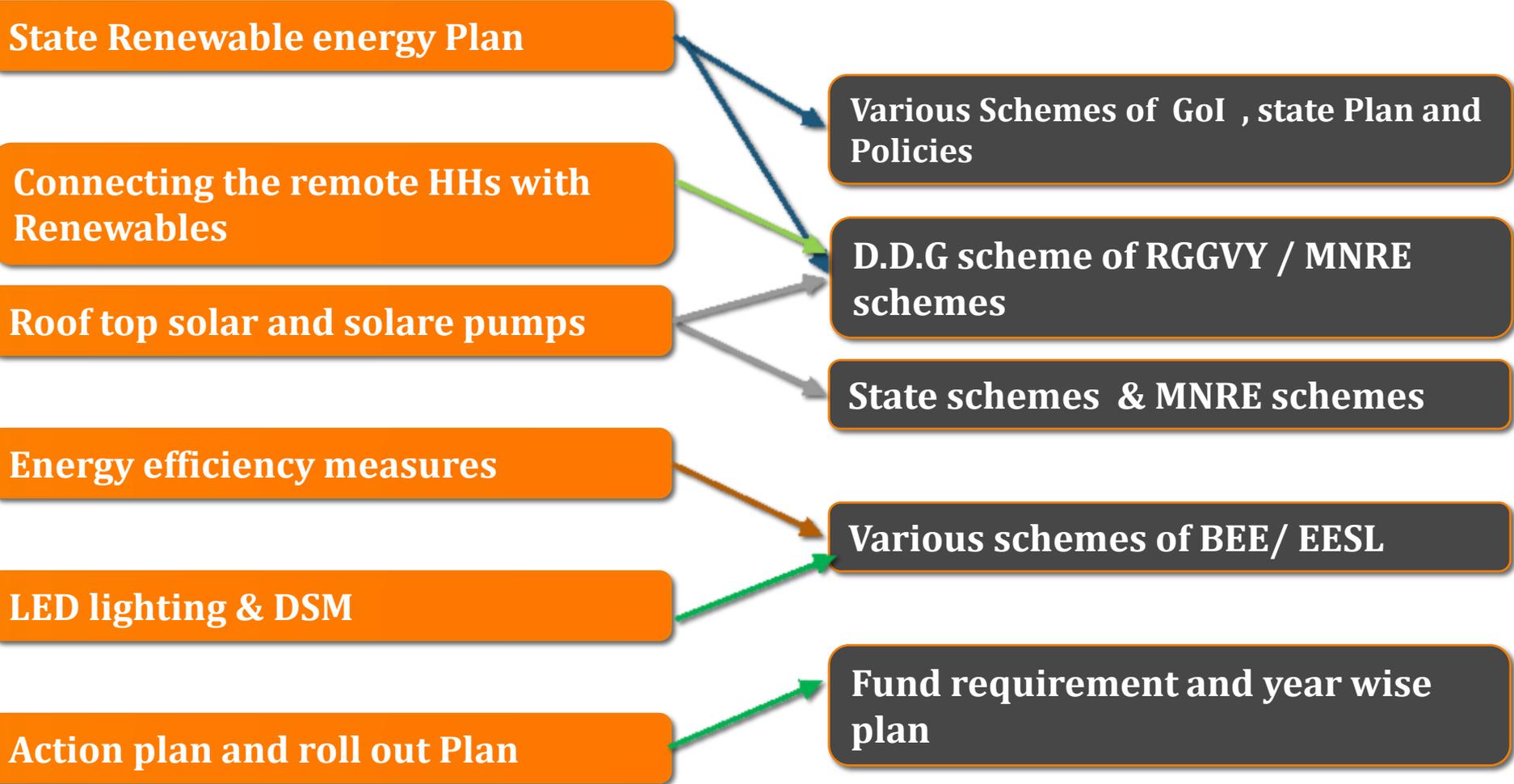
- Requirement of additional 33/11 KV S/S in rural area for 24x7 supply
- Connecting the unconnected through RGGVY and other initiative of the State Govt
- Program for connecting the unconnected HHs / remote HHs to be electrified by RE sources
- AT&C losses `trajectory
- Measures proposed to achieve AT&C loss trajectory
- Introduce modern technologies to monitor reliable supply like sub-station automation, providing adequate communication infrastructure, GIS, Reliability, Centralised Network Analysis and Planning tools, SAP driven ERP systems, DMS (Distribution Management Systems), OMS (Outage Management System), etc.

DISTRIBUTION PLAN...

- DDG Schemes
- Program for achieving 100% metering
- Renewable energy (both grid and off grid)
- Action plan/ Year wise Roll out plan of the state
- Fund Requirements
- GoI / State Govt Interventions
- Any other issue

Renewable Energy and Energy Efficiency Plan

Schemes Available to Bridge the funding Gap



RENEWABLE ENERGY PLAN

The Govt. is keen to tap renewable power potential of the state particularly solar energy and wind power to meet the growing demand for power in an environmentally sustainable manner. Renewable energy is now becoming an important source of the energy mix. The area of studies are:

- Renewable energy plan
- Grid connected and off grid Roof Top Solar scheme
- Solar water pumping scheme particularly for agricultural consumers
- Action plan of the state
- Fund Requirements
- GoI/ State Govt Interventions

ENERGY EFFICIENCY

With increasing importance being given to low carbon growth these days, the cheapest and more affordable option to overcome the energy deficit is Demand Side Management and implementation of energy efficiency measures. The area of studies are:

- Savings potential & Investment
- Usage of energy efficiency electrical equipment
- Action plan of the state
- Fund Requirements
- GoI / State Govt Interventions

Financial Sustainability

Impact on financial condition of distribution utilities in the state has to be assessed for meeting the target of 24 x 7 Power For All based on below parameters:

- Financial Position of Distribution Utilities
- Effectiveness of FRP of Gol and participation in UDAY scheme
- Sector Wise Investment Plan and Fund Requirement
- Loss Reduction, Energy Management & Energy Accounting
- Gol Schemes already Sanctioned and under implementation
- Projected Financial Statement including cash Flow projections
- Gap between ACS & ARR
- Timely preparation and finalization of annual accounts
- Release of subsidy to the Discoms
- Impact on tariff for meeting the additional energy required for 24x7
- Filing of tariff petitions and Tariff order
- Action plan of the state for Financial Turnaround.

Financial Sustainability

Impact on Financial Sustainability under different scenarios

Scenario A

As per Road Map

No subsidy and tariff hike

Escalation of O&M at WPI

Loss trajectory as planned by MOP

Scenario B

As per Road Map with Financial turnaround

Nominal tariff hike + Scenario A

Scenario C

Pessimistic Scenario

Higher T&D losses than targeted

Higher tariff required for meeting the financial gap

FINANCIAL POSITION OF POWER UTILITIES

Financial measures including optimizing investments and undertaking necessary balance sheet restructuring measures to ensure liquidity in the utility finances. The consultants are required to study:

- Financial Position of Distribution Utilities
- Effectiveness of FRP launched by GoI
- Sector Wise Investment Plan and Fund Requirement
- Loss Reduction, Energy Management & Energy Accounting
- GoI Schemes already Sanctioned and under implementation
- Projected Financial Statement including cash Flow projections for 10 years
- Gap between ACS & ARR

FINANCIAL POSITION OF POWER UTILITIES ...

- Timely preparation and finalization of annual accounts
- Release of subsidy to the Discoms
- Timely adherence to FRP implementation plan
- Filing of tariff petitions and Tariff order
- Impact on tariff for providing 24x7 supply
- Action plan of the state for Financial Turnaround.
- Fund Requirements
- GoI / State Govt Interventions

New Initiatives

To be planned by the state

Information Technology (IT) Initiatives

- ERP (Enterprise Resource Planning)
- SCADA
- DSM (Demand Side Management)
- OMS (Outage Management System)
- Regional Distribution Control Centres (RDCC)
- Renewable Energy Management centres
- Power procurement optimization tools
- Interactive Voice Response System (IVRS)

Initiative towards reform process

- Consumer Grievance Cell, Improving Consumer Convenience, Mobile alerts through SMS, capacity building initiatives, Smart Cities, etc.

Private sector participation

- PPP initiatives in the state

Project Monitoring at Center and State Level

- Monitoring of “24 x 7 Power For All” project at all levels including Project Management Agency (PMA)

Capacity Building

Present capacity building program of Genco/ Transco/Discoms

No of technical & non technical employees in these utilities (trained / untrained)

Existing training institutes in the state / proposed institutes

Details of requirement of training of the employees
(Tech & Non Technical)

Requirement of funds for establishment of requisite institutes in the state

Details reg capacity building being done presently including RAPDRP

TIME BOUND DELIVERABLES FOR ACHIEVEMENT OF 24X7

- Year wise Roll-Out Plan of 24x7 “Power for All”
- District wise granular Roll out plan as agreed by states
- Detailed PERT chart for each and every activity shall be incorporated in the roadmap documents.

Road Map

Planning in terms of yearly targets:

Sl.No.	Category	Base year scenario (Year 2015)	Rollout Plan					Total expected capacity as on March'19
			FY 16	FY 17	FY 18	FY 19	Total	
1	Capacity Addition (MW)							
2	Renewable Energy Plan (MW)							
3	Transmission Plan (lines & sub-stations)							
4	Distribution Plan (Lines & Sub-station)							
5	AT&C losses (%)							
6	Village & HH electrification Plan							
7	Financial Position							
8	Energy Efficiency Plan							

Funding Source:

Parameters	State Government	Central Government	Through PPP initiatives	Domestic/ External borrowing
Generation				
Transmission				
Distribution				
Renewable and EE projects				

Monitoring mechanism

Project Management Unit proposed

Communication Objective	Responsibility	Frequency
“ Power for all” - Roll Out Plan	Secretary(Power) GOI	Quarterly
“Power for all” - Roll Out Plan	Joint Secretary, MOP	Monthly
Status update on Deliverables	Secretary, Energy- State	Quarterly
Generation Projects Physical Progress, Achievements and Other Relates Issues	Managing Director, GENCO	Quarterly
Inter-State Transmission Projects Physical Progress, Achievements and Other Relates Issues	Director (Projects), PGCIL	Monthly
Intra-State Transmission Projects Physical Progress, Achievements and Other Relates Issues	Managing Director, STU	Monthly
Distribution Progress, Achievements, Losses, Consumer Initiatives etc.	Managing Director, Discom	Monthly
Renewable Power/EE Plan	MD, RE/EE agency	Quarterly

MONITORING OF THE IMPLEMENTATION OF 24X7 PFA

- 24x7 PFA document of Rajasthan and Andhra Pradesh are under various stages of implementation and monitoring of the states of Chattisghar, Goa, Uttarakhand, Jharkhand, Assam & Meghalaya have also been started.
- The implementation is being monitored as per the institutional arrangement given in the document.
- MOP is monitoring the implementation of PFA on regular basis every month.
- A website (www.powerforall.co.in) has already been launched by MOP and the progress of the works is being entered on-line by the states.
- For this purpose, login Id and passwords have been issued to the authorized persons of States to fill up the progress data online.

State Action Plan as per PFA document require support of SERCs

Areas of regulatory interactions

Capital Investment plan	State Action Plan for 24x7 PFA	AT&C loss reduction trajectory	Enforcing Performance of Standards
<p>Capital investment plan envisaged in the PFA roadmaps need to be approved by SERCs</p>	<p>The State Action Plan envisaged in 24x7 PFA need to be supported and Monitored by SERCs</p>	<p>AT&C loss reduction trajectory as agreed by States with MOP need to be enforced and monitored by SERCs</p>	<p>Enforcing and Monitoring the Performance Standards notified by SERCs and place the performance indices on website of SERCs.</p>

Regulatory interventions

SERCs intervention for Financial sustainability of Discoms

Problem

Most of the Discoms are presently not financially sustainable

Intervention

Result oriented steps required for financial turn around of Discoms

AT&C losses reduction trajectory may be enforced as agreed by States with MOP

Discom wise Detailed action plan for achieving 100% metering and energy auditing upto Distribution Transformer level need to be enforced and monitored

Discoms may participate in the GoI scheme of Ujwal Discom Assurance Yojna (UDAY) to revive



THANK YOU

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ADDITIONAL SLIDES

**Methodology for calculation
of energy requirement by
2018-19 for providing 24x7
power to all**

Steps Taken in the exercise

- Calculation of electrified rural & urban households in the state in 2015
- Calculation of additional energy required for providing 24x7 power supply to all
- Calculation of additional financial burden for purchasing the additional energy after taking into account the recovery at Average Revenue Realization
- Calculation of per unit implication due to this additional burden

Calculation of electrified rural & urban households in the state in 2015

In case states have data of households in 2015 (total HHs, electrified and un-electrified rural & urban households), then that data of states would be taken up

Otherwise, the following methodology have been adopted-

- The no of Households in the State in 2015 have been calculated as per census data available for 2001 and 2011 and CAGR for 10 years
- Electrified rural HHs in 2015 have been calculated based on the HH electrified in 2011 and HH electrified under RGGVY from 2011-15 or as given by state
- Electrified Urban HHs in 2015 have been calculated based on the same percentage as HH electrified in 2011 or as given by state.

Calculation of additional energy required for providing 24x7 power supply to all

- The total energy sold in the state for FY 2014-15 and the % of Energy sold to Domestic Consumers (Urban + Rural) during FY 2014-15 has been calculated or as provided by state.
- The total Energy sold to Consumers other than Domestic Consumers has been calculated by deducting the energy sold to Domestic Consumers from the total energy sold in the State during FY2014-15.
- The per rural HH and urban HH consumption in the state have been calculated by dividing the rural & urban consumption by the respective electrified HHs. In case Actual figures of rural & urban consumption are available with states, then that figures would be taken up for calculation or otherwise a suitable ration for Rural -Urban consumption (like ration of 1:1.2) is being assumed.

Calculation of additional energy required and additional cost for providing 24x7 power supply to all

- The total energy required for 24 Hr supply to rural electrified & urban electrified households are being calculated by projecting per H/H consumption from present level to an aspirational level. (i.e in case of Rajasthan, rural consumption was increased from present level of 1 unit/ day to 3 units/ day and urban H/H consumption was increased from present level of 4 units to 8 units /day increasing gradually up to 2019.
- The non domestic consumption was also increased at a suitable rate after discussion with states (like 10% per year). Based on these figures, the total energy requirement has been calculated for the state for 2018-19.

Calculation of additional energy required and additional cost for providing 24x7 power supply to all

- After considering AT&C losses into account, the additional energy required by the State for providing 24x7 Power For All consumers has been calculated.
- AT&C loss reduction from 2015-16 to 2018-19 has been taken as per the loss trajectory as agreed by the states and published by MOP .

Calculation of per unit implication due to additional burden

- The additional revenue generated is calculated by multiplying the additional energy required with the Average revenue (on subsidy received basis) for all categories of consumers combined. Assumed @Rs. 4.5/kWh.
- Cost of T&D infrastructure has been assumed in the calculations, taking into account expenditure expected to be incurred for impact on tariff due to additional energy for consumers in the state.
- Based on the cost of additional energy required and additional revenue generated, the additional cost for providing additional power supply have been calculated.
- Finally, per unit impact on tariff has been calculated by dividing the additional cost by the total energy sale(existing + additional) in the state.

Regulatory Framework for States to achieve reliable grid management and large-scale integration of Variable Renewable Energy sources



51ST FOR MEETING
30TH NOVEMBER 2015



केन्द्रीय विद्युत विनियामक आयोग
CENTRAL ELECTRICITY REGULATORY COMMISSION



Building blocks for reliable grid management



- **Regulatory Framework for safe and secure operation of the grid, and to ensure grid discipline**
 - Indian Electricity Grid Code (IEGC) Regulations, 2010
 - Deviation Settlement Mechanism (DSM) Regulations, 2014
- **Regulatory Framework to enable competition and seamless operation of markets**
 - Power Market Regulations, 2010
 - Sharing of Inter State Transmission Charges and Losses Regulations, 2010
 - Open Access in inter-State Transmission Regulations, 2008

Recent measures taken by CERC



Regulatory interventions to enable large scale integration of variable renewable energy sources:

- Operational and Commercial Framework
 - [Framework on Forecasting, Scheduling and Imbalance Handling for Variable Renewable Energy Sources \(Wind and Solar\)- for Regional Entities- published on 7.8.2015](#)
 - [Model Regulations for Wind and Solar Generating Stations at the State level, presented to FOR on 29.9.2015](#)
- [Ancillary Services Operations Regulations, notified on 19.08.2015](#)
- [Suo motu order “Roadmap to operationalise Reserves in the country”, notified on 13.10.2015](#)
- [Draft Deviation Settlement Mechanism Third Amendment, posted for stakeholder comments on 23.10.2015](#)

Alignment of State Regulatory Framework...



There is a need to replicate complementary regulatory framework at the State level:

- Detailed energy accounting of all generators and load entities connected to the State grid;
- Deviation Settlement Mechanism pool in the State;
- Implementation of Availability Based Tariff as urged in National Tariff Policy, by April 1st, 2016;
- Ring fencing the State Load Dispatch Centres (SLDCs) and evolve a special scheme for their capacity building;

...Statutory Advice to MoP



- Adoption of FOR evolved Model Regulations on Forecasting, Scheduling and Deviation Settlement for solar & wind generators, latest by April 1st, 2016;
- Deployment of requisite funds from a central fund such as PSDF or NCEF;
- States level regulation on Ancillary Services & Reserves aligned with timelines of implementation delineated in CERC's order on Reserves, latest by April 1st, 2016;
- Approval of one-time reimbursement of expenses incurred by generators and load dispatch centers for implementation of AGC.

Technical Committee of RE-rich States has been formed, under chairmanship of Shri A.S.Bakshi, to facilitate implementation of measures listed above

THANK YOU



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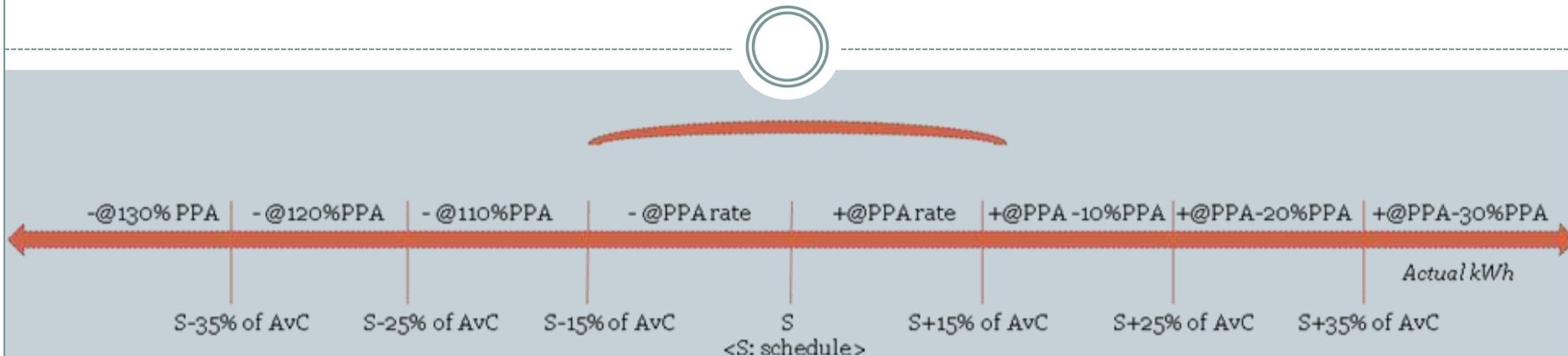


CERC's Framework for Scheduling, Forecasting & Deviation Settlement for Regional RE Generators (solar & wind)



- Forecasting and scheduling must be done for both solar and wind regional entities
 - Can be done by generator and/or RLDC
 - Larger geographical area results in better forecasting accuracy
- Due to the infirm nature of these sources, more flexibility provided w.r.t schedule
- Incentive to improve forecasting- deviation charges outside a tolerance band, which could be tightened over time.
- Integration with existing grid-framework for long term sustainability of RE sources on the grid

Deviation Settlement Framework for Regional Entities



- Error definition: $[(\text{Actual generation} - \text{Scheduled generation}) / \text{Available Capacity}] \times 100$
- Payment as per schedule @PPA Rate
- Deviation Settlement within tolerance band (+/- 15%):
 - Receipt from/payment to pool @PPA rate (i.e. in effect, payment as per actuals)
- Beyond 15%, a gradient band for deviation charges is proposed as follows:

<i>Abs Error (% of AvC)</i>	<i>Deviation Charge</i>
15%-25%	10% of PPA rate
25%-35%	20% of PPA rate
>35%	30% of PPA rate

- 16 revisions allowed, one for every one-and-half-hour block, effective from 4th time-block.

Settlement of RPO under revised framework



- RPO deemed complied at scheduled generation
- In case of under-injection or over-injection by RE generator, actual units to be balanced with RPO
- Instead of procuring or crediting REC for each case, all RE under/over-injections can be netted off (on monthly basis) for the entire pool first
 - RE shortfall: RECs will be purchased from exchange and extinguished
 - RE surplus: notional RECs will be credited to DSM Pool as carry forward for next cycle
- Settlement of OA and CPP poses challenge, particularly for CPP where there is no PPA rate
- Therefore a reference rate equal to APPC at National level shall be determined by CERC through order
- All deviations from schedule by these entities must be settled at APPC rates.

State Model Regulation for Renewables

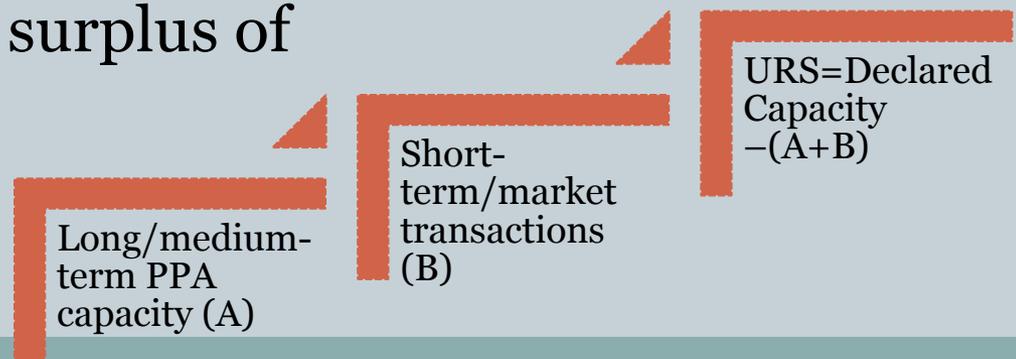


- Presented and approved in-principle at 50th FOR meeting on 29th September, 2015 in Pune
- Salient Features
 - Introduction of Qualified Coordinating Agency (QCA)
 - Payment to generator as per actuals
 - Graded deviation settlement band, settlement by SLDC
 - For generators selling power outside state, settlement as per framework similar to CERC framework on regional entities
 - All RE generators to be treated together as a virtual pool within the State Pool
 - Any deficit in State pool due to RE generators to be covered by a national fund (such as PSDF or NCEF)

Ancillary Services Regulations



- Objective: to restore the grid frequency to desired level and to relieve congestion in the transmission network
- Scope: all generating stations that are regional entities and whose tariff is determined or adopted by the Commission for their full capacity
- Reserves Regulation Ancillary Services (RRAS): utilize URS i.e. un-requisitioned surplus of generating stations



Proposed RRAS Framework- Operations



- Nodal Agency- NLDC (through RLDCs)- shall prepare merit order stack of surplus capacities available based on variable cost of generation and factors such as ramp up/down rate, response time, transmission constraints, etc.
- Nodal agency shall direct selected RRAS providers for Regulation Up or Regulation Down based on the trigger events.
- Generation under the RRAS shall be scheduled to the *Virtual Ancillary Entity* in any one or more Regional Grids as decided by the Nodal Agency.
- The schedules of the RRAS Provider(s) shall be considered as revised by the quantum scheduled by the Nodal Agency under RRAS.

Proposed RRAS Framework- Commercials



- Weekly energy accounting by the respective Regional Power Committee (RPC) along with Deviation Settlement Account
- Payment to RRAS provider would be from the Regional DSM Pool
- For Regulation Up Service, the RRAS Provider shall be paid fixed and variable charges, with a mark-up decided by the Commission
 - Fixed charges to be refunded to beneficiary to the extent of quantum surrendered
 - Mark-up on fixed cost based on factors viz. age, ramp rate, additional wear & tear etc.
 - Fixed & variable charges at the time of delivery to calculate payment
- For Regulation Down service, the RRAS Provider shall pay back 75% of the variable charges corresponding to the quantum of Regulation Down services scheduled, to the Regional Deviation Pool Account

Roadmap to Operationalise Spinning Reserves



Suo moto order “Roadmap to operationalise Reserves in the country”, notified on 13.10.2015

Reserves of ISGS to be utilized w.e.f. 1st April, 2016, along the lines of Ancillary Services Regulations 2015

Automatic Generator Control (AGC) to be operationalised in regional generating stations by 1st April 2017

Market based framework for Ancillary Services to be in place by April 1st, 2017

States must evolve a similar framework on AGC & market for ancillary services, aligned with these timelines

DSM 3rd Amendment



- **Salient Features**

- Deviation limit for States based on their peak demand met in the year 2014-15
- Proposed DSM limit varies from 50 MW to 250 MW
- Comments from stakeholders received, and regulatory process underway

- **Not a long-term solution; in the long term:**

- Control areas shall undertake cutting edge forecasting and scheduling processes, and
- Shall minimize deviations by executing fast intra-day market transactions, and by deploying spinning reserves to maintain load-generation balance



INDIAN POWER SCENARIO ISSUES & WAY FORWARD

R. N. SEN

06.09,2015

DISTRIBUTION SEGMENT IMPROVEMENT



ISSUES – DISTRIBUTION SEGMENT

- ❑ High AT&C loss (approx 40%) & substantial accumulated loss (Rs 4-5 lakh crores)
 - ❑ Discom financial health causing concern for investment
 - ❑ Stranded generation capacity
 - ❑ Cascading effect on power market
- ❑ Differential Tariff causing flight of Prime Customers
- ❑ Absence of Professional Management
- ❑ Wide Gap In Peak & Off-peak Demand
- ❑ Trust Deficit – Communication Gap between Discom & Consumers

ISSUES – DISTRIBUTION SEGMENT

- ❑ Quality of power is very poor
- ❑ Unreliable & weak distribution network
- ❑ Wide voltage fluctuation & tripping of lines due to rain/wind is regular phenomenon
- ❑ Break down of lines & equipment causes frequent outages in supply
- ❑ Load-shedding 30-40% is quite normal
- ❑ Consumers forced to make substantial investment to improve quality of supply
 - ❑ Inverter
 - ❑ Generator
 - ❑ Voltage stabilizer
 - ❑ UPS etc.

WAY FORWARD

- ❑ Separation of wire and supply company as per Electricity Act Amendment Bill 2014
- ❑ Step by step separate ownership of both the companies
- ❑ Significant investment expected in wire company because of assured return
- ❑ Encourage parallel licensing for supply
- ❑ Introduction of differential tariff for different voltage level with grade-wise losses
- ❑ Ensure common tariff for all category consumers in the same voltage level

WAY FORWARD

- ❑ Introduce Universal Service Charges (USC) to all consumers
- ❑ Govt. to subsidize agriculture & domestic sector from the collected fund/govt. assistance
- ❑ Supply company to charge market driven price based on cost of procurement
- ❑ Central govt. to form wire company & formulate DPR & specification for state wire company for reduction of AT&C loss below 10%
- ❑ State wire company shall merge with State Transmission Utility (STU) & form distribution company (wire)

WAY FORWARD

- Distribution company to take all role & responsibilities of the existing transmission & distribution company except the supply portion viz.
 - Metering & call centre
 - SOP obligation
 - Universal Service Obligation (USO) for connectivity
 - Technological upgradation of the system for AT&C loss reduction
 - TOD metering
- Existing supply company is to ensure injection of power at substation end
- Existing supply company is to address Universal Service Obligation (USO) & RE commitment

WAY FORWARD

- Existing supply company can also opt for other license area as additional supply company
- Existing supply companies capped tariff is to be determined by regulators on voltage level, not on customer category
- New supply company is to meet RE commitment & USO in steps
- New supply company shall inject power at substation end

WAY FORWARD

- New supply company shall offer price at market driven rate within the regulated rate
- New supply company may supply power at a higher rate to agreed consumer with the consent of regulator
- New supply company shall source power from the market or from its surplus power from existing PPAs

WAY FORWARD

- ❑ Central government to form Wire company & form Joint Venture with majority State Distribution (Wire) Company
- ❑ Channelize all Central Govt. Fund through the JV to make strong Wire Company
- ❑ Support with Additional Fund & Technology
- ❑ Target Technical (T&D) Loss below 8% & Quality Power with near zero failure
- ❑ Aggressive HVDS, pre-paid & remote metering implementation
- ❑ Target AT&C Loss below 10% from present 40%

WAY FORWARD

- ❑ Introduce 24x7 tariff with premium & compensation in case of failure
- ❑ Implement remote monitoring through pre paid & smart meters
- ❑ Introduce differential tariff through TOD metering
- ❑ Convert all Discoms into professionally managed company
- ❑ Ensure 100% metering

COMMON TARIFF FOR ALL CATEGORY CONSUMERS

- ❑ Relation between supplier & consumer should be strictly commercial
- ❑ Differential tariff if any will be addressed by the respective State Government through cess, subsidy, USC etc.
- ❑ Common tariff will assist in parallel licence

COMMON TARIFF FOR ALL CATEGORY CONSUMERS

- ❑ All the suppliers will have equal opportunity & level playing field
- ❑ Ultimately consumer will be benefited
- ❑ Government will be able to come out from carrying the responsibility & burden of distribution companies by ensuring common tariff for all type of consumers

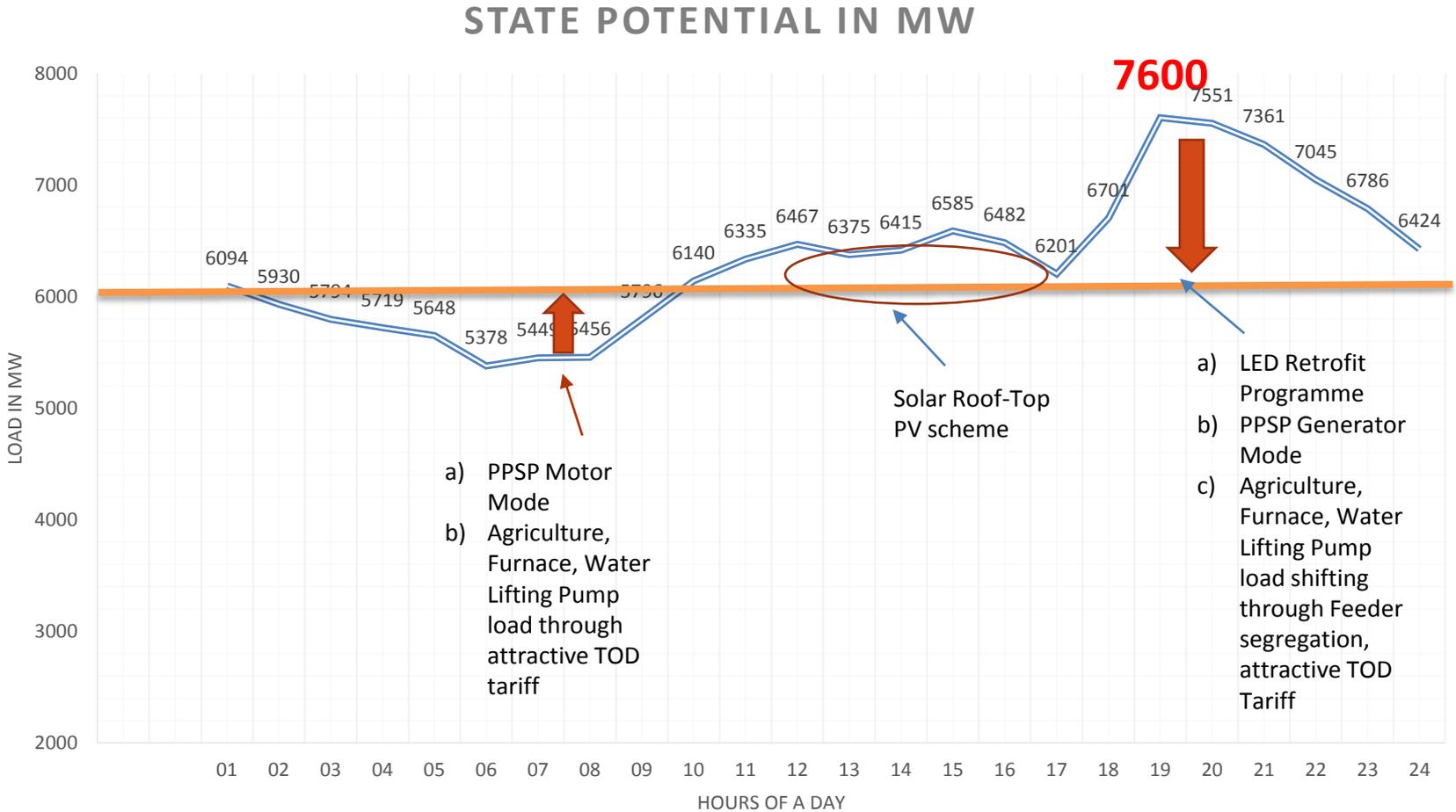
PAYMENT MECHANISM

- Collection of charges are to be done by distribution company
- Supply company to be paid through Escrow Account
- Similarly, generation cost to be paid by supply company through Escrow Account

PAYMENT MECHANISM

- Govt. Duties, Taxes, USCs etc. whichever will be collected along with power charges, shall go to a separate account
- All subsidies, promotion schemes etc. are to be charged, realized from the above account
- The above account shall be reconciled quarterly/monthly and surplus/deficit shall be treated accordingly

Load Management



GETTING DISCOM & CONSUMERS CLOSER

- SOP & Consumer Service
- Carrying out programme on consumer awareness for
 - Rights & Duties
 - Energy Conservation
 - Benefits of Renewable Energy
- Opening of Ombudsman bench at each district head quarters
- Consumer participation in theft prevention through
 - Tie-up programme with reputed NGOs
 - Event organizing through Station Managers, Consumer Forums

SCENARIO: THEN AND AFTER

- Existing supply company shall start losing premium customers to new supply companies
- Premium customers get assured power supply at market driven price
- New supply company shall source power from market
 - New PPAs
 - This will help stranded GENCOs to start functioning

SCENARIO: THEN AND AFTER

- Overall power supply position improves
- Existing Supply Companies shall enter into market to sell surplus power at market driven price
- Govt. shall introduce USC / cess / other charges for subsidizing the domestic/agricultural consumers
- Regulator shall determine energy charges for different voltage level considering AT&C loss in that voltage segment

SCENARIO: THEN AND AFTER

- This shall lead to higher charges for low voltage users
- Thus LT consumers shall land in paying more than all other consumers
 - Both govt. and Distribution Company shall then focus in reduction of AT&C losses to 8-10% through technology upgradation and consumer awareness
 - Govt. shall introduce USC / cess / other charges for subsidizing the domestic/agricultural consumers
- Gradually all segments of consumers shall be benefitted through market mechanism

THANK YOU