

MINUTES OF THE TWENTY FOURTH MEETING
OF
FORUM OF REGULATORS (FOR)

VENUE : “AMALTAS” HALL, CONVENTION CENTRE
INDIA HABITAT CENTRE, LODHI ROAD
NEW DELHI.

DATE : 16th June, 2011.

List of Participants : At Annexure-I (enclosed).

Dr. Pramod Deo, Chairperson, Central Electricity Regulatory Commission (CERC) and Forum of Regulators (FOR) extended a warm welcome to all members of Forum. The Chairperson welcomed Shri Rakesh Sahni, Chairperson, MPERC, Shri Jag Mohan Lal, Chairperson, UERC and Shri T.T. Dorji, Chairperson, Sikkim SERC who attended the FOR meeting for the first time after assuming charge of their office.

The FOR thereafter took agenda items for consideration.

Agenda Item No. 1: Confirmation of the Minutes of the 23rd
Meeting of “FOR” held during 29th – 30th
April, 2011 at Dehradun (Uttarakhand).

The Forum noted and endorsed the minutes of the 23rd Meeting of FOR held at Dehradun (Uttarakhand) during 29th – 30th April, 2011 as circulated. The Forum also noted and discussed the Action Taken Report as contained in Appendix-II of the Agenda Note. After discussion, the following was decided :-

- The concern arising out of variation in definition of Average Pooled Power Purchase Cost (APPPC) in different States and its impact on viability of the projects under REC Scheme, was noted and it was decided that the issue be taken up in the next meeting as a separate agenda item.
- In the minutes of the 23rd FOR meeting held during 29th – 30th April, 2011 at Dehradun, in the deliberations recorded against Agenda Item No.6 (Solar Specific Renewable Purchase Obligation), the expression “*separate Solar RPO as per the Tariff Policy at 0.25% of total consumption of electricity in the area of a distribution licensee by the end of 2012-2013*” may be substituted as “**separate Solar RPO as per the Tariff Policy at least at 0.25% of total consumption of electricity in the area of a distribution licensee by the end of 2012-2013**”.

Agenda Item No. 2: To Consider and Approve the Balance Sheet and the Audited Accounts of “FOR” for the year 2010-11.

The balance sheet and the audited accounts were considered and approved.

Agenda Item No. 3: Minimum Area of Supply for Second / Subsequent Licensee – Issues raised by MERC.

Chairperson, MERC made a presentation (copy enclosed at **Annexure – II**) and briefed the members on the issues relating to expiry of licence of the existing licensee and the legal opinion which was sought by

MERC from Additional Solicitor General (ASG) in this regard. As per the legal opinion the minimum area requirement as per the Rules is beyond the scope of Section 14 of the Act. The relevant proviso to section 14 mentions only requirements of capital adequacy, credit worthiness and code of conduct and not about area of supply. The matter as to whether on expiry of licence term, a fresh licence can be issued or the existing licence can be renewed / extended was also discussed. Deputy Chief (Regulatory Affairs), CERC mentioned that Section 18 which talks about amendment of licence may be considered for renewal or extension of distribution licence which is about to expire. After discussions, the following was agreed :

- Ministry of Power may be requested to review the rules defining minimum area of supply and also make suitable amendment in the Act to make a clear provision regarding renewal of licence.
- Legal opinion may be sought on the issue as to whether on expiry of the licence term of licensee, the Regulatory Commissions can grant extension or renew the existing licence under Section 18 of the Act.

Agenda Item No. 4: Issues relating to Renewable Energy – Interaction with Secretary, MNRE.

Shri Deepak Gupta, Secretary, MNRE, joined the meeting for interaction with the members of FOR. In his opening remarks, Shri Gupta gave a brief overview of the issues at stake on promotion of renewable. He expressed concern over the declining trend of RPO levels in different States and emphasized on the need for specifying RPO on lines of the NAPCC target. RPO and tariff support are the two major interventions that have promoted renewable energy sources. Secretary, MNRE reiterated that the Regulatory Commissions should continue to play a proactive role on these fronts. He also urged that the tariff principles of CERC be adopted by all State Commissions for the sake of regulatory

certainty for the investors in the RE sector. While the impact of increasing level of RPO on the overall tariff is an issue, the additional change which in his opinion should not be substantial, could be borne by the consumers who have the paying capacity. The high end consumer should be more than willing to bear this incidence of additional charge for the sake of energy security and as safeguard against climate change. Shri Gupta also highlighted the need for support for biomass projects, especially, for small scale projects upto 2 MW. He requested CERC to notify separate preferential tariff for biomass gasifier based power projects.

A presentation (**copy enclosed at Annexure - III**) was made by Shri Shashi Shekhar, Joint Secretary, MNRE on renewable energy potential in the country and achievement so far.

After discussion, the following issues emerged :

- The need for a stable RPO trajectory in line with the vision of the NAPCC was appreciated.
- The concern regarding impact of increasing level of RPO on the overall tariff was noted. However, it was felt that encouragement of renewable has become a necessity rather than a choice, given the challenges of energy security and climate change. The Regulatory Commissions have to promote RE sources as per the mandate under the Electricity Act, 2003. The idea of differentiation of tariff between consumer categories to recover additional charge for promotion of renewable was appreciated and it was decided that a legal opinion be sought on the question as to whether such differentiation can be covered under section 62 (3) of the Electricity Act, 2003.
- Need for support for biomass projects because of wide variation in the fuel price was noted. It was informed that projects in States like Chhattisgarh, Punjab and Rajasthan are closing down in the absence of provisions in the regulations for pass through of increase in price of biomass fuel. The provisions in the regulations of CERC and of the State Commissions regarding fuel price for biomass projects need review.

- MNRE and ERCs of Chhattisgarh, Punjab and Rajasthan agreed to send references to CERC in this context to enable the Central Commission to take a view on relevant provisions in its regulations on RE tariff.
- It was also decided that a legal opinion be sought on the question as to whether amendment, if made to the regulations on RE tariff by CERC/SERCs can be extended to cover the existing biomass projects which have already signed PPA.
- The concern highlighted by RERC regarding load management in wind resource rich States due to wide variation in wind generation was noted. It was, however, explained that the facilitative grid connectivity regulations of CERC which permit CTU connectivity to projects upto 50 MW, provide possible solution to this issue. The wind generators should be encouraged to get connectivity to the CTU directly. The variation in generation from wind projects can be accommodated in the larger integrated grid.

Secretary, CERC/FOR thanked Shri Deepak Gupta, Secretary, MNRE and Shri Shashi Shekhar, Joint Secretary, MNRE and hoped that such interactions would help ERCs in discharging their functions more effectively.

**Agenda Item No. 5: Open Access – Issues on
Implementation.**

A presentation was made by Shri Sushanta K. Chatterjee, Deputy Chief (RA), CERC (**enclosed at Annexure – IV**) highlighting two issues on implementation of Open Access, i.e.,

(1) Interpretation of section 86 (1) (a) read with section 42 : AG's opinion which interpreted the provision to mean that open access is a mandatory requirement and the State Commissions shall cease to

determine energy charge for open access consumers of 1 MW and above from January, 2009.

(2) The issues raised by MSEDCL in regard to Cross-Subsidy Surcharge, Standby Charges etc.

After discussion, the following emerged :-

- The members of the Forum unanimously felt that the brief sent by Adviser to Deputy Chairman, Planning Commission to AGI for opinion did not bring out all facts clearly. The objective of the amendment to the first proviso of section 42 was to remove the word “elimination” and did not deal with the question as to whether open access is an option or a mandatory requirement. In addition, there are other provisions in the Act, which need to be read harmoniously to understand the concept and implication of open access under section 42 of the Act. It was informed that interpretation on these lines as well as the consequences of mandatory requirement of open access have already been brought to the notice of the Ministry of Power and Ministry of Power has decided to approach Ministry of law for review of AG’s opinion based on the said facts.
- Regarding Cross-Subsidy Surcharge, it was felt that a uniform formula for determination of Cross-Subsidy Surcharge for all States is difficult to implement. Deputy Chief (RA), CERC in his presentation highlighted various methodologies for calculation of Cross-Subsidy Surcharge. After discussion, it was agreed that a reference be made to the Ministry of Power requesting them to suitably amend Para 8.5 of the Tariff Policy to provide for broad principles for determination of Cross-Subsidy Surcharge, as under :-
 - SERCs to calculate Cross-Subsidy Surcharge based on the assumptions that the power available as a result of exit of open access consumer will be sold at the average revenue realization rate. This is the most practical scenario in a situation of shortage of power supply. The SERCs may assume certain percentage (say, 10%) of the total consumption by eligible open access consumers for the

purpose of estimation of power available for sale at average realization rate. The wheeling charge (grossed up by the system loss at appropriate level) to be recovered from the open access consumers should also be factored into computation of surcharge.

- For a situation where there is no power cut, SERCs may calculate Cross-Subsidy Surcharge based on the estimation that the DISCOM will avoid purchase of the quantum of power for which open access has been sought. This principle of avoided cost method should be adopted in areas where there are no power shortage. Other assumptions relating to quantum of power avoided and the wheeling charges could be on the same lines as above.

Agenda Item No. 6: Presentation on “Experience of Competitive Bidding in Electricity Sector”.

Presentations were made by Prayas Energy Group and Association of Power Procedure (APP) on the matter of Competitive Bidding in electricity sector (**copies enclosed as Annexure – V and VI**). While Prayas focused on the governance related challenges in the competitive bidding regime, APP focused on the key issues in the competitive bidding framework itself.

Prayas suggested that the methodology for bidding evaluation should be more transparent and consistent and also suggested that there could be a Best Practice Code for SERCs to have oversight on the Competitive Bidding Process. Need for a Central Information repository was also emphasized.

The APP highlighted that there were no provisions either in the Standard Bidding Document (SBD) or in the Power Purchase Agreement (PPA) that took care of exigency/ situations beyond the control of the developers. The issues could be related to short supply of coal by Coal India Ltd. leading to fuel cost increase or cancellation of coal blocks etc and these issues impact the developers in terms of reduced availability or consequent loss of capacity payments or increase in cost due to higher cost of coal from other sources. The need for a separate SBD for Gas based Projects was also emphasized as the projects based on gas cannot be compared to those based on coal, because of various factors including fuel availability and supply term.

After discussions, it was agreed that the issues raised be studied in detail by the CERC/FOR Secretariat and recommendations be made to Ministry of Power for refinement of the bidding guidelines and Standard Bidding Documents.

**Agenda Item No. 7: Matters raised by APTEL on process of
Tariff Fixation – Discussion.**

Secretary, CERC/FOR requested the members of “FOR” to send the information sought by APTEL to enable FOR Secretariat to submit a consolidated report to APTEL.

Agenda Item No. 8: Any other issue

It was agreed that the next meeting of the Forum of Regulators would be held in first/second week of October, 2011 in Gangtok, Sikkim.

A vote of thanks was extended by Shri Rajiv Bansal, Secretary, CERC/FOR. He conveyed his sincere thanks to 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.

/ ANNEXURE – I /

LIST OF PARTICIPANTS ATTENDED THE TWENTY FOURTH MEETING

OF

FORUM OF REGULATORS (FOR)

HELD ON 16TH JUNE, 2011

**AT “AMALTAS” HALL, CONVENTION CENTRE,
INDIA HABITAT CENTRE, LODHI ROAD, NEW DELHI.**

S. No.	NAME	ERC
01.	Dr. Pramod Deo Chairperson	CERC – in Chair.
02.	Shri Jayanta Barkakati Chairperson	AERC
03.	Shri Digvijai Nath Chairperson	APSERC
04.	Shri Umesh Narayan Panjiar Chairperson	BERC
05.	Shri Manoj Dey Chairperson	CSERC
06.	Shri P.D. Sudhakar Chairperson	DERC
07.	Shri Bhaskar Chatterjee Chairperson	HERC
08.	Shri Mukhtiar Singh Chairperson	JSERC
09.	Shri M.R. Sreenivasa Murthy Chairperson	KERC
10.	Shri K.J. Mathew Chairperson	KSERC
11.	Shri Rakesh Sahni Chairperson	MPERC
12.	Shri V.P. Raja Chairperson	MERC
13.	Shri S.I. Longkumer Chairperson	NERC
14.	Shri D.C. Samant Chairperson	RERC
15.	Shri T.T. Dorji Chairperson	SSERC

16.	Shri Manoranjan Karmakar Chairperson	TERC
17.	Shri Rajesh Awasthi Chairperson	UPERC
18.	Shri Jag Mohan Lal Chairperson	UERC
19.	Shri Prasad Ranjan Ray Chairperson	WBERC
20.	Shri Pravinbhai Patel Member	GERC
21.	Shri Hemam Bihari Singh Member	Joint ERC for Manipur & Mizoram
22.	Shri Virinder Singh Member	PSERC
23.	Shri Rajiv Bansal Secretary	CERC/FOR
24.	Shri Sushanta K. Chatterjee Deputy Chief (RA)	CERC
25.	Ms. Neerja Verma Assistant Secretary	FOR

Discussion on Minimum License Area Requirement for grant of distribution license

24th meeting of Forum of Regulators

Presented by Shri. V.P.Raja, Chairman, MERC

June 16, 2011

Agenda

- Legal framework
- Geographical mapping of existing suburban licensee of Mumbai
- Legal opinion on the matter
- Various case studies

Background

- The distribution license of the R-Infra is set to expire on August 15, 2011.
- MERC has invited EOI from interested parties to acquire electricity license for electricity distribution in the suburban area of Mumbai.
 - Bandra to Dahisar (in west)
 - Chunabhatti to Vikhroli and Mankurd (in east)
 - Part of Mira Bhayander Municipal Corporation
- After receiving initial interest from eight parties, four parties have applied for the distribution license.
- R-Infra submitted its application separately.
- One of the key reason behind EOI was high cost of supply of electricity by R-Infra to its consumers. MERC wants to test if credible parties would be interested to take up the responsibility of distribution and supply the low cost electricity to the end consumers in present R-Infra license area.

Legal framework- Electricity Act 2003

- The sixth proviso to Section 14 states:

*Provided also that the Appropriate Commission may grant a licence to two or more persons for distribution of electricity through their **own** distribution system **within the same area**, subject to the conditions that the applicant for grant of licence within the same area shall, without prejudice to the other conditions or requirements under this Act, comply with the additional requirements [relating to the capital adequacy, credit-worthiness, or code of conduct] as may be prescribed by the Central Government, and no such applicant, who complies with all the requirements for grant of licence, shall be refused grant of licence on the ground that there already exists a licensee in the same area for the same purpose:*

Legal framework- National Electricity Policy

- *State Governments have full flexibility in carving out distribution zones while restructuring the Government utilities.*
- *For grant of **second and subsequent distribution licence within the area of an incumbent distribution licensee**, a revenue district, a Municipal Council for a smaller urban area or a Municipal Corporation for a larger urban area as defined in the Article 243(Q) of Constitution of India (74th Amendment) **may be** considered as the minimum area.*
- *With a view to provide benefits of competition to all section of consumers, the second and subsequent licensee for distribution in the same area shall have obligation to supply to all consumers in accordance with provisions of section 43 of the Electricity Act 2003. The SERCs are required to regulate the tariff including connection charges to be recovered by a distribution licensee under the provisions of the Act. This will ensure that second distribution licensee **does not resort to cherry picking** by demanding unreasonable connection charges from consumers.*

Legal framework

Distribution of Electricity License (additional requirements of Capital Adequacy, Creditworthiness and Code of Conduct) Rules, 2005

-
- *Explanation:-*

*For the grant of a licence for distribution of electricity within the same area in terms of sixth proviso to section 14 of the Act, the area falling **within** a Municipal Council or a Municipal Corporation as defined in the article 243(Q) of the Constitution of India or a revenue district **shall be the minimum area of supply.***



Present Case

Approximate license area of

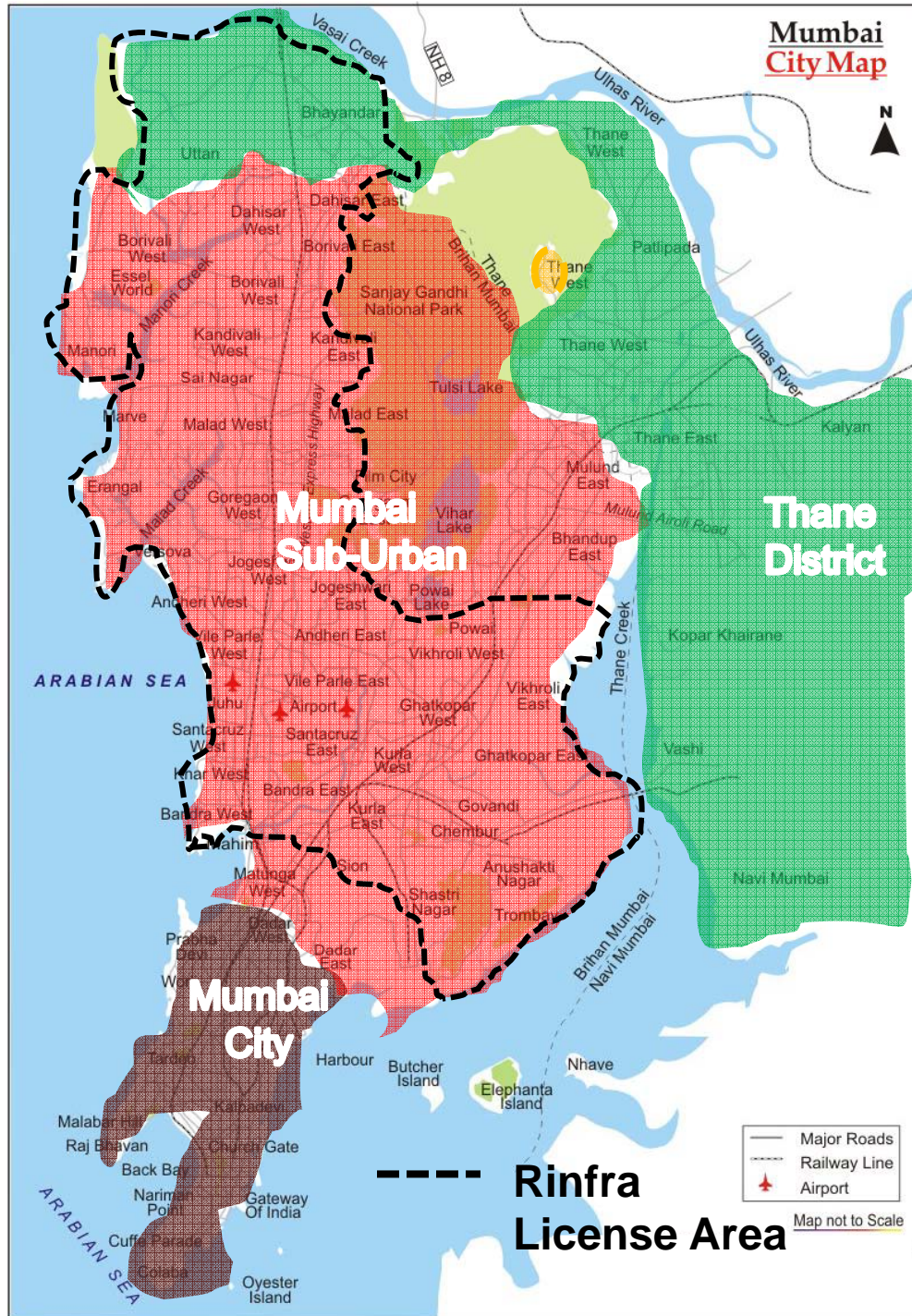
- **R-Infra-D**
- **BEST**
- **MSEDCL**



Present Case

Approximate license area of

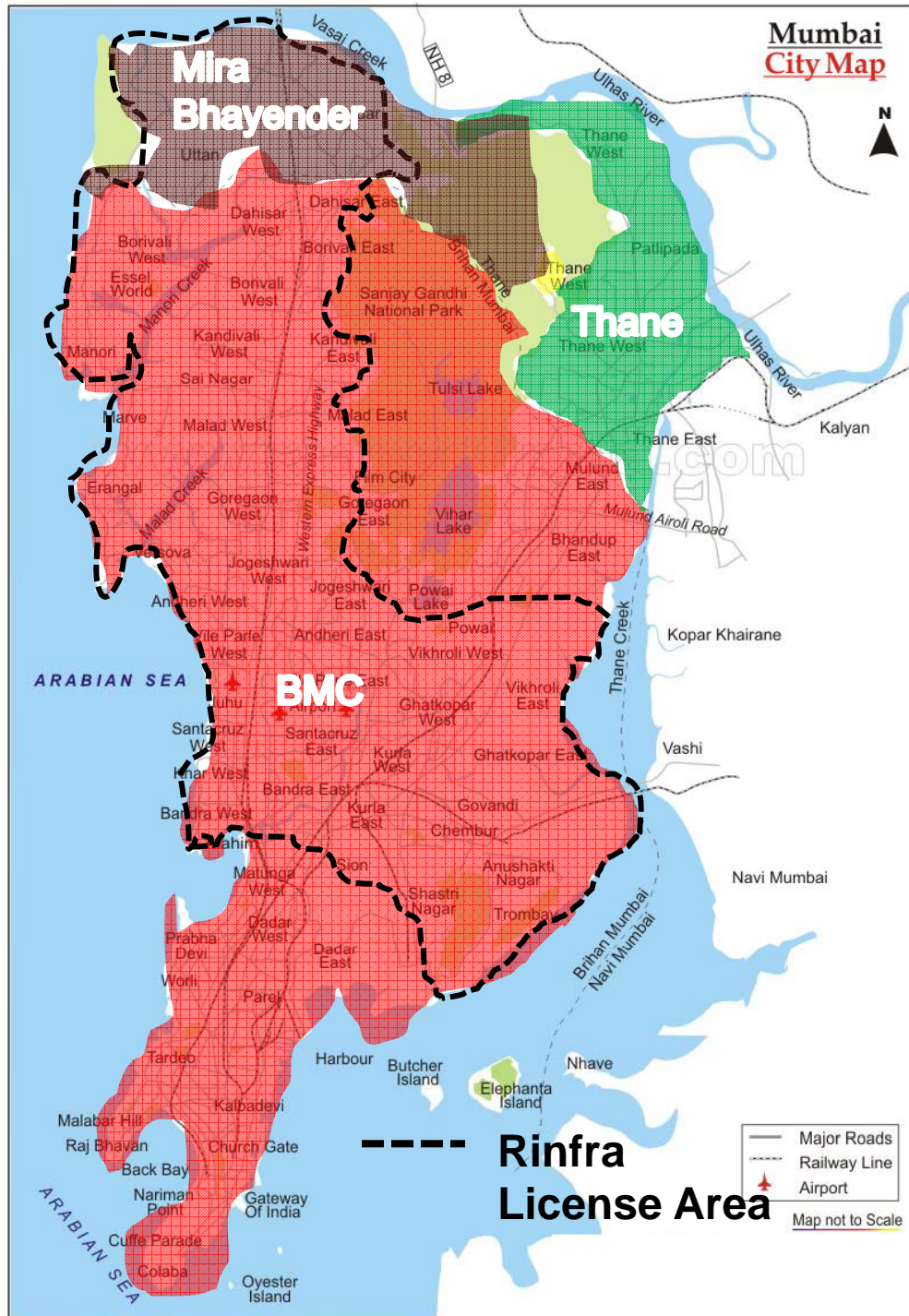
- **TPC-D**
- **R-Infra-D**



Present Case- Revenue District requirement

Present R-Infra-D covers:

1. Part of Mumbai Sub-urban
2. Part of Thane



Present Case- Requirement of Minimum license area

Present R-Infra-D covers:

1. Part of BMC
2. Part of Mira Bhayender

Thus, R-Infra-D covers:

1. Part of BMC corporation
2. Part of Mira Bhayender corporation
3. Part of Mumbai Sub-urban revenue district
4. Part of Thane revenue district

Do existing licensees meet Minimum area requirement?

R-Infra-D: No

TPC-D: Yes

BEST: Yes

MSEDCL: Yes

Who is Incumbent licensee

- Oxford dictionary: **Incumbent** (*adjective*)
 - 1 (**incumbent on/upon**) necessary for (someone) as a duty or responsibility: *the government realized that it was incumbent on them to act*
 - 2 [*attributive*] (of an official or regime) currently holding office: *the incumbent President was defeated*
 - 3 [*attributive*] (of a company) having a sizeable share of a market: *powerful incumbent airlines*
- Hence, for existing R-Infra –D area, both R-infra-D and TPC-D are incumbent licensees. Both of them are deemed licensee as per the act.
- Hence, after the expiry of R-Infra-D license, TPC-D will be the sole incumbent licensee.
- Issue of new license to R-Infra-D or any other applicant will make them second/ subsequent licensees. They will not be incumbent/ deemed licensee.

Minimum area vs. Unit size of area for license

- Both National Electricity Policy and Capital Adequacy Rules refer to Minimum Area and **not Minimum Unit area**
- Hence, license area should be at least one Revenue District/ Municipal Corporation
- Beyond minimum license area, any smallest area can form a part of the license area. There is no limit in the unit size of such additional area beyond minimum license area.

Legal opinion on Minimum licence area (1/2)

Shri Parag P Tripathi, Additional Solicitor General of India

- Provisions of section 14 shows a licence can be granted in 'any area'. There is no limit in respect of the extent or nature of the area for which a licence may be granted.
- Sixth proviso specifies additional requirements relating to capital adequacy, credit worthiness or code of conduct. These additional requirements would be related to eligibility criteria and not to deal with the area of licence.
- This appears to be at variance to the scheme of the act. What should be the area for which a licence is to be granted is left to the discretion of the appropriate commission taking into account the scheme, drift and tenor of the said act. This cannot be changed by recourse to Rule making power.
- *"... there is a strong case for contending that if in the alternative, the said Rule 3 is so interpreted as laying down an eligibility condition in respect of grant of license, the said Explanation to Rule 3 would be open to a serious challenge that it is **ultravires the said Act.**"*

Legal opinion on Minimum licence area (2/2)

Shri Parag P Tripti, Additional Solicitor General of India

- There is no provision for renewal of a licence on expiry by efflux of time. There has to be a fresh issuance of licence.
- There is no embargo under the act to issue a fresh licence under section 14 in respect of the **entirety of the area** over which it had preexisting licence even if the said area doesn't meet the requirement of 'minimum licence area' under the explanation to Rule 3.
- *Judgment of Supreme Court seems to support the view that if a Rule or other instrument of delegation is prima facie ultravires the Act, the same can be ignored by the statutory authority concerned. Reference to the judgment reported as Bharathidasan University vs. All India council for Technical Education, (2001) 8 SCC 676, (para 14, page 688)*
- It would be appropriate if the MERC makes a representation bringing this anomaly to the notice of the Rule Making Authority so that the anomaly is rectified.

Case Study 1 (in relation to area requirement)

Case No. HERC/PRO – X of 2007 (DHBVN vs DLF Estate Developers)

Review petition of DLF Estate Developers Ltd for grant of license for for distribution of electricity in DLF City, Gurgaon, dated 08.01.2010 in continuation to their petition dated 28.03.2005 filed under section 14 of the Electricity Act 2003 for grant of license for distribution of electricity in Phase 1 to 5 of DLF City, Gurgaon

The **application was refused** by the HERC:

Please refer page 23 of the order

- The function of granting license has to be executed within the framework of the Act and Rules and Regulations framed there under
- The Distribution of Electricity License (additional requirements of Capital Adequacy, Creditworthiness and Code of Conduct) Rules, 2005 is unambiguously clear about the requirement of minimum area.
- Therefore, **DLF Estate Developers Ltd does not satisfy the area requirement.**

Case Study 2 (in relation to area requirement)

Case No. 595/2009 of UPERC (PVVNL vs NPCL)

Application for Grant of Distribution License for Greater Noida Area by PVVNL

UPERC considered that minimum area requirement is not mandatory

“The most important aspect emerging from this change is that neither the requirement of minimum area finds a place in it nor it can be included in any manner. The requirement of minimum area for grant of distribution license finds mention only under the explanation given in the Rules, 2005. Since under the provisions of the Electricity (Amendment) Act, 2003 the scope of application of proviso has been restricted only to defining the additional requirement of capital adequacy, creditworthiness and code of conduct, the requirement of minimum area as specified under the Rules, 2005, apparently runs contrary to the spirit of the Act, 03. However, one of the intent for specifying the minimum area may be to prevent cherry picking of consumers by the second distribution licensee, as becomes apparent from National Electricity Policy, which is discussed below. In accordance with the provisions of the Act, the Government of India vide notification dated 12th, February, 2005 notified the National Electricity Policy, under which the only safe guard that has been advised to be taken in regard to grant of second distribution license is that the licensee does not indulge in cherry picking of consumers. For ensuring the same respective State Electricity Regulatory Commissions have been made responsible.”

Case Study 3 (in relation to area requirement)

Reference: JUSCO Tariff Order dated Aug 2010

- *“In line with the above provision and in reference to the Commission’s communication to the Petitioner with regard to filing a petition for distribution license for one or more revenue districts (letter no. JSERC/06/2004-05/64), the Petitioner applied for a Second Distribution License vide application no. PBD/176/69/06 dated May 5, 2006 for the revenue district of Saraikela-Kharsawan. The Saraikela-Kharsawan district is contiguous to the Petitioner’s service area of Jamshedpur.*
- *The Commission granted a Power Distribution License (No. 3 of 2006-07) to the Petitioner on December 1, 2006 for the aforementioned revenue district.*
- *Consequently, the Petitioner began its power distribution services in revenue district of Saraikela –Kharsawan in September 2007 as a second distribution licensee.”*

Case Study 4 (in relation to area requirement)

Judgement of the Appellate Tribunal for Electricity (ATE) in Appeal No. 114 of 2007, dated 8th May 2008

“If DMRC is seeking a second license in the area of supply of a distribution licensee, it has to fulfill the conditions of the Rules. Admittedly, it is unable to fulfill the condition of minimum area of supply and hence not entitled to a license.” (page 21)

Case Study 5 (in relation to area requirement)

Order No. 03 of 2005 of CSERC in the matter of application for distribution licence by M/s Jindal Steel and Power Limited, dated 29.09.2005

CSERC felt the need for making an **exception in the present case regarding the minimum area requirement** to issue distribution license.

“...15. An important issue is the question of the area for which the licence has been applied for. The present application for licence for supply of electricity in a private industrial estate would prima facie be contrary to explanation to Rule 3 of the Distribution Licence Rules, and also to para 5.4.7 of the NEP (quoted in para 3 above) according to which a second distribution licence should be for the minimum area of a Revenue District/Municipal Corporation/Municipal Council. The area of the application does not confirm to this stipulation. Secondly, the licence applied for would also be against the universal service obligation of a distribution licence in that the applicant seeks to supply electricity to specific consumers in a limited area.....

(Continued in the next slide)

Case Study 5 (in relation to area requirement)

Continued from previous slide...

“...The Commission is of the considered view that the present case has to be treated as an exception to the rule, for the reasons discussed in the next para. Effective steps for setting up of the industrial estate in question and an understanding with the State Government (if not a sanction by the latter) that JSPL would provide electricity from its captive power plant to the industries to be set up in this estate were taken much before the NEP was notified. A part of the industrial estate was operational with 18 industries having been set up there also happened before the NEP. As per the application, supply of electricity has commenced w.e.f. 1.3.2004 to some industries on the basis of the State Government’s letter of 28.2.2004. It would not be logical to invoke the provision of the NEP to deny distribution licence in this case. The applicant has offered to undertake supply of electricity to all consumers who may seek such supply in the two villages (Punjipathra and Tumdih) including the industrial estate (A-5). In view of the history of this case we feel that this would satisfy the universal service obligation of a distribution licensee under Sec. 43 of the Act albeit in a small area of two villages....” (page 18)

Thank You

Grid- connected renewable power

***Forum of Regulators Meeting
1030-1130 hrs Amaltas, India Habitat Centre***

Ministry of New and Renewable Energy



I. Renewable Energy Potential

A. Wind

Potential

**At 80 Metre hub
height**

Resource assessment requires revisit

400 GW

around 4% of potential land

Lawrence Berkeley National Laboratory
report estimates around 120 GW in TN
only

Off-Shore

Potential under study

**Potential confined 6
States**

Tamil Nadu, Andhra Pradesh, Karnataka in
South

Maharashtra Gujarat and Rajasthan

Tapped Potential

14+ GW MW only

Characterized by

– infirm

–Requires spinning reserves

B. Small Hydro

Estimated Potential:

15 GW

<= 25 MW being revised upward

High Potential States

**Arunachal Pradesh, Himachal Pradesh,
J&K, Uttarakhand**

Tapped Potential

**Some in Maharashtra, Karnataka, Kerala
3 GW**

Characterized by

–Firm

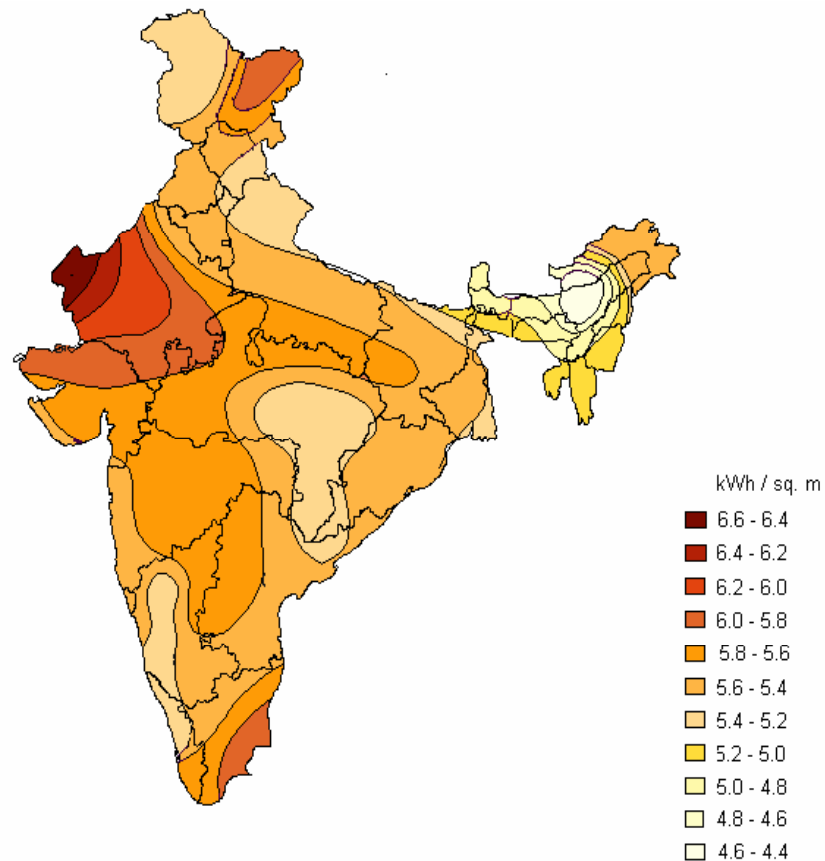
**–70 % generation between June to
September**

C. Biomass Power

Estimated Potential:	17 GW (As per present estimate-from surplus agro biomass) State –wise detailed assessment is required by site visiting Could increase substantially with increased penetration of improved cookstove, biogas and LPG
National Mission for a Green India	To cover 10 million ha-1 million ha can support 5 GW
Tapped Potential	2.3 GW
Characterized by	<ul style="list-style-type: none">–Raw material uncertainty–Higher storage requirement–Wide variation in feed stock- can lead to fluctuation in generation–Unstable price of feed stock

D. Solar Power

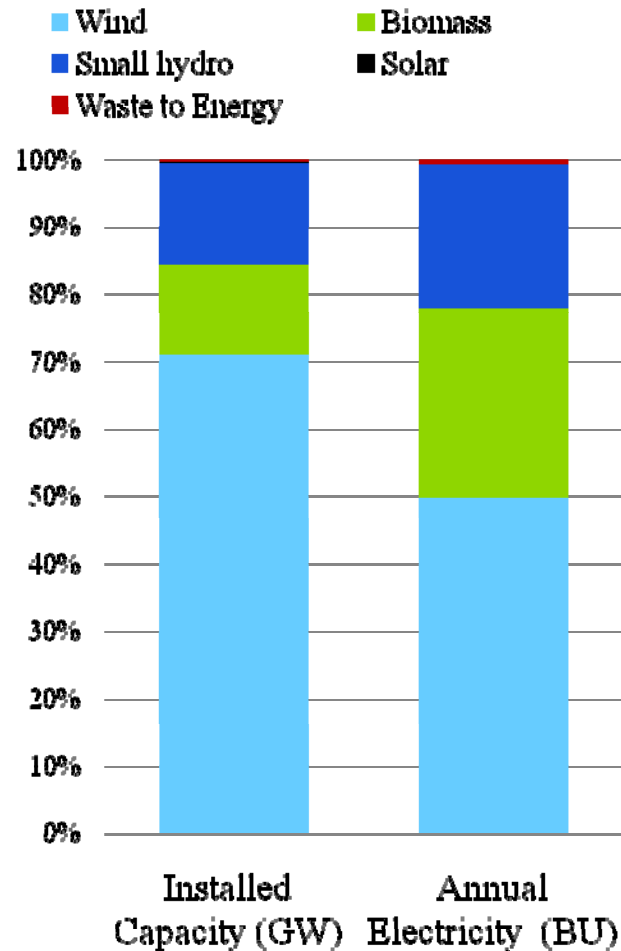
- *60Kmx60Km land area can generate Electricity that was consumed in India in 2010-11*
- *Highest Potential in Gujarat, Rajasthan*



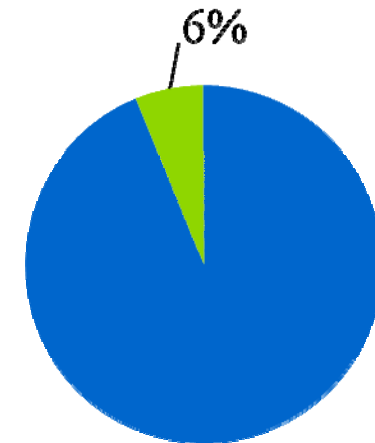
II. Renewable Power –achievements so far

	Installed Capacity (MW)	CUF (%)	Annual Electricity (BU)
Wind	14156	20	24.8
Biomass	2665	60	14.0
Small hydro	3043	40	10.7
Solar	35	15	neg
Waste to Energy	73	60	0.4
Total	19972	29	49.9

- Renewable Power has 6% share in total electricity generated
- Wind commands 70 % installed capacity and 50% in electricity mix



Share of Renewable in total electricity



Total Electricity Generation In 2010-11:
811 BU

Renewable Power Generation: 50 BU

III. Issues

I. Renewable Purchase Obligation (RPO)

National Action Plan on Climate Change (NAPCC) requires

- *Renewable Purchase Obligations* - 5% of grid power in 2009-10
 - to increase by 1% each year for 10 years
 - by 2020 to reach to 15%
 - SERCs may set higher percentages than minimum
- *Solar Specific Purchase Obligation: 0.25% by 2013 and 3% by 2022*

As per NAPCC all all should have minimum 7% RPO in 2011-12



I. States with 6 % and above RPO in 2011-12

S.No	State	RE Source	2011-12	2012-13	2013-14	2014-15
1	Gujarat	wind	5.00%	5.50%		
		Solar	0.50%	1.00%		
		others	0.50%	0.50%		
		Total	6.00%	7.00%		
2	Himachal Pradesh	Solar	0.10%	0.10%		
		Non-solar	11.00%	12.50%		
		Total	11.10%	12.10%		
3	Karnataka	Solar	0.25%			
		Non-solar	7-10%			
		Total	7.25 to 10.25%			
4	Maharashtra	Solar	0.25%	0.25%	0.50%	0.50%
		Non-solar	6.75%	7.75%	8.50%	8.50%
		Total	7.00%	8.00%	9.00%	9.00%
5	Mizoram	Solar	0.25%	0.25%		
		Non-solar	5.75%	6.75%		
		Total	6.00%	7.00%		
6	Nagaland (Draft)	Solar	0.25%	0.25%		
		Non-solar	15.75%	16.75%		
		Total	16.00%	17.00%		
7	Rajasthan	Wind	4.5%	5.10%		
		Biomass	1.0%	1.25%		
		Solar	0.5%	0.75%		
		Total	6.0%	7.10%		

Contd -

II. States having less than 6 % RPO in 2011-12

S.No	State	RE Source	2011-12	2012-13	2013-14	2014-15
1	Andhra Pradesh	Solar	0.25%	0.25%	0.25%	
		Non-solar	4.75%	4.75%	4.75%	
		Total	5.00%	5.00%	5.00%	
2	Assam (Draft)	Solar	0.10%	0.15%	0.20%	0.25%
		Non-solar	2.70%	4.10%	5.40%	6.75%
		Total	2.80%	4.25%	5.60%	7.00%
3	Bihar	Solar	0.50%	0.75%	1.00%	1.25%
		Non-solar	2.00%	3.25%	3.50%	3.75%
		Total	2.50%	4.00%	4.50%	5.00%
4	Chhattisgarh	Solar	0.25%	0.50%		
		Biomass	3.75%	3.75%		
		others	1.25%	1.50%		
		Non-solar	5.00%	5.25%		
		Total	5.25%	5.75%		
5	Delhi					
6	Goa & UTs	Solar	0.30%	0.40%		
		Non-solar	1.70%	2.60%		
		Total	2.00%	3.00%		
7	Haryana	Solar	0.50%	0.75%		
		Non-solar	0.50%	0.25%		
		Total	1% for each DISCOM	1% for each DISCOM		
8	Jammu & Kashmir	Solar	0.10%	0.25%		
		Non-solar	2.90%	4.75%		
		Total	3.00%	5.00%		
9	Jharkhand	Solar	0.50%	1.00%		
		Non-solar	2.50%	3.00%		
		Total	3.00%	4.00%		
10	Kerala	Solar	0.25%	0.25%	0.25%	0.25%
		Non-solar	2.78%	2.81%	2.84%	2.87%
		Total	0.25%	3.06%	3.09%	3.12%

II. States having less than 6 % RPO in 2011-12

S.No	State	RE Source	2011-12	2012-13	2013-14	2014-15
11	Madhya Pradesh	Solar	0.4	0.60%	0.80%	1.00%
		Non-solar	2.10%	3.40%	4.70%	6.00%
		Total	2.5%	4.00%	5.50%	7.00%
12	Manipur	Solar	0.25%	0.25%		
		Non-solar	2.75%	4.75%		
		Total	3.00%	5.00%		
13	Meghalaya	wind	0.15%	0.20%		
		Solar	0.30%	0.40%		
		others	0.30%	0.40%		
		Total	0.75%	1.00%		
14	Mizoram	Solar	0.25%	0.25%		
		Non-solar	5.75%	6.75%		
		Total	6.00%	7.00%		
15	Orissa	Solar	0.10%	0.15%	0.20%	0.25%
		Non-solar	1.20%	1.40%	1.60%	1.80%
		Co-gen	3.70%	3.95%	4.20%	4.45%
		Total	5.00%	5.50%	6.00%	6.50%
16	Punjab		4.00%			
17	Tripura (Draft)	Solar	0.10%	0.10%		
		Non-solar	0.90%	1.90%		
		Total	1.00%	2.00%		
18	Uttar Pradesh	Solar	0.50%	1.00%		
		Non-solar	4.50%	5.00%		
		Total	5.00%	6.00%		
19	Uttarakhand	Solar	0.025%	0.05%		
		Non-solar	4.50%	5.00%		
		Total	4.525%	5.05%		
20	West Bengal		3.00%	4.00%		

III. Issues

Contd -

I. Issues related with RPO

1. Only 7 States have taken RPO in accordance with NAPCC- rest much lower
2. State like Tamil Nadu is yet to prescribe RPOs for 2011-12

Above 2 create uncertainty in volume and market - investment in renewable energy get hampered

3. Enforcement mechanism not imposed-being costlier than conventional power-it acquires last priority

RPO actually declining. Examples:-

- West Bengal : Earlier RPO level was 10% and it has now been reduced to 2% for 2010-11 and reaching to 4% by 2012-13
- Uttar Pradesh: Earlier RPO level was 10% and it has now been reduced to 4% for year 2010-11
- Madhya Pradesh: Earlier RPO level was 10% and it has now been reduced to 8% for 2010-11 and reaching to 7% by 2014-15
- Rajasthan: Earlier RPO level for 2010-11 was 9.75% and it has now been reduced to 6%

V. Renewable Power Regulation Issues

II. Solar Purchase Obligation

- 0.25% Solar RPO by 2013 and 3% by 2022

- *Most of States have announced Solar Portfolio Obligation*
- *Absence of Compliance mechanism*
- *Currently, Maharashtra, Gujarat, Karnataka, Delhi have done/grounded projects, but other States are yet to do*

S.No	State	2011-12	2012-13	2013-14	2014-15	2015-16
1	Andhra Pradesh	0.25%	0.25%	0.25%		
2	Assam (Draft)	0.10%	0.15%	0.20%	0.25%	
3	Bihar	0.50%	0.75%	1.00%	1.25%	
4	Chhattisgarh	0.25%	0.50%			
5	Goa & UTs	0.30%	0.40%			
6	Gujarat	0.50%	1.00%			
7	Haryana	0.50%	0.75%			
8	Himachal Pradesh	0.10%	0.10%			
9	Jammu & Kashmir	0.10%	0.25%			
10	Jharkhand	0.50%	1.00%			
11	Karnataka	0.25%				
12	Kerala	0.25%	0.25%	0.25%	0.25%	0.25%
13	Madhya Pradesh	0.25%	0.25%	0.50%	0.50%	0.50%
14	Maharashtra	0.25%	0.25%			
15	Manipur	0.30%	0.40%			
16	Meghalaya	0.25%	0.25%			
17	Mizoram	0.25%	0.25%			
18	Nagaland (Draft)	0.10%	0.15%	0.20%	0.25%	0.30%
19	Rajasthan	0.75%	1.00%			
20	Tamil Nadu	0.50%	1.00%			
21	Uttar Pradesh	0.025%	0.05%			
22	Uttarakhand	0.03%	0.05%			

III. Issues

Contd -

II. Solar Purchase Obligation (SPO)

- 0.25% Solar RPO by 2013 and 3% by 2022

S.No	State	2011-12	2012-13	2013-14	2014-15	2015-16
1	Andhra Pradesh	0.25%	0.25%	0.25%		
2	Assam (Draft)	0.10%	0.15%	0.20%	0.25%	
3	Bihar	0.50%	0.75%	1.00%	1.25%	
4	Chhattisgarh	0.25%	0.50%			
5	Goa & UTs	0.30%	0.40%			
6	Gujarat	0.50%	1.00%			
7	Haryana	0.50%	0.75%			
8	Himachal Pradesh	0.10%	0.10%			
9	Jammu & Kashmir	0.10%	0.25%			
10	Jharkhand	0.50%	1.00%			
11	Karnataka	0.25%				
12	Kerala	0.25%	0.25%	0.25%	0.25%	0.25%
13	Madya Pradesh	0.25%	0.25%	0.50%	0.50%	0.50%
14	Maharashtra	0.25%	0.25%			
15	Manipur	0.30%	0.40%			
16	Meghalaya	0.25%	0.25%			
17	Mizoram	0.25%	0.25%			
18	Nagaland (Draft)	0.10%	0.15%	0.20%	0.25%	0.30%
19	Rajasthan	0.75%	1.00%			
20	Tamil Nadu	0.50%	1.00%			
21	Uttar Pradesh	0.025%	0.05%			
22	Uttarakhad	0.03%	0.05%			

1. *Though most States have announced SPO, there is absence of compliance mechanism -CERC notified Rs 19 per kWh penalty needs to be enforced*
2. *All States would need to indicate % of portfolio obligation for rest 10 years*
3. *Addressing above issue will create certainty of market –leading to*
 - *Indigenous manufacturing*
 - *Certainty in investment*
 - *Innovation*
4. *Currently, Maharashtra, Gujarat, Karnataka, Delhi have done/grounded projects, but other States are yet to do*


III. Issues

Contd -

III. Biomass Power Tariff Fixation

- Biomass power generation has two routes: Rankine cycle - combustion & auto cycle-biomass gasification & biogas
- Auto cycle based plants are comparatively small in size and primarily meets tail -end grid power requirement, for providing electricity in rural areas
- Tariff has so far been fixed on the basis of Rankine cycle based biomass power
- Auto cycle based biomass power generation has different capital cost structure with high expenditure on operation and maintenance, biomass cost etc
- Separate tariff for auto –cycle plants will spurt their growth and meet the twin objective of providing electricity to rural areas and also strengthening rural grid
- Wide variation in Biomass Power Tariff between States – Rs 3.00- Rs 5.17

Policy Issues

- Some of the States are not allowing evacuation of biomass based power at 11 KV grid
 - SERC may advise State Govts for Zoning to ensure fuel security as a policy decision
- 

III. Issues

Contd -

IV. Wind Power Purchase Obligation


- **Wind power potential is confined to Gujarat, Karnataka, Andhra Pradesh Maharashtra, Rajasthan & Tamil Nadu only States**
- **States not having wind resource could take Wind Purchase Obligation: Generation at source, transmission to different States or sold as Wind Power on the exchange will meet purchase obligation demand**
- **This will create volume and markets**
- **Electricity transmission charges could be waived, reduced—as for Solar Power**

Immediate Requirement- States to fix Tariff as per CERC Norms



IV. Renewable Power Regulation- Moving Forward

Ministry of Power, Ministry of New and Renewable Energy, Central Electricity Regulatory Commission and State Electricity Regulatory Commissions to work in tandem for achieving the proposed paradigm shift before 12th Five Year Plan commences



Thank You



Renewable Purchase Obligation– Technology Specific Issues

- Wind
- Biomass
- Solar

V. Approach So Far

- **Fundamental assumption : Renewable energy is costly & requires support**
- **SERCs announced Renewable Portfolio Obligation (RPO) –factoring in resource availability and impact of tariff on the State**
 - Created an assured renewable electricity market in the State
- **Feed-in tariffs on cost plus basis provides for a minimum rate of return on investment.**
- **Renewable Energy Certificate Mechanism launched to meet RPO**
- **Other concessions include: i) accelerated depreciation or GBI support; ii) custom duty exemption; and iii) excise duty exemption; iv) Carbon credits in some of the cases**

VI. Renewable Power - Issues in Existing Approach

- Renewable Energy is not uniformly distributed across the country.
- Renewable Energy Certificates - trades in environmental attributes – do not take use of electricity generated into account
- The Major Issues with existing approach are:
 - Will Tamil Nadu or any resource rich State consume all electricity potential for renewable energy?
 - Capital cost reduction ?
 - Incentives accelerated deployment ?
 - Tariff reduction?

VII. Lessons from National Solar Mission

- **Solar Specific Portfolio Obligation Creates Volume and Market**
- **(*Recent Cabinet decision - 0.25% Solar RPO by 2013 and 3% by 2022*)**

- **Tariff based bidding have helped in substantially reducing the solar power cost**


- **Solar Power to be developed at the resource rich locations and transmitted to other States to meet their State Portfolio Obligation (SPO)**

- **High volume will further drive down tariff through:**
 - **Create ecosystem for Indigenous manufacturing**
 - **Innovation in**
 - **Financial engineering**
 - **Technological efficiency**
 - **Capital market**
 - **Lower interest cost**


VIII. The Way Forward-An Approach

- Renewable energy can be classified into three categories
 - infirm –Wind
 - less infirm- Solar
 - firm- Biomass , small hydro
- A. Renewable energy specific purchase obligation by every State will create technology specific markets
- B. Generation at source will meet PO demand of all States
- C. States should procure resource specific obligation only through competitive bidding process *(this will result in transparent tariff fixation and developers will compete innovate to bring down the tariff)*- this can be tried for Wind Power and Small Hydro in addition to Solar. Not suggested for biomass based power
- D. Once tariff for a particular renewable power achieves grid parity, demand will increase – same contemplated in solar Mission- *governments special protection will not be needed*
- E. *At the existing level feed-in-tariff, the pass through will range from 1-2 paise only-CRISIL Report-this is affordable- will reduce further if tariffs are determined competitively*
- F. *If tariff in competitive bidding is quoted below the feed-in-tariff-no requirement of any tariff increase*

IX. Incentivization to States

- **Incentive to resource rich State to facilitate development and exploitation of potential – as under 13th Finance Commission an incentive to States to achieve full purchase obligation**
 - **Development/upgradation of transmission infrastructure to be funded under National Clean Energy Fund to ensure low transmission cost**
 - **Incentive to resource poor States for taking up higher renewable purchase obligations to meet NAPCC goal**
 - **Transmission cost of renewable electricity should be fixed low (as is being done for solar electricity)**
 - **Support to the developers with low cost funds and also tax breaks over and above as available for conventional power projects**
- 

Ministry of Power, Ministry of New and Renewable Energy, Central Electricity Regulatory Commission and State Electricity Regulatory Commissions to work in tandem for achieving the proposed paradigm shift before 12th Five Year Plan commences



Thank You



III. Achievements- What Does it Convey

- Though 6% share in energy
- Development, Generation and consumption confined to few States viz Tamil Nadu, Maharashtra, Karnataka, Gujarat and Rajasthan
- In other words resource rich States alone are active
- Pan India market- not yet developed
- Puts limit to exploitation


State	Wind	Small Hydro	Biomass	Achievements
Gujarat	2176	16	5	2198
Karnataka	1727	783	372	2882
Maharashtra	2317	275	413	3005
Rajasthan	1525	155	78	1627
Tamil Nadu	5904	52	500	6500
Sub total				16212
Others				3760
TOTAL				19972

III. Renewable Purchase Obligation Issues

I. National Action Plan on Climate Change

- *Renewable Purchase Obligations*
 - *5% of grid power in 2009-10*
 - *to increase by 1% each year for 10 years*
 - *by 2020 to reach to 15%*
 - *SERCs may set higher percentages than minimum*

II. Tariff Policy

- *Renewable power procurement at preferential tariffs in short term*
 - *Competitive bidding within specific renewable sources in the future*
 - *In long term, these technologies will need to compete with other sources in terms of full costs*
 - *Solar Specific Purchase Obligation: 0.25% by 2013 and 3% by 2022*
- 

Renewable Purchase Obligation -Status

Northern Region		2011-12	2012-13	2013-14
Haryana	Solar			
	Non-Solar			
	Total	1% per discom	1% per discom	
Uttarakhand	Solar	0.03	0.05	
	Non-Solar	4.5	5	
	Total	4.53	5.05	
Himachal Pradesh	Solar	0.1	0.1	
	Non-Solar	11	12	
	Total	11.1	12.1	
Uttar Pradesh	Solar	0.5	1	
	Non-Solar	4.5	5	
	Total	5	6	
Rajasthan	Wind	4.5	5.1	5.7
	Biomass	1	1.25	1.5
	Solar	0.5	0.75	1
	Total	6	7.1	8.2
Jammu & Kashmir	Solar	0.1	0.25	
	Non-Solar	2.9	4.75	
	Total	3	5	

Renewable Purchase Obligation -Status

Western Region		2011-12	2012-13
Gujarat	Wind	5	5.5
	Solar	0.5	1
	Biomass & Others	0.5	0.5
	Total	6	7
Maharashtra	Solar	0.25	0.25
	Non-Solar	6.75	7.75
	Total	7	8
Madhya Pradesh	Solar	0.4	0.6
	Non-Solar	2.1	3.4
	Total	2.5	4
Chattisgarh	Small hydro	1.25	1.5
	Solar	0.25	0.25
	Biomass & Others	3.75	3.75
	Total	5.25	5.5

Renewable Purchase Obligation -Status

Southern Region		2011-12	2012-13
Tamil Nadu	Total	14 (2010-11)	
Kerala	Solar	0.25	0.25
	Non-Solar	3.05	3.38
	Total	3.3	3.63
Karnataka	Total		
Eastern Region			
Jharkhand	Solar	0.5	0.75
	Non-Solar	2.5	3
	Total	3	3.75
Orissa	Solar	0.5	0.75
	Non-Solar	5.5	6
	Total	6	6.75
Bihar	Total	2.5	4
West Bengal	Total	4	4
North Eastern Region			
Assam	Solar	0.1	0.15
	Non-Solar	2.7	4.05
	Total	2.8	4.2
Meghalaya	Total	0.75	1
Nagaland	Total	16	17
Manipur	Total	3	5
Mizoram	Total	6	7
Tripura	Total	2	

Renewable Purchase Obligation -Status

	2011-12	2012-13	2013-14
Gujarat	0.5	1	
Uttar Pradesh	0.5	1	
Rajasthan	0.5	0.75	1
Maharastra	0.25	0.25	
Himachal Pradesh	0.1	0.1	
Orissa	0.5	0.75	
Madhya Pradesh	0.4	0.6	
Chattisgarh	0.25	0.25	
Uttarakhand	0.03	0.05	
Jammu & Kashmir	0.1	0.25	
Kerala	0.25	0.25	
Jharkhand	0.5	0.75	
Assam	0.1	0.15	

Renewable Purchase Obligation -Status

States –Less than 6% RPO levels

		2011-12	2012-13
<i>Madhya Pradesh</i>	<i>Solar</i>	<i>0.4</i>	<i>0.6</i>
<i>Chattisgarh</i>	<i>Solar</i>	<i>0.25</i>	<i>0.25</i>
<i>Uttarakhand</i>	<i>Solar</i>	<i>0.03</i>	<i>0.05</i>
<i>Jammu & Kashmir</i>	<i>Solar</i>	<i>0.1</i>	<i>0.25</i>
<i>Kerala</i>	<i>Solar</i>	<i>0.25</i>	<i>0.25</i>
<i>Jharkhand</i>	<i>Solar</i>	<i>0.5</i>	<i>0.75</i>
<i>Assam</i>	<i>Solar</i>	<i>0.1</i>	<i>0.15</i>

Renewable Purchase Obligation -Status

States –More than 6% RPO levels				
		2011-12	2012-13	2013-14
Gujarat	Wind	5	5.5	
	Solar	0.5	1	
	Biomass & Others	0.5	0.5	
	Total	6	7	
Uttar Pradesh	Solar	0.5	1	
	Non-Solar	4.5	5	
	Total	5	6	
Rajasthan	Wind	4.5	5.1	5.7
	Biomass	1	1.25	1.5
	Solar	0.5	0.75	1
	Total	6	7.1	8.2
Maharashtra	Solar	0.25	0.25	
	Non-Solar	6.75	7.75	
	Total	7	8	
Himachal Pradesh	Solar	0.1	0.1	
	Non-Solar	11	12	
	Total	11.1	12.1	
Orissa	Solar	0.5	0.75	
	Non-Solar	5.5	6	
	Total	6	6.75	
Nagaland	Total	16	17	
Mizoram	Total	6	7	

Renewable Purchase Obligation -Status

States –Less than 6% RPO levels			
		2011-12	2012-13
Madhya Pradesh	<i>Solar</i>	<i>0.4</i>	<i>0.6</i>
	<i>Non-Solar</i>	<i>2.1</i>	<i>3.4</i>
	<i>Total</i>	<i>2.5</i>	<i>4</i>
Chattisgarh	<i>Small hydro</i>	<i>1.25</i>	<i>1.5</i>
	<i>Solar</i>	<i>0.25</i>	<i>0.25</i>
	<i>Biomass & Others</i>	<i>3.75</i>	<i>3.75</i>
	<i>Total</i>	<i>5.25</i>	<i>5.5</i>
Haryana	<i>Total</i>	<i>1% per discom</i>	<i>1% per discom</i>
Uttarakhand	<i>Solar</i>	<i>0.03</i>	<i>0.05</i>
	<i>Non-Solar</i>	<i>4.5</i>	<i>5</i>
	<i>Total</i>	<i>4.53</i>	<i>5.05</i>
Jammu & Kashmir	<i>Solar</i>	<i>0.1</i>	<i>0.25</i>
	<i>Non-Solar</i>	<i>2.9</i>	<i>4.75</i>
	<i>Total</i>	<i>3</i>	<i>5</i>
Kerala	<i>Solar</i>	<i>0.25</i>	<i>0.25</i>
	<i>Non-Solar</i>	<i>3.05</i>	<i>3.38</i>
	<i>Total</i>	<i>3.3</i>	<i>3.63</i>
Jharkhand	<i>Solar</i>	<i>0.5</i>	<i>0.75</i>
	<i>Non-Solar</i>	<i>2.5</i>	<i>3</i>
	<i>Total</i>	<i>3</i>	<i>3.75</i>
Bihar	<i>Total</i>	<i>2.5</i>	<i>4</i>
West Bengal	<i>Total</i>	<i>4</i>	<i>4</i>
Assam	<i>Solar</i>	<i>0.1</i>	<i>0.15</i>
	<i>Non-Solar</i>	<i>2.7</i>	<i>4.05</i>
	<i>Total</i>	<i>2.8</i>	<i>4.2</i>
Meghalaya	<i>Total</i>	<i>0.75</i>	<i>1</i>
Manipur	<i>Total</i>	<i>3</i>	<i>5</i>
Tripura	<i>Total</i>	<i>2</i>	



Issues on implementation of Open Access.

Forum of Regulators



Sushanta K.
Chatterjee

Deputy Chief-Regulatory Affairs
CERC

Date: 16.06.2011

24th Meeting of Forum
of Regulators



Forum of Regulators

Issues related to implementation of Open Access

Legal Opinion on the interpretation of section 86(1)(a) of the Electricity Act 2003.

Petition of MSEDCL on issue related to open Access.



Forum of Regulators

Issues related to implementation of Open Access

Legal Opinion on interpretation of section 86(1)(a) of the Electricity Act 2003.

Petition of MSEDCL on issues related to open Access.



1. Legal Opinion (1/5)

- Opinion of SG of India sought on the following main queries:
 - Whether Open Access is a choice or obligation/mandatory requirement for the Consumer?
 - Whether SERCs shall cease to regulate the tariff (energy charges) for all such consumers?
 - Whether the distribution licensee of their area of supply would no longer have the obligation to supply to these consumers?



1. Legal Opinion (2/5)

➤ SG's Opinion:

- *Section 42 being an enabling provision should not be interpreted to mean that all consumers satisfying the condition under regulations must necessarily avail open access..... As per Section 43 the distribution licensee is under obligation to supply electricity as and when requested to do so implying that the option and choices remain open to the consumers*



Legal Opinion (3/5)

- Letter by MoP to the Department of Legal Affairs (DoLA) raising the following issues for opinion:
 - Whether all bulk consumers (above 1 MW) shall be deemed to be open access consumers with effect from January 2009 in terms of the proviso to Section 42 (3).
 - Whether the regulatory commission can continue to regulate the tariffs for supply of electricity to the aforesaid open access consumers after January 2009.
 - Whether the jurisdiction of the State Commission in respect of the bulk consumer is limited to fixing the wheeling charges and surcharge thereon in accordance with the provisions of Section 49 and 86 (1) (a).



Legal Opinion (4/5)

➤ AG's Opinion:

- No, all bulk consumers are not deemed to be open access consumers. Only those who opt for open access are entitled to open access.
- The Jurisdiction of the State Commission in relation to bulk consumers who opt for open access is limited to the determination of wheeling charges and surcharge and not fixation of tariff.

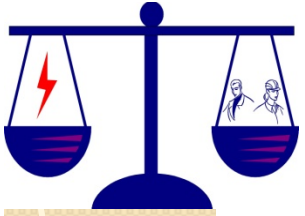


Legal Opinion (5/5)

➤ However, AG reconsidered his opinion based on a subsequent reference from Advisor to Deputy Chairman, Planning Commission and took the view that a State Commission cannot continue to regulate the tariff for supply of electricity to any consumer of 1 MW and above. This is based on the interpretation of amendment to Section 42 (2) first proviso in 2007 whereby the word “may” has been substituted by “shall”.

Remarks:

- *The objective of 2007 amendment was to omit the word ‘elimination’ and did not deal with the question as to whether open access is an option or a mandatory requirement.*
- *This is evident from the Statement of Reasons of the amendment of 2007.*
- *This point could not be brought to the notice of AG.*



Consequences of the AG's opinion:

- Whether condition of supply will continue to apply (USO)?
- Whether Standard of Performance (SoP) will continue to apply?
- What will happen to the agreement of supply between Discoms and such consumers?



Operational constraints (If OA becomes mandatory) (1/2)

- For the Open Access consumers:
 - Suddenly they will be forced to contract power (electricity component) from other sources.
 - Given that there is hardly any long-term surplus power available in the country for open access consumers to source power from, they will be at cross roads with uncertainty about supply.
 - Even if such consumers are able to contract power (possibly on short-term basis) there is no certainty about such contracted power reaching them without interruption, if they are connected to a meshed network for reasons being a distribution company in a shortage situation has to resort to load-shedding. In order to manage load, if it is required to discontinue supply to a particular feeder, there is no way that the discom can isolate any open Access consumer connected to that feeder to ensure uninterrupted supply for that Open Access consumer.
 - They have to depend on the local licensee for standby supply. This will increase costs for such consumers. At the same time, there are serious doubts about discom's capability to provide for standby supply for such large number of consumers. Most of these consumers being industrial or commercial consumers, such uncertainty could severely affect the economy of the country.
 - The other fall out could be that the consumers would be forced to buy the electricity component from the local licensee (not at regulated price) but at any arbitrary price dictated by the local discom. Section 49 provides that on grant of open access, agreement between the supplier and open access consumer (including the price of power supply) will be mutually decided. Given the aforesaid constraints, the local discom



Operational constraints (If OA becomes mandatory)(2/2)

- For the distribution companies:
 - If suddenly all one MW and above consumers are forced to seek power through open access, there will be uncertainty for the Discoms in terms of recovery of cost of long term procurement of power.
 - The Discom's contract power on long-term basis based on the load in their area, and the fixed cost for such power procurement is a sunk cost.
 - There is a provision for recovery of stranded cost through additional surcharge but this would have severe adverse impact on the open access consumers.



Forum of Regulators

Issues related to implementation of Open Access

Legal Opinion on the interpretation of section 86(1)(a) of the Electricity Act 2003.

Petition of MSEDCL on issue related to open Access.



2. Petition of MSEDCL on issues related to open Access.

Issues:

- Methodology to determine Cross Subsidy surcharge.
- Standby arrangement to be provided by DISCOM.
- Open access transactions through power exchanges.



Snapshot of Tariff Order of MSEDCL for FY 2010-2011

Annual Revenue Requirement(2010-11)		Rs. Cr.	30901
Total Sales		MUs	70,480
Total revenue from sales		Rs. Cr.	29,993
Sales to 1 MW and above consumers		MUs	12984.25
Revenue from Sales to 1 MW and above consumers		Rs. Cr.	7175.37
Transmission Loss		%	4.85%
Wheeling Loss(at 22/11 kv)		%	9.00%
Wheeling Charge (at 22/11 kv)		Rs/kWh	0.21
Average Cost of Supply		Rs./Unit	4.38
Tariff of Consumer (5MW at 11 KV)		Rs./Unit	5.53
No of Applications pending	For 1 MW and Above	Nos	128
	Less than 1 MW	Nos	511185
Contracted Demand of Pending Applications	For 1 MW and Above	MW	NA
	Less than 1 MW	MW	NA
<u>Total Power Purchase</u>		MUs	90793
Total Power Purchase Cost		Rs. Cr.	23791
Average Power Purchase Cost		Rs./Unit	2.62



Maharashtra Case Study (MSEDCL) 2010-11

Forum of Regulators

Scenario I

All the consumers of 1 MW and above opt for Open access and Discom avoids the variable cost of Power procurement (in descending order @ Rs./unit).

Scenario II

10% of eligible consumers opt for open access and Discom avoids the variable cost of power procurement (in descending order @ Rs./unit).

Scenario III

10% of eligible consumers opt for open access and Discom sells power available to its existing consumers @ average revenue realization.

Scenario IV

All eligible consumers opt for open access and Discom sells power available to its existing consumers @ average revenue realization.

Scenario V

10% of eligible consumers opt for open access and Discom sells power available to new consumers of same category



Scenario-I-MSEDCL

Forum of Regulators

All the consumers of 1 MW and above opt for Open access and Discom avoids the variable cost of Power procurement (in descending order @ Rs./unit).

Particulars	Unit	Details	Formulae
Total ARR	Rs Cr.	30901	W
Total Power Purchase Cost	Rs Cr.	23791	X
Total Sales	MUs	70480	Y
Average Cost of Supply	Rs./Unit	4.38	$Z=W*10/Y$
Total units sold to eligible Open Access Consumers (1 MW and above)	MUs	12,984	A
Total units wheeled for eligible Open Access Consumers (1 MW and Above)	MUs	14,268	$B=A/(1-\text{wheeling loss})$
Total Energy purchase avoided by DISCOM	MUs	14,996	$C=B/(1-\text{Transmission loss})$
Expenditure/Revenue Loss			
Revenue from sales to outgoing consumers	Rs. Cr.	7,175	D
Total	Rs. Cr.	7175	$E=D$
Savings / Receipts			
Power procurement variable cost avoided	Rs. Cr.	3925	F
wheeling charges (@ 21 paise/unit)	Rs. Cr.	300	$G=.21*B/10$
Total	Rs. Cr.	4224	$H=F+G$
Loss in case consumer opts for Open Access	Rs. Cr.	2951	$I=E-H$

Impact on ARR

Revised ARR	Rs Cr.	33852	$W'=W+H$
Revised Sales	MUs	57496	$Y'=Y-A$
Revised Average Cost of Supply	Rs./Unit	5.89	$Z'=W'/Y'*10$



Scenario-II MSEDCL

Forum of Regulators

10% of eligible consumers opt for open access and Discom avoids the variable cost of power procurement (in descending order @ Rs./unit).

Particulars	Unit	Details	Formulae
Total ARR	Rs Cr.	30901	W
Total Power Purchase Cost	Rs Cr.	23791	X
Total Sales	MUs	70480	Y
Average Cost of Supply	Rs./Unit	4.38	$Z=W*10/Y$
Total units sold to 10% of eligible Open Access Consumers (1 MW and above)	Mus	1,298	A
Total units wheeled for eligible Open Access Consumers (1 MW and Above)	MUs	1,427	$B=A/(1-\text{wheeling loss})$
Total Energy purchase avoided by DISCOM	MUs	1,500	$C=B/(1-\text{Transmission loss})$
Expenditure/Revenue Loss			
Revenue from sales to 10% of outgoing consumers	Rs. Cr.	718	D
Total	Rs. Cr.	718	$E=D$
Savings / Receipts			
Power procurement variable cost avoided	Rs. Cr.	421.65	F
Wheeling charges (@ 25 paise/unit)	Rs. Cr.	29.96	$G=B*.21/10$
Total	Rs. Cr.	451.62	$H=F+G$
Surplus in case 10% of eligible consumer opts for Open Access	Rs. Cr.	265.92	$I=E-H$

Impact on ARR

Revised ARR	Rs Cr.	30635	$W'=W-I$
Revised Sales	MUs	69182	$Y'=Y-A$
Revised Average Cost of Supply	Rs./Unit	4.43	$Z'=W'/Y'*10$



Scenario-III MSEDCL

10% of eligible consumers opt for open access and Discom selling power available to its existing consumers @ average revenue realisation.

Particulars	Unit	Details	Formulae
Total ARR	Rs Cr.	30901	W
Total Sales	MUs	70480	Y
Average Cost of Supply	Rs./Unit	4.38	$Z=W*10/Y$
Total units sold to 10% of eligible Open Access Consumers (1 MW and above)	Mus	1,298	A
Total units wheeled for eligible Open Access Consumers (1 MW and Above)	MUs	1,427	$B=A/(1-\text{wheeling loss})$
Revenue realisation from sale of Power	Rs. Cr.	29,993	C
Avg. Revenue realisation	Rs./kWh	4.26	$D=C*10/Y$
Expenditure/Revenue Loss			
Revenue from sales from 10% of outgoing consumers	Rs. Cr.	718	E
Savings / Receipts			
Revenue from sale of units @ avg. revenue realisation to existing consumer	Rs. Cr.	552.55	$F=D*A/10$
Wheeling charges (@ 21 paise/unit)	Rs. Cr.	29.96	$G=.21*B/10$
Total	Rs. Cr.	582.51	$H=F+G$
Loss in case consumer opts for Open Access	Rs. Cr.	135.02	$I=E-H$

Impact on ARR

Revised ARR	Rs Cr.	31036	$W'=W+I$
Revised Average Cost of Supply	Rs./Unit	4.40	$Z'=W'/Y*10$



Scenario-IV MSEDCL

All eligible consumers opt for open access and Discom selling power available to its existing consumers @ average revenue realisation.

Particulars	Unit	Details	Formulae
Total ARR	Rs Cr.	30901	W
Total Sales	MUs	70480	Y
Average Cost of Supply	Rs./Unit	4.38	$Z=W*10/Y$
Total units sold to eligible Open Access Consumers (1 MW and above)	MUs	12,984	A
Total units wheeled for eligible Open Access Consumers (1 MW and Above)	MUs	14,268	$B=A/(1-\text{wheeling loss})$
Revenue realisation from sale of Power	Rs. Cr.	29,993	C
Avg. Revenue realisation	Rs./kWh	4.26	$D=C*10/Y$
Expenditure/Revenue Loss			
Revenue from sales from outgoing consumers	Rs. Cr.	7175	E
Savings / Receipts			
Revenue from sale of units @ avg. revenue realisation to existing consumer	Rs. Cr.	5525.49	$F=D*A/10$
Wheeling charges (@ 21 paise/unit)	Rs. Cr.	299.64	$G=.21*B/10$
Total	Rs. Cr.	5825.13	$H=F+G$
Loss in case consumer opts for Open Access	Rs. Cr.	1350.24	$I=E-H$

Impact on ARR

Revised ARR	Rs Cr.	32251	$W'=W+I$
Revised Average Cost of Supply	Rs./Unit	4.58	$Z'=W'/Y*10$



Scenario-V MSEDCL

10% of eligible consumers opt for open access and Discom selling power available to new consumers

Particulars	Unit	Details	Formulae
Total units sold to 10% of eligible Open Access Consumers (1 MW and above)	Mus	1,298	A
Average tariff of HT Category	Rs./kW h	5.53	B
Expenditure/Revenue Loss			
Revenue from sales from 10% of outgoing consumers	Rs. Cr.	717.54	C
Savings / Receipts			
Revenue from sale of saved units to new consumers	Rs. Cr.	717.54	D=C
Wheeling charges (@ 21paise/unit)	Rs. Cr.	29.96	E
Total	Rs. Cr.	747.50	F=D+E
Surplus in case 10% existing consumer opts for Open Access and being replaced by new HTP Consumers	Rs. Cr.	29.96	G=F-C

Note: As per the information received by the distribution utility, there are more than 120 applications pending for new connection with contracted demand of 1 MW and above. This implies, that the expected consumption of new connection will be more than consumption of 10% of the consumers, leaving for OA.



Consumer Perspective- MSFDCI

Maharashtra- Comparative analysis for a 5 MW, 11 kV embedded consumer procuring power through open access.

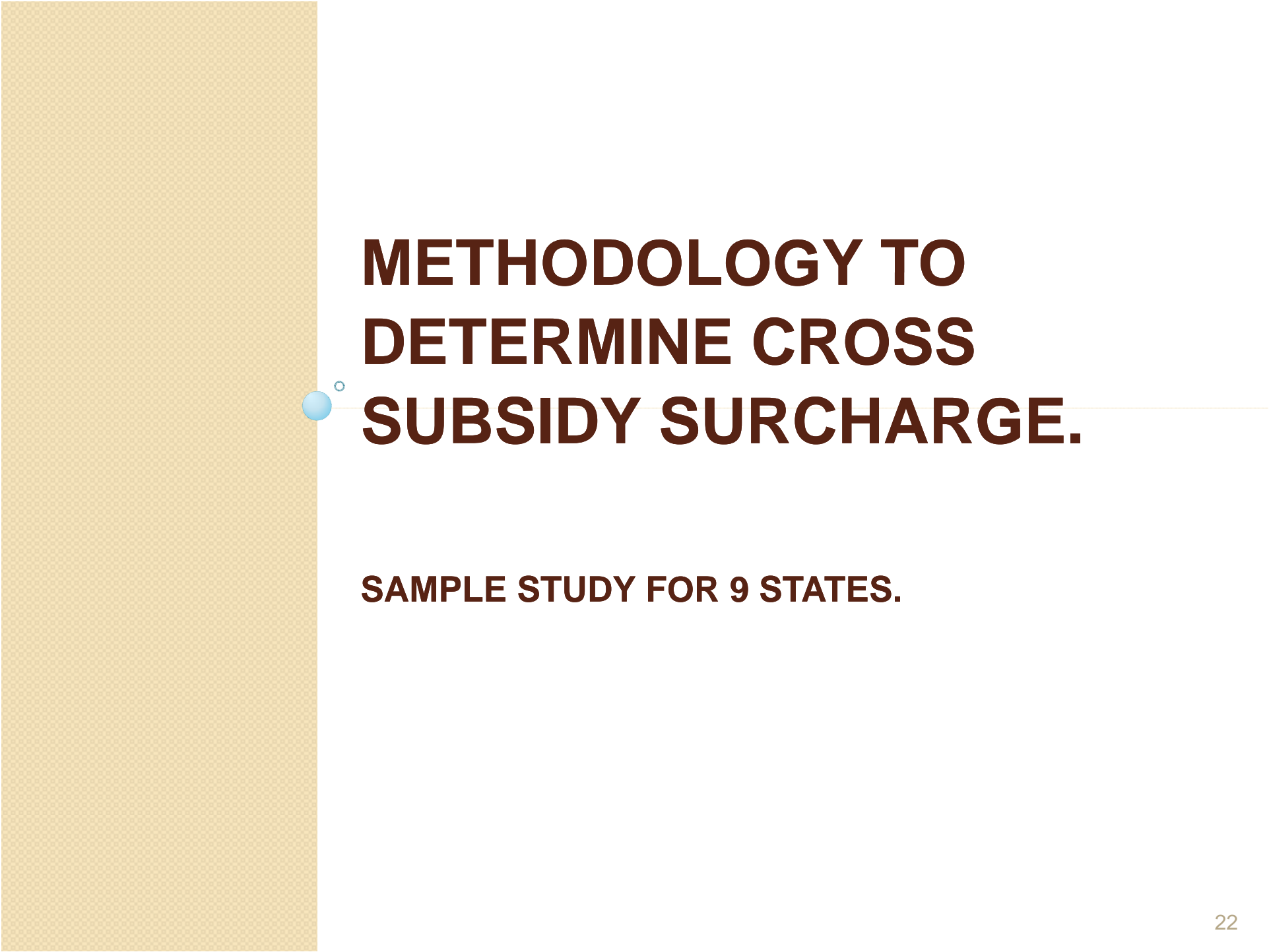
	(Rs./kWh)				
Particulars	Short term		Long term		Formulae
	Max	Min	Case I***	Case II****	
Power Purchase cost assumed *	4.00	2.73	2.64	2.95	A
Tariff (Discom) **	5.53	5.53	5.53	5.53	B
Intra State Open Access					
Open Access Charges Payable	0.31	0.31	0.25	0.25	C
Loss Compensation	0.62	0.42	0.41	0.46	D
Net Charge payable by OA Consumers	0.93	0.74	0.66	0.71	E=C+D
Net Cost payable by intra-State OA Consumers (including cost of procurement)	4.93	3.47	3.30	3.66	F=A+E
Difference (Rs/ kWh)-Intra State	-0.59	-2.06	-2.23	-1.87	G=F-B
Inter State Open Access within the region (WR)					
Loss Compensation (Rs./kWh)	0.92	0.63	0.61	0.68	H
Inter state transmission charges (WR)	0.15	0.15	0.15	0.15	I
Net Cost payable by inter-State OA Consumers (including cost of procurement)	5.07	3.51	3.40	3.78	J=H+I
Difference (Rs/ kWh)-Inter State	-0.46	-2.02	-2.13	-1.75	K=J-B

*Power purchase cost assumed as per the CERC's MMC report for the month of October,2010.

**Tariff for an embedded consumer of 5MW at 11 KV.

***Average levelized tariff of total nine projects under case I bidding across the country.

**** Average levelized tariff of total five projects under case II bidding across the country.



METHODOLOGY TO DETERMINE CROSS SUBSIDY SURCHARGE.

SAMPLE STUDY FOR 9 STATES.



Assumptions

- Study has been done based on the approved ARR/Tariff orders of various Discoms for year FY2010-11.
- Where breakup of variable and fixed cost of station-wise Power Purchase cost was not available, variable cost assumed as 60% of total power purchase cost.
- Tariff ('T') of the consumer category has been calculated as the average realization from that particular category (i.e. revenue/sales).
- For States where approved sales and revenue numbers were not available, T has been calculated by adding demand and energy charges with assumption of 80% as load factor.



Methodology for calculation of Surcharge

1. $T - ACS$
2. $T - (C*(1+L)+D)$
3. $T - (C*(1+(L+TI))+D)$
4. $T - (APPC*(1+L)+D)$
5. $T - (C/(1-L)+D)$
6. $T - (AR+D/(1-L))$

Where,

T = Tariff payable by the relevant category of consumers (Revenue/sales)

ACS = Average Cost of Supply (ARR/Sales)

C = Weighted average cost of power purchase of top 5% at the margin excluding liquid fuel based generation and renewable power

L = System Losses for the applicable voltage level, expressed as a percentage

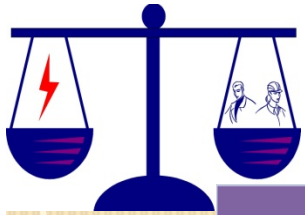
D = Wheeling charge of relevant consumer category

TI = Intra-State Transmission Losses

APPC = Average Power purchase Cost

AR = Average Revenue Realization (Revenue from sale of power/total sales)

Other methods for surcharge calculation: LRIC/Marginal Cost method and Cost to Serve method, not feasible in the absence of data.



Snapshot of CSS analysis for Nine states (1/2)

Forum of Regulators

Median of all consumer category								Weighted Average of all consumer categories		
State	DISCOM	T-ACS	T- (C*(1+L)+D)	T- (c*(1+(L+Tl))+D)	T- (appc*(1+L)+D)	T- (C/(1-L)+D)	T- (AR+D/(1-L))	T- (C/(1-L)+D)	T- (AR+D/(1-L))	T- (ACS+D/(1-L))
Andhra Pradesh	CSPDCL	0.55	0.78	0.66	1.08	0.75	0.54	-0.33	-0.05	-0.33
	EPDCL	-0.75	0.03	-0.09	0.31	0.03	-0.54	-0.35	-0.10	-0.35
	NPDCL	-0.92	-0.18	-0.30	0.11	-0.19	0.52	-1.54	-0.01	-1.54
	SPDCL	0.50	1.03	0.90	1.32	1.00	0.95	-0.80	-0.02	-0.80
Bihar	BSEB	-1.44	-0.76	-0.91	0.68	-0.79	-0.22	-0.94	-0.39	-1.95
Gujarat	DGVCL-GJ	-0.56	-3.21	-3.47	0.05	-3.28	-0.66	-2.75	-0.12	-0.46
	PGVCL-GJ	-0.36	-2.97	-3.20	0.94	-3.03	0.20	-3.36	-0.13	-1.13
	MGVCL-GJ	-0.85	-3.24	-3.50	0.22	-3.31	-0.36	-2.95	0.01	-0.92
	UGVCL-GJ	1.45	1.08	0.95	1.95	1.04	1.84	1.19	1.99	1.19
Haryana	UHBVNL	-0.80	0.54	0.34	1.07	0.53	1.34	-2.29	-0.64	-2.29
	DHBVNL	-0.80	0.54	0.34	1.07	0.53	0.72	-2.29	-0.19	-2.29
Karnataka	BESCOM	0.21	-0.70	-0.89	1.32	-0.71	0.40	-0.54	-1.32	-0.54
	MESCOM	-0.17	-3.53	-3.81	1.06	-3.56	0.29	-1.12	-4.25	-1.12
	HESCOM	-0.49	-1.68	-1.87	0.89	-1.70	1.33	-2.98	-3.61	-2.98
	GESCOM	-0.06	-1.97	-2.17	1.27	-2.01	1.26	-2.26	-3.71	-2.26
	CESC	0.05	-1.29	-2.41	1.40	-1.31	1.40	-2.06	-3.10	-2.06
Maharashtra	MSEDCL	0.82	-0.31	-0.54	1.99	-0.38	0.62	-0.68	0.24	0.12
Madhya Pradesh	EAST	0.39	0.25	1.02	1.70	-0.15	-0.13	-0.31	-0.29	-0.05
	WEST	0.06	-1.39	-1.62	1.98	-1.81	0.22	-2.30	-0.27	-0.25
	CENTRAL	0.16	-0.01	-0.16	1.28	-0.51	-0.19	-0.62	-0.30	-0.25
Punjab	PSEB	0.09	-1.58	-1.58	0.94	-1.63	-0.27	-1.79	-0.42	-0.84
Uttarakhand	UPPCL	-0.30	-2.65	-6.42	0.78	-2.88	-0.37	-2.60	-0.11	-0.05



Snapshot of CSS analysis for Nine states.(2/2)

Forum of Regulators

State	DISCOM	Median of subsidizing category						Weighted Average of subsidizing consumer categories		
		T-ACS	T- (C*(1+L)+D)	T- (c*(1+(L+TI))+D)	T- (appc*(1+L)+D)	T- (C/(1-L)+D)	T-(AR+D/(1-L))	T- (C/(1-L)+D)	T-(AR+D/(1-L))	T-(ACS+D/(1-L))
Andhra Pradesh	CSPDCL	1.17	1.54	1.42	1.83	1.54	1.24	1.40	1.12	0.85
	EPDCL	0.97	1.50	1.38	1.80	1.49	1.01	1.80	1.29	1.05
	NPDCL	0.85	1.59	1.46	1.88	1.56	2.28	1.48	2.21	0.74
	SPDCL	0.79	1.66	1.54	1.95	1.66	1.49	1.62	1.52	0.74
Bihar	BSEB	0.14	0.86	0.68	2.26	0.80	1.36	0.94	1.50	-0.07
Gujarat	DGVCL-GJ	0.34	-2.03	-2.29	1.24	-2.10	0.55	-2.12	0.53	0.18
	PGVCL-GJ	0.81	-1.80	-2.03	2.11	-1.86	1.37	-1.55	1.70	0.70
	MGVCL-GJ	0.15	-2.00	-2.26	1.46	-2.07	0.90	-2.11	0.86	-0.07
	UGVCL-GJ	1.53	1.36	1.23	2.23	1.33	2.15	1.97	2.78	1.97
Haryana	UHBVNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	DHBVNL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Karnataka	BESCOM	1.68	0.61	0.41	2.66	0.58	1.80	1.47	0.76	1.47
	MESCOM	1.67	-1.54	-1.82	3.05	-1.58	2.25	1.26	-1.84	1.26
	HESCOM	1.49	0.30	0.10	2.86	0.28	3.31	0.60	-0.12	0.60
	GESCOM	2.08	0.10	-0.11	3.34	0.06	3.33	0.75	-0.67	0.75
	CESC	1.00	-0.33	-1.14	2.34	-0.35	2.33	0.89	-0.06	0.89
Maharashtra	MSDCL	2.42	1.54	1.31	3.79	1.50	2.37	0.43	1.27	1.15
Madhya Pradesh	EAST	1.18	1.03	1.79	2.49	0.64	0.66	0.61	0.64	0.87
	WEST	1.07	-0.82	-1.05	2.55	-1.25	0.78	-1.23	0.80	0.83
	CENTRAL	1.17	1.00	0.85	2.29	0.50	0.82	0.45	0.77	0.82
Punjab	PSEB	0.25	-1.42	-1.42	1.10	-1.47	-0.11	-1.57	-0.20	-0.62
Uttarakhand	UPPCL	0.49	-1.97	-5.74	1.46	-2.19	0.31	-2.14	0.35	0.43



Inferences/suggestions (1/2)

- Difficult to apply a uniform formula for surcharge calculations for all states.
- Surcharge can vary depending on the level of 'T', 'C', 'L', 'D', 'APPC', 'ACS' and 'AR'.
- Prerequisite for reasonableness of surcharge is the rationalization of Tariff ('T').
 - Act/Tariff Policy requires SERCs to specify a roadmap for tariff rationalization.



Inferences/suggestions (2/2)

Suggestion for consideration

- Surcharge can be calculated by the following formula:

$$\text{median of } [T - (AR + (D / (1 - L)))]$$

Where,

T = Tariff payable by the relevant category of consumers (Revenue/sales)

L = System Losses for the applicable voltage level, expressed as a percentage

D = Wheeling charge of relevant consumer category

AR = Average Revenue Realization (Revenue from sale of power/total sales)

- Where surcharge calculated on above method yields negative or very high value, SERC may adopt a variant after consulting FoR.
- If agreed we can request MoP to suitably amend Tariff Policy based on above suggestions.
- Study to
 - evolve uniform method of calculation of T, AR, D and L and consequently surcharge (in house study based on data to be provided by SERCs);
 - road map for reduction of cross subsidy

STANDBY CHARGES



**SAMPLE STUDY OF ISPAT INDUSTRY
OF MAHARASHTRA.**



Stand-by Support-Sample case (MSEDCL)

MSEDCL Consumer - Ispat industries Ltd.

General Data

Contract Demand	300 MVA	V
Monthly consumption	160 Mus	X
Tariff Category	HT-I industry Express feeder	
	Energy charge (Rs./ unit)	5.27 Y
	Demand/fixed charge (Rs./ kVA per month)	150.00 Z

Calculation for Standby Charges as per FOR recommendation-Model regulation (42 days)

	Total units consumed for 42 days	224 Mus	$A = X * 42 / 30$
Scenerion A	If the consumer opts for OA and seeks standby facility (at tariff of consumer)		Formulae
	Energy charge	118.05 Rs. Cr	$B = A * Y$
	Demand Charges	6.30 Rs. Cr	$C = Z * V (42/30) * 1000 / 10^7$
	Total bill	124.35 Rs. Cr	$D = B + C$
	Per unit cost	5.55 Rs./unit	$E = D * 10 / A$
	Standby charges (Fixed/demand charge)	6.30 Rs. Cr Lumpsum for a year	$F = C$
	Standby charges (Fixed/demand charge) per unit	0.28 Rs./unit	$G = F * 10 / A$
	Demand charges spreadover 365 days so per day charge	0.017 Rs. Cr per day	$H = C / 365$
Scenerion 2	If the consumer opts for OA and seeks standby facility (at temporary supply tariff)		Formulae
	Energy charge per unit	10.12 Rs./unit	a
	Demand/fixed charge	150.00 Rs. Per 10 kW per month	b
	Energy charge	226.69 Rs. Cr.	$c = a * A / 10$
	Demand Charges	0.63 Rs. Cr.	$d = b * V (42/30) * 1000 / (10 * 10^7)$
	Total bill	227.32 Rs. Cr.	$e = c + d$
	Per unit cost	10.15 Rs. /unit	$f = e * 10 / A$
	Standby charges (Fixed/demand charge)	0.63 Rs. Cr Lumpsum for a year	$g = d$
	Standby charges (Fixed/demand charge) per unit	0.028 Rs./unit	$h = g * 10 / A$
	Demand charges spreadover 365 days so per day charge	0.0017 Rs. Cr per day	$i = g / 365$

At present in Maharashtra, the Standby charges is equal to the temporary supply tariff

Standby charges (Fixed/demand charge)	5.40 Rs. Cr Lumpsum for a year	$S = b * V * 1000 * 12 / (10 * 10^7)$
Energy charge per unit	10.12 Rs./unit	



POWER PURCHASE THROUGH POWER EXCHANGES



Issue raised by MSEDCL

- Consumers take their chances at the exchanges to switch off supply from the licensee when the exchange traded power is cheap, and resume supply from the licensee when the exchange power is expensive. This is causing havoc in the system in terms of provisioning of **standby power, and scheduling**, and surcharge, inter alia.
- MSEDCL also submitted that the **Regulation on Open Access by MERC** (Distribution Open Access, Regulation 2005) **predate** the introduction of the **energy exchanges** and not a word is breathed in these regulations about energy exchange related transactions. The MERC is permitting exchange related open access without having followed the mandate of the Act. There are no State regulations governing such exchange related transactions, but the MERC continues to allow all such transactions routinely



Supreme Court Order (23/05/2011) (Extract)

**Petition(s) for Special Leave to Appeal (Civil)
No(s).14984/2011- MSEDCL Vs MERC**

- *We have heard Shri Vikas Singh, learned senior counsel appearing for the petitioner, Shri Parag P.Tripathi, learned Additional Solicitor General appearing for respondent No.1, Shri Jayant Bhushan, Senior Advocate and other learned counsel appearing for the private respondents and perused the record. In our considered view, the reasons assigned by the Division Bench for refusing to entertain the petitioner's prayer do not suffer from any legal infirmity and the impugned order does not call for interference under Article 136 of the Constitution.*
- *The special leave petitions are accordingly dismissed.*
- *However, we request the High Court to make an endeavour to dispose of the writ petition as early as possible.*



High Court Order (NO.666 OF 2011) MSEDCL V/s MERC dated 4th MAY, 2011

- 10. Besides, the order about which grievance is made was passed as far back as on 5/9/2006. The petitioner took no steps to challenge it immediately. In fact, a remedy of appeal was available to the petitioner under Section 111 of the said Act which the petitioner did not avail. That order has assumed finality. The MERC (Distribution Open Access) Regulations 2004 were not challenged by the petitioner. They have also assumed finality. This also dis-entitles the petitioner from getting any interim relief. Prima facie, we feel that Mr. Khambatta is right in submitting that the petitioner can always sell the quantum of electricity which the open access consumer does not need, to the willing purchasers and earn revenue thereby.
- 11. We may also refer to the affidavit of Mr. Parulekar, the Under Secretary of the MERC where he has stated that the Tariff Policy has considered that in case a consumer opts for open access, the distribution licensee could be in a position to discontinue purchase of power at the margin in the merit order and, therefore, the formula stipulated in the Tariff Policy has considered deduction of "C" being the cost of power purchase at top 5% margin. Prima facie, we find no difficulty in accepting the statement made on oath by the MERC's Under Secretary that in view of the above, the distribution licensee benefits in terms of reduction of a part of the highest cost power which results into benefits to the consumers of the licensee.



High Court Order (NO.666 OF 2011) MSEDCL V/s MERC dated 4th MAY, 2011

- 12. So far as draft regulations are concerned, since they are not finalized, they are subject to changes. In fact, they were put for suggestions and objections of the petitioner. In our prima facie opinion, the petitioner is trying to prejudge the validity, legality and efficacy of the regulations. It would be premature to opine on the draft regulations at this stage. Their finalization cannot be stayed.
- 13. In view of the above, the prayer for interim relief is rejected. We make it clear that the MERC would be at liberty to raise the preliminary objection about the maintainability of this petition on the ground of availability of an alternative remedy at the final hearing.



THANK YOU



BACKUP SLIDES



Power Purchase Portfolio-MSEDCL(2010-11)

Source	Mus	Rs. Cr.	Rs./unit
NCE	4114	2028	4.93
RGPPL	11000	5155	4.69
CPP	392	172	4.39
GANDHAR	1314	573	4.36
DODSON II	43	15	3.49
KhTPS-I	61	19	3.11
KhTPS-II	511	149	2.92
DODSON I	21	6	2.86
TAPP 3&4	1934	529	2.74
FSTPP	129	35	2.71
IPP - JSW	1310	354	2.70
Sipat TPS	2242	593	2.64
KAWAS GAS	1345	321	2.39
VSTP III	2211	520	2.35
MSPGCL	50490	11359	2.25
KAPP	368	80	2.17
SSP	635	130	2.05
PENCH	240	49	2.04
VSTP II	2652	501	1.89
TSTPS	84	13	1.55
VSTP I	3395	488	1.44
KSTPS	5096	587	1.15
TAPP 1&2	1206	115	0.95
Total Power Purchase	90793	23791	2.62

Discom may avoid procurement from these sources in descending order of per unit cost

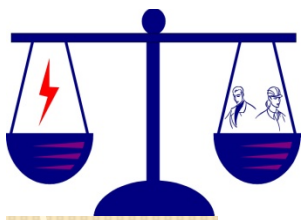
Source: Tariff order
MSEDCL for FY 10-11

*Variable cost assumed as 60% of the total Power procurement cost from each source



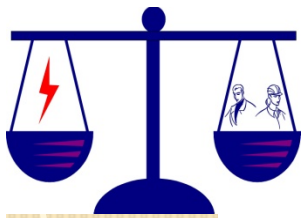
Loss Compensation-MSEDCL

Particulars	Short term		Long term		Formulae
	Max	Min	Case I	Case II	
Contracted Load (MW)	5	5	5	5	W
Base Energy Consumption (kWh)	3600000	3600000	3600000	3600000	$X=W*30*24*1000$
Power Purchase cost assumed *	4.00	2.73	2.64	2.95	Y
Intra State Open Access					
Wheeling Loss (%)	9.00%	9.00%	9.00%	9.00%	A
Energy injected into system at T>D (kWh)	3956043.96	3956043.96	3956043.96	3956043.96	$B=X/(1-A)$
Transmission loss (%)	4.85%	4.85%	4.85%	4.85%	C
Energy injected into system at G>T (kWh)	4157692.02	4157692.02	4157692.02	4157692.02	$D=B/(1-C)$
Loss (kWh)	557692.02	557692.02	557692.02	557692.02	$E=D-X$
Loss in Rs.	2230768.08	1522499.21	1472306.93	1645191.46	$F=E*Y$
Loss Compensation (Rs./kWh)	0.62	0.42	0.41	0.46	$G=F/X$
Inter State Open Access					
Transmission loss (WR) (%)	6.06%	6.06%	6.06%	6.06%	H
Energy injected into system at G>T (kWh)	4425901.66	4425901.66	4425901.66	4425901.66	$I=D/(1-H)$
Loss (kWh)	825901.66	825901.66	825901.66	825901.66	$J=I-X$
Loss in Rs.	3303606.64	2254711.53	2180380.38	2436409.90	$K=J*Y$
Loss Compensation (Rs./kWh)	0.92	0.63	0.61	0.68	$L=K/X$



Details of Case-I Projects

S. No.	Project	Size	Status	State	Developer	COD Date: 1st Unit	Levelized Tariff (Rs/kWh) as per Competitive Bidding
1	Kamalanga	3 X 350 MW	Tariff Approved	Haryana, Case 1	PTC/GMR	Oct. 2011	2.54
2	Babandh	4 X 660MW	Approved	Haryana, Case 1	LANCO	Jul-12	2.075
3	Mandva	2 X 660 MW	Approved	Maharashtra , Case 1	LANCO Mahanadi	Oct. 2012 *	2.7
4	Tiroda Ph.1	2 X 660 MW	Approved	Maharashtra , Case 1	Adani Maharashtra	Aug. 2012	2.642
5	Chitrangi, Ph 1	3 X 660 MW	Petition	MP, Case 1	Reliance	June, 2012	2.45
6	Mahan	2 X 600 MW	Petition	MP, Case 1	Essar	May, 2011*	2.45
7	Nandgaonpe th	2 X 660MW	Petition	Maharashtra , Case1	India Bulls	Mar. 2014	3.26
8	Tiroda Ph. 2	2 X 660 MW	Petition	Maharashtra , Case 1	Adani Maharashtra	Sept. 2014	3.28
9	Mahanadi	3 X 600 MW	Petition	Gujarat	KSK Energy	Mar. 2015	2.345
Average levellised tariff							2.64



Details of Case-II Projects

S. No.	Project	Size	Status	State	Developer	COD Date: 1st Unit	Levelized Tariff (Rs/kWh) as per Competitive Bidding
1	Talwandi Sabo	3 x 660 MW	Tariff Approved	Punjab/Case 2	Sterlite	Aug-12	2.8643
2	Rajpura	2 X 660 MW	Tariff Approved	Punjab/Case 2	L&T	Jan-14	2.89
3	Jhajjar	2 X 660 MW	Approved	Haryana, Case 2	CLP Power	Nov-Dec., 2012	2.996
4	Prayagraj	3 X 660MW	Petition	UP, Case 2	JP Associates	Jul-14	3.02
5	Sangam	2 X 660 MW	Petition	UP, Case 2	JP Associates	Jan, 2014	2.97
Average levellised tariff							2.95



CSS analysis of MSEDCL

Forum of Regulators

Category of consumer	ABR	ACS	T-ACS	T- (C*(1+L)+D)	T- (c*(1+(L+TI))+D)	T- (appc*(1+L)+D)	T- (C/(1-L)+D)	T-(ARR+D/(1-L))
LT I Domestic	3.67	4.38	-0.71	-2.03	-2.26	0.32	-2.14	-1.00
LT II Non domestic	6.61	4.38	2.23	0.91	0.68	3.26	0.80	1.94
LT III PWW	2.18	4.38	-2.20	-3.52	-3.75	-1.17	-3.63	-2.49
LT IV agriculture	1.96	4.38	-2.42	-3.74	-3.97	-1.39	-3.85	-2.71
LT V industries	5.17	4.38	0.79	-0.53	-0.76	1.82	-0.64	0.50
LT VI street light	3.5	4.38	-0.88	-2.20	-2.43	0.15	-2.31	-1.17
LT VII temporary others	11.69	4.38	7.31	5.99	5.76	8.34	5.88	7.02
LT VII temporary religious	2.52	4.38	-1.86	-3.18	-3.41	-0.83	-3.29	-2.15
LT VIII advertisement	17.96	4.38	13.58	12.26	12.03	14.61	12.15	13.29
crematorium and burial grnds	2.66	4.38	-1.72	-3.04	-3.27	-0.69	-3.15	-2.01
HT I-Cont (Express Feeders)	5.62	4.38	1.24	0.30	0.07	2.55	0.26	1.13
HT I-Non Cont (Non Express Feeders)	5.23	4.38	0.85	-0.09	-0.32	2.16	-0.13	0.74
HT I - Seasonal Category	6.92	4.38	2.54	1.60	1.37	3.85	1.56	2.43
HT II Commercial (Express feeders)	8.43	4.38	4.05	3.11	2.88	5.36	3.07	3.94
HT II Commercial (Non-Express feeders)	8.08	4.38	3.70	2.76	2.53	5.01	2.72	3.59
HT III Railways	5.8	4.38	1.42	0.48	0.25	2.73	0.44	1.31
HT IV PWW express feeder	4.02	4.38	-0.36	-1.30	-1.53	0.95	-1.34	-0.47
HT IV PWW non express feeder	3.96	4.38	-0.42	-1.36	-1.59	0.89	-1.40	-0.53
HT V Agriculture	2.39	4.38	-1.99	-2.93	-3.16	-0.68	-2.97	-2.10
HT VI Bulk supply residential	4.19	4.38	-0.19	-1.13	-1.36	1.12	-1.17	-0.30
HT VI - Bulk Supply (commercial)	6.8	4.38	2.42	1.48	1.25	3.73	1.44	2.31
HT-VII-MPECS	2.85	4.38	-1.53	-2.47	-2.70	-0.22	-2.51	-1.64



CSS analysis of MSEDCL

Forum of Regulators

Category of consumer	ABR	ACS	T-ACS	T- (C*(1+L)+D)	T- (c*(1+(L+TI))+D)	T- (appc*(1+L)+D)	T- (C/(1-L)+D)	T-(ARR+D/(1-L))
HT I-Cont (Express Feeders)	5.62	4.38	1.24	0.61	0.39	2.80	0.59	1.32
HT I-Non Cont (Non Express Feeders)	5.23	4.38	0.85	0.22	0.00	2.41	0.20	0.93
HT I - Seasonal Category	6.92	4.38	2.54	1.91	1.69	4.10	1.89	2.62
HT II Commercial (Express feeders)	8.43	4.38	4.05	3.42	3.20	5.61	3.40	4.13
HT II Commercial (Non-Express feeders)	8.08	4.38	3.70	3.07	2.85	5.26	3.05	3.78
HT III Railways	5.8	4.38	1.42	0.79	0.57	2.98	0.77	1.50
HT IV PWW express feeder	4.02	4.38	-0.36	-0.99	-1.21	1.20	-1.01	-0.28
HT IV PWW non express feeder	3.96	4.38	-0.42	-1.05	-1.27	1.14	-1.07	-0.34
HT V Agriculture	2.39	4.38	-1.99	-2.62	-2.84	-0.43	-2.64	-1.91
HT VI Bulk supply residential	4.19	4.38	-0.19	-0.82	-1.04	1.37	-0.84	-0.11
HT VI - Bulk Supply (commercial)	6.8	4.38	2.42	1.79	1.57	3.98	1.77	2.50
HT-VII-MPECS	2.85	4.38	-1.53	-2.16	-2.38	0.03	-2.18	-1.45
Median of all consumer category (11 kV)			0.30	0.42	0.19	2.61	0.40	1.13
Median of all consumer category (33 kV)			0.30	-0.68	-0.90	1.60	-0.74	0.19
Median of subsidizing category(33kV)			2.42	1.79	1.57	3.98	1.77	2.50
Median of subsidizing category(22/11kV)			2.42	1.48	1.25	3.73	1.44	2.31
median of all			0.82	-0.31	-0.54	1.99	-0.38	0.62
median of subsidizing category			2.42	1.54	1.31	3.79	1.50	2.37



Section 42 (2)

Section 42. (Duties of distribution licensee and open access): --- (1) It

.....

(2) *The State Commission shall introduce open access in such phases and subject to such conditions, (including the cross subsidies, and other operational constraints) as may be specified within one year of the appointed date by it and in specifying the extent of open access in successive phases and in determining the charges for wheeling, it shall have due regard to all relevant factors including such cross subsidies, and other operational constraints:*

Provided that ¹[such open access shall be allowed on payment of a surcharge] in addition to the charges for wheeling as may be determined by the State Commission:

Provided further that such surcharge shall be utilised to meet the requirements of current level of cross subsidy within the area of supply of the distribution licensee :

*Provided also that such surcharge and cross subsidies shall be progressively reduced ²[***] in the manner as may be specified by the State Commission:*

Provided also that such surcharge shall not be leviable in case open access is provided to a person who has established a captive generating plant for carrying the electricity to the destination of his own use:

³[Provided also that the State Commission shall, not later than five years from the date of commencement of the Electricity (Amendment) Act, 2003, by regulations, provide such open access to all consumers who require a supply of electricity where the maximum power to be made available at any time exceeds one megawatt.]

- ¹ *Subs. by Act 26 of 2007, Sec.7 for the words “such open access may be allowed before the cross subsidies are eliminated on payment of a surcharge” [w.e.f. 15th June 2007].*
- ² *The words “and eliminated” omitted by Act 26 of 2007, Sec.7 [w.e.f. 15th June 2007].*
- ³ *Ins. by Act 57 of 2003, Sec.3 [w.e.f. 27th January, 2004].*



Extract of Statement of Reasons of the Electricity Act (Amendment) 2007

- *Sections 38, 39, 40 ,42, 61, 178 and 181 of the Act, inter-alia, provides for reduction and ‘elimination’ of cross-subsidies. There has been a concern that though the cross subsidies may be reduced but elimination of such subsidies may not be feasible for the present. It is, therefore, proposed to amend the said section so as to do away with the ‘elimination’ of cross subsidies. However, reduction of cross subsidies will continue.*

Transition from MoU to Competitive Bidding: Good take-off but turbulence ahead

Discussion Paper by
Prayas Energy Group, Pune

About Prayas ...

www.amulya-reddy.org.in



**'Prayas' means
'Focused Effort'**

Based at Pune, India

**Research based, policy
advocacy Voluntary Org.**

**Focus on protection of
"Public Interest" in
electricity sector**

Activities:

- **Research & intervention (regulatory, policy)**
- **Civil Society training, awareness, and support**

Prayas Energy Group, India

Motivation for the study

- Bitter experience of MoU based projects in 1990s → Demand for competitive bidding
- Strong enabling framework for competitive bidding in E. Act 2003 and subsequent policies
- Increasing role of competitive bidding for capacity addition / contracting
- Need for comprehensive review of outcome of competitive bidding

Objectives of the study

- Provide overview of competitive bidding based contracting
- Assess competitiveness of tariff discovered through bidding
- Analyze key strengths and weaknesses of bidding framework (from governance perspective)
- Methodology & data sources:
 - Regulatory commission and discom websites
 - SERC orders (approving deviations, tariff adoption etc.), Published documents as per CBG
 - DRHPs submitted to stock exchanges, media / power sector magazines



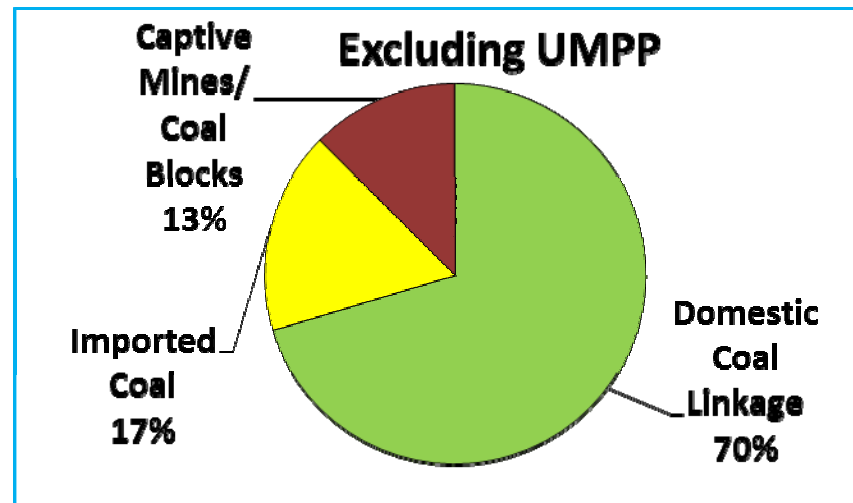
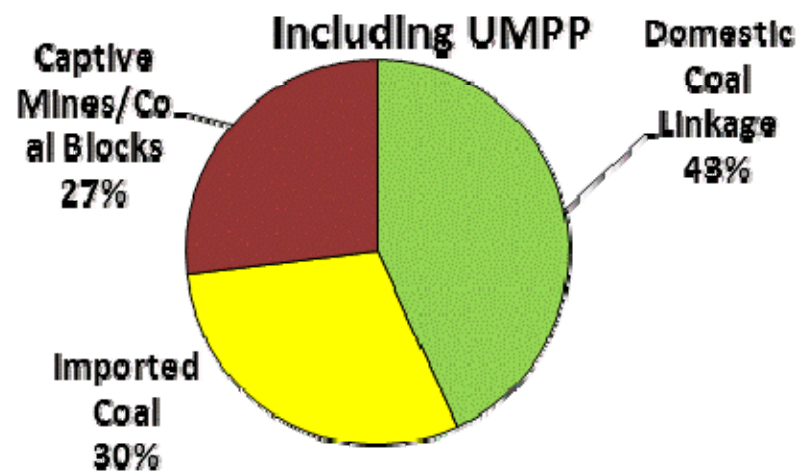
Outline

- Overview of capacity contracted
- Analysis of competitiveness of tariff
- Governance challenges
- Suggestions for way forward

Overview of capacity contracted

..1

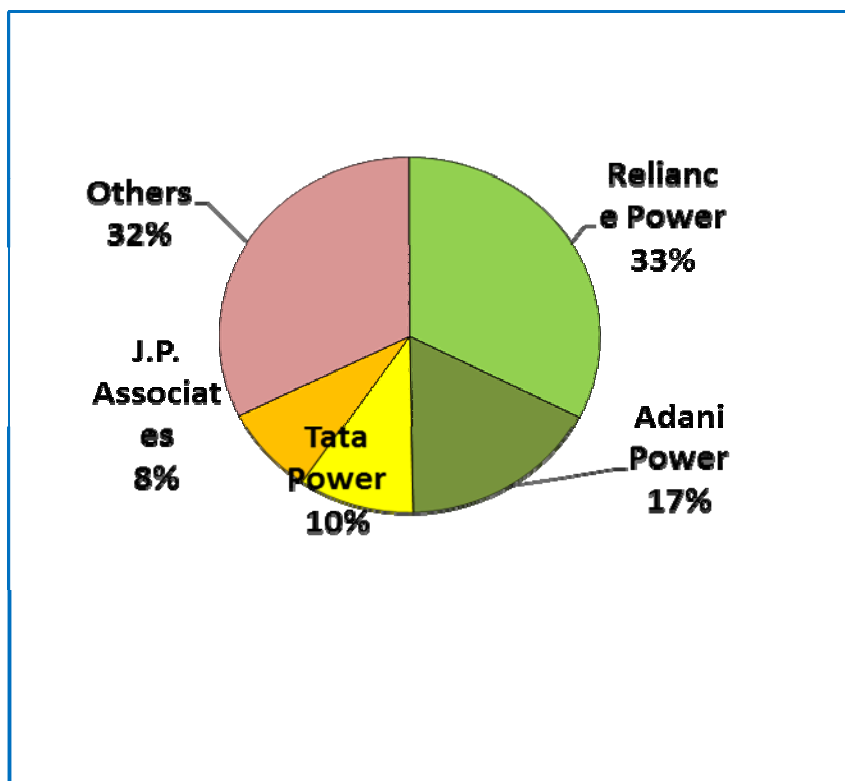
- Over 42,000 MW capacity contracted through bidding (Case 1 -16,265 MW, Case 2 – 10340 MW, UMPP 16,000 MW)
- Capacity contracted – Fuel source wise break-up



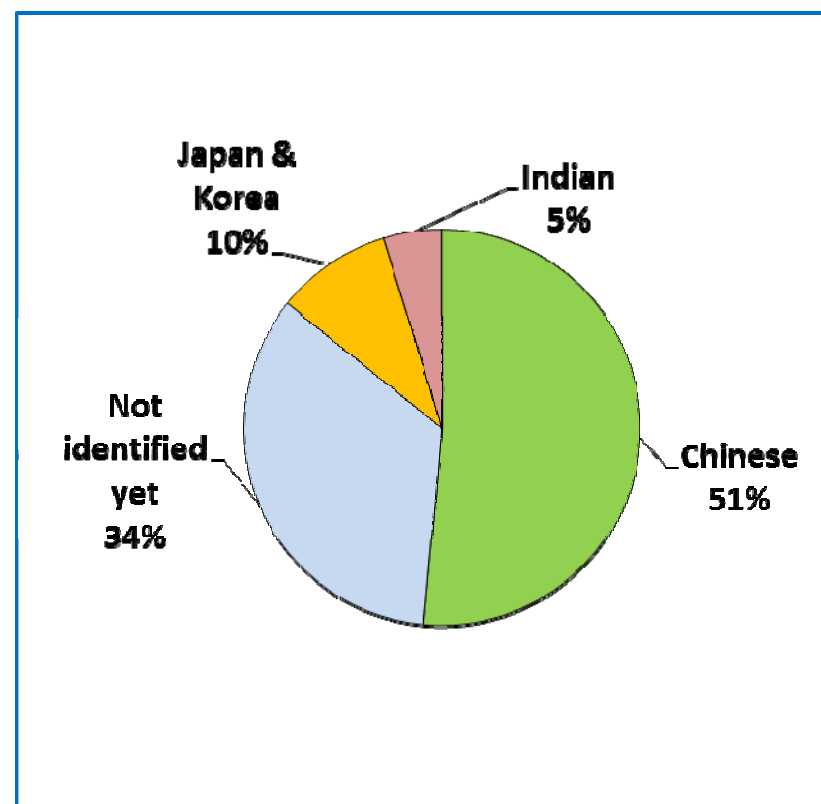
Overview of capacity contracted

..2

Break-up based on
developers

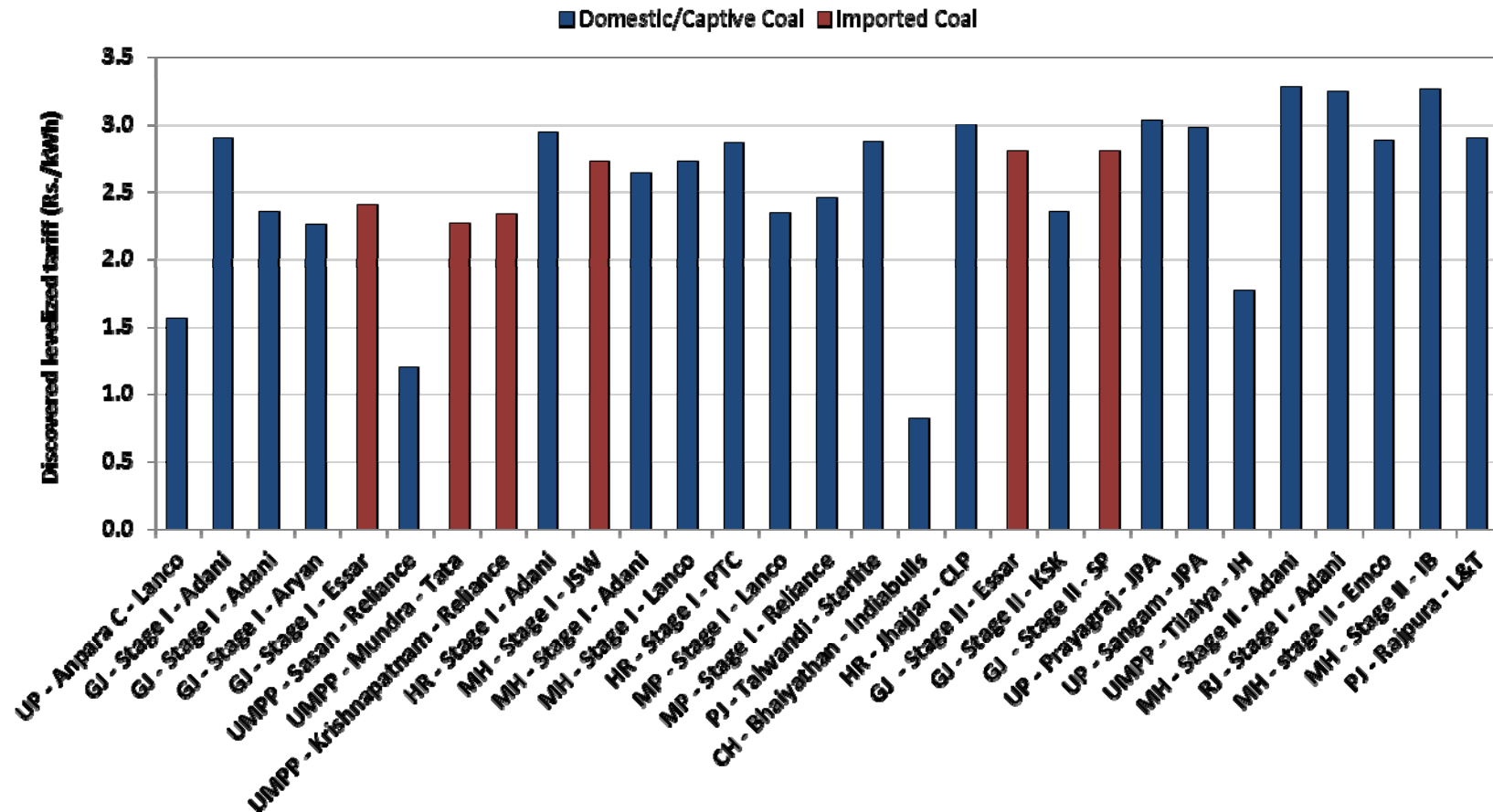


Break-up based on EPC
contractors



Including UMPP

Overview of discovered tariff



Discovered levelised tariff in the range of Rs. 2 to Rs. 3 /unit

Tariff Structure – Case 1 projects

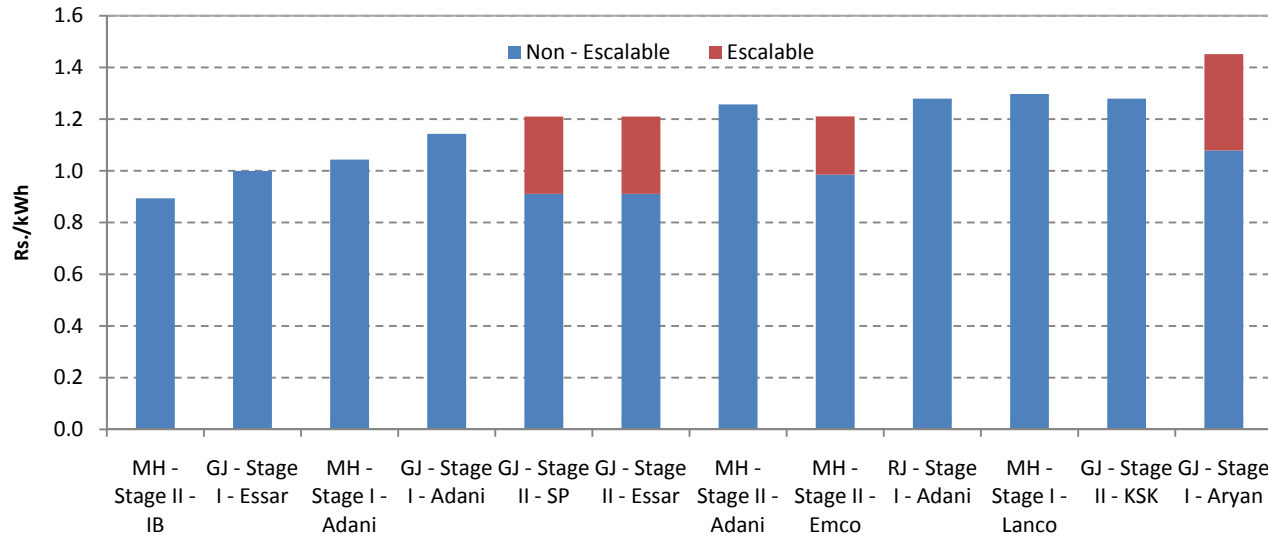
- Domestic coal based projects

Project Name	Capacity Charge		Fuel Charge		Inland Transportation	
	Non Escalable	Escalable	Non Escalable	Escalable	Non Escalable	Escalable
RJ - Stage I - Adani	✓		✓	✓		✓
GJ - Stage I - Adani	✓		✓			
GJ - Stage I – Aryan	✓	✓	✓	✓		
GJ - Stage II – KSK	✓		✓			✓
MH - Stage I - Adani	✓		✓			
MH - Stage I - Lanco	✓		✓			
MH - Stage II – IB	✓		✓	✓		✓
MH - Stage II - Adani	✓		✓	✓		✓
MH - Stage II - Emco	✓	✓		✓		✓

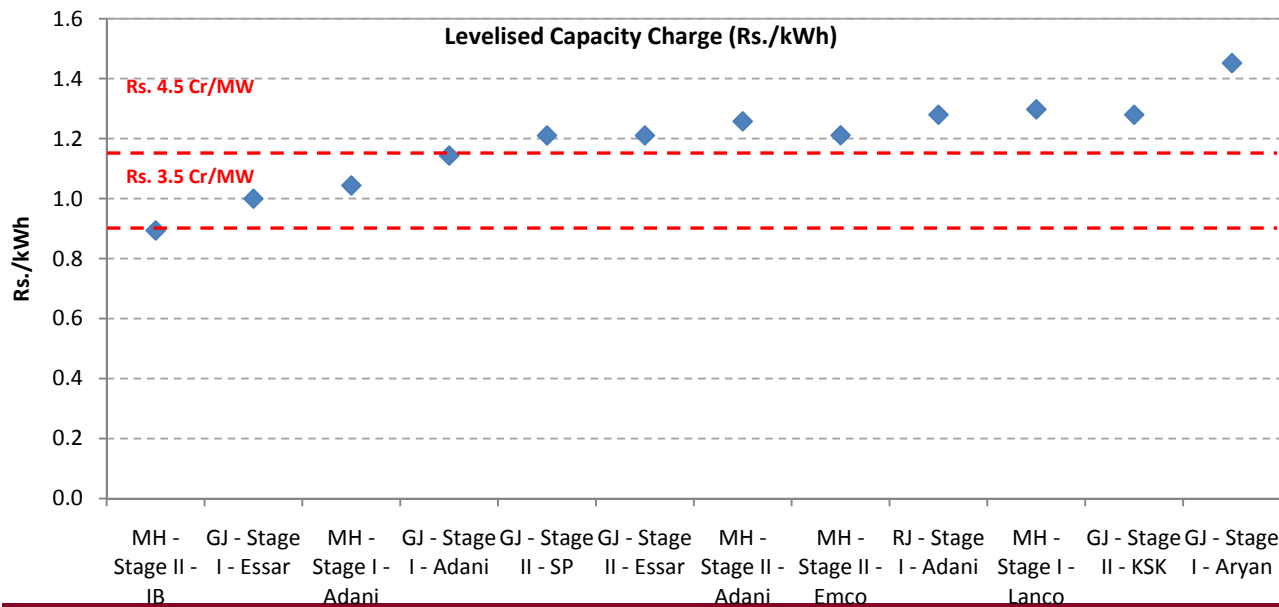
- Imported coal based projects

Project Name	Capacity Charge		Fuel Charge		Overseas/Inland Transportation		Fuel Handling	
	Non Escalable	Escalable	Non Escalable	Escalable	Non Escalable	Escalable	Non Escalable	Escalable
GJ - Stage I - Essar	✓		✓		✓		✓	
GJ - Stage II – SP	✓	✓	✓		✓		✓	
GJ - Stage II - Essar	✓	✓	✓		✓		✓	

Capacity Charge – CB Projects v/s Others

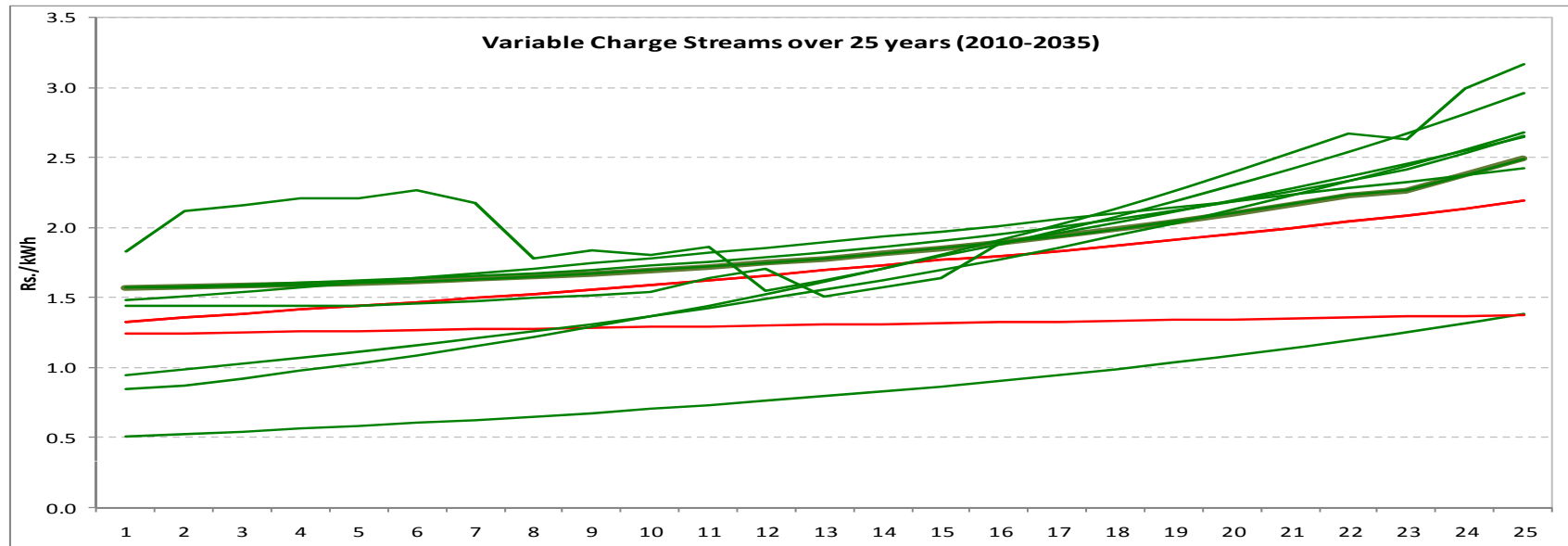
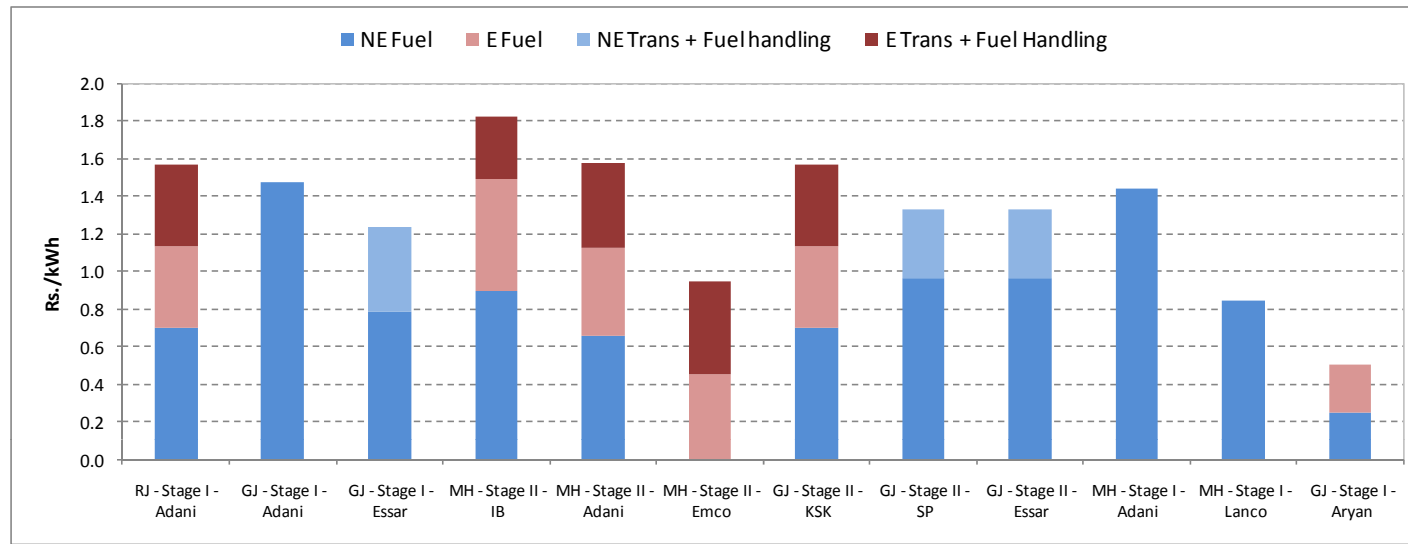


1. Most projects have a fixed capacity charge for the life time of the PPA and thus the change in the capacity charge is not a pass through to the consumers. – Greater certainty and Low risk
2. For other projects which have an escalable component, the pass through is at a rate specified by the CERC and thus not at actuals.

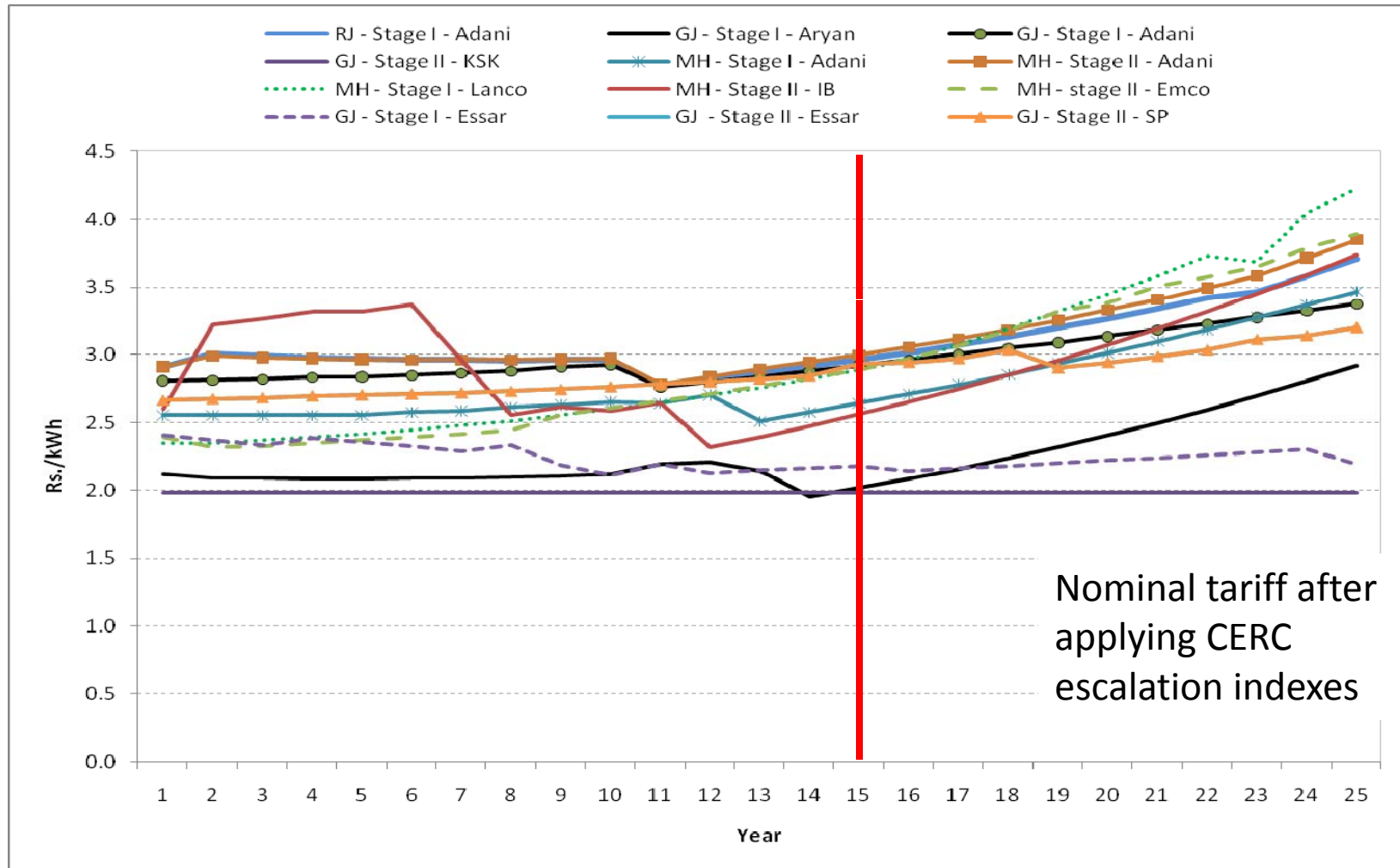


Project	Capex (Rs.crores /MW)
Trombay Unit 8	4.50
JK LTPS	4.50
Parli Unit 6	4.60
Kothagudem TPS stage VI - Unit 11	4.65
GVK Govindval Sahib	4.90
North Chennai TPS - Stage II	5.15
Giral LTPS	5.72
Rayalaseema TPP St.III	5.80
Kakatiya ST-I TPP	5.90
Mettur TPS St-III	5.91

CB Project - Variable Charges – Components and stream



Tariff streams over PPA term (Case 1 projects)



Tariff discovered through bidding is competitive

Analysis of tariff

- Capacity charge of CB projects equivalent to capital cost between Rs. 3.5 Cr. / MW to Rs. 4.5 Cr. / MW
- Variable charges of most CB projects less than Rs. 2 / unit for first 15 years of PPA and increase to around Rs. 3 / unit by 25th year of the PPA

Review of bidding process in some states

- Strengths and weaknesses of bidding framework - from governance perspective
- Review of bidding process in some states
 - Uttar Pradesh
 - Punjab
 - Gujarat
 - Chhattisgarh
 - Rajasthan
 - Maharashtra

Governance challenges

...1

- Tweaking of bidding process
 - Post bidding / non-transparent alterations in bidding documents
 - Non-specification of scheduled delivery date, altered responsibility for arranging transmission capacity
 - Post bidding changes in nature and character of projects
 - Expansion of capacity, change in unit size, allowing partial merchant sales

Governance challenges

...2

- Tweaking of bidding process
 - Re-bidding in the name of high discovered tariff
 - But accepting subsequent bids even if new discovered tariff is more than earlier discovered
 - Different assumptions for bid evaluation
 - Changes in heat rate and fuel cost assumptions can lead to deceptive discovered tariff.

	GCV (kCal/kg)	
Coal Cost	4300	4600
Rs. 1600/ ton	2.92	2.79
Rs. 2400/ ton	3.95	3.75

Levelised tariff Rs./ u

Governance challenges

...3

- (non) Adherence to PPA by developers
 - Attempts to seek higher tariff / wriggle out of contracts
 - Delays in construction and CoD
 - Constraints on fuel availability / cost
- Non-compliance with transparency and accountability provisions
 - Anonymous comparisons of bids and documents not published on website
 - Orders approving deviations, Tariff adoption orders not issued in time and not available on websites.
 - Bid evaluation committee reports are not public

Governance challenges

...4

- Limited regulatory oversight and scrutiny
 - To ensure rational power planning
 - Mandating Discoms to undertake contracting for required capacity
 - Type of capacity required (base v/s peak, medium v/s long term, seasonal demand etc.)
 - To ensure reasonability of tariff discovered and compliance with bidding guidelines
 - Timeliness and details in tariff adoption order

Governance challenges

...5

- Transparency and reforms in fuel sector (coal and gas)
 - Fuel cost accounts for more than 50 % of the generation tariff
 - Access to reliable, cost effective fuel source is major competitive advantage
 - Competition restricted to developers willing / able to 'manage' fuel risk in current scenario

Suggestions for way forward

...1

- Strengthening CBG and SBDs
 - Bid evaluation documents and all contracts to be on the website for PPA duration
 - Stringent provisions for preventing developers walking out of contracts (e.g. procurer's right over contracted units?)
 - Transparent and consistent methodology for bid evaluation

Suggestions for way forward

...2

- Central Information Repository - accessible by public, (CEA / FoR / CERC ?)
 - Web based system to publish and archive all documents related to CB
 - All documents (**and amendments thereto**) relating to each bidding process should be deposited with CIR (RFQ / RFP, petition and orders relating to deviations, bid evaluation committee report, all project documents (as per PPA))
 - In case of any dispute / litigation, only documents in CIR should be considered valid

Suggestions for way forward

...3

- Creating incentives for rational bidding process
 - Central bidding management agency (on lines of UMPP, for case 1 projects also)
 - Priority allocation of coal linkage / blocks
 - Benchmarking tariff
 - Incentive in ARR for competitively discovered tariff lower than benchmark tariff

Best practice code for SERCs (FoR)

- SERC's role in ensuring rational power planning
- Templates / issues to be looked into during
 - petitions seeking deviations,
 - tariff adoption order,
- Scope of regulatory scrutiny of tariff adoption petition
 - ensuring compliance with CBGs
- Public hearing / notice before approving deviations and adopting tariff

In the nut-shell

- India has achieved successful transition to competitive bidding based capacity contracting
 - Over 42,000 MW capacity contracts
 - Discovered tariff is competitive and predictable
- But need mid-course correction to address
 - Governance challenges
 - Fuel sector limitations

Thank you for kind attention

Prayas Energy Group

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Review of Competitive Bidding Framework

A presentation by Association of Power Producers

Meeting of Forum of Regulators

16 June 2011

New Delhi

Table of Contents

- About Association of Power Producers
- Background and Objectives of Competitive Bidding Framework
- Overview of Capacity Additions through Competitive Bidding
- Tariff Analysis
- Past Bid Experience
- Issues and Suggestions

Association of Power Producers : A representative body of key private sector players in power generation

- Private sector to play a significant role in generation capacity addition
 - ❑ Actual Capacity addition till Dec 2010 as percentage of planned capacity addition in the 11th Five Year Plan has been 70% for the private sector vis-à-vis 23% for Central Sector and 48% for State Sector
 - ❑ Percentage share of the private sector in total planned capacity addition during 12th Five Year Plan is expected to be substantially higher at ~50-60%
- ❑ Currently APP represents a generation project portfolio of approx. 120,000 MW
- ❑ APP has been formed to take up generic issues impacting the power generation sector



Background and Objectives of Competitive Bidding Framework

Background

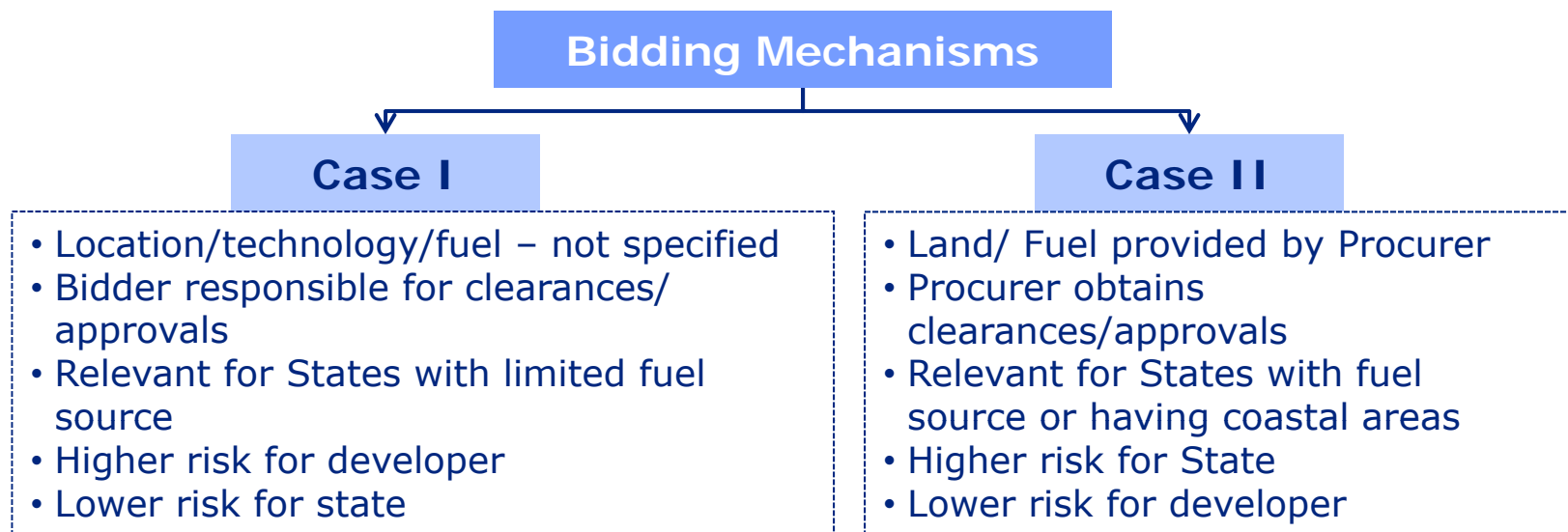
- Electricity Act 2003 (EA 2003) and National Tariff Policy (NTP) provide for tariff regulation and determination under following guidelines
 - Non-discriminatory open access in transmission
 - Sec 63 - ERCs to follow competitive bidding process. Further, NTP Mandates competitive procurement of power and transmission services – transitional window of 5 years period given to public sector companies.
 - Sec 79(2) - CERC to advise GoI on promoting competition
 - Section 60 – Controlling abuse of market power
 - Section 66 – ERC to promote development of market
- Competitive Bidding Guidelines (CBG) were framed under Section 63 of EA 03
 - ***“Notwithstanding anything contained in section 62, the Appropriate Commission shall adopt the tariff if such tariff has been determined through transparent process of bidding in accordance with the guidelines issued by the Central Government.”***
 - On January 19, 2005, Ministry of Power (MoP) issued CBG for medium term (1-7 years) and long term (>7 years) procurement of power
 - Bidding process was classified under 2 routes – Case I and Case II

Bidding Objectives

- Protect consumers interest by facilitating competitive conditions in procurement of electricity
- Facilitate transparency and fairness in procurement processes
- Standardization and reduction in ambiguity through bidding documents

Post January 2011, it is mandatory for generating companies including CPSUs & State PSUs to follow competitive bidding route for sale of power

Bidding Mechanism – Case I and Case II



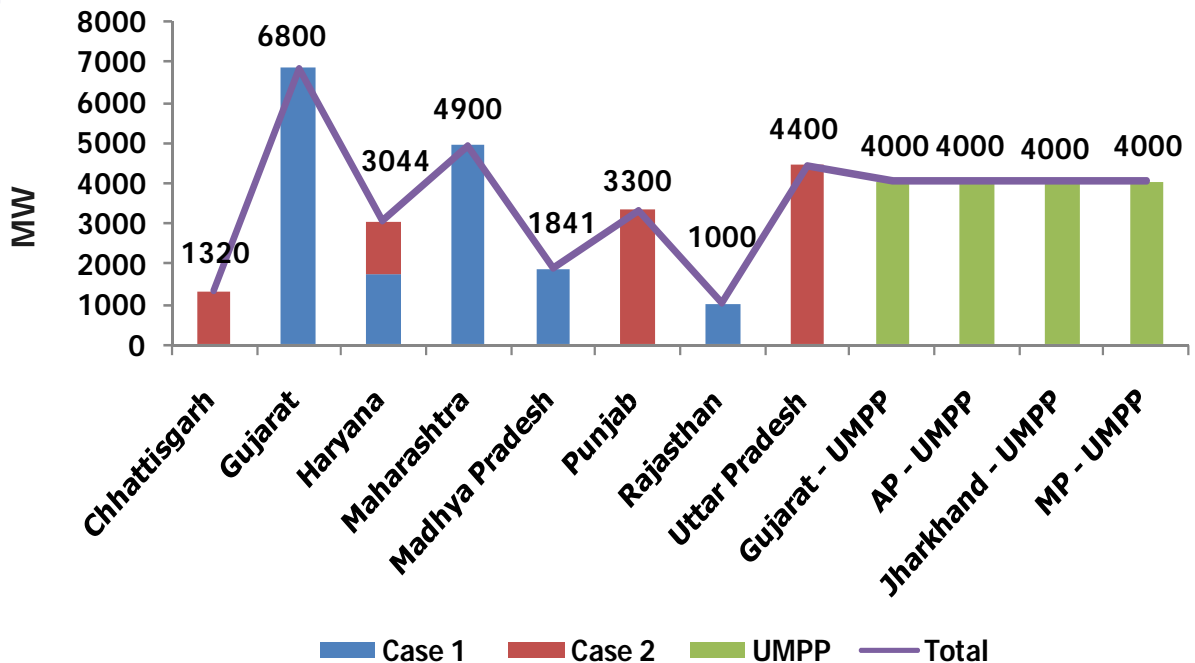
- CBG specifies parameters of bid submission, tariff structure, bid evaluation, payment mechanism and security structure
 - Multi-part tariff structure with separate capacity and energy components of tariff form the basis of bidding
 - For medium-term procurement of power, a single part tariff or a firm price for each year along with availability is to be used.

Low Risk may lead to prices being lower in Case II than in Case I

Overview of Capacity added through Bidding and Analysis of Tariffs

Overview of capacity additions through competitive bidding (1/2)

- Post CBG, ~30 number of Case-1 and Case-2 bids have been concluded
- PPA's have been executed for an aggregate capacity of 42915 MW including Ultra Mega Power Projects
 - Case 1- 16,495 MW
 - Case 2- 10,420 MW
 - UMPP – 16,000 MW

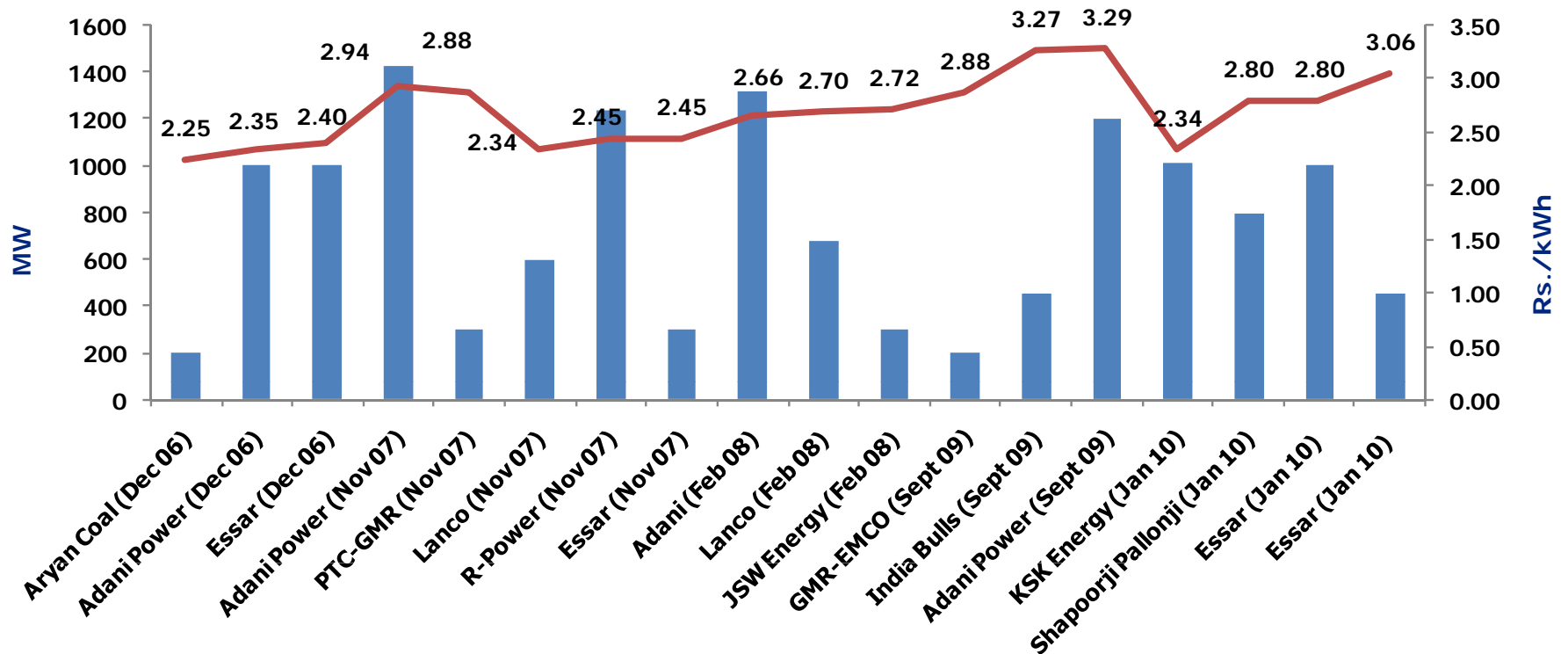


- Private sector participation has significantly increased post CBG
- The XI Plan period will witness about 40% of total capacity addition from the private sector and this share is likely to increase to about 50%-60% in the XII Plan period

Overview of capacity additions through competitive bidding (2/2)

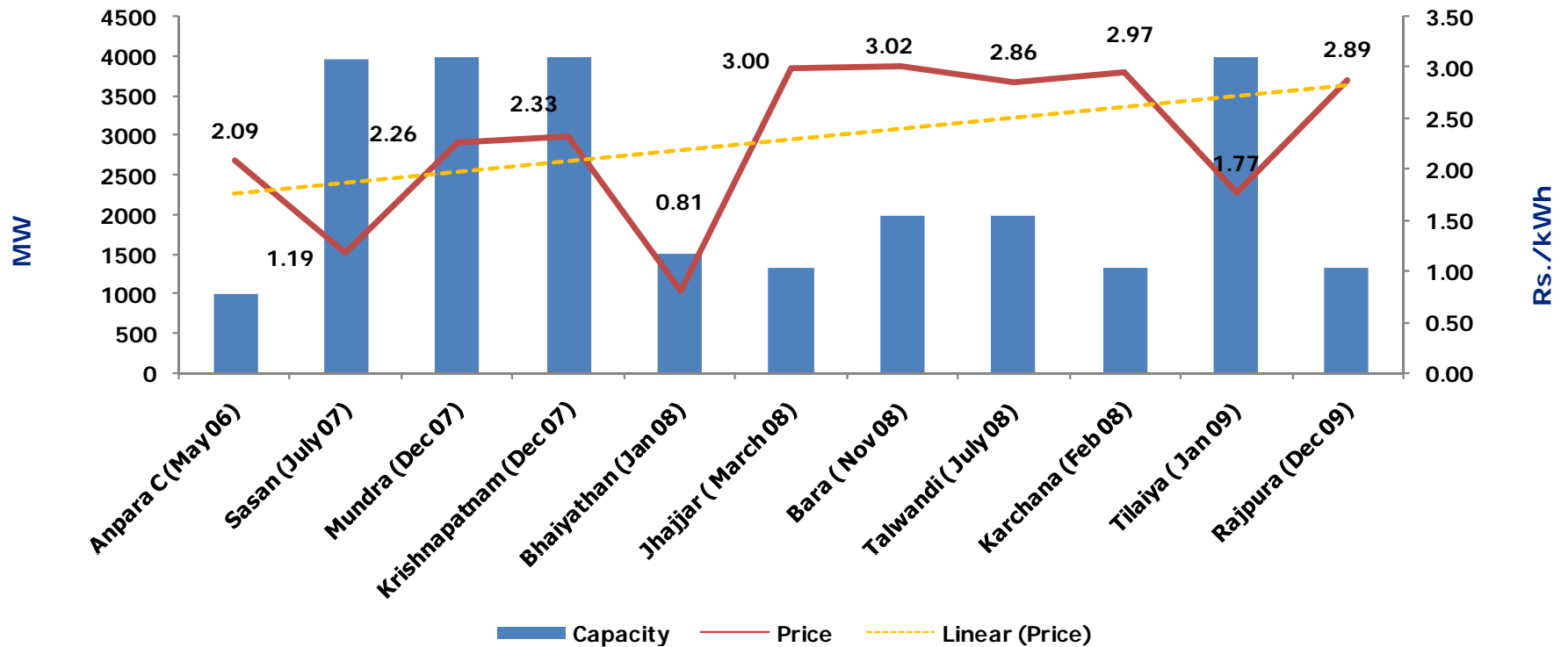
- Of the total contracted capacity
 - 43 % is based on Domestic coal
 - 27% on Captive coal blocks
 - 30% on Imported coal
- Competitive bidding framework has encouraged several private players to foray into power generation sector viz. Lanco, Jindal, KVK, GMR, India Bulls etc.
- Tariffs under competitive bidding have been found to be lower than cost plus mechanism – several reports including the statutory advice of CERC regarding timeframe for tariff based competitive bidding bring out this fact

Tariff Analysis - Historical Case I Bids



In most of the cases tariffs range from Rs. 2.25/unit to Rs. 2.80/unit. Increase in tariff in certain cases has been on account of (i) addition of transmission charges (and losses); (ii) plant being based on imported coal; (iii) impact of inland freight charges for fuel transportation

Tariff Analysis - Historical Case II Bids



- While UMPPs in Case II bidding have witnessed lower tariffs, most of the other projects have witnessed prices in the range of Rs. 3/kWh or late.
- Also, the project linked to captive coal mines have lower tariff relative to others.
- Bhaiyathan seems to be an exception but has 35% of the installed capacity reserved for merchant sales

Competitive bidding framework has given significant benefits to the consumers in terms of availability of cost effective power, however over the last 5 years several issues have emerged that need to be addressed

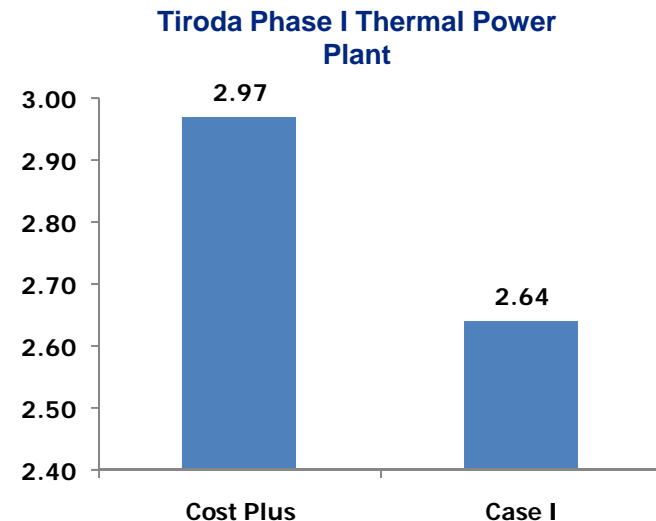
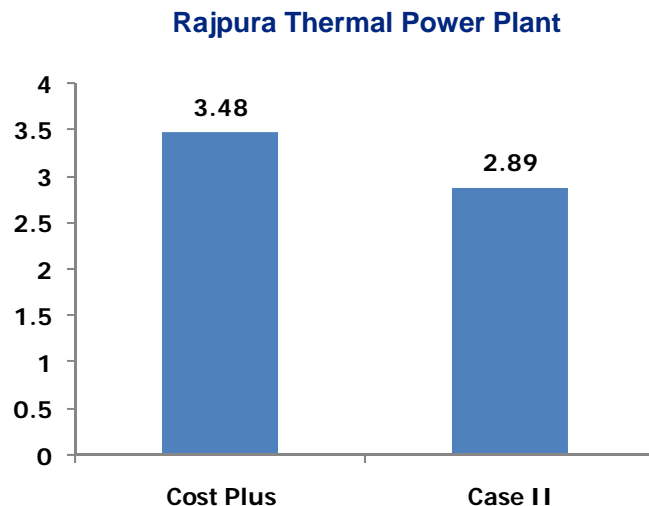
Key Issues in the Competitive Bidding Framework

- Co-Existence of Cost regime plus along with Bidding route
- Rebidding based on unconvincing grounds
- Post Bidding Changes in SBD/Nature and Character of Project
- Adherence to Timelines
- Transmission Access
- Alternative Supply
- Coal Related Issues
 - Domestic Coal Availability
 - Imported Coal
- Gas Related Issues

Co-Existence of Cost plus regime along with Bidding route leading to huge burden on the Power Sector (1/3)

- Indian power sector through the EA 2003 and the NEP has promoted competition to get better tariff
 - The bidding mechanism is a marked difference from the earlier cost plus mechanism
 - The regulated return allowed as per CERC are 23% with the RoE fixed at 15.5% and additional incentives of 7.5%
 - Likely Equity IRR for the first four UMPPS averages to 16%

Indicative Cost Comparison b/w MoU, Case-I, and Case-II



Co-Existence of Cost plus regime along with Bidding route leading to huge burden on the Power Sector (2/3)

- Tariff discovery through competitive bidding has been found to be much lower than cost plus mechanism
 - The differential (23 paise/unit computed by the CERC) when translated over 25 years period for a 1000 MW project indicates a loss of ~Rs. 4000 Crores
- MoU is still being adopted as an active route
 - Mass Scale signing of cost-plus PPAs by NTPC aggregating to 37000 MW for project planned up to 2017
 - Orissa Govt. signed MoUs with three IPPs (KU Project Ltd; SPI Ports; Nagapatnam Power Co. Ltd) aggregating to 3960 MW (Jan 2011)
 - UP Govt. signed MoU with Welspun Energy to set up 1320 MW TPP (Jan 2011) and with Bajaj Hindusthan for 1980 MW (June 2011)

Continuation of MoU route has shrunk market opportunity under Case I bidding atleast in the short/medium-term adversely impacting the consumers

Co-Existence of Cost plus regime along with Bidding route leading to huge burden on the Power Sector (3/3)

- One of the stated objects and various provisions of the EA03 seek to secure the interest of the consumers
 - Preamble to EA03 clearly talks about protecting consumer interest.
 - Section 61(d) makes consumer interest as one of the consideration in specifying terms and conditions for determination of tariff.
 - Section 60 authorizes the Regulatory Commissions to intervene if a licensee or generating company enters into any agreement or abuses its dominant position leading to adverse effect on competition in electricity industry.
 - Section 66 places responsibility on the ERC to promote development of electricity markets
- Hence, prevalence of MoU route is resulting in huge burden on the power sector that will ultimately impact the consumers in terms of costlier power.

In the interest of the overall Power Sector and the consumers of the electricity, MoU based arrangement should be abandoned and all procurement should be permitted only through bidding route.

This may require Amendment in the Electricity Act as the Appellate Tribunal of Electricity has held that the power given by Sec 62 of the Act to the Regulator cannot be diluted in any manner by the policy framework.

Until the Act is amended, Regulators may use their discretion in consumer interest by resorting to adoption of tariffs discovered through competitive bidding route in preference over cost plus mechanism

Rebidding based on unconvincing grounds

- Several instances of re-bidding have been observed in different states
 - Uttar Pradesh – 1980 MW Bara TPP; 1320 MW Karchana TPP
 - Gujarat – Case 1 tender floated by GUVNL in 2006
- At times rebidding has led to lower tariffs whereas at other times discovered tariff has been higher than the original bids

- **Re-bidding negatively affects the investor confidence and raises questions on fairness of the bid process**
- **If the tariff is determined by the process as laid down in the Competitive Bidding Guidelines 2005 and the regulators can find no flaw in the process, the same tariff should be adopted**
- **Further, no tariff negotiations should be allowed after opening of financial bids. The proposed arrangement is also in line with the extant CVC guidelines.**

Post Bidding Changes in SBD/Nature and Character of Project

- In certain cases post bidding changes in the documents/ nature and character of projects have been observed
 - Case of UP: Post completion of bidding round for Anpara C, UP permitted change in capacity of the plant (by 20%); and permitted sale of 50% of this additional quantum into merchant market.
 - Case of Maharashtra: Under Stage 2 of Case I bidding process, MSEDCL has contracted 2600 MW to various suppliers at levelized tariff ranging from Rs. 2.879/unit to Rs. 3.28/unit
 - PPAs signed between MSEDCL and the selected bidders (i.e. EMCO Energy Ltd, Indiabulls Power Ltd, Adani Enterprises) revealed difference in certain important clauses in the PPAs.
 - Indiabulls and EMCO, the scheduled delivery date is mentioned as 'not less than four years' from the PPA being effective .
 - Adani, the delivery date is 4 years from effective date.

Any change in the clauses of SBD or the nature and character of the project (size, merchant sales etc), should be notified prior to the bidding process to ensure a level playing field for all bidders and discovery of most economical tariffs

Adherence to Timelines

Bid Condition	<ul style="list-style-type: none"> SBD provides for a period of 30-45 days for shortlisting of bidders and issuance of LOI, from the date of submission of bid
Issues	<ul style="list-style-type: none"> In general, issuance of LOI has taken much longer time wherein bidders have to keep extending their bid and bid bond validity. For example, in the Case I bids in 2009, time taken by different entities from the bid submission date to issuance of LoI were as follows: (i) MSEDCL: 227 days; (ii) RRVPNL: 139 days; (iii) Maharashtra Stage I (2008): 179 days; (iv) Haryana (2007): 243 days; (v) GUVNL: 98 and 79 days for Stage 1 and Stage 2 respectively This leads to opportunity loss for the unsuccessful bidders who are unable to participate in other bids, as the capacity remains locked up. Also the bidder has to pay for the extension of Bank Guarantee (Bid Bond).
APP Suggestion	<ul style="list-style-type: none"> Bid process should be completed in a timely manner. Regulatory authorities should be empowered with the responsibility of ensuring this. Under the present dispensation, Regulator comes into picture, only when "Conformity Certificate" in respect of conclusion of bid is submitted to him by the Procurer for tariff adoption.

Transmission Access

Bid Condition in Case 1	<ul style="list-style-type: none"> • The Seller shall be wholly responsible to arrange transmission access from the Interconnection Point to the Injection Point. • The Procurer(s) shall be wholly responsible to arrange transmission access from the station switchyard of the generation source in case of the generating source being in the same state as that of the Procurer(s).
Issues	<ul style="list-style-type: none"> • SBD states that the Seller shall be wholly responsible to arrange transmission access from the Interconnection Point to the Injection Point. The Procurer(s) shall be wholly responsible to arrange transmission access from the station switchyard of the generation source in case of the generating source being in the same state as that of the Procurer(s) • There could be a mismatch between the generation schedule (about 38-40 months) and associated transmission schedule (50-54 months), this is primarily due to (i) time taken in finalization of scope of transmission system; (ii) time consumed in inviting bids & selection of developer; and (iii) time required to construct the system including procurement.
APP Suggestion	<ul style="list-style-type: none"> • Non-availability of transmission network on account of delay due to the CTU/STU is beyond the control of the developer and hence the developer should not be penalized on account of such delays.

Alternative Supply

Bid Condition	<ul style="list-style-type: none"> • As per SBD, during the Operating Period, if the Seller is unable to provide supply of power to the Procurer up to the Aggregate Contracted Capacity (ACC) from the Power Station except due to a Force Majeure Event or due to a Procurer Event of Default, the Seller is free to supply power up to the ACC from an alternative generation source to meet its obligations under this Agreement. <ul style="list-style-type: none"> • Such power shall be supplied to the Procurer at the same Tariff as per the terms of this Agreement. In case the transmission and other incidental charges, including but not limited to application fees for open access, RLDC/SLDC charges, etc., applicable from the alternative source of power supply are higher than the applicable Transmission Charges from the Injection Point to the Delivery Point, the Seller would be liable to bear such additional charges. • The conditions further state that the Seller shall be permitted to supply power to the Procurer from any alternative source for a maximum continuous duration of six (6) Months or a maximum non continuous period of 12 months during the Operating Period, excluding any period of supply from alternative generation source that the Seller avails prior to the commencement of supply from the generation source named in this Agreement
Issues	<ul style="list-style-type: none"> • Time limitation on the arrangement of alternate supply should not be there if developer maintains the price and quantity obligation.
APP Suggestion	<ul style="list-style-type: none"> • The concern of procurer is fully met if the Seller commits to meet the price and quantity obligations. In such cases there should not be any limitation on the duration of such alternative supply.

No provisions either in the SBD or in the PPA to take care of exigencies/situations beyond the control of the developer

Issues	<ol style="list-style-type: none"> 1. Short supply of coal by CIL leading to fuel cost increase 2. Cancellation of Coal Blocks 3. Change in fuel source/mix due to unavoidable circumstances 4. Change in law in the country of source mine 5. Abnormal increase in pricing in the country of source mine 6. Allocated Coal Blocks falling under 'No-Go' Areas or mining not permitted due to environmental considerations <ul style="list-style-type: none"> • These issues impact the developers in terms of: <ul style="list-style-type: none"> • Reduced availability and consequent loss of capacity payments; or • Increase in cost due to higher cost of coal from other sources (imports / e-auction)- worst hit are Case I PPAs executed on the strength of LoA • Plants hit include due to Reason 1: KSK Wardha (Maharashtra, 4X135MW), Lanco Amarkantak (Chattisgarh, 600 MW), Adani Mundra (Gujarat, 660 MW)
APP Suggestion	<ul style="list-style-type: none"> • Pending resolution of availability of adequate domestic coal supplies by CIL, the impact of sourcing coal from alternative means on the power pricing should be pass through (in Case I PPAs as well) as the developer has no control over such situation. • For imported coal based project, the impact of change in law in the country of source coal mine and abnormal changes in the coal prices (which cannot be prudently predicted) should be pass through.

Need for a separate SBD for Gas based projects (1/2)

Coal and gas based projects have inherent differences, as listed below:

- **Tenure of PPA for gas-based projects:** - SBD requires bidders to have fuel tied up for total installed capacity for the entire term PPA, generally 25 years in order to respond to Case I bids. However, Typically the gas supply contracts (KG D6, RLNG) are of much lower term ~5-7 yrs.
- **Blended Gas Option:** Looking at the availability of domestic gas, option of blended gas cannot be ruled out. Hence, there is a need to devise a mechanism by which developer is compensated for purchase of LNG from international market
- **Escalation rate allowed for energy charges for domestic gas:** Escalation rate allowed for energy charges for domestic gas based projects is based on APM gas prices. APM gas supplies do not suffice for the entire requirement of the IPPs. In addition, with declining APM gas supplies, the new plants are likely to be allocated gas from the NELP fields. **Under NELP, gas price is approved for every 5 year period and it is implausible to forecast NELP gas price for quoting the Tariff in Long Term Case 1 bids.**

Need for indexation of SBD clauses with the gas supply agreements from different sources, and the prices notified by the Govt. Of India from time to time

Need for a separate SBD for Gas based projects (2/2)

- **Nature of operation** - Gas based generation fits well for time of the day power for intermittent and peaking applications because of starting time, ramp up rate and efficiency in part-load operation. The CERC has already issued draft regulations for a separate tariff for peaking rates. Once it is implemented, gas based generation being expensive would automatically get reserved for peaking requirement.

- It is suggested that the current SBD be revised comprehensively so as to ensure a level playing field for gas based projects including recognizing the realities and market dynamics of the national and international gas sector. However, if this is not possible, separate SBDs may be developed for gas based projects.

Thank You