



MINUTES OF THE 22nd ANNUAL GENERAL BODY MEETING OF FORUM OF INDIAN REGULATORS

**DATE: 18TH JUNE 2021, FRIDAY
(Through Video Conferencing)**

Dr. M. S. Sahoo, Hony. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, IBBI chaired the meeting. He extended a warm welcome to all members present to the 22nd Annual General Body Meeting (AGM), which was being conducted on virtual mode. The list of members and guest speakers who attended the AGM is enclosed at **Annexure I**.

Dr. Sahoo welcomed Dr. Krishnamurthy Venkata Subramanian, Chief Economic Advisor to the Government of India to address the members of FOIR on the theme "Role of Regulation in fostering markets". Dr. Subramanian in his address (**Appendix A**) stressed on the need for competition and innovation along with the ways to foster pro-market behavior. Dr. Sahoo thanked him for sparing his valuable time and addressing the members of FOIR.

Dr. P. K. Pujari, Hony. Vice Chairperson, FOIR and Chairperson, CERC welcomed Mr. Reji Kumar Pillai of India Smart Grid Forum (ISGF), a Public Private Partnership initiative of the Ministry of Power to address the members on "Design of robust time of use framework for electricity tariff & New revenue opportunities for Discoms". Mr. Reji in his presentation (**Appendix B**), highlighted the future opportunities such as P2P trading of electricity using Blockchain Platform. Dr. Pujari thanked the team of ISGF for the presentation.

Thereafter, the agenda items were taken up for consideration.

Agenda 1: Confirmation of the minutes of the 21st Annual General Body Meeting of FOIR held on 26th June, 2020

After discussion on the action points, the minutes of the 21st AGM held on June 26th, 2020, as circulated, were confirmed.

Agenda 2: Reconstitution of Governing Body of FOIR

Ms. Rashmi Somasekharan Nair, Dy. Chief (RA), CERC briefed about the Rules and Regulations of FOIR which govern the composition of the Governing Body (GB). The members of FOIR may hold the office as long as they hold the office in their respective institution. The Chairperson or Members of Electricity Regulatory Commissions/Authorities are nominated to the GB based on their seniority if they have at least one year service remaining in their organisation. Accordingly, the proposed reconstitution of the Governing Body for 2021-22 (**Annexure II**) was approved.

Agenda 3: Accounts related matters

- (a) Budget for FY 2021-2022.
- (b) Audited Accounts for FY 2020-2021.
- (c) Re-appointment of Auditor for the FY 2021-2022.
- (d) Re-appointment of Tax Consultant for filing the Income Tax Return for the FY 2021-2022.
- (e) Status of ongoing IT cases.
- (f) Status of re-investment of deposits.
- (g) Resolutions.

a) Budget of FOIR for the FY 2021-2022.

Ms. Nair briefed on the **agenda 3(a)** and explained the salient features of the proposed budget for FY 2021-22. After deliberations, the proposed budget was approved.

b) Audited Accounts for FY 2020-2021.

Ms. Nair presented an overview of the audited accounts for the FY 2020-2021. She apprised that that due to recent merger of banks, namely, Corporation Bank with Union Bank of India, the bank needed more time to provide the interest certificate for FY 2020-21. The Auditor has audited the accounts of FOIR considering provisional / estimated interest. Only after the receipt of interest certificate from the bank, he would finally certify the figures. The Auditor has advised to seek a “Resolution”, authorizing the Hony. Chairperson, FOIR (Chairperson, IBBI) and Hony. Vice-Chairperson, FOIR (Chairperson, CERC) to accord consent to the final Audited Accounts of FOIR for the FY 20-21 before the same is filed with the concerned authorities.

After discussions, the Audited Accounts of FOIR for 2020-21 were approved with the necessary authorization.

c) Re-appointment of Auditor for the FY 2021-2022.

Ms. Nair submitted the proposal for re-appointment of M/s. R. S. Gupta & Co. (empanelled with C&AG) as auditors of FOIR for FY 2021-22, which is the 2nd year of their tenure and the same was approved.

d) Re-appointment of Tax Consultant for filing the Income Tax Return for the FY 2021-2022.

Ms. Nair briefed that M/s. R. K. Raman & Co., Chartered Accountants, New Delhi were appointed as the Tax Consultant to file the Income Tax returns of FOIR for the FYs. 2019-2020 and 2020-2021 (1st & 2nd year of their tenure). She sought approval for re-appointing them as the Tax Consultant to file the Income Tax returns of FOIR for the FY 2021-2022 (i.e. 3rd year of their tenure) and the same was approved.

e) Status of ongoing ITcases.

Ms. Nair updated on the ongoing IT cases - financial year wise, and informed that the Tax Consultant, CA Mr. R. K. Raman had been pursuing the demand cancellation matters with the IT Department. It was appraised that while the demand cancellation for the AY 2013-14 will take some more time, the demand cancellation for the AYs 2015-16 and 2016-17 have been done by the CIT(A) and formal orders would be issued soon. Further, the scrutiny assessment for the AY 2018-19 is complete and has been closed by the department and the demand for the AY 2019-20 has been duly cancelled by the IT Authority, based on the clarifications submitted by the Tax Consultant.

f) Status on re-investment of deposits

Ms. Nair briefed the General Body that as has been advised by the Members during the 21st AGM on 10th July, 2020, based on the highest rate of interest being offered from amongst the PSU banks (downloaded from the website of the PSU banks in Connaught Place, New Delhi), the maturity proceeds will be re-invested. The GB approved the same.

g) Various Resolutions

The following resolutions were approved:

- (i) Resolution approving Balance Sheet, Income & Expenditure Account along with authorization of officials to sign the Audited Annual Accounts and authorization of officials for filing various documents with Income Tax authorities and Registrar of Societies.
- (ii) Resolution for Addition/Withdrawal of Authorized Signatories in the bank account of FOIR.
- (iii) Resolution for Applying for net banking services only for the purpose of making income tax related payments, viz. Tax deducted at source, Advance Tax and Self-Assessment Tax.
- (iv) Resolution authorizing Chairperson, FOIR and Chairperson, CERC to approve the Audited financial statements of FOIR for the FY 2020-2021, after complete information is received from the Banks; and
- (v) Resolution authorizing writing off the outstanding membership fees receivable from Kerala State ERC and WDRA for the previous years.

Agenda Item 4: Status update on activities conducted by FOIR Centre, IICA during FY 2020-21 and proposed for year FY 2021-22.

a) Activities conducted by FOIR Centre, IICA during FY 2020-21.

Dr. Abha Yadav, Associate Professor, IICA gave a background on the three-year strategic plan of FOIR-IICA approved in previous AGM and GBM. Thereafter, she gave a brief presentation (**Appendix C**) on the activities conducted by FOIR Centre, IICA during FY 2020-2021, as follows:

- International Webinar Series (May-July, 2020)
- 21st Annual General Body meeting of FOIR took place through video conferencing on 10th July, 2020
- Virtual colloquium for the serving Chairpersons of the Central Sector Regulatory Member Organizations of FOIR on the theme “Stakeholders Engagement in Regulatory Decision Making” on 23rd March, 2021
- Three-day Online Capacity Building Program for Chairpersons and Members of FOIR Member Organizations from 08th February - 10th February, 2021
- Three-week Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations from 04th January - 22nd January, 2021.
- Two-week Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations from 07th December - 18th December, 2020.
- Second quarterly webinar of FOIR on "Interface of Blockchain and Energy Sector" on 2nd December, 2020.
- The first quarterly webinar of FOIR in form of a Virtual Conference on "Digital Assets Regulation in India: Learnings from the Mauritius Model Framework." on 27th August, 2020
- Six-month research project on “Development of Performance Evaluation Mechanism for Regulatory Bodies in India”.
- Launched Three-Month Online Certificate Course on Regulatory Governance (Batch 1)
- Launched Three-Month Online Certificate Course on Regulatory Governance (Batch 2)
- Launch of e-newsletter “Regulatory Digest”. Seven issues circulated.

The General Body noted the activities of FOIR Centre, IICA.

b) Proposals for FOIR Capacity Building Programs for the FY 2021-2022.

Sr. No.	Particulars	Expected participants	Duration of the program
1	Online Capacity building training program (July, 2021)	60 participants	2 weeks (Tentative)
2	Online Capacity Building Program for Group 3 officers (September, 2021)	60 participants	3 weeks (Tentative)
3	Online Capacity Building Program-Group 1m (November, 2021)	60 participants	3 days (Tentative)
4	Online Capacity Program (January, 2022)	60 participants	3 weeks (Tentative)
5	Colloquium for Central Sector Regulators (August, 2021)	8-10 Participants	2 Hours
6	Colloquium for Central Sector Regulators (December, 2021)	8-10 Participants	2 Hours

For FY 21-22, the proposal comprised four capacity building programs and two Colloquiums. The General Body while approving the IICA proposals suggested that the concerned sectoral regulators may be consulted at the time of finalizing the program for fine tuning the themes with flexibility of time. Ms. Yadav noted the suggestions and clarified that the topics for the capacity building trainings will be fine-tuned after considering the suggestions from the concerned sectoral regulators and members of FOIR. The GB also suggested that a training program on the emerging areas or future markets should be conducted to keep the regulators updated. With these suggestions, the proposal of FOIR Centre, IICA with a budget of Rs.28,50,380 was approved.

c) *Three months Certificate Course*

The FOIR Centre, IICA has successfully convened two batches of the 3 month online regulatory governance certificate course during FY 2020-2021. The proposal of FOIR Centre, IICA for conducting two further batches of the certificate course (each batch comprising of 50 participants) at a total budget of Rs.35 lakh was approved for two batches. The General Body directed the FOIR Secretariat at CERC to go through cost breakup of the program while approving the proposal.

d) *Proposal for Research/Study*

Ms. Nair put forth the proposal of FOIR Centre at IICA to conduct a three-month research study during the FY 2021-22 at a budget of Rs.3,00,000 (excluding any applicable taxes). FOIR Centre at IICA had suggested to conduct the study on “Study of Regulators Role during Covid-19 Pandemic”. The Members suggested that a study can be done on “Best practices by regulators during COVID-19 pandemic”. They further suggested that the methodology for study may be shared with FOIR Secretariat at CERC and FOIR Centre at IICA may take a feedback from the member regulators regarding their best practices. Members suggested to include power sector perspective as well in the study.

After discussions, the General Body, subject to above suggestions, approved the budget for the three-month study.

e) Proposal for webinars and newsletters

Ms. Nair placed before the General Body the proposal of FOIR Centre at IICA for continuing to organize quarterly webinars with a proposed budget of Rs.30,000/- (plus taxes). The General body recommended the approval of conducting webinars.

Ms. Nair updated on the status of issuing bi-monthly newsletters of FOIR. The Members suggested that the regulators should be invited to contribute articles in the newsletter and that views of all regulators should be taken into account before finalizing the newsletter. It was also updated that the cost for issuing newsletters on bi-monthly basis would be Rs.11,500 (plus taxes) per newsletter.

After discussions, the General Body approved both the proposals, namely, the quarterly webinars and bi-monthly newsletters.

Agenda Item 5: Cross Sector Collaborative Regulations between Telecom Regulator and Electricity Regulators – Reference From TRAI

Ms. Nair briefed the members that a Working Group on “Cross Sector Collaborative Regulation between Telecom Regulators and Electricity Regulators” was constituted under the aegis of the FOIR, based on discussions held in the 21st Annual General Body Meeting, considering a reference received from TRAI for rolling out the 5G network in the country using the transmission and distribution network of power utilities. In this regard, Advisor (TRAI) gave an overview of the concept of Collaborative Regulation. He informed that till date, two meetings of the Working Group had been held wherein presentations were made by Indus Tower Limited on “How can the telecom sector utilize available infrastructure in the electricity sector – supported by international case studies” and by CTU (POWERGRID) on “Sharing of power sector communication system infrastructure for 5G technology in India”. Two working groups have already submitted their recommendation and the rest two will submit in a month. He sought additional time of three months to complete the study.

The General Body noted the above and approved additional time for completion of the work.

Hony. Chairperson FOIR/IBBI thanked all the members for their presence and valuable suggestions and placed on record his appreciation for members of FOIR for their support and the continuous efforts of the FOIR Secretariat.

The meeting ended with a Vote of Thanks to the Chair and a virtual photograph was taken.

**LIST OF PARTICIPANTS OF THE 22ND ANNUAL GENERAL BODY MEETING
OF FORUM OF INDIAN REGULATORS (FOIR)
HELD ON FRIDAY, THE 18TH JUNE, 2021
{THROUGH VIDEO CONFERENCING}**

S. No.	Name	Designation & Organization
1.	Dr. M. S. Sahoo	Chairperson, IBBI & Hony. Chairperson, FOIR
2.	Shri P. K. Pujari	Chairperson, CERC & Hony. Vice- Chairperson, FOIR
3.	Shri Ashok Kumar Gupta	Chairperson, CCI & Hony. Vice- Chairperson, FOIR
4.	Shri Indu Shekhar Jha	Member, CERC & Hony. Secretary, FOIR
5.	Shri Pravas Kumar Singh	Member, CERC
6.	Shri Kumar Sanjay Krishna	Chairperson, AERC
7.	Shri Shishir Sinha	Chairperson, BERC
8.	Shri M.K. Goel	Chairperson, JERC for State of Goa & UTs
9.	Shri Lokesh Dutt Jha	Chairperson, JERC for UTs of J&K and Ladakh
10.	Shri P. W. Ingty	Chairperson, MSERC
11.	Shri U. N. Behera	Chairperson, OERC
12.	Shri M. Chandrasekar	Chairperson, TNERC
13.	Shri T. S. Balasubramanian	Chairperson (I/C) & Member (Fin.), TAMP
14.	Shri D. Radhakrishna	Chairperson, TERC
15.	Shri Raj Pratap Singh	Chairperson, UPERC
16.	Shri D. P. Gairola	Chairperson (I/C) & Member (Law), UERC
17.	Shri Sutirtha Bhattacharya	Chairperson, WBERC
18.	Shri Ramesh Kumar Choudhary	Member, BERC
19.	Shri Subhash Chandra Chaurasia	Member, BERC
20.	Shri Arun Kumar Sharma	Member, CSERC
21.	Shri Vinod Deshmukh	Member, CSERC
22.	Shri Akhilesh Kumar Ambasht	Member, DERC
23.	Shri Mehul M. Gandhi	Member, GERC
24.	Shri Satyendra R. Pandey	Member, GERC
25.	Shri Naresh Sardana	Member, HERC
26.	Shri Bhanu Pratap Singh	Member, HPERC
27.	Dr. Navrang Saini	Member, IBBI
28.	Shri Sudhaker Shukla	Member, IBBI
29.	Dr. (Ms.) Mukulita Vijayawargiya	Member, IBBI
30.	Shri Mukul Dhariwal	Member, MPERC
31.	Shri Iqbal Mazharhussain Bohari	Member, MERC
32.	Shri Mukesh Khullar	Member, MERC
33.	Shri Sauri Kant Parhi	Member, OERC
34.	Shri Satpal Garg	Member, PNGRB
35.	Ms. Anjali Chandra	Member, PSERC
36.	Ms. Meenakshi Gupta	Member, TRAI
37.	Shri Bandaru Krishnaiah	Member, TSERC
38.	Shri M. D. Manohar Raju	Member, TSERC
39.	Shri Jiban Krishna Sen	Member, TERC
40.	Shri Kaushal Kishore Sharma	Member, UPERC
41.	Shri V. K. Srivastava	Member, UPERC
42.	Shri M. K. Jain	Member, UERC
43.	Shri Durgadas Goswami	Member, WBERC
44.	Shri S. Machendranathan	Ex-Chairperson, AERA
45.	Shri Umesh Narayan Panjiar	Ex-Chairperson, BERC

46.	Shri S. K. Negi	Ex-Chairperson, BERC
47.	Dr. H. L. Bajaj	Ex-Chairperson, CEA
48.	Dr. PramodDeo	Ex-Chairperson, CERC
49.	Shri P. D. Sudhakar	Ex-Chairperson, DERC
50.	Shri Pravinbhai Patel	Ex-Chairperson, GERC
51.	Shri V. S. Ailawadi	Ex-Chairperson, HERC
52.	Shri Jagjeet Singh	Ex-Chairperson, HERC
53.	Shri V. P. Raja	Ex-Chairperson, MERC
54.	Ms. Kusumjit Sidhu	Ex-Chairperson, PSERC
55.	Shri D. K. Sarraf	Ex-Chairperson, PNGRB
56.	Shri Manoranjan Karmakar	Ex-Chairperson, TERC
57.	Dr. J. L. Bajaj	Ex-Chairperson, UPERC
58.	Shri Rabindra Nath Sen	Ex-Chairperson, WBERC
59.	Shri Dinesh Chander Bajaj	Ex-Member, AERA
60.	Dr. Rajani Kant Gogoi	Ex-Member, AERC
61.	Shri Rajeev Amit	Ex-Member, BERC
62.	Shri G. S. Rajamani	Ex-Member, CERC
63.	Srhi Bhanu Bhushan	Ex-Member, CERC
64.	Shri V. S. Verma	Ex-Member, CERC
65.	Shri Arvinder Singh Bakshi	Ex-Member, CERC
66.	Shri S. R. Sethi	Ex-Member, DERC
67.	Shri B. P. Singh	Ex-Member, DERC
68.	Shri Debashish Majumdar	Ex-Member, HERC
69.	Ms. Neerja Mathur	Ex-Member, JERC for State of Goa & UTs
70.	Shri Anil Kumar Jha	Ex-Member, MPERC
71.	Shri A. Velayutham	Ex-Member, MERC
72.	Shri Gurinder Jit Singh	Ex-Member, PSERC
73.	Shri S.C. Dhingra	Ex-Member, UPERC
74.	Shri Ram Dayal Gupta	Ex-Member, UPERC
75.	Shri Sanoj Kumar Jha	Secretary, CERC & Executive Secretary, FOIR
76.	Dr. Sushanta K. Chatterjee	Chief (RA), CERC
SPECIAL INVITEES		
77	Dr. Krishnamurthy Venkata Subramanian	Chief Economic Advisor, Government of India
78	Dr. AbhaYadav	Director, FOIR Centre, IICA
79	Shri Sunil Kumar Singhal	Advisor, TRAI
80	Shri Reji Kumar Pillai	President, India Smart Grid Forum
OTHERS		
81	Ms. Rashmi Somasekharan Nair	Deputy Chief (RA), CERC
82	Shri Rajiv Kumar	Assistant Secretary (P&A), CERC & Executive Treasurer, FOIR

PROPOSED GOVERNING BODY OF "FOIR"
FOR THE YEAR 2021 – 2022

Name & Designation	Date of Appointment in Regulatory Commission / Authority	Date of Retirement in Regulatory Commission / Authority
Hony. Chairman		
Dr. M. S. Sahoo, Chairperson, IBBI	01.10.2016	30.09.2021*
Hony. Vice-Chairman		
Dr. P. K. Pujari, Chairperson, CERC	01.02.2018	11.06.2022
Shri Ashok Kumar Gupta, Chairperson, CCI	12.11.2018	25.10.2022
Shri Balwinder Singh Bhullar, Chairperson, AERA	08.07.2019	07.07.2022
Dr. P. D. Vaghela, Chairperson, TRAI	01.10.2020	30.09.2023
Shri U. N. Behera, Chairperson, OERC	16.01.2017	15.01.2022***
Shri M. K. Goel, Chairperson, JERC for State of Goa & UTs	17.02.2017	16.09.2021**
Chairperson, PNGRB (Vacant)		
Chairperson, TAMP (Vacant)		
Hony. Members		
Shri. Ramesh Kumar Choudhary Member, BERC	08.08.2016	07.08.2021##
Shri Sauri Kant Parhi, Member, OERC	04.11.2016	03.11.2021###
Shri Arun Kumar Sharma, Member, CSERC	29.11.2016	22.06.2021#
Shri Suresh Chandra Dinkar, Member, RERC	17.07.2017	16.07.2022
Vacant, Central Infrastructure Sector		
Vacant, Financial Sector		
Hony. Secretary		
Shri. Indu Shekhar Jha, Member, CERC	21.01.2019	20.01.2022
Hony. Treasurer		
Shri Arun Goyal, Member, CERC	07.04.2020	06.04.2023

* Shri Ashok Kumar Gupta, Chairperson, CCI will replace Dr. M.S. Sahoo, Chairperson, IBBI (on completion of his tenure) and will serve as Hony. Chairperson, FOIR (from 01.10.2021 to 25.10.2022).

Further, the name of new Chairperson, PNGRB will be included (from the date of joining PNGRB) in the Governing Body of FOIR as Hony. Vice- Chairperson. Similarly, name of Chairperson, TAMP will be included (from the date of joining TAMP) in the Governing Body of FOIR as Hony. Vice- Chairperson. On completion of tenure of Dr. M. S. Sahoo, Chairperson, IBBI, the name of new Chairperson, IBBI (from the date of assumption of charge) will be included in the Governing Body of FOIR as Hony. Vice- Chairperson.

**Shri Raj Pratap Singh, Chairperson, UPERC will replace Shri M. K. Goel, Chairperson, JERC for State of Goa & UTs and will serve as Hony. Vice- Chairperson (from 17.09.2021 to 01.07.2023).

***Shri D. Radhakrishna, Chairperson, Tripura ERC will replace Shri U.N. Behera, Chairperson, OERC and will serve as Hony. Vice- Chairperson (from 16.01.2022 to 07.08.2024).

#Shri Bhanu Pratap Singh, Member, HPERC will replace Shr. Arun Kumar Sharma, Member, CSERC and will serve as Hony. Member (from 23.06.2021 – 28.09.2022).

##Shri Mukul Dhariwal, Member, MPERC will replace Shri Ramesh Kumar Choudhary, Member, BEREC and will serve as Hony. Member (from 08.08.2021 – 01.01.2023).

###Shri I. M. Bohari, Member, MERC will replace Shri Sauri Kant Parhi, Member, OERC and will serve as Hony. Member (from 04.11.2021 – 31.05.2023).

Role of Regulation in Fostering Markets

DR. K. V. SUBRAMANIAN,
CHIEF ECONOMIC ADVISOR
GOVERNMENT OF INDIA



Importance of innovation in today's economy

“Television will never be a serious competitor for radio, because people must sit and keep their eyes glued on a screen; the average American family hasn't time for it.” - New York Times, 1939

- ❑ Three-quarters of market value of companies in today's economy accounted for by intangible assets
- ❑ Google, Amazon, Infosys: not only huge value creators but also significant employment generators
- ❑ Innovation critical for entrepreneurship, job creation and economic growth

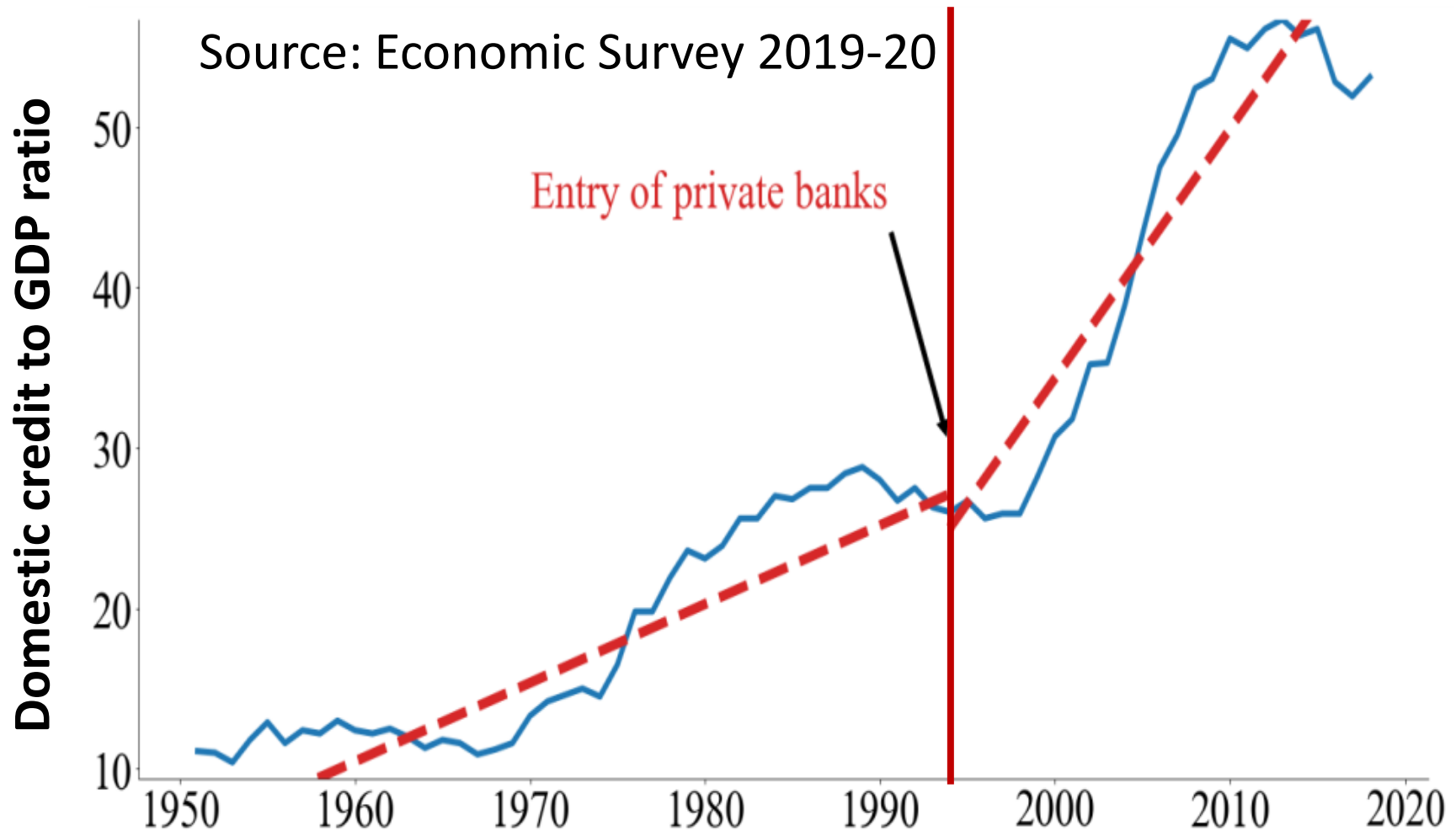


Innovation and Competition in Telecom Industry

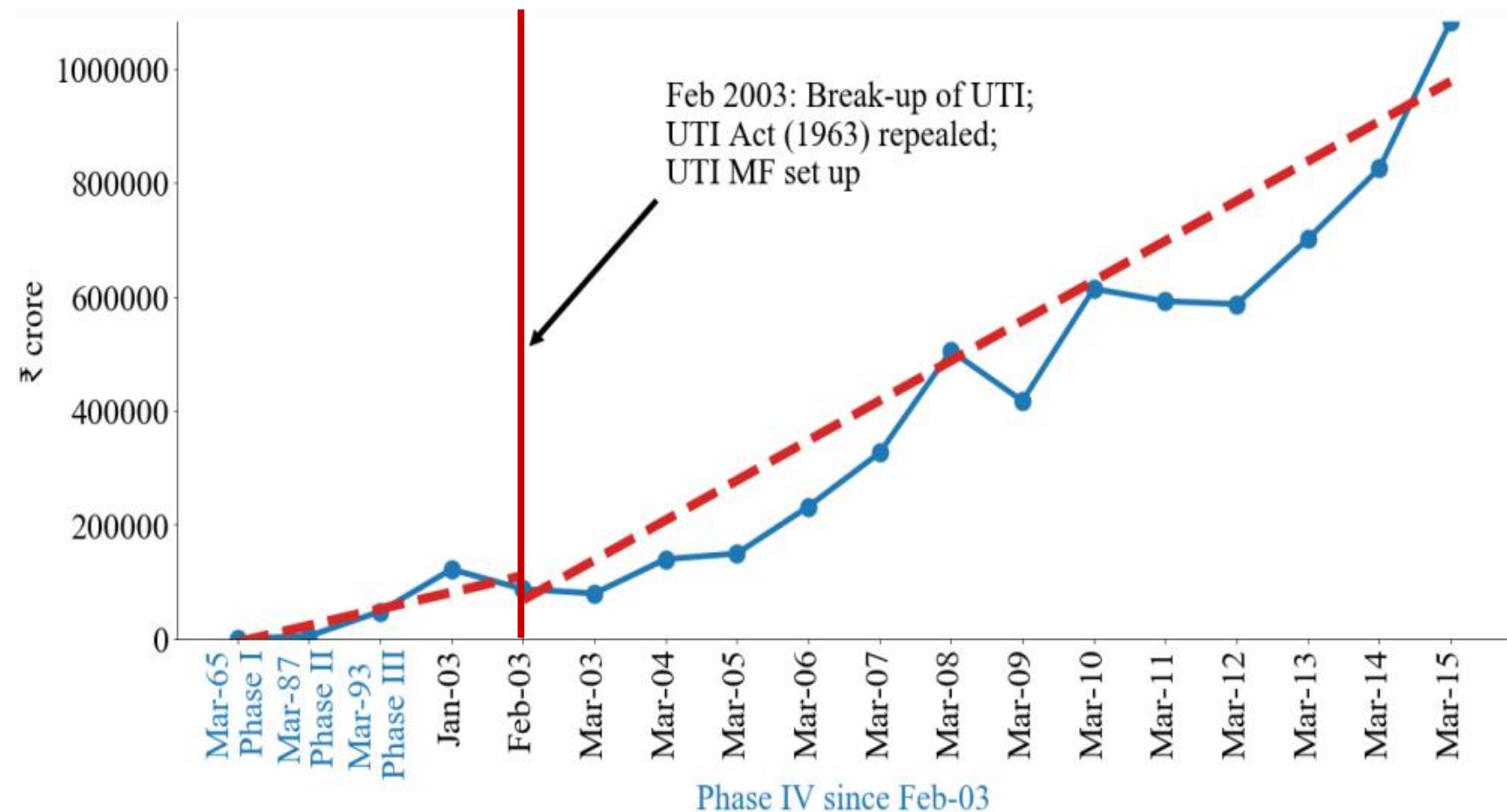
- ❑ In September 2002, telecom tariffs were assigned to competitive forces
- ❑ Requirement for service providers to obtain approval from the TRAI on tariff changes was dispensed with
- ❑ Significant technological innovation
 - Starting with analog technology, mobiles have evolved to 5G technology now
- ❑ Competition & innovation have gone hand-in-hand



Contemporary evidence: Benefits of economic freedom (Banking)



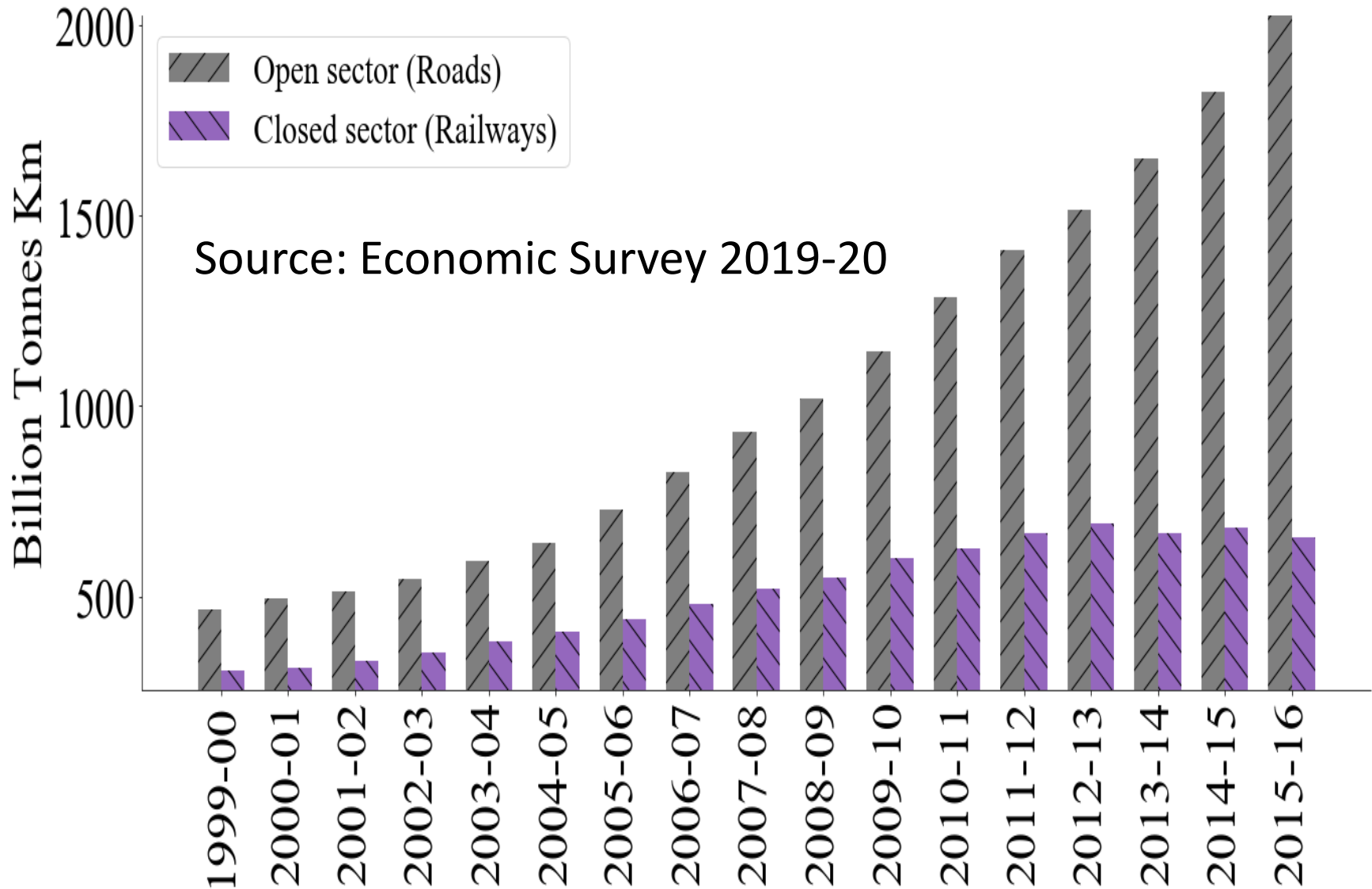
Contemporary evidence: Benefits of economic freedom (Mutual Funds)



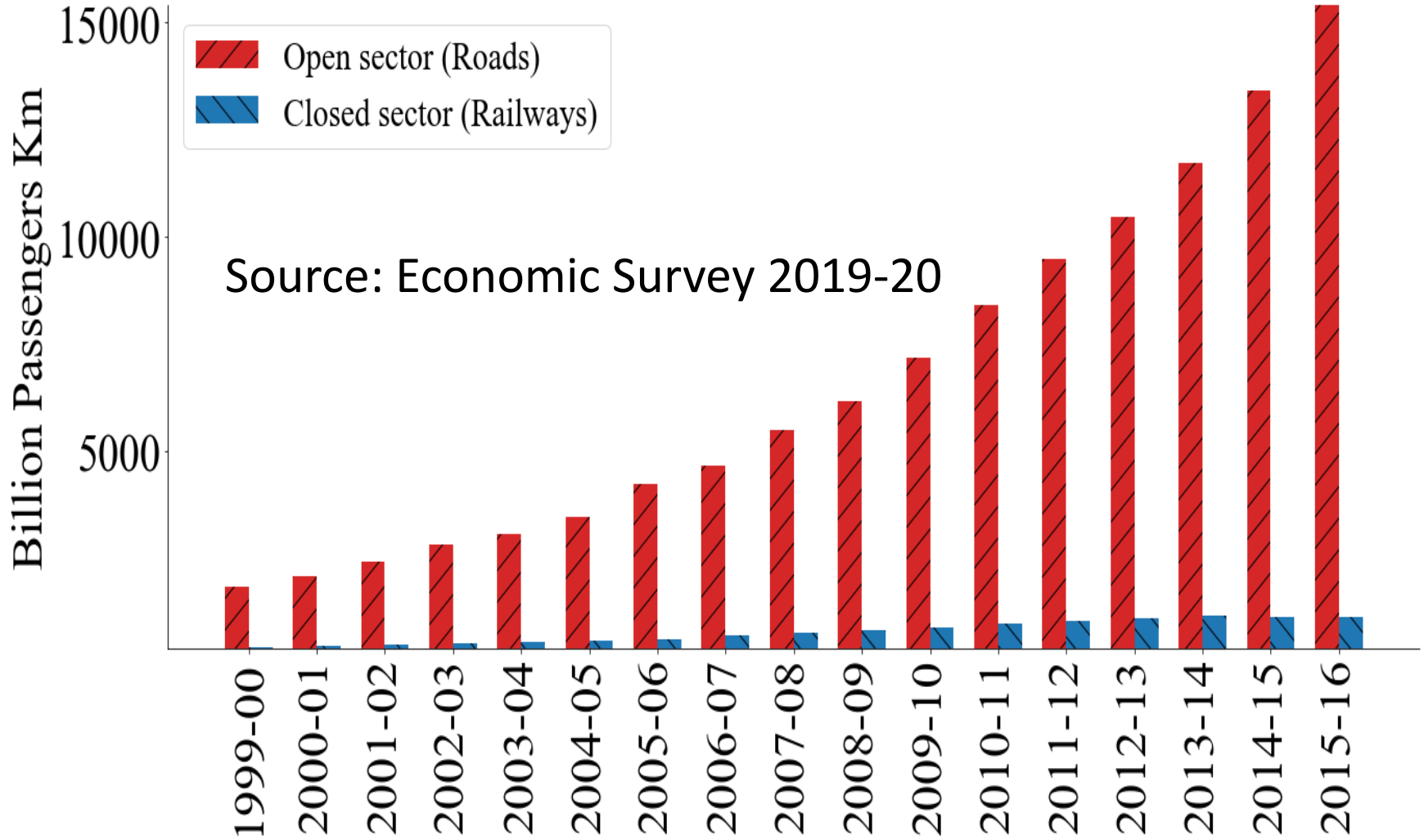
Source: Economic Survey 2019-20



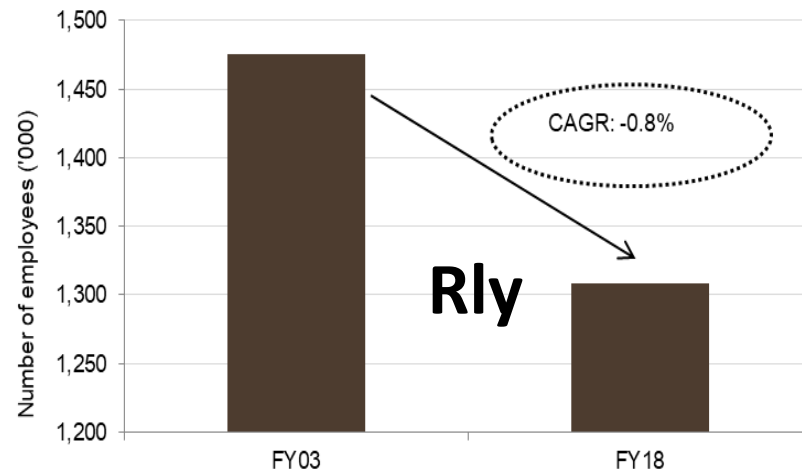
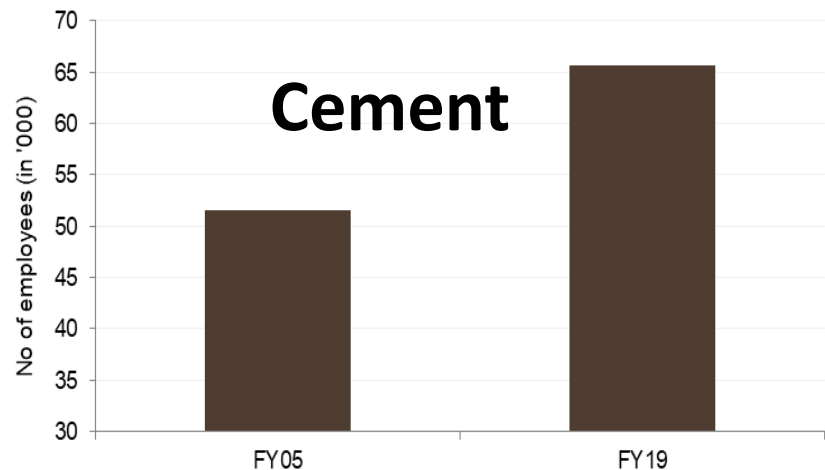
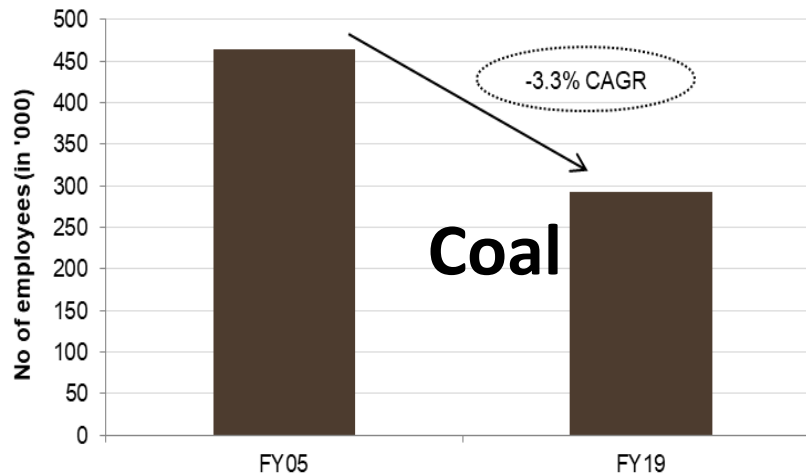
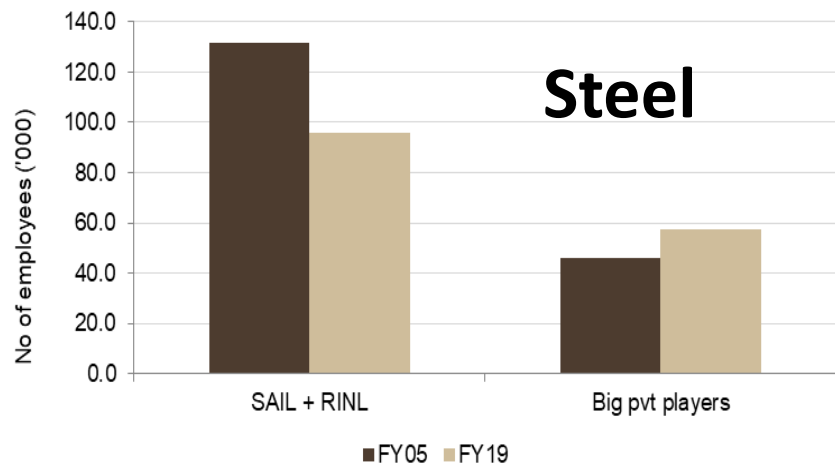
Contemporary evidence: Benefits of economic freedom (Railways vs Roads)



Contemporary evidence: Benefits of economic freedom (Railways vs Roads)



Contemporary evidence: Benefits of Economic Freedom through Employment



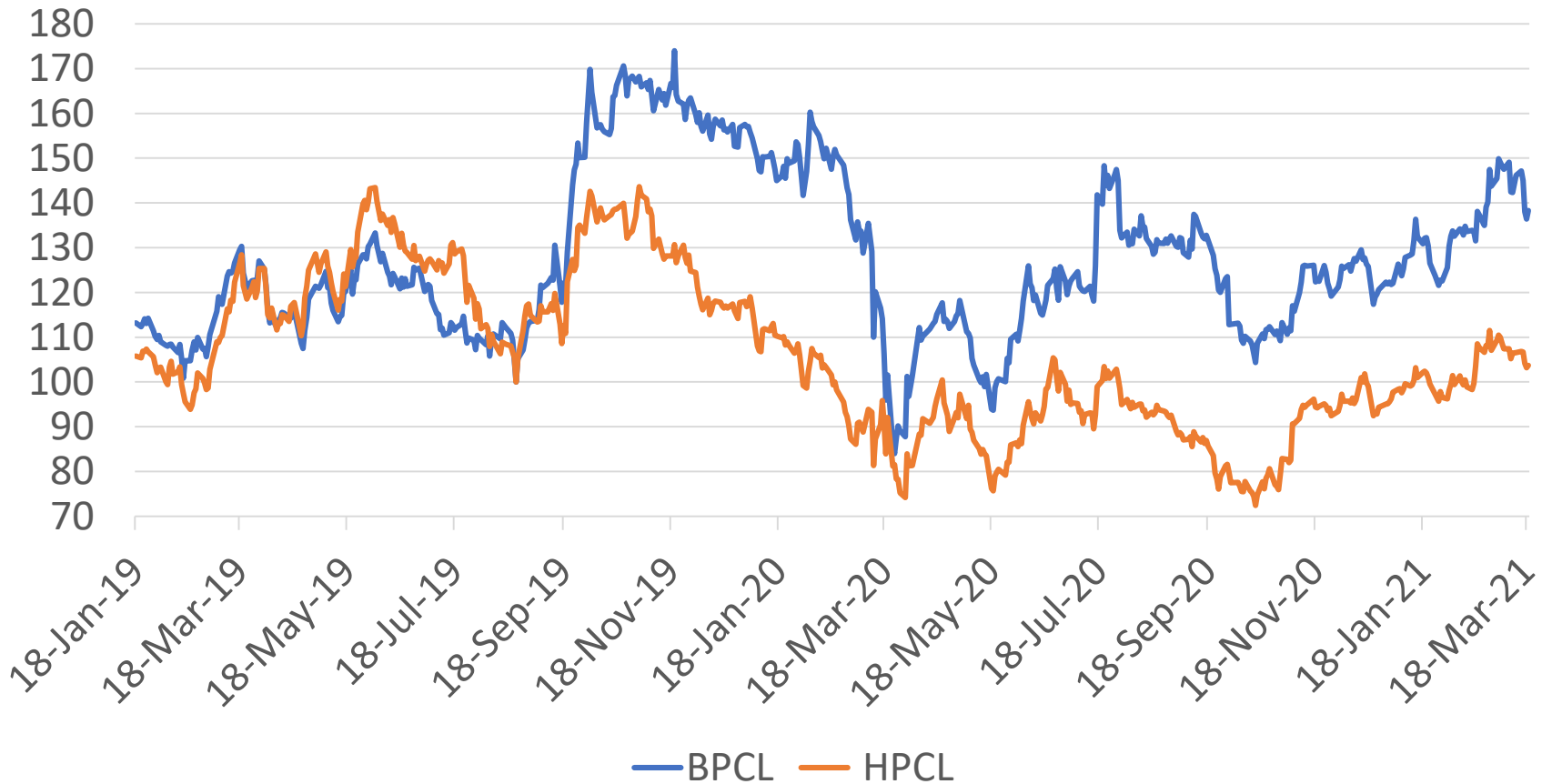
Source: Economic Survey 2019-20



Benefits of Privatization: BPCL vs. HPCL

Source: Economic Survey 2019-20

BPCL & HPCL prices normalised to 100 on 22-Aug-19 when news first surfaced

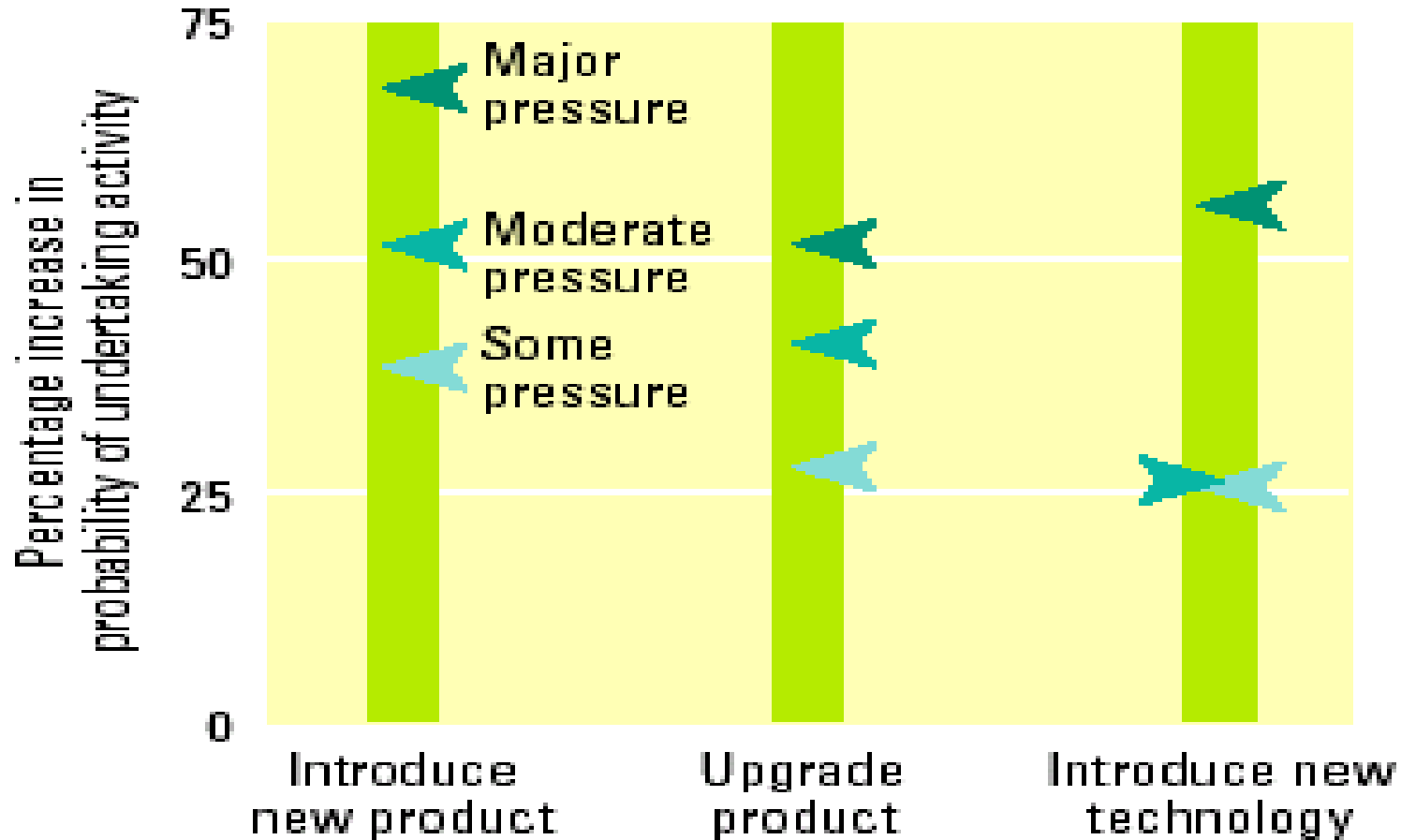


Benefits accrue to all stakeholders following privatization

<i>All amounts in Rs. Crores</i>	Total amounts across all privatised enterprises			Average amount across all privatised enterprises		
	Pre	Post	Post/Pre	Pre	Post	Post/Pre
Compensation to employees	6715	16047	2.4	81	189	2.3
Compensation per '000 employees	1108	2274	2.1	14	45	3.3
Taxes paid	27586	48036	1.7	298	614	2.1
Forex earnings	33829	43450	1.3	391	731	1.9
Payments to suppliers	51577	189517	3.7	564	1977	3.5
Research & development expenses	409	2183	5.3	4	22	5.0
Capital expenditure	11471	22804	2.0	152	328	2.2



Higher the competitive pressure, greater the innovation



Note: Surveys cover 27 countries in Eastern Europe and Central Asia.
Source: World Bank Investment Climate Surveys/BEEPS II.

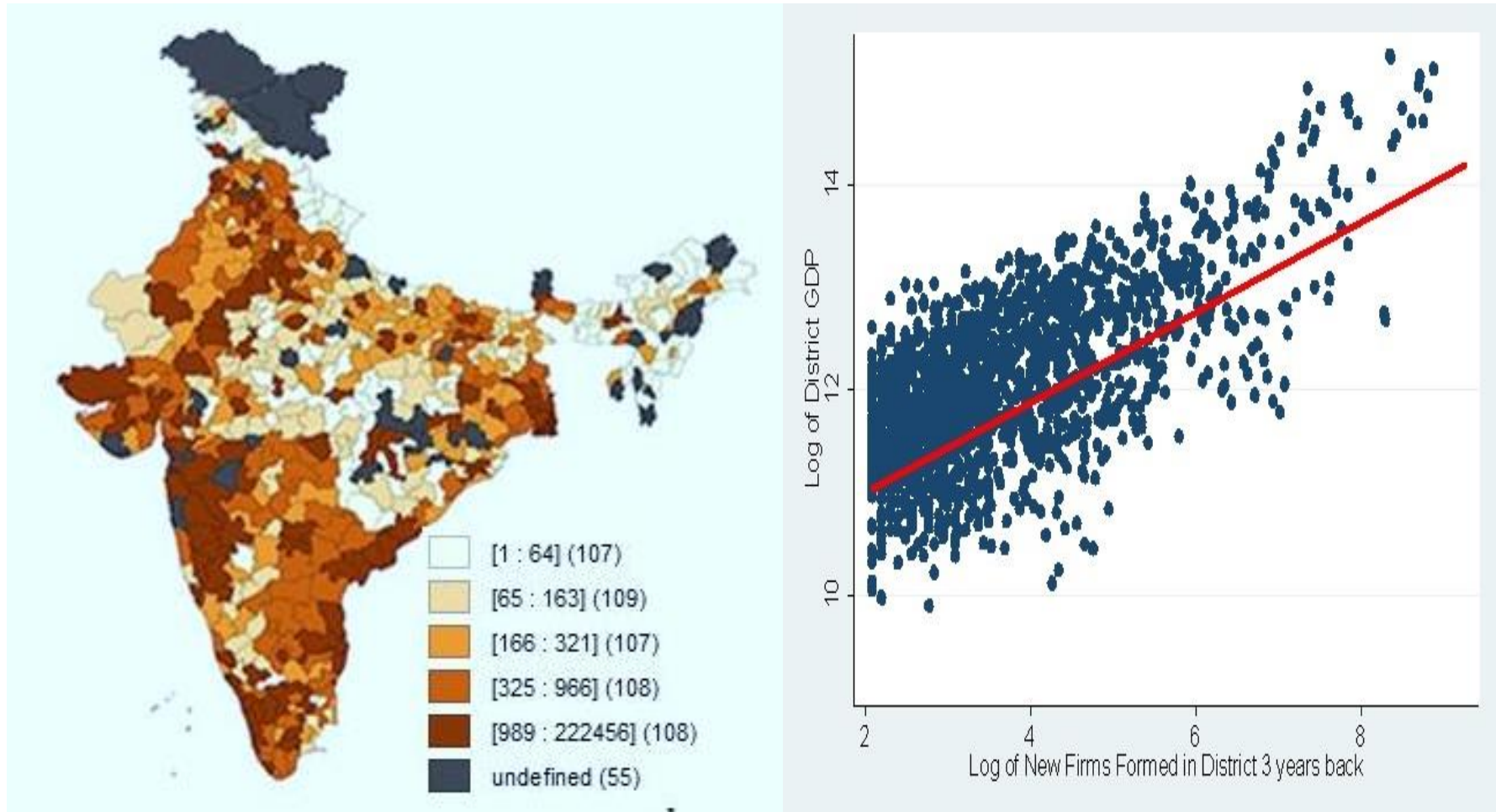


Empirical evidence of the effects of competition on innovation

- ❑ Total factor productivity in India could be 50% higher just through greater competition (Hsieh and Klenow, 2009, 2012)
- ❑ Productivity increases manifest from innovation => greater product market competition can play an important role in fostering innovation in India



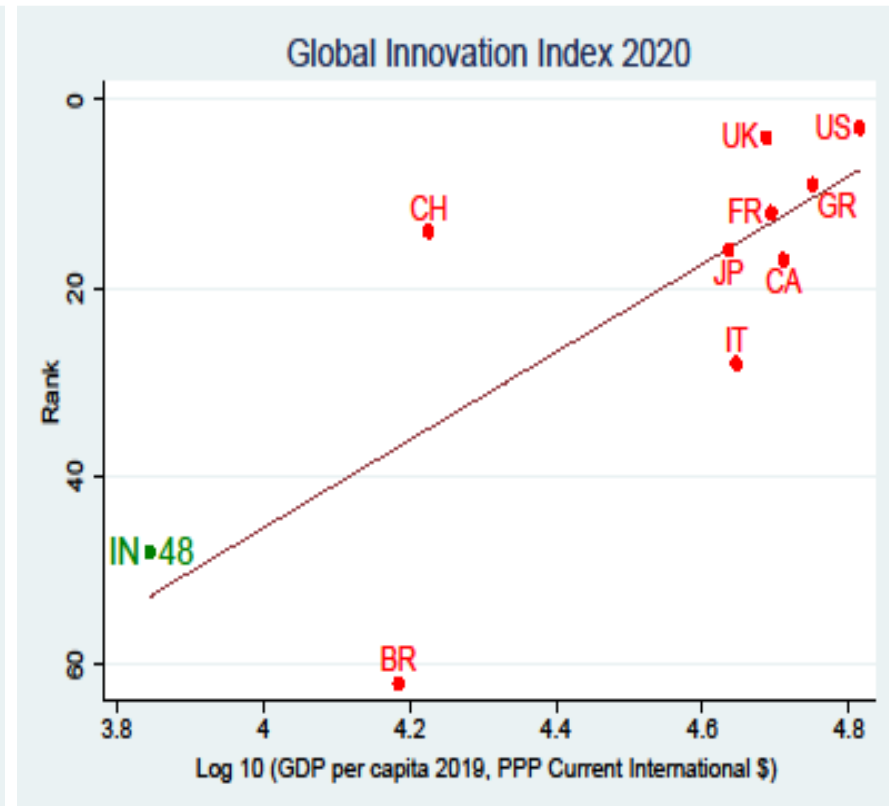
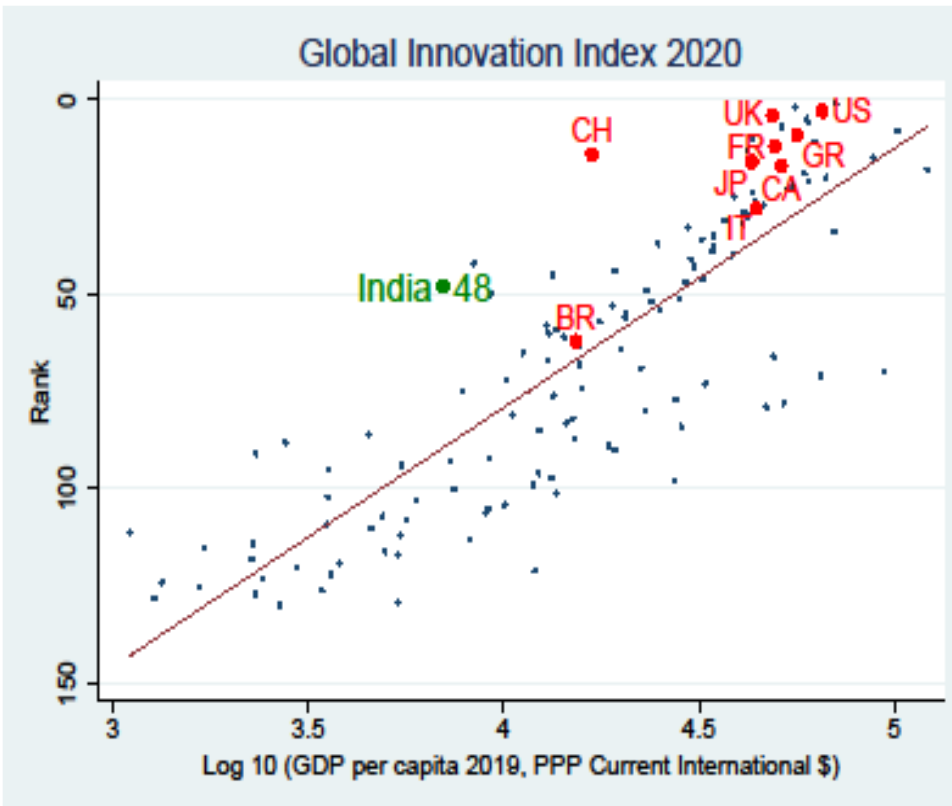
Wealth creation through Entrepreneurship at the grassroots



New Firm Creation across Districts Source: Economic Survey 2019-20



India a positive outlier in innovation.. India entered top 50 innovative economies this year

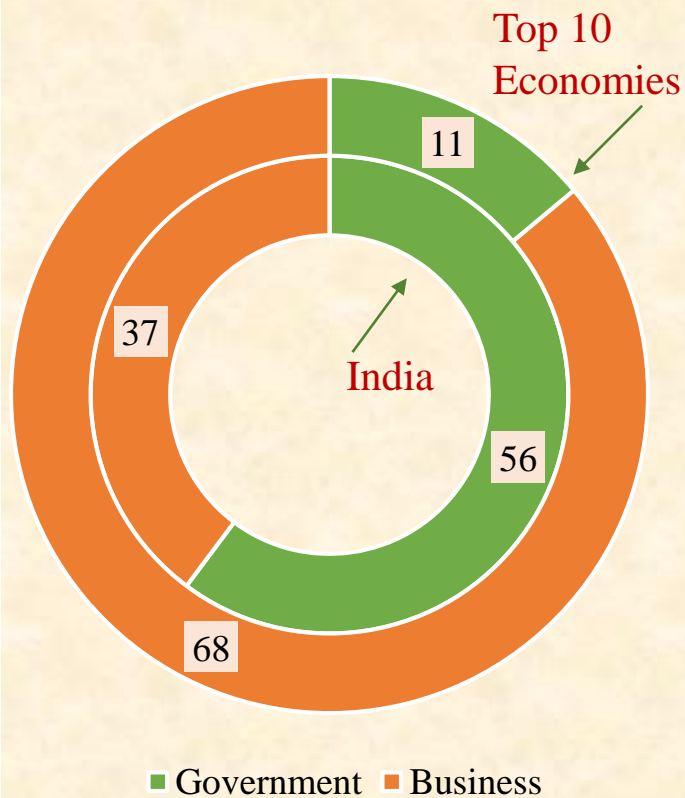


India must aspire to increase GERD from 1.5%-3% of GDP (average in top 10 economies).



Enhancing Private Sector participation in Innovation

Share in GERD



- Business sector in India contributes 37% to gross expenditure on R&D. In top ten economies, businesses contribute 68% per cent on average.
- Govt contributes 56 per cent of gross expenditure on R&D - three times the average contributed by governments in the top ten economies.
- India's gross expenditure on R&D at 0.65% of GDP is low primarily due to the disproportionately lower contribution from the business sector
- This is despite more liberal Tax incentives for R&D in India when compared to those in the top ten economies.

How can regulators encourage
pro-market behavior



How to foster pro-market behaviour: Deterrence

- ❑ Competition regulation and its enforcement create incentives that shape the behavior of all firms, including those never found in violation.
- ❑ Primary benefits accrue from the deterrence of anti-competitive conduct, which is never observed.
- ❑ Effects of speed limits on driving speeds:
 - Cannot focus only on those drivers caught for speeding
 - Need to examine the impact of speed limit enforcement on the vast majority of drivers not caught for speeding.



How to foster pro-market behaviour: Deterrence

- ❑ Similarly, many managers may never personally be involved in a legal case of anti-competitive conduct
- ❑ But managers hear about others who are and they modify their behavior accordingly
- ❑ The behavioral change following IBC is a good example



How to foster pro-market behaviour: Deterrence

- ❑ The behavioral change following IBC is a good example
- ❑ Enforcement of bankruptcy process on large and small firms
 - Little difference in enforcement of IBC between small and large firms
- ❑ Similarly, enforcement of regulation must create deterrence
 - Without any distinction between large and small firms
 - Without any distinction between well-connected firms and firms without any connections
- ❑ Wrong to dismiss as “impractical”... change never happened by being “practical”... change happens only by “pursuing ideals”



How to foster pro-market behaviour: Deterrence

□ The deterrent effects of anti-competitive enforcement

depends upon

- expected probability of detection
- expected probability of conviction upon detection, and
- magnitude of penalty upon conviction

□ To create meaningful deterrence, all three factors should be non-trivial

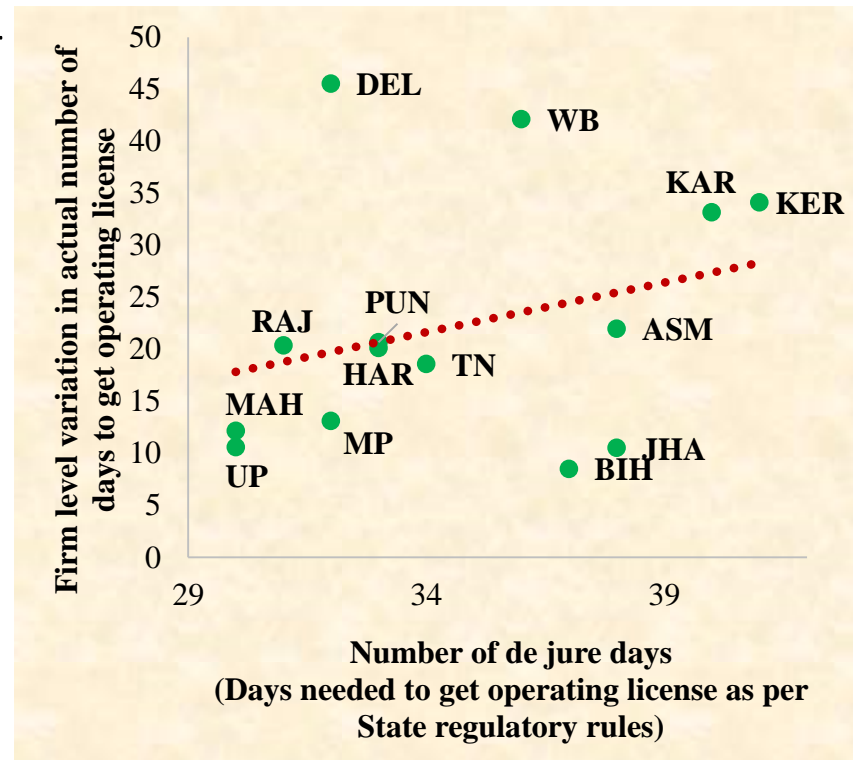
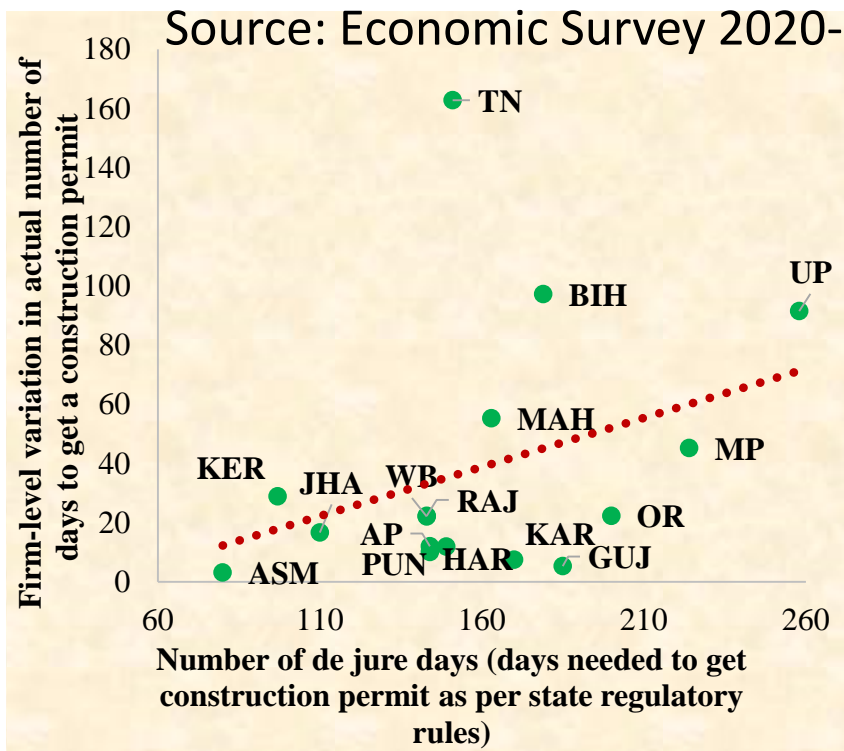


Over-Regulation leads to more Discretion

Noble-prize winning work on incomplete contracts: Complexity in framing contracts arises from

- difficulties involved in anticipating and specifying all obligations for all parties in full
- across all possible contingencies.

Incomplete regulations become inevitable when the reality of **incomplete contracts** is acknowledged



It takes 1570 days for a company to undergo voluntary liquidation in India (when there is no dispute/ litigation and all paperwork is complete)... 120 days in Singapore



Need for Process Reforms

Source: Economic Survey 2020-21

01

**Simple regulations combined
with transparent decision-
making process**

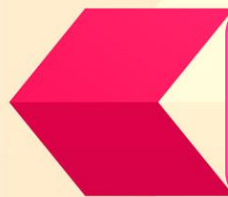


**Improved transparency in
supervision**

02

03

**Stronger systems of ex-ante
accountability**



Ex-post resolution mechanisms

04



In Sum...

□ Effective competition is critical for fostering innovation in the Indian economy

➤ Jobs

➤ Entrepreneurship

➤ Economic growth

□ Deterrence is crucial for encouraging pro-market behaviour

□ Regulation must not be confused with supervision. Substituting supervision with regulation leads to over regulation.



THANK YOU



Annual Meeting of the Forum of Indian Regulators

ISGF PRESENTATION ON

- (1) ToU Tariff Framework for Electricity**
- (2) New Revenue Opportunities for Utilities**
- (3) Peer-to-Peer (P2P) Trading of Electricity from Rooftop Solar on Blockchain Platform**

REJI KUMAR PILLAI

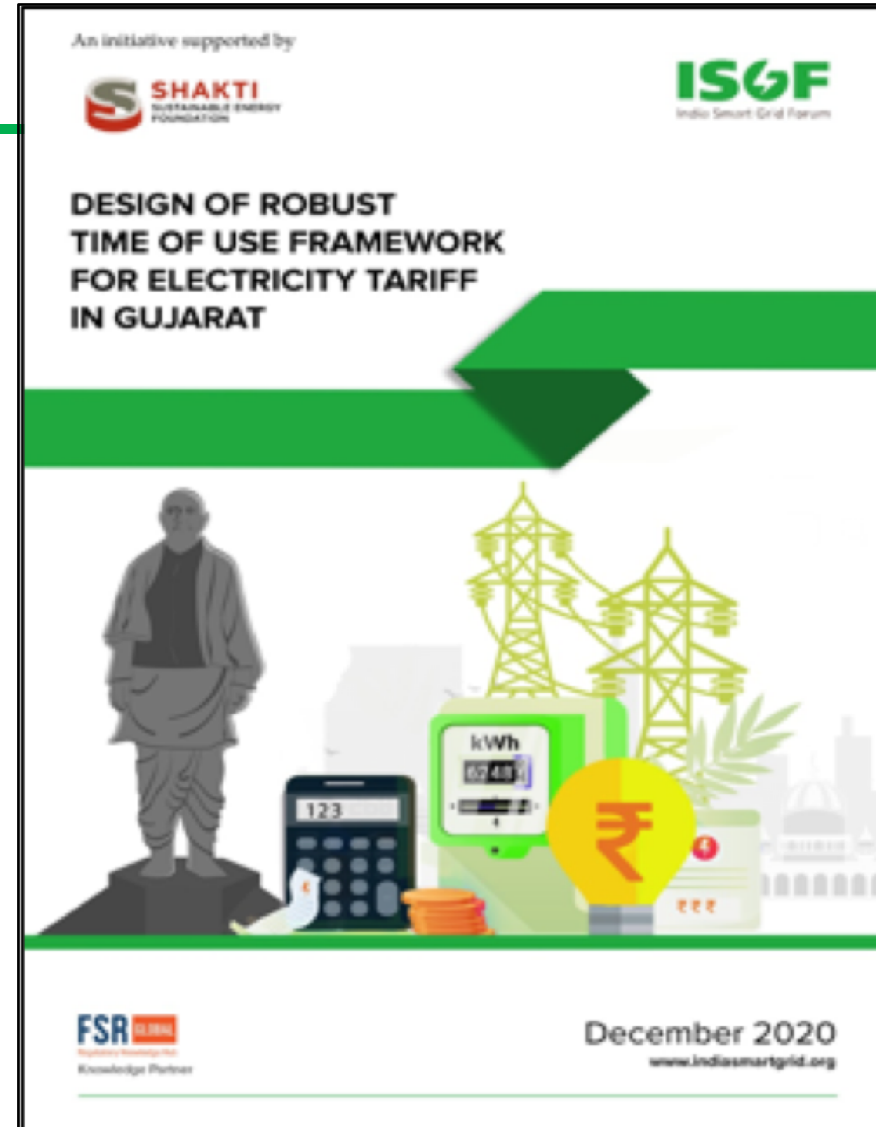
President - India Smart Grid Forum

Chairman - Global Smart Energy Federation

18 June 2021

Design of Robust Time of Use Tariff Framework for Electricity in India

(A Project supported by Shakti
Sustainable Energy Foundation)



Need for Time of Use (or Real Time) Tariff

- Demand for electricity in India is projected to grow significantly in the coming years
- IEA estimates 85% flexibility for the Indian Power System by 2040
- To achieve this level of flexibility we must explore and exploit all plausible solutions such as:
 - **Generation Resources that can ramp-up fast**
 - **Demand Response (DR)**
 - **Energy Storage Systems**
 - **Smart Microgrids that can island from the grid**
 - **Innovative Tariff mechanisms - Time of Use (ToU), Critical Peak Pricing etc**
 - **EV Integration with Grid**

IEA Projections of Indian Power System (capacities in GW)

	2030	2040
Solar	207	622
Wind	119	219
Other RE	19	28
Other Sources	444	597
Battery Storage	34	118
Total	823	1584
Flexibility Requirement	-	±85% (50% ramp-up and 35% backdown)

On 05 April 2020, Indian Power system demonstrated 25% flexibility; but 85% flexibility on a daily basis is very different paradigm

Pilot Study: Naroda, Gujarat

Project Objective: Shifting the peak load to regular/off-peak hours to flatten the load curve with added incentives to consumer and no extra burden (preferably savings) to DISCOMS

Customer Survey: Customer Survey conducted with help of Gujarat Technical University amongst 932 customers of UGVCL

ToU Tool: designed an interactive Tool that can simulate different *“What-If”* scenarios for different percentages of reallocation of load from peak time slots to comparatively non-peak periods

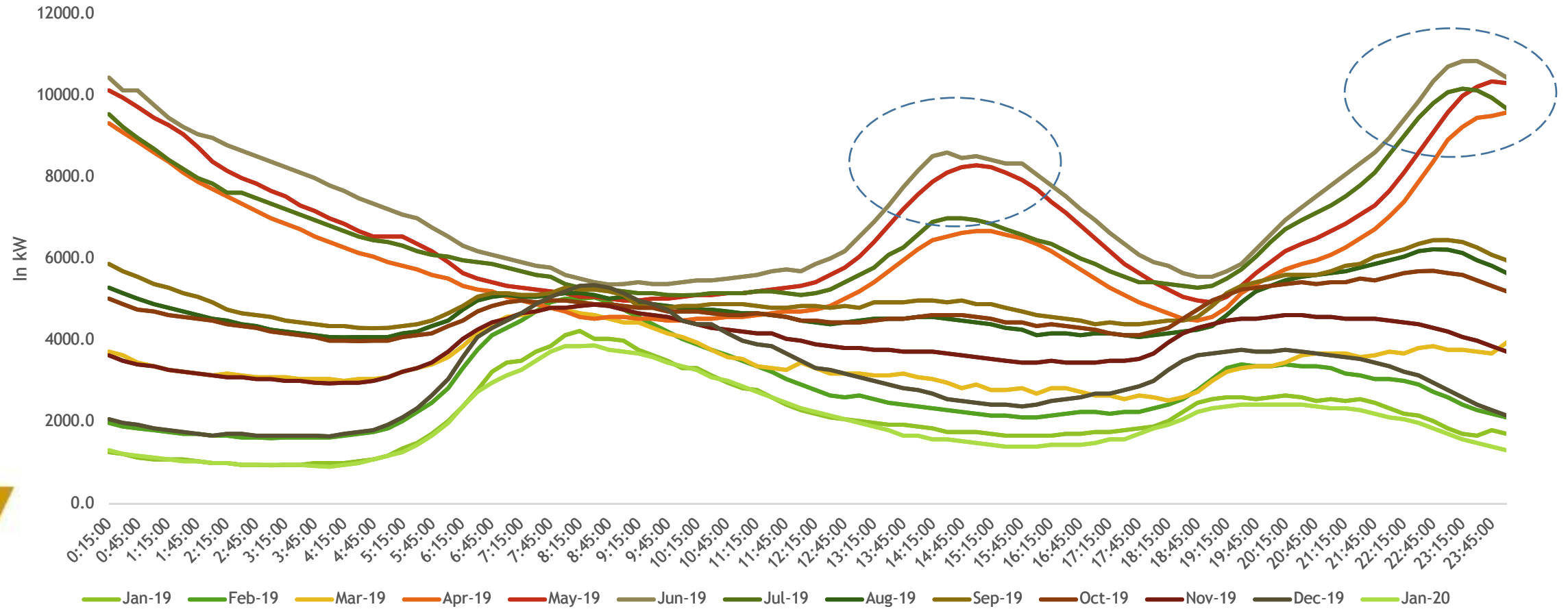
Geographical Area covered: Naroda, Gujarat

Data Source & Type: UGVCL’s Smart Grid Pilot Project Customers in Naroda area – 15 minutes interval data of 23,391 customers for the period Jan 2019 to Jan 2020 (13 months)

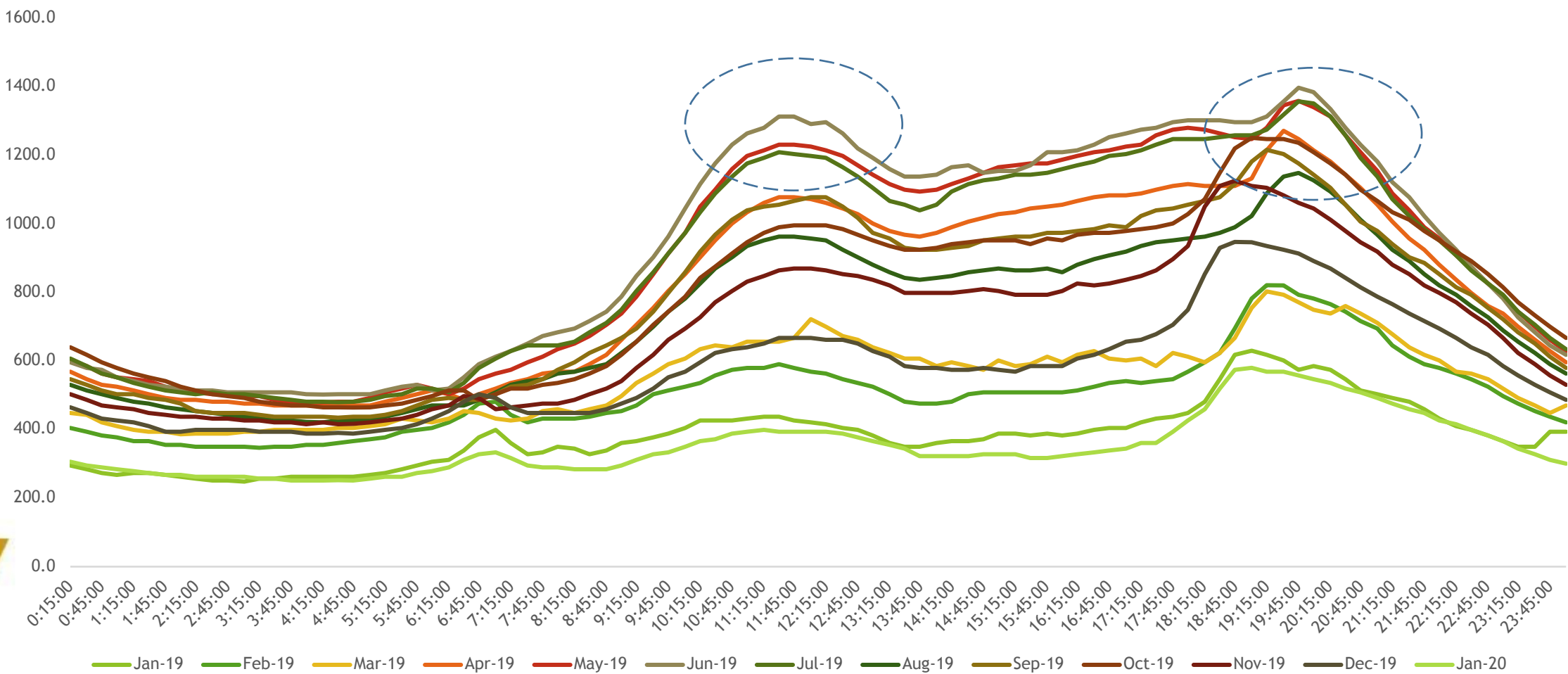
Limitations of the ToU Tool: The Tool has been designed on the basis of one-on-one reallocation. This leads to a sudden spike in the curve due to shift in load. Upon application, however, the spike will comparatively gradual and will provide the system time to cope to the new usage trend

Load Curve Naroda: As Is Status

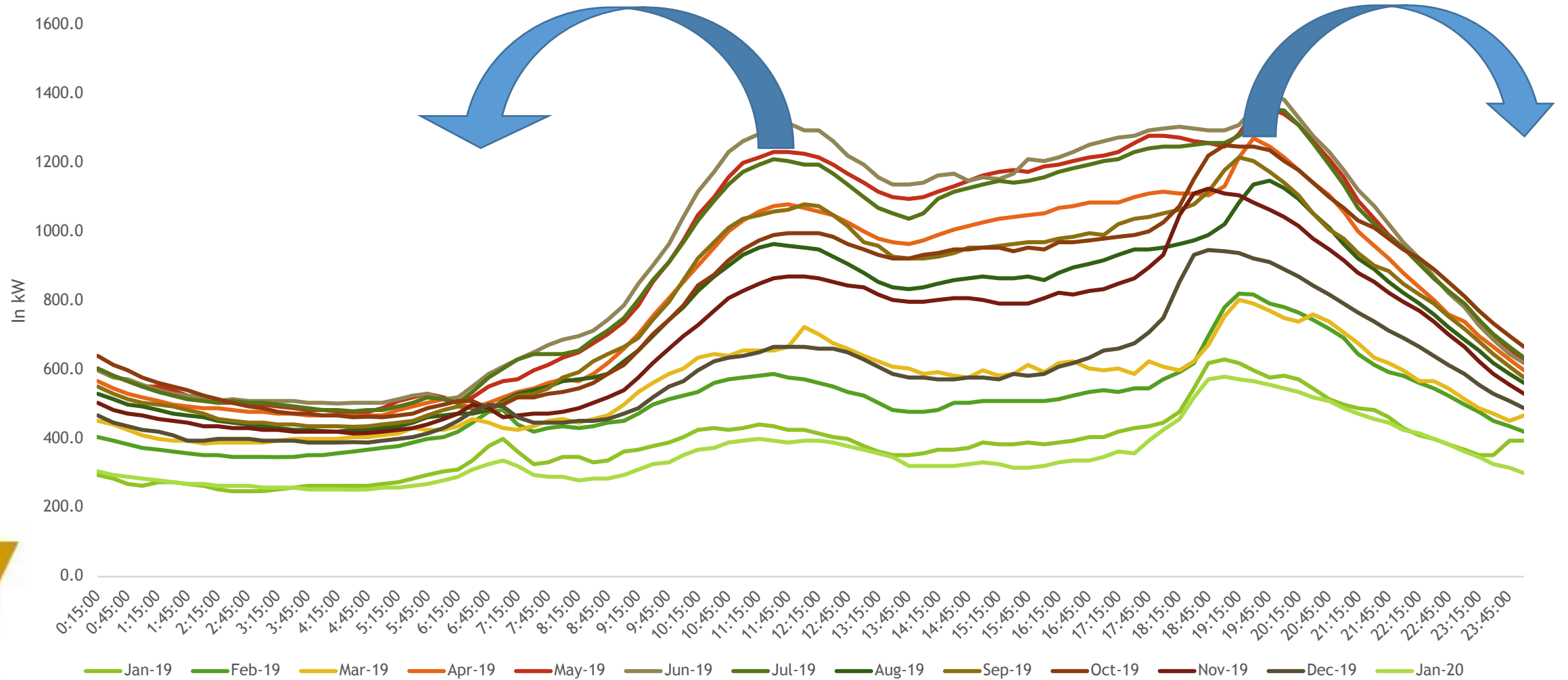
Load Curve (Month-wise for Jan 2019 - Jan 2020)



Load Curve Naroda: As Is Status of NRGPs Customers

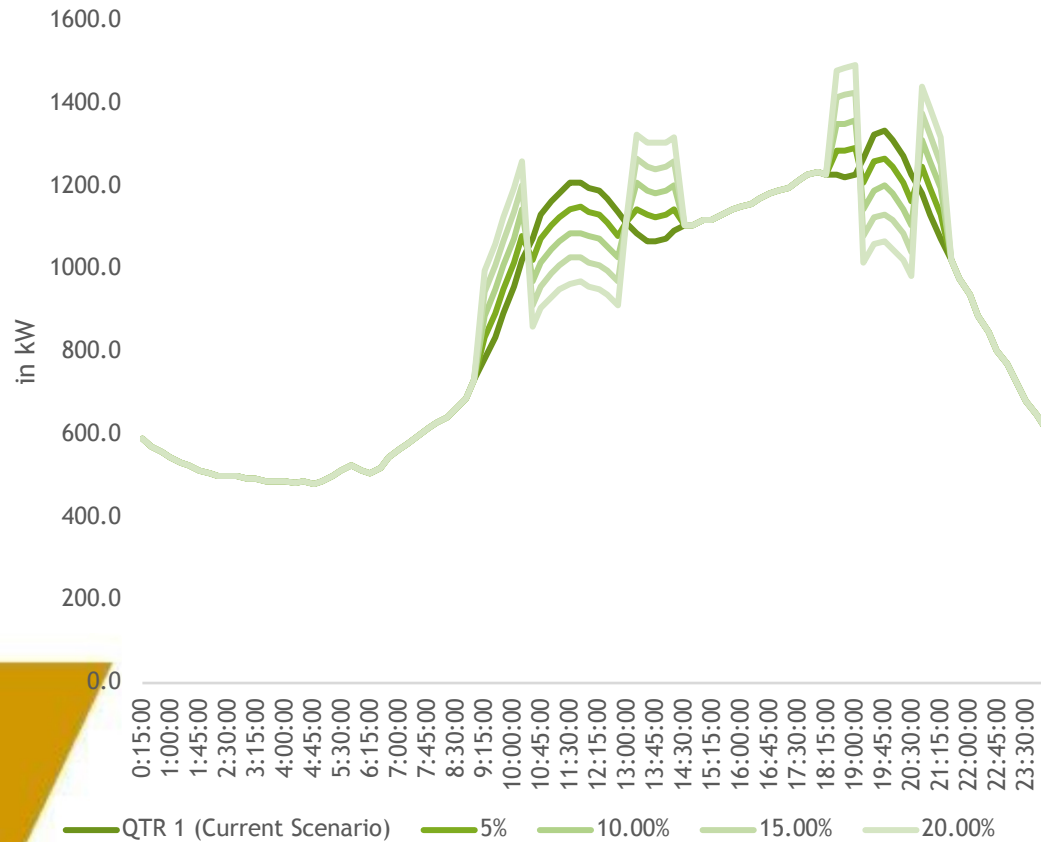


Shifting The Load

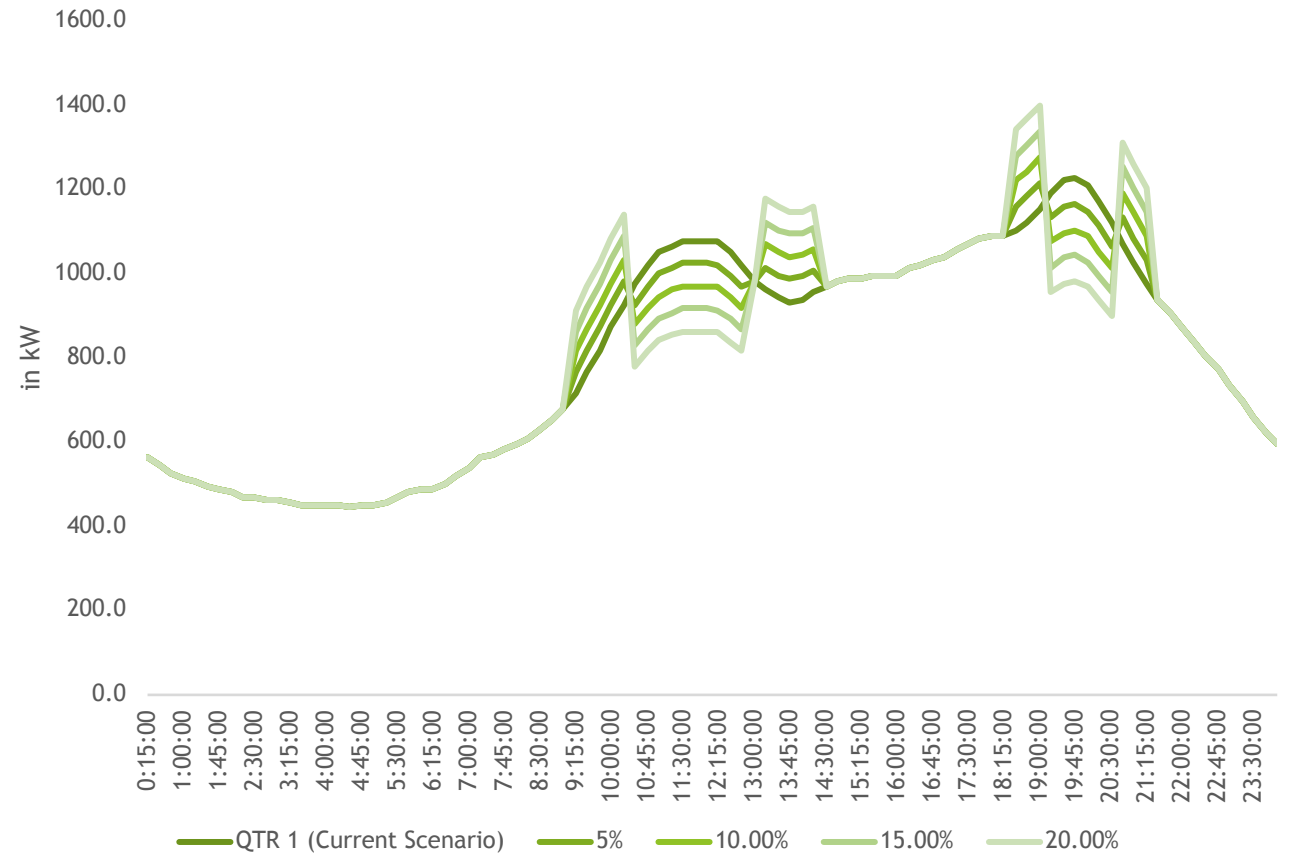


NRGP – Impact on Load shifting

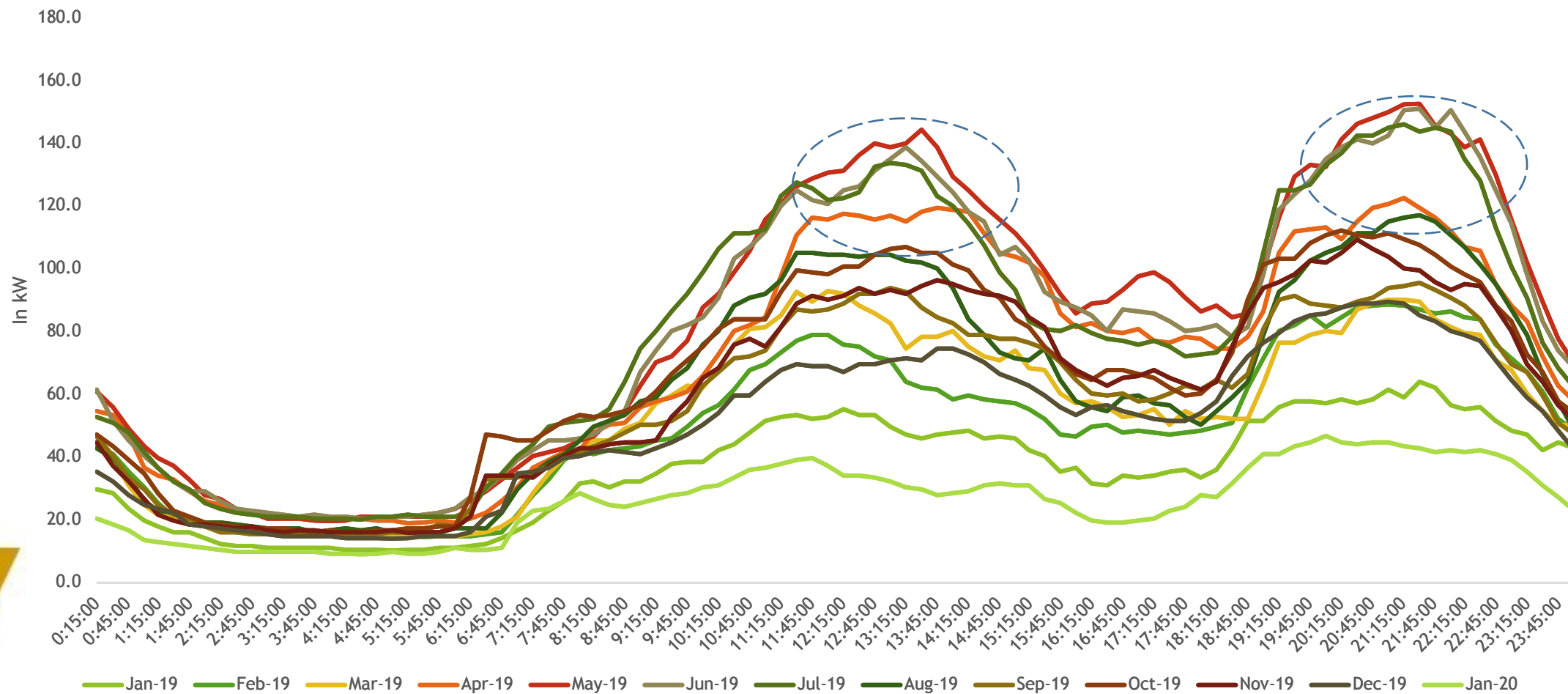
NRGP: Quarter 1 (Apr-June)



NRGP: Quarter 2 (July-Sept)

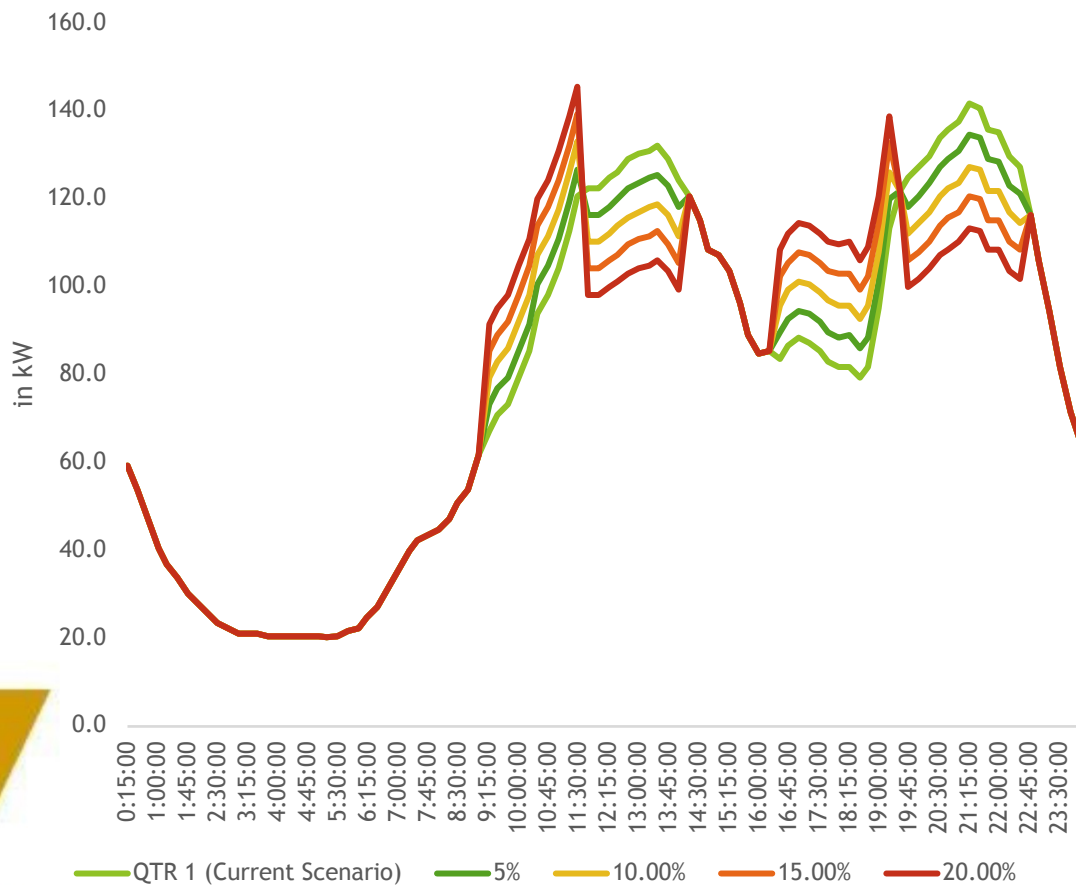


Load Curve Naroda: As Is Status of LTMD Customers

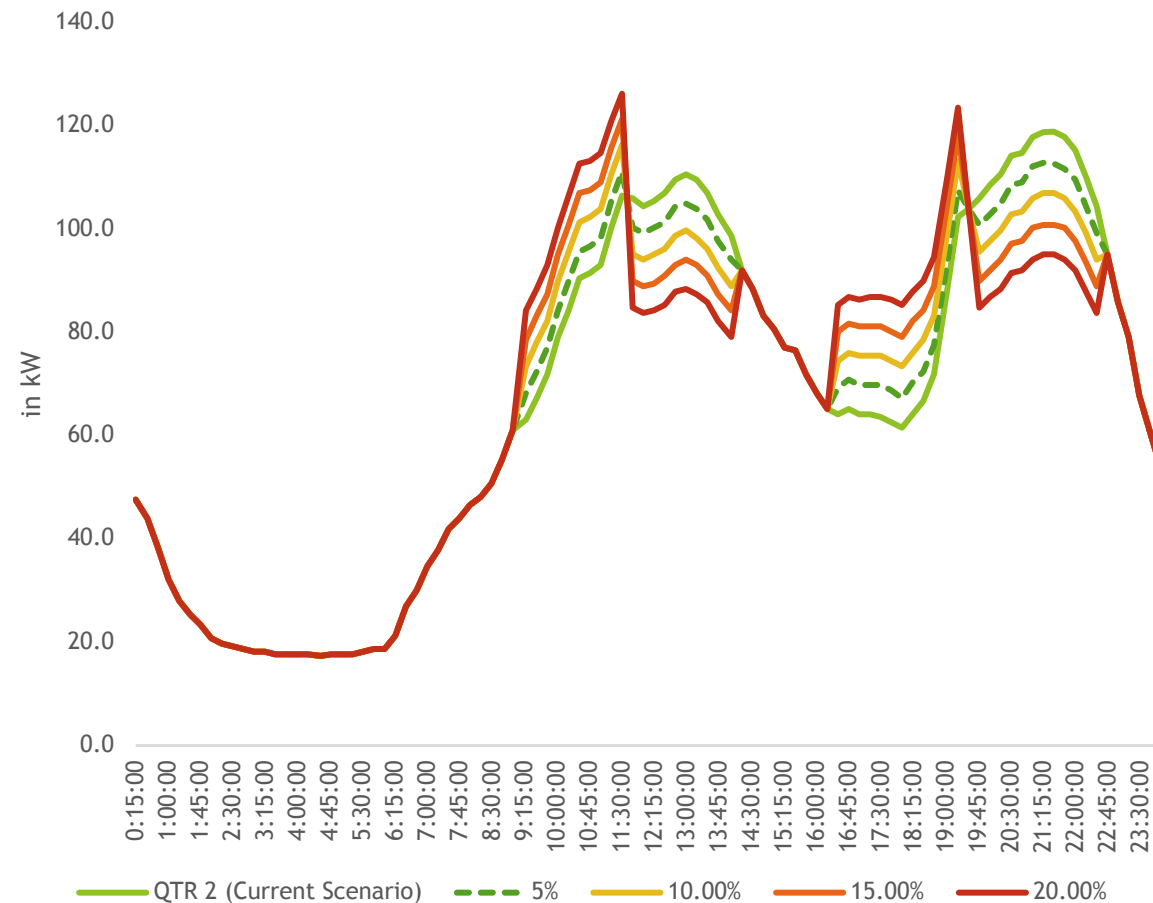


LTMD Customers – Impact of Load Shifting

LTMD: Quarter 1 (Apr-June)



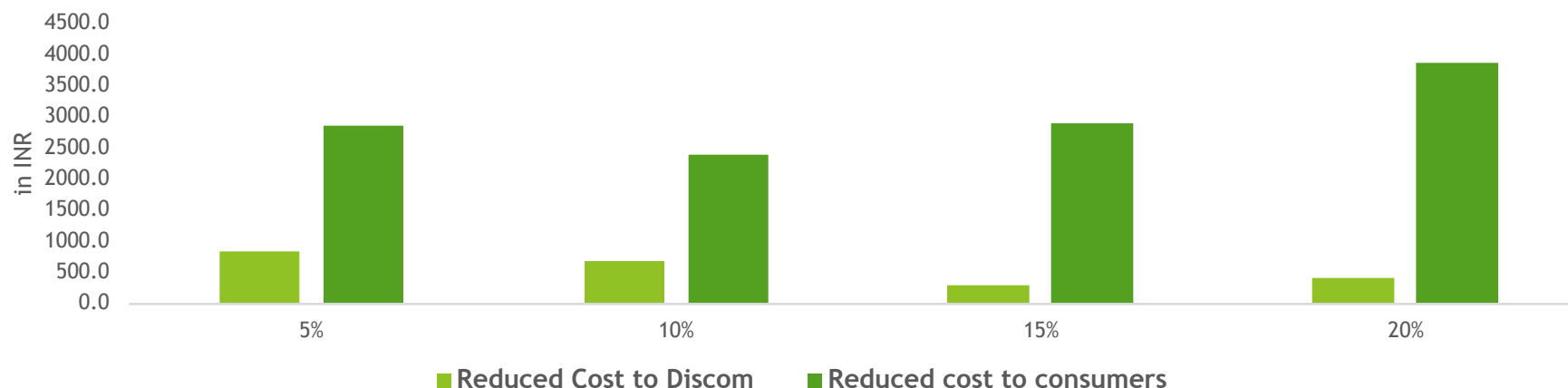
LTMD: Quarter 2 (July-Sept)



Effect of ToU on DISCOM & NREGP Customers

(in per kWh)	Assumed rates	(to be asked)	ToU Porposed Rate			
Time slots	Buy Rate	Sell Rate	5%	10%	15%	20%
Peak	6.00	8.00	9	9.8	9.6	9.6
Regular	4.00	7.00	5	5	5	5
Off-peak	3.00	6.00	3	4	4	4

Effect on cost and revenue



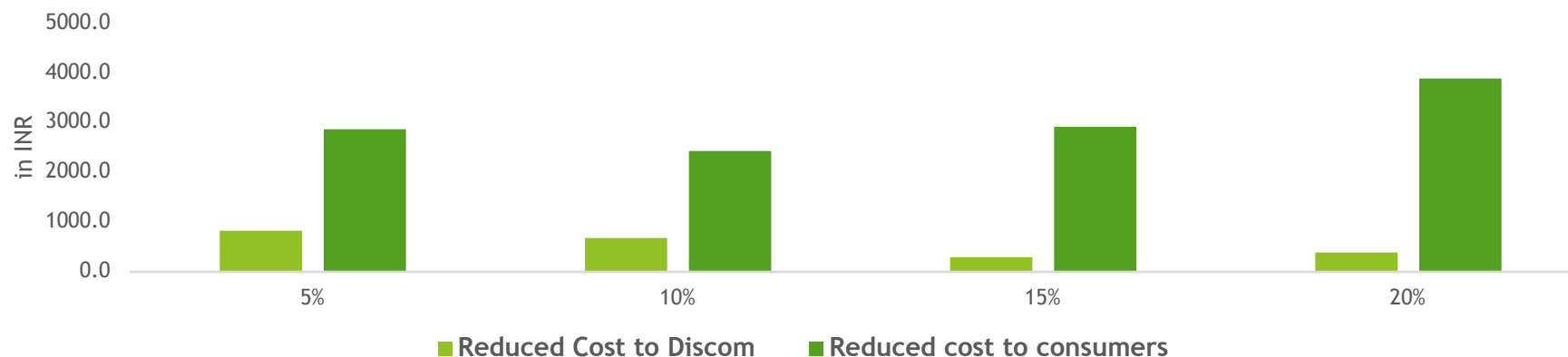
Reduced cost to DISCOMS is the difference between their revenue and cost respectively in both the scenarios
 Reduced cost to consumers is the savings in total cost incurred comparing both the scenarios

*Buy and sell rates are assumed

Effect of ToU on DISCOM & LTMD Customers

(in per kWh)	Assumed rates	(to be asked)	ToU Porposed Rate			
Time slots	Buy Rate	Sell Rate	5%	10%	15%	20%
Peak	6.00	8.00	9	9.8	9.6	9.6
Regular	4.00	7.00	5	5	5	5
Off-peak	3.00	6.00	3	4	4	4

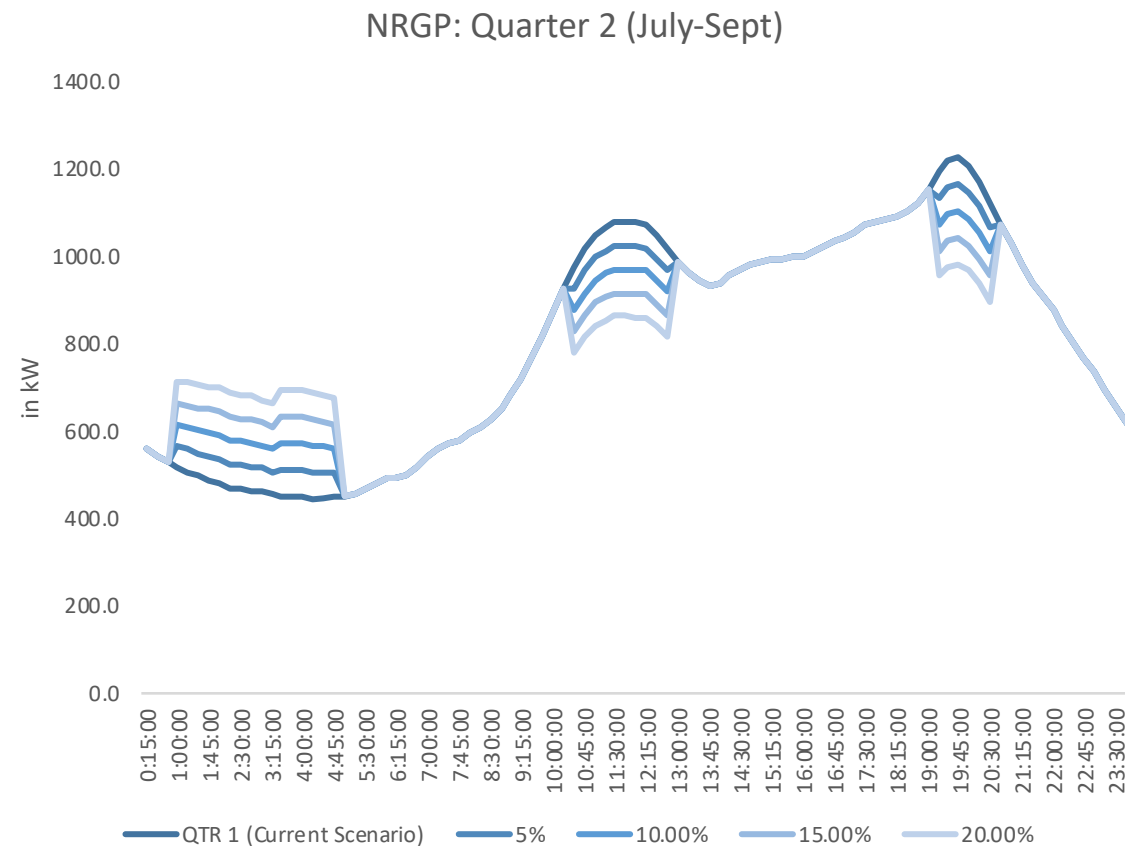
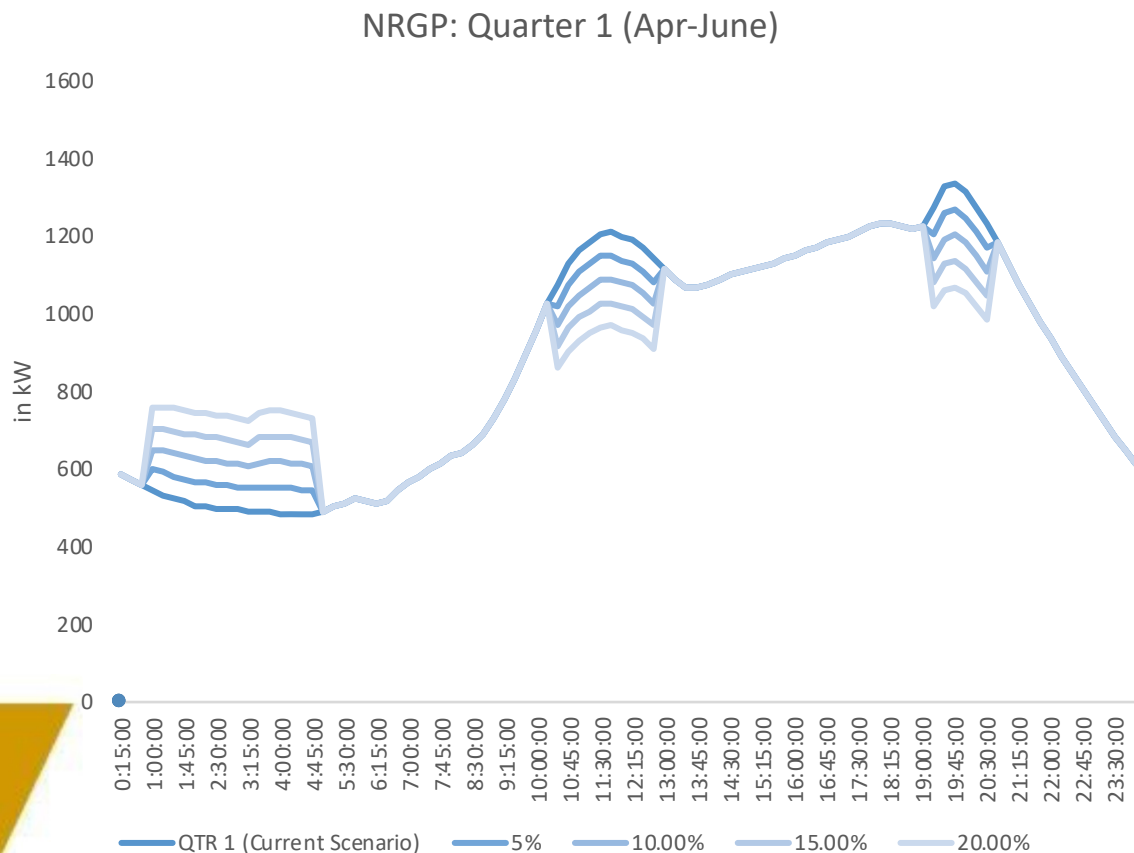
Effect on cost and revenue



Reduced cost to DISCOMS is the difference between their revenue and cost respectively in both the scenarios
 Reduced cost to consumers is the savings in total cost incurred comparing both the scenarios

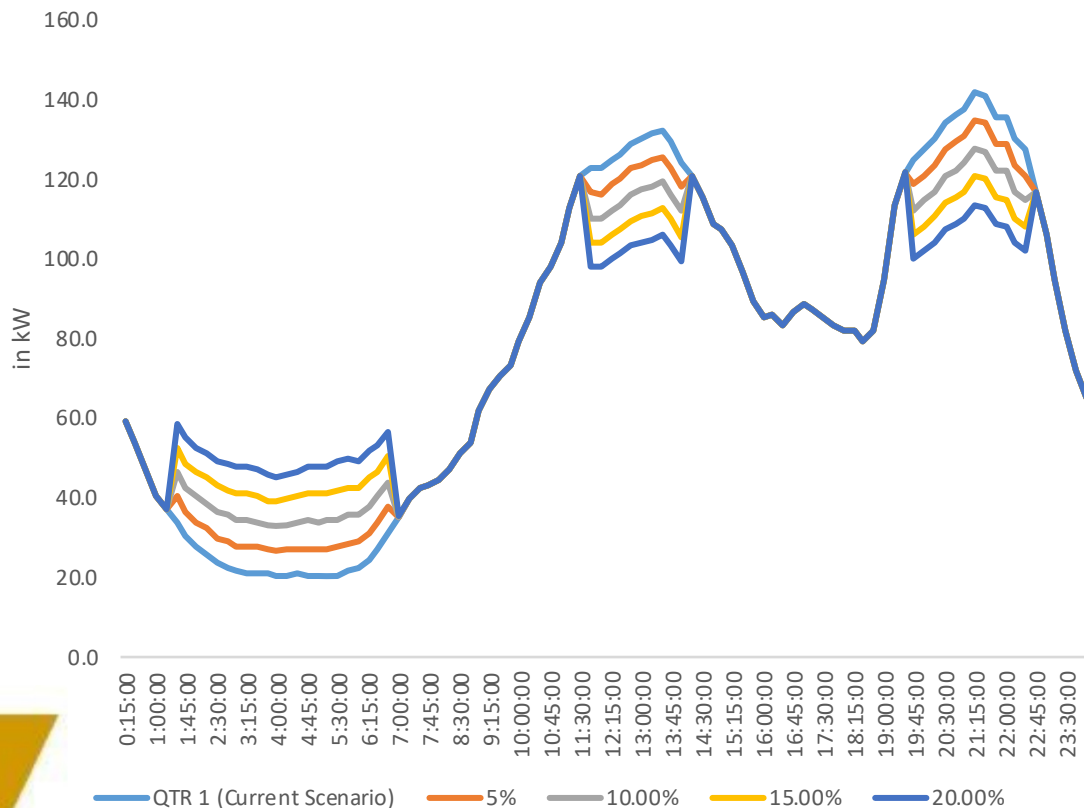
*Buy and sell rates are assumed

NRGP – Impact of Load shifting at Night

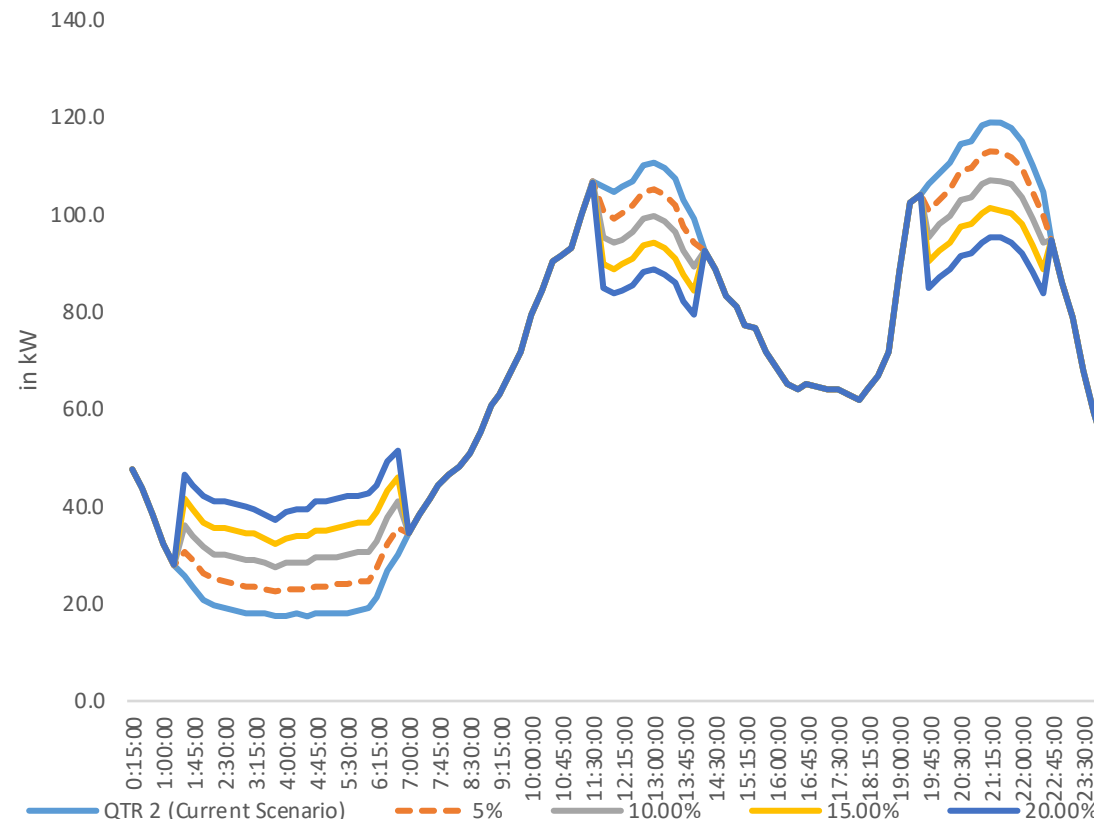


LTMD – Impact of Load Shifting at Night

LTMD: Quarter 1 (Apr-June)



LTMD: Quarter 2 (July-Sept)



Objective: *A customer survey was undertaken in UGVCL area to understand the awareness and view points of customers on electricity tariff and their willingness to participate in ToU scheme.*

Geographical Area covered: UGVCL, Gujarat

Data Source & Type: Customer Data provided by UGVCL

Number of Customers Surveyed : 932

Limitations of the Survey: (i) Small sample size – only UGVCL area, (ii) Telephonic interaction owing to the pandemic situation; and (iii) Non-participation of other Discoms

Key Takeaways from Customer Survey

- 23% of people have the flexibility to shift their operation during the day/night for connected load/ appliances
- 54% people agree that changing (dynamic) electricity rate determined by the market conditions could save money
- 70% of consumers are willing to adopt smart devices to be able to participate in ToU schemes
- 80% of consumers are willing to replace their existing appliances with smart appliances to optimize the cost
- 79 % consumers are willing to buy smart appliances (including the features of smart switching) which would help optimize operational cost
- 93% of consumers are willing to understand potential at ToU saving for the same amount of power consumption before and after enrolling the ToU schemes
- Majority of consumers are willing to use app for saving electricity, it shows consumer inclination towards digital applications and a huge potential for ToU where real time pricing signals are required

Recommendations for ToU Implementation

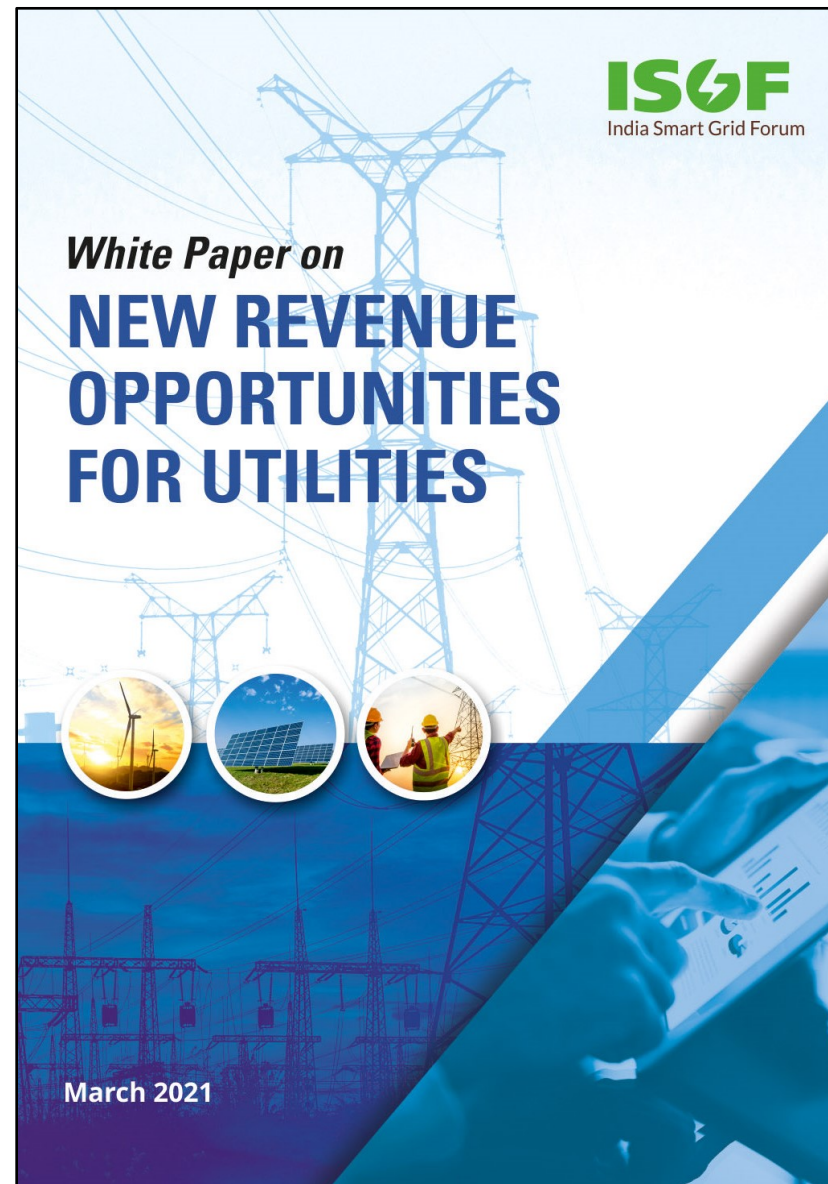
- SERCs in consultation with the Energy Department and the DISCOMs may finalize a ToU Tariff regime
- ISGF recommendation is to keep it simple in the beginning - just **3 part tariff: Regular, Peak and Off-Peak**. For the Peak, a surcharge may be added to the regular tariff, and a rebate on the regular tariff may be given for off-peak rates. Exact numbers for different categories of customers may be analysed and finalized by the SERC in consultations with target ToU customers
- **Phase-1:** SERC may approve pilot rollout of ToU in areas where smart meters are already implemented. Customers may be given **shadow billing showing the savings** in the initial few months if they have opted for the ToU tariff; and allow them to **opt-in for the ToU tariff**
- For successful implementation of ToU, **Billing System must be modified and integrated with the time-stamped meter data**
- **Phase-2:** Once the ToU billing system integration is completed for the pilot area customers, DISCOM should explore the feasibility of **ToU rollout to HT and other high value customers** (say with load above 100kW). These customers may be given smart meters with GPRS communication.

Recommendations for ToU Implementation

- Customer feedback and analysis system should be monitored by SERC for appropriate modifications in the ToU framework
- The savings in power purchase cost for the DISCOM, the ***peak load reduced*** and the consequent ***reduction in AT&C losses and emissions avoided*** must be calculated by the DISCOM and monitored by SERC. DISCOM should also assess ***their revenue impact*** (both positive and negative) from the ToU customers and overall revenue impact from the scheme and may make appropriate recommendations to SERC for changes in the ToU tariff framework
- **Smart metering rollout** (as part of 100% smart metering scheme of GoI) may be designed so that ***the meter data management systems (MDMS) and its integration with billing system should have the features to capture and aggregate the meter reads in specified time blocks with different tariffs in separate buckets and apply relevant tariffs to prepare the ToU bills for the billing cycle***
- **Phase-3:** Once smart metering is completed in urban areas in by all DISCOMs, ToU tariff may be offered to customers with load above 20kW across all DISCOMs in State
- **Phase-4:** ToU tariff may be offered to all the customers in the DISCOMs on voluntary basis while it is mandatory for customers with load above 20kW

NEW REVENUE OPPORTUNITIES FOR UTILITIES

(White Paper by ISGF)



New Revenue Opportunities Enabled by Digitalization of the Power Sector

PHYSICAL ASSETS DEPRECIATE.....

1. Power Plants
2. Transmission and Distribution Network Equipment
3. Offices, Buildings, etc
4. Computer and Communication Hardware

.....DIGITAL ASSETS APPRECIATE

1. Customer Data
2. Billing and Collection System
3. AMI Data and Energy Consumption Profile
4. GIS Map indexing Electrical Network and Customers – cover all buildings and roads
5. Automation Systems - SCADA/DMS, DA and SA, DR, DERMS...
6. Outage Management System and Mobile Workforce Management System
7. Call Centers and Call Data Archives

New Services and Revenue Opportunities from Unlocking Existing Infrastructure and Services

1. Selling of Rooftop PV (RTPV) Systems and promoting “Prosumers”
2. Selling of Energy Efficient (star-rated) and “Smart” Appliances
3. Promotion of Electric Cooking and sale of Cooking Appliances
4. Selling Electric Vehicle Chargers
5. Selling Batteries for Energy Storage and Other Applications
6. Sharing of Communication Bandwidth
7. Smart Home: Grid Interactive Buildings and Appliances
8. Maintenance Services to Large Buildings and Complexes
8. Unlocking the Value of Substation Land: Commercialization of Surplus Land by Conversion of existing Substations to Gas Insulated Substations (GIS)
9. Unlocking the Value of Lamp Poles and Transmission Towers:
 - Installation of EV Charging Points
 - Installation of 4G/5G/WiFi Antennas/Navigation Systems for Drones
 - Installation of Security Cameras/Pollution Monitoring Sensors
 - Advertisements
11. Cooling as a Service – District Cooling Systems

Pilot Projects on Peer to Peer Trading of Solar Power on Blockchain in Lucknow, Uttar Pradesh and TPDDL, Delhi

Project Objectives and Outcomes – UPPCL

- ❖ Deliver P2P trading opportunities to prosumers and consumers under a Regulatory Sand Box Approach – only mock trading in the pilot phase
- ❖ Provide prosumers more flexibility, further incentivizing the uptake of DERs
- ❖ Reduce the financial impact of net metered solar systems on the Discoms
- ❖ Provide valuable opportunities to Discoms to:
 - Learn how best to implement a network tariff to support the wider rollout of P2P electricity trading
 - Understand the impacts of P2P trading on the electricity distribution network
- ❖ Try different Trading Rules to assess to test what works best
- ❖ Conduct consultation workshops with various stakeholders to fine-tune the P2P Trading Rules and promote the system state-wide
- ❖ Recommendations to SERC for appropriate regulations to promote P2P Trading state-wide

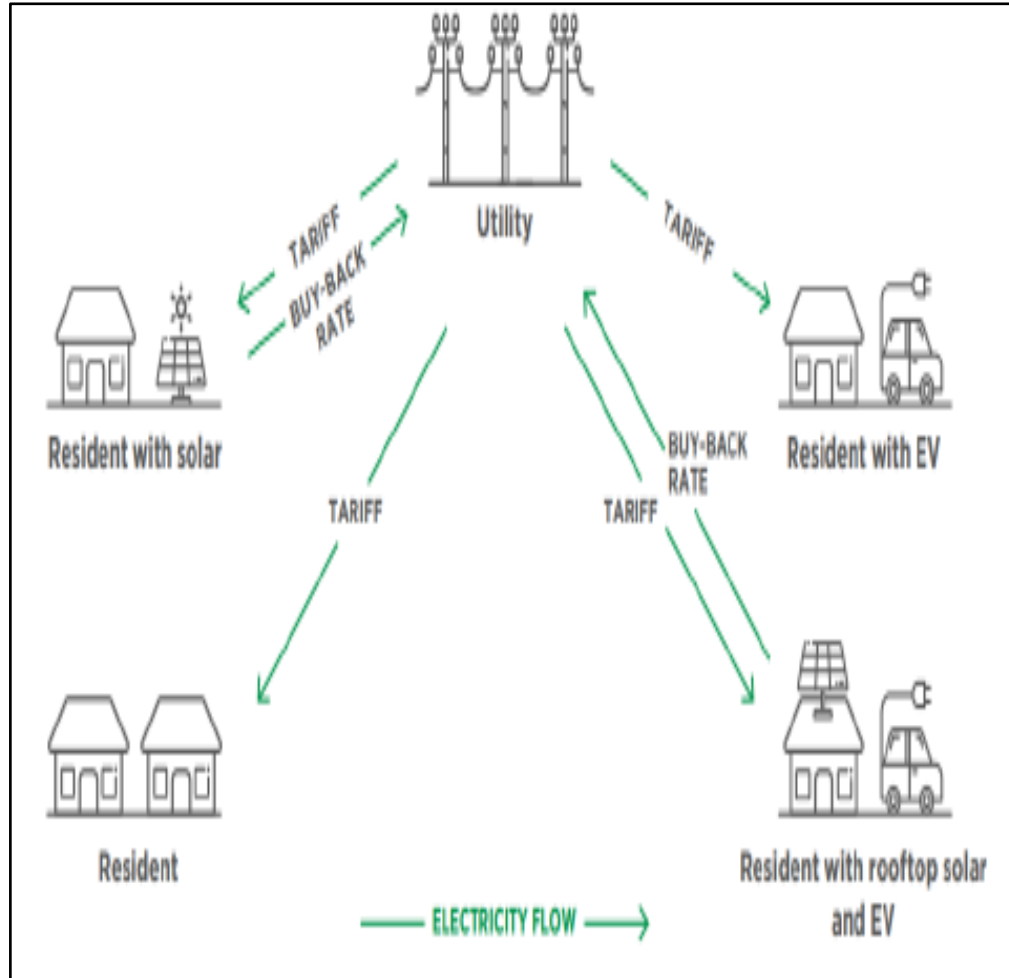
P2P Trading – An Innovative Approach



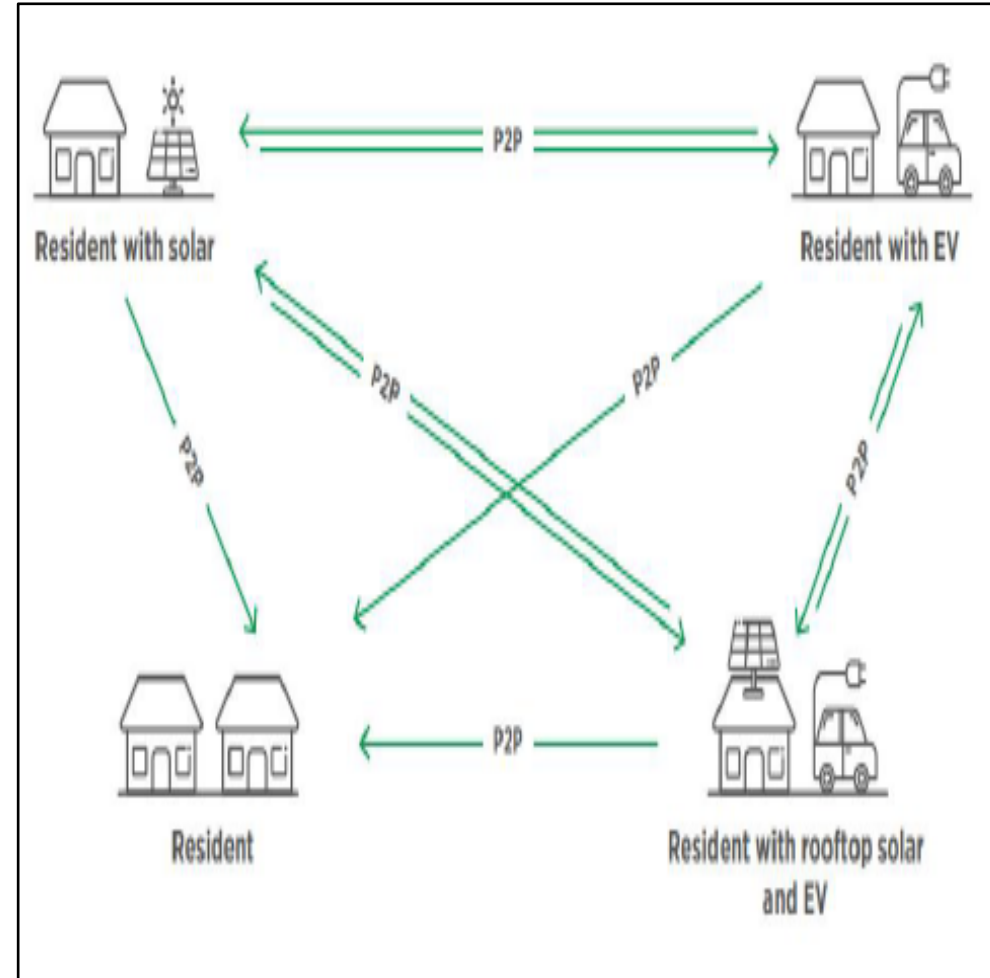
Power Ledger



Traditional Trading Model



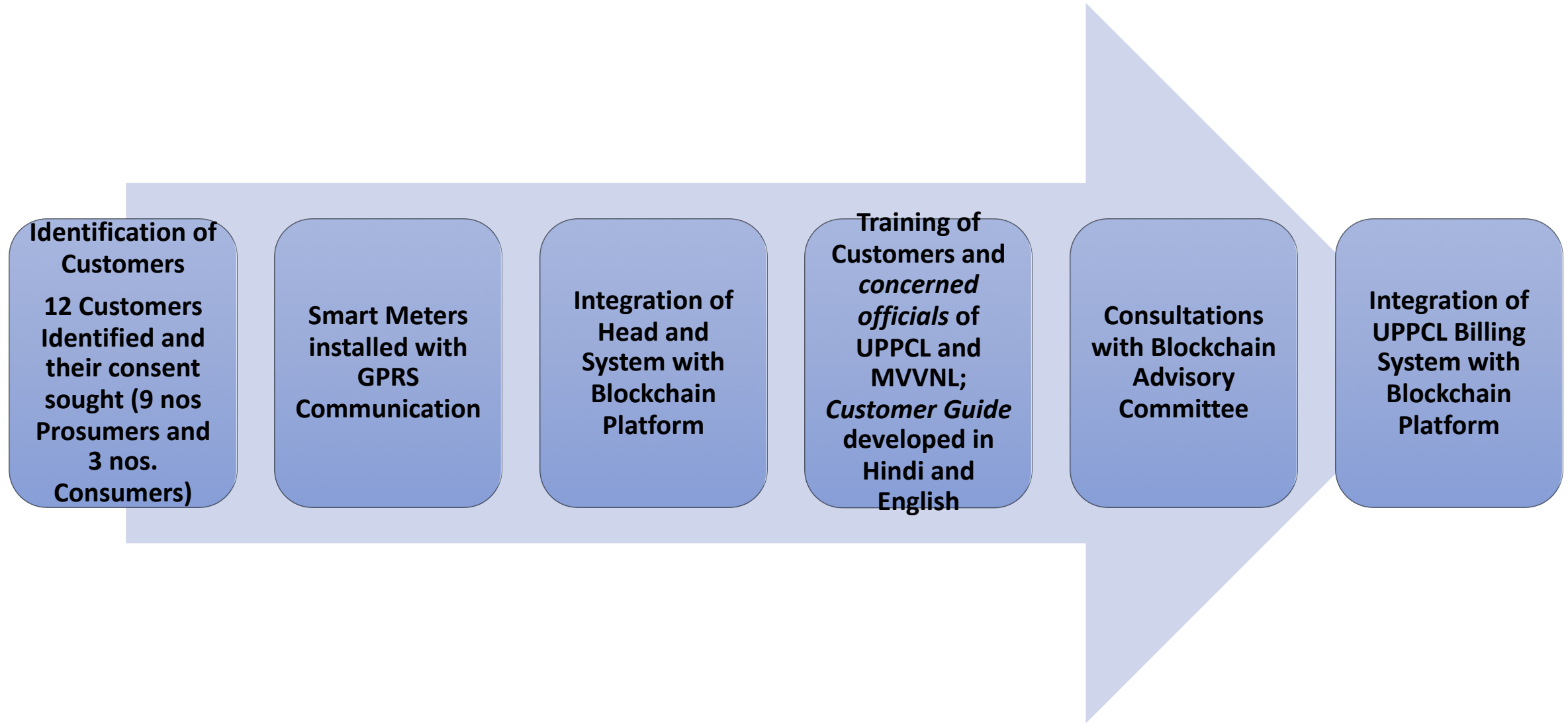
Peer to Peer (P2P) Electricity Trading Model



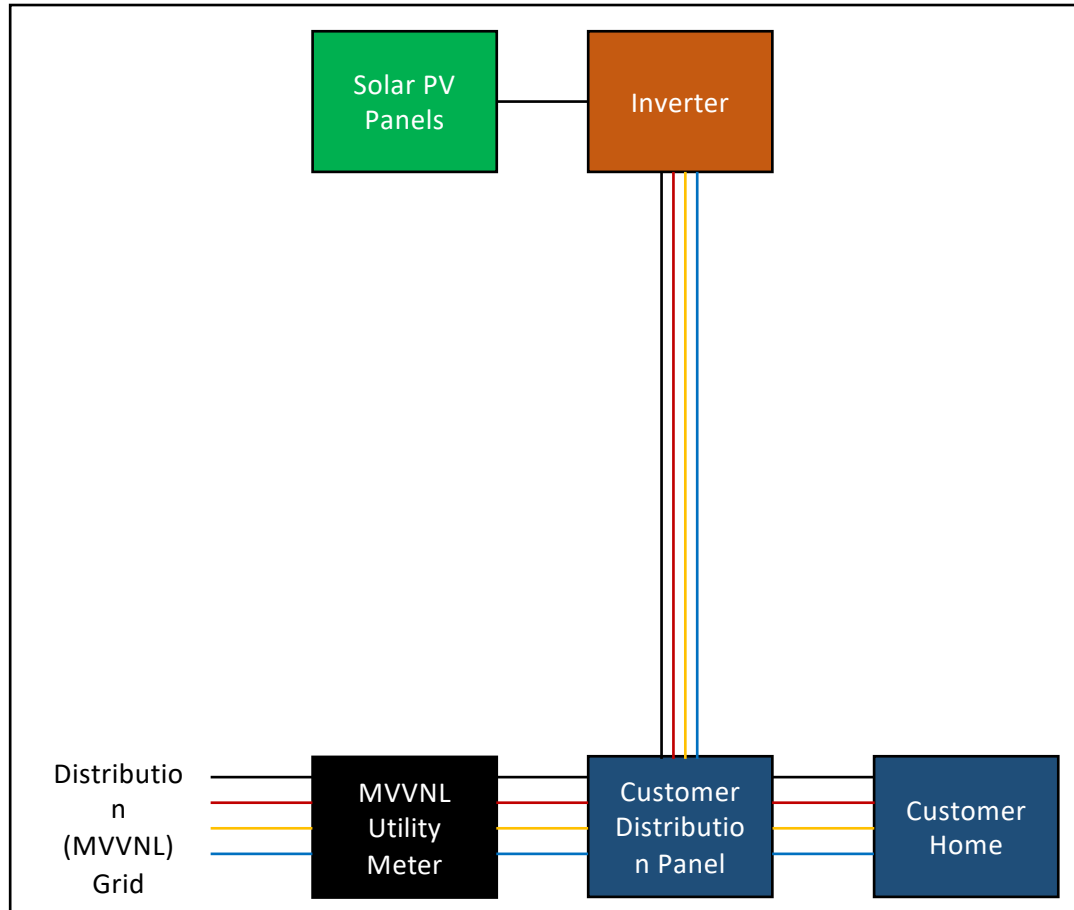
Key Enabling Factors

1. Distributed RES
2. Digitalisation
3. Conducive regulatory framework

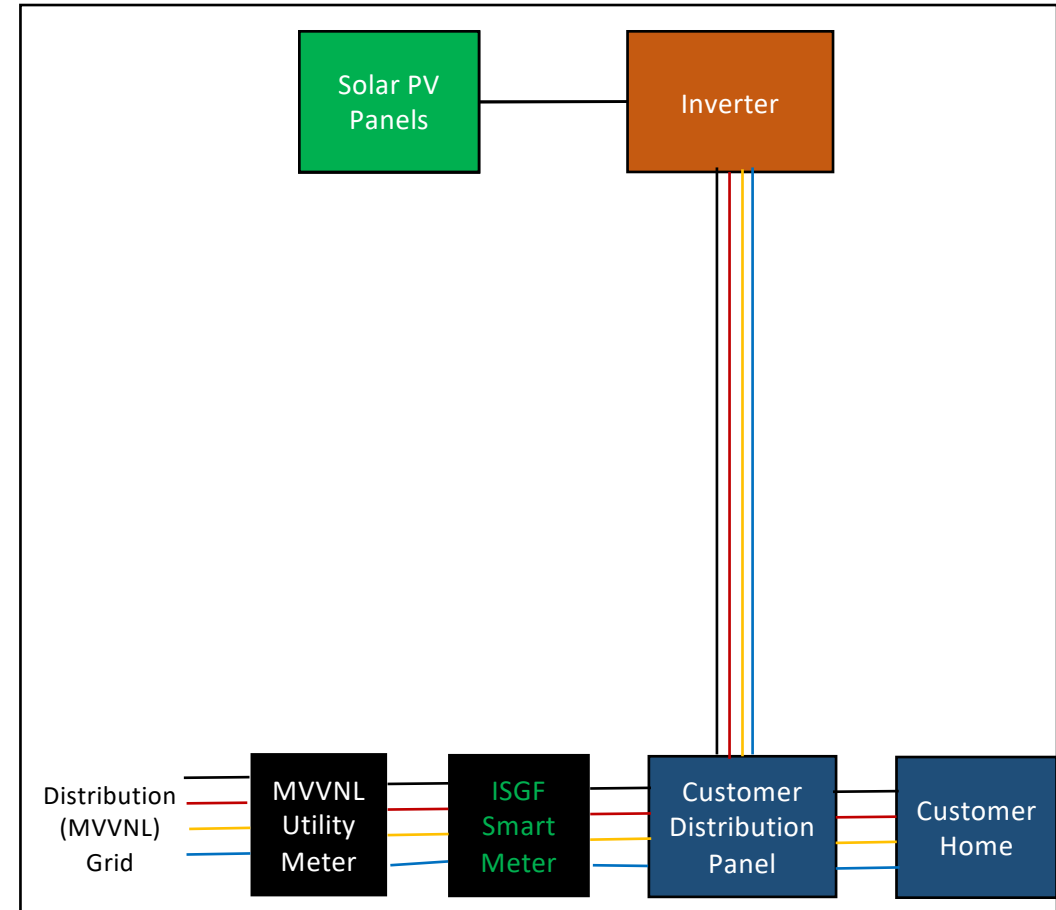
Australia, Bangladesh, Colombia, Germany, Japan, Malaysia, Netherlands, UK, USA have already started trial P2P Schemes



Connectivity Diagram

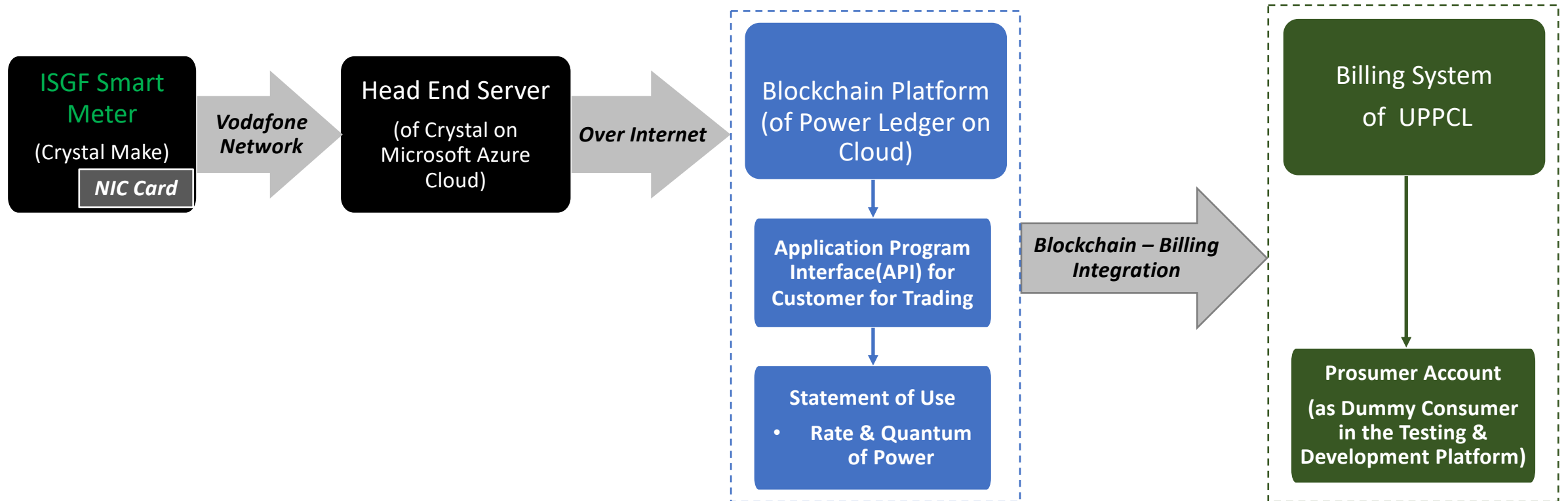


Connection Diagram – Before Installation of ISGF Smart Meter



Connection Diagram – After Installation of ISGF Smart Meter

Information Flow Diagram





Uttar Pradesh
Power Corporation Limited



Power Ledger

लखनऊ, उत्तर प्रदेश में
सौर ऊर्जा के सहकर्मी से
सहकर्मी (पीयर-टू-पीयर)
व्यापारिक लेनदेन हेतु
ग्राहक मार्गदर्शिका



Uttar Pradesh
Power Corporation Limited



Power Ledger

**Customer Guide for
Peer to Peer Trading
of Solar Power on
Blockchain for
Pilot Project
in Lucknow,
Uttar Pradesh**





- **P2P Trading Price:** Participants preferred fixed prices - P2P trading price may be issued by UPERC along with tariff regulations
- **Charges for the DISCOM:** 10% of the sale price of RTPV energy may be provisioned as Network Access Charges/Service Fees to DISCOMs
- **Achievement of RPO Targets by DISCOMs:** RTPV energy traded on P2P platforms may be made eligible for RPO of the DISCOM
- **Extend the P2P trading platform to Agricultural Feeders that are being solarized under the KUSUM Scheme**
- **Regulatory Interventions:** New clauses may be added to the current regulations, or UPERC may issue formal trading rules and regulations for P2P sales and purchases
- **Capacity Building:** Training is required for all stakeholders, including SLDCs, SERCs, and DISCOMs, as well as for unique customer groups



- Created a trading platform on Blockchain for TPDDL in Delhi – similar to the one in UPPCL – project went live in January 2021
- The TPDDL pilot has 65 prosumers and 75 consumer (140 buildings)
- TPDDL's Grid Stations with Solar PVs and some real customers joined the platform as prosumers / consumers
- TPDDL's smart meters are integrated with blockchain platform (no additional smart meters)
- Simulated trading to mirror the scenarios of real trading regimes
- A document/ proposal being made for Ministry/DERC based on the learnings of the pilot/ PoC

Unique Aspects:

- Involvement of a **Power Trader** (as Aggregator) who will take over the trading responsibilities for prosumers and consumers
- Opportunity to test other elements such as **ESS, V2G** and **Demand Response**



reji@rejikumar.com



[@rejipillai](https://twitter.com/rejipillai)

India Smart Grid Forum

CBIP Building, Malcha Marg, Chanakyapuri, Delhi-110021

www.indiasmartgrid.org

www.globalsmartenergy.org

www.isuw.in

www.dumindia.in

[Follow us at:](#)

Twitter - @IndiaSmartGridF | **Facebook** - @IndiaSmartGridF | **LinkedIn** - India Smart Grid Forum (ISGF)

Back-up Slides

NEW REVENUE OPPORTUNITIES FOR UTILITIES

A1. Customer Data

- Share with Service Providers in other Domains: Water and City Gas Distribution, Municipal Agencies, Renewable Energy Development Agencies
- Large aggregation allows for better and more integration of renewables into the grid on the supply side and more effective Demand Response tools on the demand side
- **Big data analytics** can use power system data for various cross sectoral themes - environment, lifestyles, wealth, health, etc
- Analytics **both real-time and non real-time from remote - equipment, systems, O&M**
- The use of **AI** and **m2m** communications to determine optimal energy use, lifestyle comfort, energy efficiency

A. New Revenue Opportunities Enabled by Digitalization of the Power Sector

A2. Billing and Collection System

- Extension of the billing and collection system to water and city gas distribution, house tax collection, other municipal/city taxes
- Can even be extended to other service providers such as cable TV, internet, telephone, etc in semi-urban and rural areas
- Considerable savings in **cost of doing business** to other domain owners
- Additional **revenue stream** for electric utilities

A3. AMI Data and Energy Consumption Profile

- Sharing of AMI data with a variety of Industry players for development of innovative applications and services
- Authentic load research for many stakeholders in the sector
- New revenue stream for distribution utilities

A. New Revenue Opportunities Enabled by Digitalization of the Power Sector

A4. GIS Maps

- All electrical assets (medium voltage and low voltage lines, substations) and consumers are mapped on a digital map and the Utilities update this system on regular basis to capture changes/addition to the electrical network as well as new consumers/buildings
- This digital map can be effectively used by other infrastructure services providers for planning as well as operation and maintenance of their systems
- Very useful for planning the laying of water supply and sewerage lines, telecom cables, gas pipe lines etc; also useful for planning of road networks
- Share the maps with other stakeholders in a city for a modest fee

A5. Automation Systems - SCADA/DMS, DA and SA, DR, DERMS

- **Common SCADA** with water and gas distribution utilities
- Sharing the **communication infrastructure** for security cameras, traffic cameras and other smart city applications
- Communication network can be leased to telecom operators

A6. Outage Management System (OMS) and Mobile Workforce Management System (MWFM)

- Revenue from sharing the OMS and MWFM with water and gas distribution agencies, white goods services agencies, other city service providers

A7. Call Centers and Call Data Archives

- Revenue from sharing the Customer Care Centers, Call Centers, Chatbots and Voice Bots with other stakeholders
- **Analytics of data** from the customer calls and interactions with Chatbots and Voice Bots can be useful tools for different stakeholders to optimize their business operations
- Call Centers of electric utilities can be made **City Command and Control Centers** at marginal cost

B. New Services and Revenue Opportunities from Unlocking Existing Infrastructure and Services

B1. Selling of Rooftop PV (RTPV) Systems

- RTPV has become economically attractive to most category of customers
- Utilities could TEST and CERTIFY good quality RTPV Systems and undertake complete EPC of the RTPV to Customers; and also well maintain it through annual maintenance contracts

B2. Selling of Energy Efficient (star-rated) and *Smart* Appliances

- Many utilities are already promoting replacement of old Air-Conditioners and Refrigerators with new star-rated appliances
- Should promote “*smart*” appliances which can be connected to the WiFi network and remotely controlled
- The range should cover geysers, washing machines and cooktops

B. New Services and Revenue Opportunities from Unlocking Existing Infrastructure and Services

B3. Promotion of Electric Cooking

- Electric Cooking can help the grid in load balancing – there is surplus electricity on the grid during many timeslots in a day and can offer cheap electricity to millions of cooking appliances that will improve the load on the grid. With Time of Use (ToU) Tariff and Smart Plugs, most cooking load can be shifted to non-peak hours at lower tariffs

B4. Selling Electric Vehicle Chargers

- Utilities could partner with EV manufacturers and set-up home charging facilities (mostly AC Slow Chargers)
- AC Chargers with Vehicle-to-Grid (V2G) functionality would help load balancing on the grid
- Large number of EVs connected to the grid could be aggregated as virtual power plants (VPP) and support the grid in many ways

B5. Selling Batteries for Energy Storage and Other Applications

- Utilities can offer Lithium-ion Batteries (LiB) to Customers and lease it back for grid support (large batteries):
 - Ancillary Services
 - Network Upgrade Deferrals
 - Smoothing of Power from Solar PV
 - Other Emergency Situations

B6. Communication Bandwidth

- The latest trend is to build own telecom network by utilities for smart metering and network automation
 - Electric cables with in-built fiber optic cables are now available at marginally higher cost – no additional right of way required; laying cost also saved; only fiber termination cost is extra
 - PLC/RF Mesh is used for last mile connectivity
- The spare fibers can be leased to third parties and telecom service providers
- Could offer internet and cable TV services in **underserved communities**

B7. Smart Homes - Grid Interactive Buildings and Appliances

- Buildings are becoming smart – it can be made grid interactive
- Large buildings and campuses with Rooftop/in-premise Solar PV, Electric Vehicles (EV) and Battery Energy Storage Systems can be made Grid-Connected Smart Microgrids that could
 - Island from the grid during peak hours
 - Buy electricity from the grid when prices are low and store it in the BESS and EVs and sell back to the grid during peak hours
 - Provide Ancillary Services
- Smart Homes/Buildings with Smart Appliances could provide Demand Response (or load relief) to the grid when required
- Utilities can evaluate appropriate equipment, smart appliances and systems to facilitate this transformation to smart homes/grid interactive buildings for mutual benefit

B8. Unlocking the Value of Substation Land: Commercialization of surplus Land by conversion of existing Substations to Gas Insulated Substations (GIS)

- Large substations built 30-40 years ago outside the cities are now prime commercial properties
- Old substations require urgent modernization and capacity enhancement
- Conversion of these substation to Gas Insulated Substations (GIS) could release up to 70% of the land that could be commercialized
- Only a small portion of the price of the land commercialized is required for the conversion to GIS and to enhance the capacity

B9. Unlocking the Value of Lamp Poles and Towers:

- Millions of lamp poles that utilities own is an under valued asset which can be deployed for:
 - Installation of EV Charging Points
 - Installation of 4G/5G/WiFi Antennas
 - Installation of Navigation Systems for Drones – Passenger Drones and Delivery Drones
 - Installation of Pollution Monitoring Sensors
 - Installation of Security Cameras
 - Advertisements
- Lamps can be converted to solar powered lamps with integrated sensors and cameras for the above - lot of innovation going on in this domain

B. New Services and Revenue Opportunities from Unlocking Existing Infrastructure and Services

B10. Maintenance Services

- All large buildings outsource electrical maintenance services to third parties
- Utilities have skilled employees and better access to supply chain for undertaking such services efficiently
- Customers will have more trust with Utilities taking over the responsibility to maintain their buildings and campuses – particularly in case of Schools, Colleges, Hospitals, IT Parks etc

B11. Cooling as a Service – District Cooling Systems

- Water, Electricity and Gas are provided as a service to buildings – same way Cooling can be provided as a service
- Chilled water produced at a central chiller can be supplied to buildings through insulated pipes where air handling units will cool the air passing over chilled water pipes for air conditioning the buildings/rooms – **District Cooling Systems (DCS)** – successfully implemented in several cities around the world including GIFT City in Gujarat
- DCS is highly energy efficient and economical; reduces the electrical load of individual buildings
- Electric Utilities should seriously consider Cooling Service with DCS as a new business opportunity

Contact US

 reji@rejikumar.com

 [@rejipillai](https://twitter.com/rejipillai)

India Smart Grid Forum

CBIP Building, Malcha Marg, Chanakyapuri, Delhi-110021

www.indiasmartgrid.org

www.globalsmartenergy.org

www.dumindia.in

FOLLOW US AT

Twitter - @IndiaSmartGridF | **Facebook** - @IndiaSmartGridF | **LinkedIn** - India Smart Grid Forum (ISGF)



Three Weeks Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations (January, 2020)

Three Days Online Capacity Building Program for Chairpersons and Members of FOIR Member Organizations. (February, 2020)



Two Weeks Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations. (December, 2020)

Two Weeks Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations (December, 2020)



- The theme of the training program: "Regulatory Performance Evaluation".
- No. of Participants: 43

Experts engaged



- The experts engaged for delivering session included
- Mr. Suresh Chandra, Information Commissioner at Central Information Commission (CIC);
- Mr. Tariq Khan, Principle Associate, Advani & Co.;
- Mr. Ishan Roy, Tamil Nadu e- governance Agency;
- Mr. Jonathan Cave Member, UK Regulatory Policy Committee;
- Prof. Amita Singh, President NAPSIPAG Centre for Disaster Research & Professor (Retd) Jawaharlal Nehru University, New Delhi;
- Prof. Punam Kumari, Presiding officer ICC, JNU, New Delhi;
- Dr. Abha Yadav, Director FOIR Centre IICA Etc.

Three Weeks Online Capacity Building Program for Regulatory Officials of FOIR Member Organizations (January, 2021)



Experts engaged

Prezi

- Theme : *"Emerging Regulatory issues in Digital Era"*.
- No. of participants: 36

Three Days Online Capacity Building Program for Chairpersons and Members of FOIR Member Organizations. (February, 2021)



Experts Engaged

Themes covered

Prezi

- Theme: *"Effective Regulation and Stakeholders Consultation"*.



Prezi

- Inaugural address- Dr. S K Chatterjee, Chief (Regulatory affairs), CERC.
- The experts engaged for delivering session included Mr. Rahul Singh, Partner Khaitan & Co.;
- Ms. Ginny Rautray, Rautray & Co., Advocates and Solicitors;
- Ms. Shilpa Mankar Ahluwalia, Partner, Shardul Amarchand and Mangaldas;
- Dr. Pramod Kumar, Registrar, Jawahar Lal Nehru University, New Delhi;
- Mr. Tariq Khan, Principle Associate, Advani & Co.;
- Mr. Vikas Kanungo, Senior Consultant - Digital Development Global Practice, The World Bank;
- Mr. Santosh M. (CEO, Tamil Nadu E-governance, Agency);
- Dr. Abha Yadav, Director FOIR Centre IICA etc

A total of seven sessions were conducted, covering the pertinent areas over a course of three days on subjects relating to:

- Stakeholders Engagement in Regulatory Decision Making
- Stakeholders Consultation in Regulatory Bodies in India
- Achieving Regulatory Excellence
- Need for Performance Evaluation of Regulators in India
- Alternative to Regulations
- Regulatory effectiveness in the era of digitalization
- Using Stakeholders data for better regulation

Prezi



The experts engaged for delivering session included

- Dr. Geeta Gouri, Ex. Member, CCI;
- Mr. Jonathan Cave Member, UK Regulatory Policy Committee;
- Prof. Cary Coglianese, Edward B. Shils Professor of Law and Professor of Political Science Director, Penn Program on Regulation;
- Ms. Bhargavi Zaveri, Senior Researcher, Finance Research Group (FRG), Indira Gandhi Institute of Development Research (IGIDR); New Delhi;
- Mr. Vikas Kanungo, Senior Consultant, Digital Development Global Practice, The World Bank etc.



Prezi

Virtual Conference on the theme "Digital Assets Regulation in India: Learnings from the Mauritius Model Framework" on 27th August, 2020

Speakers



Lord Meghnad Desai, Member British House of Lords



Ms. Loretta Joseph, Fintech Advisor FSC & Ms. Hemlata Gopal, 2nd Deputy Governor BOM



Mr. S.K. Jha, Secretary-CRC & Ex. Secretary-FSC



Dr. V.K. Garg, Former Chairman, ERG of Govt



Dr. Anu Yelke, Assoc. Prof. SOGARM & Director - FGR Centre



Mr. Anand Sharma, Fellow FGR Centre



Webinars & Virtual Conference

Virtual Conference on the theme "Digital Assets Regulation in India: Learnings from the Mauritius Model Framework" on 27th August, 2020

Webinar on the theme "Interface of Blockchain and Energy Sector" on 2nd December, 2020.



Prezi



Lord Meghnad Desai
Member, British House of Lords and
Emeritus Professor of Economics,
London School of Economics.



Ms. Hemlata Sadhna Sewraj-Gopal,
Second Deputy Governor for Bank of
Mauritius.

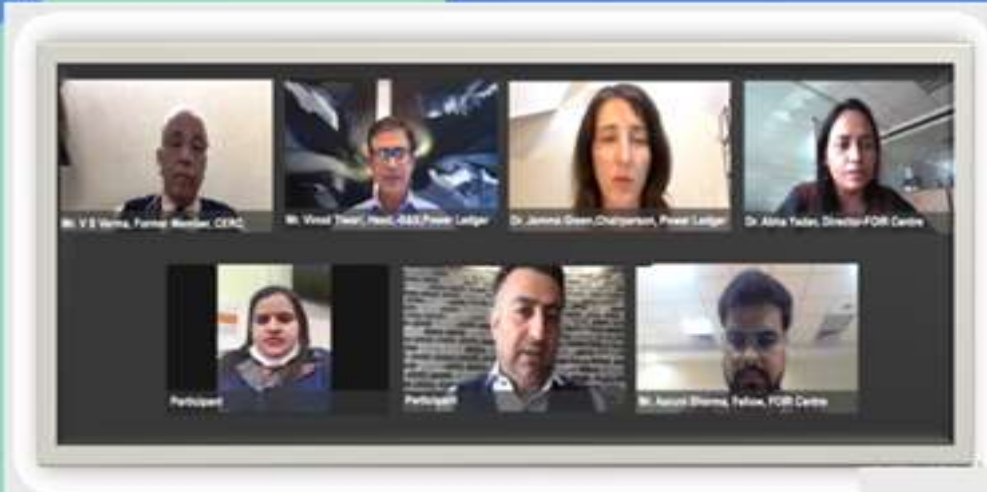


Ms. Loretta Joseph
Fintech Advisor for Financial Services
Commission, Mauritius

Prezi

Webinar on the theme "Interface of Blockchain and Energy Sector" on 2nd December, 2020.

List of speakers



Dr. Jemima Green
Co-founder and Chairperson of Power Ledger



Mr. Vinod Tiwari
Head of Business Development and Sales, Power Ledger

Three Months Online Certificate Course on "Regulatory Governance"

Batch 2

Batch 1



Batch 1- Regulatory Governance Course



- First batch of "Three Months Online Certificate Course on Regulatory Governance" held during October, 2020 to January, 2021.
- Considering the unprecedented times due to COVID pandemic, FOIR Centre at IICA successfully organized this three-month course through an online medium.
- Total Participants: 50

Feedback Experts engaged

Testimonials:

- I highly recommend the regulatory governance course for regulatory professionals or anyone interested in working in the field of regulation”
- Mr. Stephen Gibson, Interim Chair, Regulatory Policy Committee, UK
- The collaboration between FOIR and IICA would go a long way in developing capacities in the regulatory bodies in India. The regulatory governance course is a step in the right direction.”
- Dr. S.K. Chatterjee, Chief (RA), CERC
- Thanks Abha Ma'am for your great cooperation and I am personally impressed. A memorable great sessions and the whole team for cooperation and attention, reminders for joining the classes time was again wonderful. indebted to Abha Ma'am”.
- Parminder Singh Walia, Deputy Director (M&F), PSERC



- Mr. Rahul Singh, Partner Khaitan & Co.;
- Ms. Srijoni Sen, NLSIU, Bangalore;
- Mr. Anirudh Burman, Associate Fellow at Carnegie India;
- Dr. Pyla N Rao, Associate Professor, School of Corporate Law at IICA;
- Prof. (Dr.) Vijay Vir Singh, Director NITI Aayog Chair and Director, UGC- Human Resource Development Centre at University of Rajasthan, Jaipur;
- Dr. Chatterjee, Chief (Regulatory Affairs), Central Electricity Regulatory Commission (CERC);
- Dr. Ajay Shah;
- Dr K P Krishnan, IEPF Chair Professor;
- Dr. Naveen Bali, Consultant, Department of Economic Affairs, Ministry of Finance;
- Dr. Renuka Sane, Associate Professor, National Institute of Public Finance and Policy (NIPFP);
- Eric Thomson, Founder, Envelope Economics;
- Dr. Abha Yadav, Director FOIR Centre IICA etc.



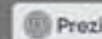
Launch of Second batch of Three Months Online Certificate Course on “Regulatory Governance”



- Total No. of participants: 33 regulatory officials
- Inaugurated by: Mr. Arun Goyal, Member, Central Electricity Regulatory Commission
- Mode: Online

Experts invited

Feedback



Overall Feedback for the course



- Excellent
- Good
- Fair
- Needs improvement
- No Ans

"I found the overall course structure to be very relevant for the participants. It is a much required programme. It widens ones thinking canvas and creates better awareness about wider scheme of regulation in the country. Almost all facilities were renowned experts and great speakers. The organisers worked hard to ensure success of the course which was hit by crippling second wave of pandemic."

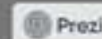
By Yogesh Kumar Dubey
Jt. Director (Eco.), CCI

"Thank you for having conducted the splendid programme. It has truly been a great experience of learning in the last three months from the best experts from around the world sharing their views on Regulatory Governance in India and around the world. As participants, the programme has helped us in better understanding of the issues/challenges pertaining to the Regulatory Governance and what the future course shall entail."

By Shivanku Bhatt
Assistant Director (Law)
Uttarakhand Electricity Regulatory Commission

"My Best Wishes & Kudos to the team of IICA for carefully drafting and organizing three months online course on "Regulatory Governance". I wish that IICA would continue the good job of conducting such courses and enlighten regulatory professionals from various Regulatory Commissions/Authorities."

By Yashwardhan Dixit,
Joint Director (Technical),
Uttarakhand Electricity Regulatory Commission, Dehradun, Uttarakhand.





Group Discussion panel
Dr. Abha Yadav

Mr. Marcial Boo, Chief Executive, United Kingdom Public Health Register (UKPHR) &

Dr. Chitrasen Gauram, Assistant Professor at Institute of Management Studies, Mahatma Gandhi Kashi Vidyapeeth, Varanasi.



The experts engaged for delivering session included
Dr. Geeta Gouri, Ex. Member, CCI;
Ms. Srijoni Sen, NLSIU, Bangalore;
Mr. Anirudh Burman, associate fellow at Carnegie India;
Mr. Arjun Goswami, Director Public Policy, Cyril Amarchand & Mangaldas;
Mr. Sudhaker Shukla, Member, IBBI;
Mr. Gurdev Bhatia, Head Competition Law Practice, L&L Partners; Ex-Additional Director General, Competition Commission of India;
Sanjeev Kumar Sharma, senior officer with Government of India; Dr. Chatterjee, Chief (Regulatory Affairs), Central Electricity Regulatory Commission (CERC);
Dr K P Krishnan, IEPF Chair Professor in Regulatory Economics; Dr. Naveen Bali, Consultant, Department of Economic Affairs, Ministry of Finance;
Eric Thomson, founder of Envelope Economics and
Dr. Abha Yadav, Director FOIR Centre IICA

6 months research project on "Development of Performance Evaluation Mechanism For Regulatory Bodies In India"

The aims and objectives of the study is as follows:

1. To study the regulatory performance evaluation structure in India.
2. To develop an effective regulatory performance evaluation structure in India.
3. To compare the regulatory framework of India with other countries and develop performance indicators for the evaluation of the regulators in India.



Prezi

FOIR virtual Colloquium on the theme "Stakeholders Engagement in Regulatory Decision Making" held on 23rd March, 2021



Guest speaker- Mr. Andrew Williams-Fry, Director, Economic Regulation (Interim), Thames Water & Board Member, Regulatory Policy Committee, London, UK.

The colloquium panellist:

- Mr. P.K Pujari, Chairperson, Central Electricity Regulatory Commission (CERC);
- Shri Ashok Kumar Gupta, Chairperson, Competition Commission of India (CCI);
- Dr. P. Vaghela, Chairman, Telecom Regulatory Authority of India (TRAI);
- Shri. T. S. Balasubramanian, Chairman in-Charge, Tariff Authority for Major Ports (TAMP) &
- Shri Satpal Garg, Member, Petroleum and Natural Gas Regulatory Body (PNGRB).



Regulatory Digest

cover page

page 23

FOIR bi-monthly newsletters: "Regulatory Digest".

The first issue launched in March, 2020

Seven issues have been published and the eighth is in pipeline.

Prezi

Prezi

REGULATORY DIGEST
ISSUE NO. 1 SEP-OCT 2020 | VOLUME 1

INSIDE THE ISSUE
 - Manage Data & Information Security
 - From the Editor's Desk
 - Meet FOIR and its Member Regulators
 - Meet FOIR Centre at ICA
 - Regulatory News and Trends
 - Editor's Column

FIRST BATCH OF 43 MONTHLY ONLINE CERTIFICATE COURSES ON REGULATORY GOVERNANCE (MAY 20-16N 20)
 Forum of Indian Regulators (FOIR) has announced the launch of its first batch of 43 monthly online certificate courses on Regulatory Governance. The courses are being conducted by the FOIR Centre at ICA, New Delhi.

FOIR AGM and its Resolutions
 The Forum of Indian Regulators (FOIR) successfully held its 21st Annual General Meeting (AGM) on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

FOIR AGM and its Resolutions
 The AGM was held on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

FOIR AGM and its Resolutions
 The AGM was held on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

REGULATORY DIGEST
ISSUE NO. 1 SEP-OCT 2020 | VOLUME 1

INSIDE THE ISSUE
 - Manage Data & Information Security
 - From the Editor's Desk
 - Meet FOIR and its Member Regulators
 - Meet FOIR Centre at ICA
 - Regulatory News and Trends
 - Editor's Column

FIRST BATCH OF 43 MONTHLY ONLINE CERTIFICATE COURSES ON REGULATORY GOVERNANCE (MAY 20-16N 20)
 Forum of Indian Regulators (FOIR) has announced the launch of its first batch of 43 monthly online certificate courses on Regulatory Governance. The courses are being conducted by the FOIR Centre at ICA, New Delhi.

FOIR AGM and its Resolutions
 The Forum of Indian Regulators (FOIR) successfully held its 21st Annual General Meeting (AGM) on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

FOIR AGM and its Resolutions
 The AGM was held on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

FOIR AGM and its Resolutions
 The AGM was held on 10th July 2021. The meeting was held through a video conference and was presided over by Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).

- Chaired by: Shri R.S. Sharma, Hon. Chairperson, Forum of Indian Regulators (FOIR) and Chairperson, Telecom Regulatory Authority of India (TRAI).
- Annual General Body Meeting (AGM) of FOIR conducted for the first time on virtual mode.



21st Annual General Meeting of Forum of Indian Regulators took place through video conferencing on 10th July, 2021

3 years strategic plan of FOIR-IICA

CAPACITY BUILDING STRATEGIC PLAN FOR FORUM OF INDIAN REGULATORS (FOIR)

Prepared by: FOIR Centre at ICA, Indian Institute of Corporate Affairs

- The schedule for the conduct of the programmes will be as stated below:-
- Capacity Building Programs - Minimum of four capacity building seminar/trainings to be held every year
 - Conferences/Colloquiums/ Workshops - To be held twice every year
 - The suggested programme structure will develop overall skills & knowledge of the regulators on sector specific functions as well as on cross cutting functions.

FY 2021-2022

Proposal of activities for FY 2021-2022

Agenda 2021-2022

Way Forward



Trainings & Conferences

- 4 Capacity building Programs- officers of FOIR member organizations
- 2 Colloquiums - Chairpersons/ Members of Central sector regulators

Webinars and course

- 4 Quarterly Webinars
- Bi-monthly Newsletters
- 3-months online Certification course

Research

- 6-month Research
- 3-month Study
- Other administrative activities

Way Forward



Strengthening of existing programs

Introducing new programs with enhanced world wide collaboration