REPORT:

Forum of Indian Regulators (FOIR) Working Group on Inter-Regulator Cooperation

VOLUME OF INPUTS

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FORUM OF INDIAN REGULATORS (FOIR)

SECRETARIAT: C/o. CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC)

Harpreet Singh Pruthi
Executive Secretary FOIR/Secretary CERC

F.No. FOIR-11011(13)/2/2023-CERC Dated: 11th October, 2023

Subject: Constitution of FOIR Working Group on Inter-Regulator Cooperation.

During the 53rd Governing Body Meeting of FOIR, the members of FOIR discussed the establishment of an Inter-Regulatory Working Group for cooperative endeavours to enhance coordination and partnership among diverse sector-specific regulators.

2. After deliberations, the Governing Body decided to constitute an Inter-Regulatory Working Group to address these topics.

3. The Competent Authority has constituted a Working Group with the following composition: -

(a)	Member (Finance), CERC	- Chairperson of WG
(b)	Member, PNGRB	- Member
(c)	Member, AERA	- Member
(d)	Member, TNERC,	- Member
(e)	Member, UPERC	- Member
(f)	Member, TAMP	- Member

4. The scope of the Working Group will be as under:

(i) Compile best practices of different infrastructure regulators
(ii) Identify scopes for inter-sectoral learnings
(iii) Suggest areas of cooperation amongst the infrastructure regulators

5. The Secretariat of FOIR at IICA & CERC will provide secretariat services to the Working Group in terms of knowledge support and logistics.

(Harpreet Singh Pruthi)
Executive Secretary/
Secretary CERC

Copy to:-

Members of the Working Group & Director, FOIR Centre, IICA

Copy for information only:-

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Inputs from Members of the Working Group

CENTRAL ELECTRICITY REGULATORY COMMISSION (CERC)

Best Practices

The Central Electricity Regulatory Commission (CERC) was established in 1998 under the provisions of the Electricity Regulatory Commissions (ERC) Act, 1998 with the objective to distance tariff regulation from the Government. The functions of the Commission were widened under the Electricity Act, 2003 which replaced the ERC Act, 1998. Apart from tariff fixation, CERC was vested with responsibilities of licensing, development of market, introduction of open access, specifying grid code, adjudication of disputes, setting performance standards, ensuring their compliance etc. As an organization, CERC has consistently embraced innovation, inclusivity, and transparency, while continuously addressing the ever-evolving challenges in the sector, all the while safeguarding the interests of consumers and stakeholders alike.

Taking on the core principles behind the responsibilities endowed through the Act, CERC pioneered various regulations with transparent public and stakeholders consultations for the sustainable development of the power sector. Among many of these, the most important were related to :-

a. **Open Access in the Transmission System** - CERC introduced regulations for open access in inter-State transmission in the year 2004, defining the rules of the game for offering equal and non-discriminatory transmission network. This regulatory framework empowered any eligible entity, meeting technical specifications, to buy and sell electricity from anywhere in India, and currently even beyond the borders. Prior to Open Access, consumers were confined to purchasing electricity from designated suppliers only. However, with the introduction of Open Access, the rules of the game changed. This led to enhance efficiency, promoted competition, protected consumer interests, and also gave impetus to investment in the sector.

b. **Power Market Regulations** - Subsequent to the provision of Open Access, it was seen that sellers and buyers across the country were not visible to one another on a single platform. Thus, sometimes though power was available, it was not getting despatched. CERC worked towards this end and in 2007, notified the Guidelines for Grant of Permission for setting up and operation of a Power Exchange. Two power exchanges, the Indian Energy Exchange (IEX) and Power Exchange India Limited (PXIL) were granted permission to commence operations. CERC notified the CERC (Power Market) Regulations, 2010 on 21.01.2010 for the development of power market in India. This was another cornerstone that emerged promoting competition and robust surveillance to avoid gaming in Power Market operations. Through the introduction of Power Market Regulations, CERC aimed to help in the creation of a comprehensive market structure and enable transaction, execution and contracting all types of possible products in the power markets.

In recent years, CERC has introduced several more pioneering regulations, including Grid Code, General Network Access Regulations, and Sharing of Transmission Charges and Losses. These enhancements further solidify CERC's commitment to transparency, stakeholders' interests and investment-oriented policies.

Among CERC's most impressive innovation in its functioning is its E-Court system, a model it stands ready to share and cooperate with other regulators.

c. **E-Court System** - CERC, in its role as a quasi-judicial authority, adjudicates disputes as per the provisions of the Electricity Act. The petitions that used to come to the commission for redressal were bulky and a difficult and time-consuming process for reaching a solution. This hampered the principle of Natural Justice. To tackle that cumbersome process, CERC launched the E-court initiative. CERC appropriately leveraged the system to achieve the objectives of speedy disposal, transparency, enhancing economics and proficiency, and achieving the aforementioned principle of Natural Justice. A separate document with more insights has been attached below.

CERC E-court System -Leveraging Technology to Galvanize Best Regulatory Practices

CERC performs the role of a quasi-judicial authority as per the Code of Civil Procedure and adjudicates upon disputes covered by the Electricity Act which are brought before CERC in the form of petitions. In order to achieve the objectives of speedy disposal, transparency, introducing economy & efficiency and following the principles of natural justice, CERC launched the E-Court initiative also named as System for Adjudication Using Digital Access & Management of Information through Network Integration (SAUDAMINI).

The system developed an integrated, flexible and dynamic database for filing of petitions and other documents online. With features such as online communication of record of proceedings, orders etc, the CERC e-Court system transformed the manner in which the legal system in CERC functions.

CERC e-Court Services:

S.No	Services	Deliverables
1.	e-Filing	Enables filing of petitions in soft copy after doing Registration on CERC SAUDAMINI Portal
2.	e-Pleading	Enables filing of reply, rejoinder, comments etc online
3.	e-Hearing	Enables the Commission to hear the cases through softcopies of pleadings and provide the Commission facility of making e-notes
4.	e-Library	Digitization of records and enables viewing softcopy of petitions, replies, rejoinders, comments, objections, written submissions etc using search facility
5.	Case Information System	Enables processing the petition at various stages in CERC, Case Data maintenance and Cause list Generation
6.	Videoconferencing Hearing /Online Hearings	Enables outstation stakeholders to participate and present their cases through Videoconferencing
7.	Real Time Mobile App	Enables stakeholders to access information like petition Status, Cause list, Record of Proceedings & Orders
8.	e-Regulation	Enables the stakeholders for online submission of objections/comments/suggestions on draft Regulations/Staff paper etc

Benefits of e-Court services:

- Reduced the lag time between filing petitions and listing them for hearing.
- The e-Court provides enabled online service of notices, online communication of record of proceedings, orders etc. this helped the parties save time, manpower and money.
- Led to greater transparency as the stakeholders are now aware of the EXACT status of the petition and reasons for pendency if any. Greater accountability is achieved as there is time stamping on documents. All this has also increased efficiency of the Commission's officers and done away with discretion and arbitrariness.
- There is better internal monitoring and increased accountability as Case Information System (CIS) has improved substantially. This has enhanced the credibility of the regulatory system and has

restored the faith of stakeholders.

- Strengthened MIS & Improved internal monitoring due to which Legal division may concentrate on their core activity.
- Adopting cloud computing and deploying the application on NIC Cloud platform hence reducing the Capital expenditure to Operational Expenditure
- Use of open source software makes the project very cost effective
- Reduced the daily usage of papers thus making it eco-friendly and reduced postage charges on account of speed post.
- Moreover, during the COVID lockdown the CERC e-Court services were very beneficial to all stakeholders as all the documents and relevant data was available online anytime/anywhere. CERC officials were also able to discharge their duties without any delay. The court hearings were not impacted due to lockdowns.

Best practices adopted for implementation of CERC e-Court System

- Extensive stakeholder participation. Workshops were held at regular intervals and also when critical milestones were achieved at the time of developing the e-Court System. For e.g., stakeholder interaction was held and feedback was obtained before initiating the project, after layout and screen design, after development of application and before launch of trial run.
- Innovative Design and layout of the application. Users can access it 24 x 7 from multiple locations. In addition, innovative practices such as sharing online tutorials on the application and having a dedicated helpline to address user concerns were used.
- Adopting cloud computing and deploying the application on NIC Cloud platform making it highly reliable with near zero downtime and zero data loss.
- Business Process Reengineering (BPR) was undertaken and workflows were streamlined and simplified. Public Notice/Instructions and necessary intervention was done by top management as and when required for the smooth and successful implementation of the initiative.
- The success of e-Court System was dependent on handling change management and capacity building. Several strategies were used such as highlighting the advantage of the application, making it simple to use, inviting stakeholders for repeated rounds of discussions in small groups and larger workshops, changing the model in line with their suggestions, etc. Most importantly, stakeholders were convinced that e-Court system will reduce their costs, time and make their interaction/interface with CERC easier. Similarly, internal stakeholders were persuaded that this would reduce manual drudgery and the Business Process Reengineering (BPR) would benefit all concerned.
- Project management and monitoring strategy includes gap Analysis and Identification of needs, Overseeing the training of staff, Overseeing the documentation of the system, Managing the associated risk and quality issues. Continuous evaluation and taking feedback from the stakeholders so as to improve the features and usability of the application day by day.
- For spreading the awareness about the CERC e-Court System wide publicity through newspaper advertisements was done, public notice on CERC website was uploaded. Meetings with the stakeholders were conducted at regular interval of time.

Green e-Governance

- CERC e-Court System are deployed on NIC Cloud platform thus reducing the deployment in CERC premises and resulting in reduced energy consumption.
- All live petitions were digitized and uploaded in Document Management System resulted in

huge paper and photocopy savings and reduced physical storage requirements.

- e-filing and online payments results in huge paper savings and hence is eco-friendly.
- Online and hybrid mode hearings reduces the travel time of stakeholders especially who are stationed outside Delhi. Thus, resulting in reduced carbon footprint.

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Best Practices followed by the CERC for Tariff Setting

The Electricity Act provides a broader role to the Commission, which includes promoting competition, efficiency and economy in bulk power markets, improving the quality of supply, promoting investments and advising the Government on removal of institutional barriers to allow for bridging the demand-supply gap and thus fostering the interests of consumers. Section 61 of the Electricity Act and the Tariff Policy issued by the Government of India provides the guiding principles for the Central Commission while specifying the terms and conditions for the determination of tariff.

2. The main challenge before the Commission is to balance the requirements of objectives of the Tariff Policy and the principles under Section 61 of the Electricity Act. These objectives inter-alia includes:

- Transparency, consistency and predictability in approach for tariff fixation.
- Availability of electricity to different categories of consumers at reasonable rates.
- Adequate return on investment for the developer to attract investment in the sector.

3. The very essence of a multi-year tariff framework is to maintain regulatory certainty by not only considering the existing scenario but also anticipating likely future developments that may impact the tariff.

4. Through these Tariff Regulations, 2024, the Commission has envisaged to maintain regulatory certainty and encourage investments on one hand, while promoting efficiency, encouraged development of hydro generation and flexibility in operations of generating stations, with an overarching objective of making 24x7 electricity available at a reasonable price to the end consumer. These regulations address the prevailing challenges of the sector, while maintaining regulatory certainty to the tariff setting approach.

Key aspects envisaged:

- Simplification of Tariff Determination Process as far as possible

- Preserving and augmenting existing capacities - Incentivising life extension, R&M, and efficient old generating stations
- Providing the necessary push to Investments - Assured Returns - Mitigation of Risk Perception
- Regulatory Certainty
- Incentivising efficient plant operations and sustainable development

Tariff Setting Approach:

- **Hybrid Cost of Service:** A mix of normative (predetermined) and actual cost elements is used. This incentivizes efficiency while ensuring a fair return on investments.
- **Operational and Maintenance (O&M) Norms:** These are established based on industry benchmarks, historical data, and expert recommendations. They aim to optimize resource allocation and promote operational efficiency.
- **Promoting Efficiency:**
    - Availability Based Tariffs (ABT): Reward generators for higher plant availability and penalize underperformance.
    - Improved Operational Norms: Encourage better performance through achievable benchmarks.
    - Relaxation of norms for older plants to incentivize their upkeep and continued operation.
- **Incentivizing Efficiency:**

  Financial incentives for efficient generators:
    - Increased returns for running older, cheaper plants.
    - Relaxation of certain cost components.
    - Higher Allowable Fuel Cost (AFC) for providing grid stability.
    - Incentives for hydro power generation during peak hours.

  Differential Rate of Return on Equity (RoE): Higher RoE for new hydro projects and new transmission projects compared to existing thermal and hydro assets.
- **Addressing Recent Challenges:**
    - Renewable Energy (RE) Integration: The variability of RE sources requires flexible generation capacity. The tariff framework encourages grid support services from generators with higher fixed charges in return.

- Reduced Front-loading of Tariffs: Recognizing the availability of long-term loans, the commission proposes to reduce the rate of depreciation for new projects, spreading the cost burden over a longer period.
- Provisions for Projects acquired through National Company Law Tribunal (NCLT) proceedings: The regulations address tariff setting for assets undergoing insolvency resolution.

Best Practices on Staffing at CERC

1. For carrying out the voluminous qualitative and quantitative activities of Central Electricity Regulatory Commission (CERC) under the purview of the Electricity Act 2003, the Commission ensures staff as per requirement in form of permanent recruitment and through deputation, contractual, and also engages corporate consultants.

2. As per the CERC (Recruitment, Control, and Service Conditions of Staff) Regulations, 2007 (amended from time to time), the appointments made in CERC are through various modes. This includes officers serving on deputation from other organisations ; absorption of officials who come on deputation (based on their application) and suitability as decided by the Commission ensuring stability of the knowledge resource in CERC.

3. Furthermore, at the contractual level, CERC follows its Staff Consultants Regulations wherein staff are engaged based on the expertise solicited for specific requirements. Freshers are also given opportunities to join the organization through vacancies for staff consultants, ensuring ample learning opportunities and exposure for selected individuals. Corporate consultants are engaged through transparent bidding via GEM based on well-defined Terms of Reference. The Staff consultants Regulations are regularly updated as per prevailing market standards and requirements.

4. To ensure officials and staff are updated with the necessary skills and knowledge, they are encouraged to participate in various capacity-building programs. Additionally,

lecture/webinars sessions are organized at regular intervals, adding to the insightfulness of its officers and staff.

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Tariff Determination

Tariff determination process as per the CERC Tariff Regulations FY 2024-29

Section 61 of the Electricity Act, 2003 provides that the Appropriate Commission shall, subject to the provisions of this Act including the National Electricity Policy and tariff policy, **specify the terms and conditions for the determination of tariff.**

The CERC regulates tariff capacity of generating companies apart from tariff determination and regulation of inter-state transmission system under Section 62 of the Act. The principles of tariff determination specified by the Central Commission may also act as guiding principles for the State Commissions. While framing the regulations, the critical challenge before the Commission is to balance the requirements of objectives of the Tariff Policy and the principles under Section 61 of the Act.

The multi-year tariff principle is followed to maintain certainty, both to the generators and the procurers. The very essence of a multi-year tariff framework is to maintain regulatory certainty by not only considering the existing scenario but also anticipating likely future developments that may impact the tariff.

The process followed for Tariff determination under the provisions of the Tariff Regulations, 2024

Capital Cost

As per the process followed, assessment of capital cost after prudence checks as per the Tariff Regulations is the first and most essential step in determining tariffs for both existing and new generating stations or transmission systems.

The Regulations provide detailed guidelines regarding the determination of capital cost for generating stations or transmission systems, and how these costs form the basis for tariff determination for both existing and new projects. Some key points include:

1. Components of Capital Cost for New Projects: The capital cost for new projects includes various expenditures such as construction expenses, interest during construction, foreign exchange risk variation, initial spares, additional

capitalization, emission control systems, and expenses related to environment clearance, among others.

2. Components of Capital Cost for Existing Projects: For existing projects, the capital cost includes admitted costs, additional capitalization, renovation and modernization expenses, ash disposal and utilization costs, and expenses related to biomass handling equipment, among others.

3. Inclusions for Hydro Generating Stations: Additional costs for hydro generating stations include rehabilitation and resettlement (R&R) plans, contributions towards government schemes, and expenditure on local infrastructure development.

4. Considerations for Projects Acquired Through NCLT Proceedings: Specific considerations are outlined for projects acquired through insolvency proceedings, including historical costs and additional expenditure post-acquisition.

5. Exclusions from Capital Cost: Certain items are excluded from the capital cost calculation, such as assets not in use, de-capitalized assets, , and grants received from government bodies.

6. Prudence Check of Capital Cost: Capital cost is admitted after prudence check such as historical data analysis of recently completed projects of same specification, financing plans, technology use, competitive bidding and issues relating to time over-run by the generating company or transmission licensee.

Overall, these regulations aim to ensure transparency and fairness in determining capital costs and tariffs for energy projects.

Treatment of Additional Capital Expenditure

The Regulations provide detailed guidelines with regard to admissibility of Additional Capital Expenditure which is as follows:

Additional Capitalization within the Original Scope and Up to the Cut-off Date (Regulation 24):

- The Commission may admit additional capital expenditure incurred after the date of commercial operation and up to the cut-off date (upto 36 months from CoD), subject to a prudence check.
- This additional expenditure may include payment towards admitted liabilities, deferred works, procurement of initial capital spares, arbitration awards, compliance with laws, infrastructure development for hydro projects, and force majeure events.

Expenditure for assets replacement is also considered, with necessary adjustments made for depreciation. **Additional Capitalization within the Original Scope and After the Cut-off Date (Regulation 25):**

- Additional capital expenditure within the original scope of work and after the cut-off date may be admitted by the Commission, subject to a prudence check.
- This includes payments against arbitration awards, compliance with laws, deferred works, payments for works executed, force majeure events, and works executed after the cut-off date.

Any claim of additional capitalisation with respect to the replacement of assets under the original scope and on account of obsolescence of technology, however, Add cap less than Rs. 20 lakhs shall not be considered as part of Capital cost and shall be met through normative O&M expenses.**Additional Capitalization Beyond the Original Scope (Regulation 26):**

- Capital expenditure beyond the original scope may be admitted by the Commission, subject to a prudence check.
- This includes expenses for compliance with laws, force majeure events, security enhancements, ash pond-related works, usage of water from sewage treatment plants, and works related to biomass handling systems or railway infrastructure, among others.

Any claim of additional capitalisation less than Rs. 20 lakhs shall not be considered under Clause (1) of this regulation and shall be met through normative O&M expenses.**Additional Capitalization on Account of Renovation and Modernization (R&M)** (**Regulation 27):**

- Generating companies may undertake renovation and modernization for life extension, subject to approval by the Commission.
- Expenditure incurred for R&M, after prudence check, forms the basis for tariff determination.

Special Allowance for Coal/Lignite Fired Thermal Generating Stations (Regulation 28):

- Thermal generating stations after 25 years of operation may opt for a special allowance instead of renovation and modernization.
- The special allowance is allowed @ Rs. 10.75 Lakhs per MW.

Additional Capitalization on Account of Revised Emission Standards (Regulation 29):

- Generating companies may incur additional capital expenditure to comply with revised emission standards, subject to approval by the Commission.
- After completion of implementation, the incurred expenditure forms the basis for tariff determination, subject to prudence check.

<u>Capital Structure</u>

The Capital Structure for the projects shall be as under:

1. Debt-Equity Ratio for New Projects: The debt-equity ratio of 70:30 is considered for new projects as of the date of commercial operation. If the equity actually deployed exceeds 30% of the capital cost, the excess equity is treated as normative loan. Conversely, if the actual equity deployed is less than 30%, it is considered for tariff determination.

2. Continuation of Debt-Equity Ratio for Existing Projects: For projects already under commercial operation before April 1, 2024, the debt-equity ratio allowed by the Commission for the period ending March 31, 2024, shall be considered. However, on completion of useful life, excess equity over 30% is not considered for tariff computation.

<u>Computation oof Major Components of Tariff</u>

The Regulations provide for computation of major components of Tariff as under:

Return on Equity (RoE):

- Return on equity is calculated based on the equity base as per Regulation 18. For existing projects, the return on equity is set at 15.50% for thermal generating stations, transmission systems, and run-of-river hydro stations, and 16.50% for storage-type hydro stations, pumped storage hydro stations, and run-of-river stations with pondage.
- For new projects achieving COD on or after April 1, 2024, the return on equity is 15.00% for transmission systems, 15.50% for thermal and run-of-river hydro stations, and 17.00% for storage-type hydro stations, pumped storage hydro stations, and run-of-river stations with pondage.
- For additional capitalization beyond the original scope, including emission control systems, Change in Law, and Force Majeure, the return on equity is calculated at the one-year MCLR of the State Bank of India plus 350 basis points, capped at 14%.

Tax on Return on Equity:

- RoE is grossed up with the effective tax rate of the respective financial year, calculated based on estimated profit and tax payable.
- Inclusion of Surcharge and Cess in case Minimum Alternate Tax (MAT) or Section 115BAA of the Income Tax Act, 1961, is applicable.

Interest on Loan Capital:

- Interest on loan capital is calculated based on normative loans as per Regulation 18. The outstanding normative loan as of April 1, 2024, is determined by subtracting the cumulative repayments up to March 31, 2024, from the gross normative loan.
- The interest rate is the weighted average rate of interest based on the actual or allocated loan portfolio. If no actual loan is outstanding but the normative loan is, the last available weighted average rate of interest is used. For projects without any actual loans, the weighted average rate of the generating company or transmission licensee's overall loan portfolio is considered.
- Repayment for each year of the tariff period 2024-29 is deemed equal to the allowed depreciation for that year. In case of asset de-capitalization, repayment adjustments are made proportionally, not exceeding the cumulative depreciation recovered up to the de-capitalization date.
- Repayment is considered from the first year of commercial operation, regardless of any moratorium, and is equal to the depreciation allowed for that year.
- For loans related to emission control systems installed after the commercial operation date, the interest rate is based on the actual loan portfolio for the emission control system, with a cap of 14%. If there is no actual loan portfolio, the rate is the 1-year MCLR of the State Bank of India as of April 1 of the relevant financial year.
- Interest is calculated on the normative average loan of the year using the weighted average rate of interest of actual loans drawn/allocated to the project..

Depreciation:

The depreciation rates are structured in such a manner to generate funds flow to meet loan repayment obligations in 12/15 years. In other words each year's depreciation expense is set at a level that, when accumulated over the 12/15-year period, fully repays the entire loan amount.

- Depreciation starts from the commercial operation date of a generating station, unit, or transmission system and is based on the capital cost. For multiple units, depreciation considers the effective date and installed capacity. For emission

control systems, depreciation starts from their operation date and varies based on the station's age.

- The asset's salvage value is 10%, except for IT equipment and software, which are considered fully depreciated
- Depreciation rates are specified in appendices and use the straight-line method. For existing projects, depreciation is recalculated from April 1, 2024. Decapitalized assets adjust cumulative depreciation accordingly. Land (except leased land and reservoir land for hydro stations) is not depreciable.

Interest on Working Capital (IOWC):

The Interest on Working Capital is worked out as under:

1. Working capital covers various expenses depending on the type of generating station or transmission system:
   - Coal/Lignite Thermal Stations: The working capital includes the cost of coal or lignite for 10 days for pit-head stations and 20 days for non-pit-head stations, limestone stock for 15 days, and 30 days advance payment for both coal/lignite and limestone. It also covers the cost of secondary fuel oil for two months, maintenance spares at 20% of operation and maintenance (O&M) expenses, receivables for 45 days of capacity and energy charges, and one month of O&M expenses.
   - Emission Control Systems: For coal or lignite-based thermal stations, the working capital covers 20 days of limestone or reagent cost, 30 days advance payment for reagents, receivables for 45 days of supplementary charges, one month of O&M expenses, and maintenance spares at 20% of O&M expenses.
   - Gas Turbine/Combined Cycle Stations: The working capital includes 15 days of fuel cost, 15 days of liquid fuel stock (if storage is available), maintenance spares at 30% of O&M expenses, receivables for 45 days of capacity and energy charges, and one month of O&M expenses.
   - Hydro Stations and Transmission Systems: The working capital covers receivables for 45 days of annual fixed cost, maintenance spares at 15% of O&M expenses, and one month of O&M expenses

2. Fuel Cost Calculation: The cost of fuel used in computation of working capital is calculated based on the landed fuel cost and gross calorific value of the fuel from the previous financial year. For new stations, the cost is based on data from the last three months before commercial operation
3. Interest Rate for calculation of IOWC: Interest on working capital is calculated on a normative basis, considering the Reference Rate of Interest as on a specified date.
    - For new projects, it's based on the Reference Rate of Interest as on 1st April of the year during the tariff period in which the project is declared under commercial operation.
    - For truing-up, the rate of interest is considered at the Reference Rate of Interest as on 1st April of each financial year during the tariff period.

4. Payment Obligations: Interest on working capital is payable on a normative basis..

Operation and Maintenance Expenses or O&M expenses:

O&M Expenses means the expenditure incurred for operation and maintenance of the project, or part thereof, and includes the expenditure on manpower, maintenance, repairs and maintenance spares, other spares of capital nature valuing up to Rs. 10 lakhs, additional capital expenditure of an individual asset costing less than Rs. 20 lakhs, consumables, insurance and overheads and fuel other than used for generation of electricity.

The Regulations on operation and maintenance expenses broadly covers as follows:

Thermal Generating Stations:

- Normative operation and maintenance expenses vary based on the capacity of the generating station and the year.
- Expenses are categorized for different types of thermal generating stations, including coal-based, lignite-fired, gas turbine, combined cycle, etc.
- Additional O&M expenses due to changes in law events or wage revisions are considered at the time of tariff truing up.
- Changes in law events impacting O&M expenses or wage revisions are considered at the time of tariff truing up, subject to certain conditions.

- Ash transportation expenses, security expenses, water charges and capital spares shall be allowed separately after due prudence.

Hydro Generating Stations:

- Normative operation and maintenance expenses vary for different hydro generating stations based on their capacity and years of operation.
- For stations operational for three or more years as of April 1, 2024, O&M norms are provided for each station for the control period.
- For stations declared under commercial operation on or after April 1, 2024, initial O&M expenses are fixed at a percentage of the original project cost, with subsequent annual escalation.
- Changes in law events impacting O&M expenses or wage revisions are considered at the time of tariff truing up, subject to certain conditions.
- Insurance expenses, security expenses and capital spares shall be allowed separately after due prudence.

Transmission System:

- Normative operation and maintenance expenses are provided for various components of the transmission system, including substations, transformers/reactors, and transmission lines.
- Expenses are calculated based on the number of bays, transformer/reactor capacity, and line length, multiplied by the applicable norms.
- Additional expenses for security, capital spares, and insurance are allowed after a prudence check.
- Changes in law events impacting O&M expenses or wage revisions are considered at the time of tariff truing up, subject to certain conditions.
- Insurance expenses, security expenses and capital spares shall be allowed separately after due prudence.

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Inter-Sectoral Collaboration Inputs

Areas of Cooperation

Electricity is the fulcrum that runs economies. In fact, electricity consumption is widely understood as an indicator reflecting the development of any nation. To enhance the productivity of electricity as both a product and a service, CERC seeks cooperation from the following regulators:

a. **With SEBI** – On forward contracts and futures options in the electricity segment as a commodity.
b. **With BEE** – CERC, being the designated regulator for the Carbon Market in India, seeks knowledge sharing and support to develop a robust mechanism on this.
c. **With TRAI** – On aspects of Artificial Intelligence and Machine Learning to enhance efficiency in its workings.
d. **With all sector regulators** – Given India's ambitious commitment to reach a Net Zero target by 2070, each regulator needs to play an important role in achieving this feat. Each one of us needs to act, and CERC also readily seeks to support all regulators in their endeavors to walk on this path, promote renewable energy penetration, and ensure the safe and sustainable development of our nation and Mother Earth.

AIRPORTS ECONOMIC REGULATORY AUTHORITY (AERA)

Best Practices

Inter Regulatory Working Group on 'Inter Regulatory Cooperation'

Civil aviation plays a critical role in the economic growth and development of a country. Like other modes of transport, the aviation industry plays a key role in today's global economy, as it connects a country with other countries and facilitates the growth of business, trade and tourism with significant multiplier effects. It improves the efficiency of the service delivery system and, therefore, has a positive impact on productivity, growth and employment generation and helps the country make its mark on the global economy.

The estimated total passenger throughput for all airports including Major Airports in the FY 2022-23 grew to 350 million from 109 million in 2008-09 and freight tonnage from 1.70 million tons to 3.50 million tons in the same period, operating from approximately 150 operational airports. The top 6 Airports contributed 51% of total passenger traffic in FY20 (pre-covid); Delhi, Mumbai, Bengaluru, Hyderabad and Cochin airports combined handled over 180 MPPA during the same financial year, Increased focus on airport city model to enhance non-aeronautical revenues.

Airports Economic Regulatory Authority of India (AERA) established under the AERA Act, 2008. It operates as an independent economic regulator for major airports operators (regulated entities) and Independent Service Providers (ISPs), providing regulated services at the major airports, relating to Cargo Facility, Ground Handling & Supply of Fuel to the aircraft. AERA follows impartial decision-making in its tariff determination process. AERA's regulatory framework encompasses key regulatory principles advocated by International Civil Aviation Organization (ICAO) for economic oversight of airports & fixation of Airport User Charges viz., Transparency, Cost Relatedness, Non-Discrimination and Consultation with Users.

The aviation sector in India is a collection of multiple distinct, yet intertwined, commercial functions in different segments for instance, airport, airlines, cargo, ground handling, fuel to aircraft, safety, security and expected to be in Green Energy in future

etc.

A. Robust Regulatory Practices followed by AERA for Economic Regulation of Major Airports in India

AERA follows the robust regulatory practices, while discharging its statutory functions, including Determination of Tariffs for the Major Airports. Some of the best practices followed by AERA as an economic regulator of major airports are as under:

(i) Transparency & Stakeholders' Consultation in Tariff Determination Process:

- In accordance with mandate given under the AERA Act, 2008 and ICAO's key tariff setting principles, AERA determines Tariffs for Major airports, following a transparent tariff determination process. Stakeholders' consultation is an integral part of AERA's regulatory philosophy and a tool to ensure transparency in tariff determination exercise. All the proposals of AERA are well documented, giving details of various aspects of proposals, along with underlying justifications/ reasons. The Consultation Papers issued by AERA are put up in the public domain and comments/views from the stakeholders/airport users are solicited. Tariff Orders for the service providers are finalized only after considering the views/comments received from stakeholders & counter comments of the service providers on the comments/suggestions of other stakeholders.
- **Stakeholders' Consultation**: In addition to stakeholders' consultation being done by AERA as mentioned above, AERA's Regulatory Guidelines also prescribes a well defined Consultation Protocol to be followed by Airport Operators/ Independent Service Providers (regulated entities). All the Airport Operators (AOs)/ Independent Service Providers (ISPs) are required to comply with the Consultation Protocol and documents related to consultations held with the airport users, as part of consultation protocol, are required to submitted to AERA, as part of Multi-Year Tariff Proposals (MYTPs) by the service providers.
- **Airport Users Consultative Committee (AUCC):** Further, AERA mandates all AOs to form Airport Users Consultative Committee (AUCC) at the Major Airports for the purpose of consultations with airport users on the proposed CAPEX and

tariff rates. As part of consultation process, stakeholders viz., airlines, airport operators, industry associations, consumer groups, and government agencies, are invited to provide feedback and recommendations.

- **Sharing of Project Investment File (PIF):** Service Providers, in respect of major capital projects, proposed during the regulatory Control Period, are required to share Project Investment File (PIF) with airport users. Airport Operators are required to consult AUCC, during all the stages of project life cycle, beginning with the Need identification stage (stage 1), Option development stage (stage 2) and Detail project design stage (stage 3).
- During the consultation meetings with stakeholders, views/ suggestion/ objections from Users are obtained and same along with reply/counter submission of Airport Operators are properly documented, for later submission to AERA, as part of AO's MYTP submission. During the consultation meetings with AUCC, pertinent details of 'Major Capital Projects' are discussed with & necessary details of Projects, including its need, benefits for airport users & its financial implication etc., are shared with the airport users.
- AERA also hold meetings of Stakeholders, in connection with consultation papers, which allow stakeholders to express their views, raise concerns, and propose alternative solutions, ensuring that diverse perspectives are considered in decision making. The comments/ suggestions of the stakeholders are duly considered by AERA in its tariff determination exercise, as part of Consultation Protocol.
- AERA, while finalizing Tariff Orders, takes into account the interests of all stakeholders, including airlines & travelling passengers, and decides fair and reasonable tariffs for the service providers to ensure the financial viability of airport operations.

(ii) Benchmarking of Cost of Construction (adoption of Normative Costs) for Key Airport Assets viz., Terminal Buildings & Runways/ Taxiways:

Cost of Civil Works associated with airport assets is a significant proportion of total costs of Airport Assets. AERA, in order to have a common benchmark to assess the reasonability of capital costs associated with the construction/ development of key

airport assets like Passenger Terminal Buildings, Apron, Runways & Taxiways, has adopted the Normative Rates (benchmark costs in per square meter) of Construction Costs (in per sq mtr.). The ceiling rates (normative costs) for Civil Works associated with pertinent key Airport Assets is revised on yearly basis, to account for inflationary increase in construction costs.

(iii) <u>True-up Mechanism</u>:

- The Regulatory Guidelines, in respect of Airport Operators & Independent Service Providers, include the unique 'True-up Mechanism', wherein regulatory building blocks based on which Aggregate Revenue Requirement (ARR) & Tariffs are finalized (under the Cost Plus Approach) considering the financial estimates & Traffic volume forecast submitted by the service providers for a given regulatory Control Period, are reviewed/trued-up at the time next Control Period, considering the actual financial figures & traffic volume achieved vis-à-vis estimated figures.
- Any under-recovery or over-recovery of ARR of previous Control Period, based on the review/ true-up of regulatory building blocks considering the actual figures for the same Control Period, is adjusted in the tariff proposed for the subsequent tariff cycle.
- Neither, the Service Provider nor the Service Receiver is allowed to benefit / put to loss, on account of variances, in ARR/ Tariff Order finalized in earlier Control Period vis-à-vis Trued-up Figures (actual financial figures & traffic volumes) for the same Control Period. Thus, Regulatory approach of AERA for Tariff Determination is fair to both, the airport operators & the users of airport services.

(iv) <u>Light Touch Approach for Tariff Determination:</u>

- AERA**,** in case regulated services related to 'Cargo Facility, Ground Handling and Supply of Fuel to the Aircraft' determines its regulatory approach (Cost Plus or Light Touch approach) after assessing the regulated services against three Criterion i.e., 'Materiality', 'Competition' and 'Reasonableness of User Agreement(s)'. Wherever, the regulated service at a given airport is assessed as 'non-material' or if the regulated service is assessment as 'Material but

competitive' or where the AERA considers User Agreements between the Service Provider & Service Users as reasonable; in all such cases, tariffs of the regulated services are determined following the 'Light Touch Regulatory Approach'.

- In Light form of Regulations, prices of regulated services are closer to market rates and there is little distortion in prices prevailing at the ground. Under the Light Touch Approach, there is minimum examination / scrutiny by the Regulator as compared to Cost Plus Approach followed for the Airport Operators. The Tariff proposed by the Service Providers is generally accepted by the Regulator and reasonability of User Charges is ensured by the market competition, mutual negotiations between the service providers and the Airlines/Users.

(v) <u>Supports Investments in Environment Friendly Green Technologies at the Airports</u>:

AERA, supports environment friendly green initiatives/ transition to greener technologies by the airport operators/ independent service providers at the major airports. In its endeavor to promote adoption of green technologies to reduce carbon emissions at the airports and to move towards achieving goal of net carbon neutrality at the airports for sustainable airports, AERA supports & encourages CAPEX in the environment friendly initiatives undertaken by the airport operators/ independent service providers:

- **<u>Use of Renewal Energy & adoption of Energy Conservation Measures at the major airports</u>** - CAPEX done by the service providers relating to installation of Solar Power Plants (Rooftop & ground based solar panels), adopting energy conservation measures such as, installing LED powered airfield lights, solar powered LED lighting on perimeter roads, parking bays, Apron, Terminal buildings, roads etc. is duly considered by AERA in the Regulatory Asset Base (RAB) of the service providers.

  Many airports like Cochin & Hyderabad are meeting their entire electricity requirements from solar power plants, and, the surplus solar power at the airport is supplied back to local electricity grid.

- **<u>Transition of Fossil Fuel based Equipment/ Vehicles to Electricity driven</u>**

Vehicles (EVs)/ Equipment – AERA supports the transition of Ground Support Equipment (GSE) & Ground Support Vehicles (GSV) operated with fossil fuel-based engines to electricity driven Equipment /Electric Vehicles (EVs) to reduce air pollution & carbon emissions at the airports. Changeover to greener fuel/ electricity driven equipment leads to lowering of air & noise pollution at the airports.

- Bridge Mounted Equipment (BME) is a prime example of transition to cleaner technologies at the airports. BME is an electric equipment attached to Passenger Board Bridge (PBB) on airside of the Terminal Building and it is used for providing fixed Ground Electric Power Supply and the pre-conditioned air to the stationery aircrafts parked at in-contact parking stands. BMEs provide electric power & pre-conditioned air in a pollution free manner, in place of convention method of providing electricity & pre-conditioned air to aircrafts using Diesel powered generator sets.
- The Capex Plan for transition to green technologies are duly considered by AERA, while determining tariffs for the service providers.
- **Water Conservation measures & setting up of Effluent Treatment Plants** – Setting up of Sewage/ Waste Water Treatment Plants at the airports is another important part of Environment Protection Plan of the airports. Airports are setting up Sewage Treatment Plants and treated water is reused for landscaping/ horticulture and other purposes. Similarly, AERA supports setting up of Rain Water Harvesting Systems (RWHS) at the airports for conserving precious water resources and recharging of water table in and around airport area.

AERA's Guidelines & Regulatory Approach for the Determination of Tariffs for Aeronautical Services

1. AERA's regulatory framework encompasses key regulatory principles advocated by International CIVIL Aviation Organisation (ICAO) for economic oversight of airports & fixation of Airport User Charges viz., Transparency, Cost Relatedness, Non- Discrimination and Consultation with Users.

2. AERA determines tariff for Major Airports in accordance with the mandate given in AERA Act, 2008 and the guidelines given in "Terms and Conditions for Determination of Tariff for Airport Operators Guidelines, 2011".

3. As per the AERA Act, 2008, the following are the main Aeronautical services:

   i. Landing, housing or parking of an aircraft or any other ground facility in connection with aircraft operations at an airport;

   ii. Cargo Facility, Ground Handling and Supply of Fuel to the Aircraft (CGF Services); and

   iii. Air Navigation Services (ANS).

   Presently, tariff for ANS is determined by the Ministry of Civil Aviation (MoCA) across all airports (including non-major airports) to maintain uniformity of charges.

4. Tariff for Aeronautical services is determined on following two approaches:

   i. Cost Plus approach.

   ii. Light touch approach (LTA).

   Tariff determination for Airport Operators at all Major airports is done using

Cost-Plus approach. Tariff for ISPs is generally determined following LTA.

5. Airport Operators submit Multi Year Tariff proposal (MYTP) in respect of Aeronautical Services, for Major Airports separately, for a given Control Period of 5 tariff years. In case of existing major airports (brownfield airports), in addition to MYTP for the next Control Period, they also submit actual financial figures & other relevant information of preceding control period, for the purpose of True-up of each regulatory building blocks based on the actual figures.

   Post true up exercise, variance in actual figures viz-a-viz approved figure in respect of previous Control Period is adjusted while determination of tariff for next tariff period.

6. AERA has adopted the Hybrid-Till mechanism for tariff determination in respect of Airport Operators, wherein 30% of the non-aeronautical revenues is used for cross-subsidizing the aeronautical charges.

7. AERA computes Aggregate Revenue Requirement (ARR) of the Airport Operator for a given control period based on the following formula:

$$ARR = \sum_{t=1}^{5} ARR_t$$

$$ARR = (FRoR\ x\ RAB_t) + D_t + O_t + T_t - \alpha\ x\ NAR_t$$

   Where,

   t is the tariff year in the control period, ranging from 1 to 5

   ARR_t is the Aggregate Revenue Requirement for tariff year 't'

   $FRoR$ is the Fair Rate of Return for the Control Period

   RAB_t is the Aeronautical Regulatory Asset Base for tariff year 't'

D_t is the Depreciation corresponding to the Regulatory Asset Base for tariff year 't'

O_t is the Aeronautical Operation and Maintenance expenditure for the tariff year 't'

T_t is the Aeronautical taxation expense for the tariff year 't'

α is the cross-subsidy factor for revenue from services other than Aeronautical services under the Hybrid Till methodology followed by the Authority, α = 30%.

NAR_t is the Non-Aeronautical Revenue in tariff year 't'.

Based on ARR, Yield per passenger (Y) is calculated as per the formula given below:

$$Yield\ per\ passenger\ (Y) = \frac{\sum_{t=1}^{5} PV(ARR_t)}{\sum_{t=1}^{5} VE_t}$$

Where,

PV (ARR_t) is the Present Value of ARR for all the tariff years. All cash flows are assumed to occur at the end of the year. The AERA computes ARR for the Control Period, at the end of first tariff year (in PV terms), considering discounting cash flows for all the 5 tariff years.

VE_t is the passenger traffic in year 't'

8. Building blocks considered to determine tariff for aeronautical services are follows:

1. Traffic Passenger Traffic and Air Traffic Movement (ATM)

2. Capital Expenditure, Regulatory Asset Base (RAB), Depreciation

3. Fair Rate of Return (FRoR) on RAB

4. Return on Land

5. Operating and Maintenance (O&M) Expenses

6. Non-Aeronautical Revenue

7. Taxation

1. Traffic Passenger Traffic and Air Traffic Movement (ATM)

AERA considers the annual passenger and Air Traffic Movement (ATM) on projection with the Y-O-Y growth rates (in case of first control period) and actual annual passenger and ATM traffic (in case of true-up) are considered for computing the tariff.

Sample shown for Traffic considered for computing tariff

Domestic Passengers (in Millions)	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**	**FY 2026-27**	**FY 2027-28**	**Total**
As submitted by Airport Operator for PIA	4.57	5.26	5.99	6.84	7.66	**30.32**
As proposed by AERA	4.57	5.26	5.99	6.84	7.66	**30.32**
Y-o-Y growth of Domestic PAX submitted by AAI for PIA	22.00%	15.00%	14.00%	14.00%	12.00%	
Y-o-Y growth of Domestic PAX proposed by the Authority	22.00%	15.00%	14.00%	14.00%	12.00%	
Domestic ATM (in '000)	**FY 2023-24**	**FY 2024-25**	**FY 2025-26**	**FY 2026-27**	**FY 2027-28**	**Total**
Domestic ATM submitted by Airport Operator for PIA	32.96	36.91	41.34	46.30	51.40	**208.92**
Domestic ATM proposed by AERA	32.96	36.91	41.34	46.30	51.40	**208.92**
Y-o-Y growth of Domestic ATM submitted by AAI for PIA	18%	12%	12%	12%	11%	
Y-o-Y growth of Domestic ATM proposed by the Authority	18%	12%	12%	12%	11%	

There is no international traffic in the above illustration.

2. Capital Expenditure (CAPEX): -

i. Capital expenditure proposed in MYTP is analyzed element-wise. Cost of major elements of proposed CAPEX like Apron, Runway & Terminal building is considered based on Normative cost or estimated cost basis, whichever is lower. The normative cost is escalated every year with the inflation rate.

Normative Approach illustrating construction of Terminal Building

Particulars	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2024-25
Terminal Building (A)*	₹ 1,00,000				
Inflation factor (WPI forecast) (B)	Base Year	7.14%#	9.42%	0.30%	3.80%
Inflation adjusted Rate per Sq.m. (in ₹)	1,00,000	1,07,140	1,17,233	1,17,584	1,22,052
Rate per Sqm (in ₹) incl. GST					1,29,376

** Normative cost of terminal building @ ₹ 1,00,000 per sqm. Considered as on 2020-21.*

ii. The capital projects proposed during the Control Period are analyzed/ examined in detail for their essentiality, from the view point of airport operations & passenger facilitation etc. and reasonability of costs is assessed before inclusion in the forecasted RAB. Cost of projects may be rationalized and/or likely completion date shifted to next tariff years / next Control Period, wherever considered necessary.

iii. Capital expenditure incurred for Terminal Building is segregated into aeronautical and non-aeronautical activities (non- regulated activities) based on Aeronautical:Non-aeronautical ratio and only Aeronautical portion is considered for inclusion in RAB.

3. Regulatory Asset Base (RAB)

i. All the fixed assets i.e. aeronautical assets used for the provisions of aeronautical services at the Airport are considered under the scope of RAB. The assets which do not provide amenities/facilities/services related to airport are excluded from RAB.

ii. Assets related to mandated security expenditure as laid down by Government/Bureau of Civil Aviation Security (BCAS) is also included in RAB.

iii. Interest during Construction (i.e. IDC) is the interest on CAPEX loan pertaining to construction period. This cost is capitalized and considered as a part of RAB.

Illustrating Average RAB based on various Capex elements *(₹ Crores)*

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Opening RAB (A)	87.88	94.62	955.24	954.00	887.06	
Capital Additions (B)	13.52	895.80	63.73	-	-	**973.04**
Disposal/Transfers (C)	-	-	-	-	-	
Depreciation (D)	6.78	35.16	64.97	66.95	66.79	**240.65**
Closing RAB (E) = [(A) +(B) – (C) – (D)]	**94.62**	**955.24**	**954.00**	**887.06**	**820.27**	
Average RAB = [(A) + (E)]/2	**91.25**	**524.93**	**954.62**	**920.53**	**853.66**	

4. Depreciation

i. Depreciation is allowed for calculating ARR based on straight line method considering opening balance of all the additions and disposal during the year.

ii. AERA issued regulatory order specifying the useful life and depreciation rates in respect of aeronautical assets at the Airport. Assets which are not indicated in the above order, their useful life and rates are considered as per the Companies Act.

iii. Land is a non-depreciable asset thus; it is excluded from the cost of assets while calculating depreciable value of the asset.

Sample table for Depreciation for allowed capex *(₹ Crores)*

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Land	-	-	-	-	-	-
Runways	0.04	0.04	0.04	0.04	0.04	**0.20**
Taxiway	-	0.58	1.16	1.16	1.16	**4.06**
Aprons	0.25	0.47	1.26	1.84	1.84	**5.66**
Road, Bridges & Culverts	0.35	5.07	11.22	12.67	12.67	**41.98**
Building- Terminal	0.71	8.14	15.56	15.56	15.54	**55.51**
Building – Residential	0.75	0.82	0.88	0.88	0.88	**4.21**
Boundary Wall -Operational	0.11	0.24	0.4	0.37	0.35	**1.47**
Other Buildings-Unclassified	0.64	2.38	3.52	3.52	3.52	**13.58**
Computer & Peripherals	0.1	0.07	0.03	0.02	0.02	**0.24**
Plant & Machinery	1.64	1.62	1.6	1.6	1.6	**8.06**
Tools & Equipment	0.39	0.34	0.31	0.31	0.31	**1.66**
Other Vehicles	0.92	0.92	0.92	0.92	0.8	**4.48**
Electrical Installations	0.63	14.38	28.05	28.05	28.05	**99.16**
Furniture & Fixtures: Trolley	0.24	0.11	0.01	0.01	0.01	**0.38**
Total	**6.77**	**35.18**	**64.96**	**66.95**	**66.79**	**240.65**

5. Fair Rate of Return (FRoR)

i. AERA determines Fair Rate of Return (FRoR), based on weighted average cost of capital for an airport operator as under: -

FROR= (g x R_d) + {(1-g) x R_e}

Where;

g is the gearing (debt/total cost)

R_d is the pre- tax cost of debt

R_e is the post tax cost of equity.

Where cost of equity is calculated based on CAPM (capital asset pricing model).

ii. AERA for the interest of all the stakeholders, considers the efficient capital structure and normative gearing ratio (i.e. Debt: Equity) of 48: 52 for the tariff determination. Cost of Equity i.e. 15.18% is considered based on the independent study report done by IIM Bangalore.

iii. FRoR determined as above is allowed on average RAB determined for each tariff year.

In the given illustration we have considered cost of Equity (Re) as 14%.

Parameter	Reference	Value
Cost of equity (Re)	A	14.00%
Cost of debt (Rd)	B	8.10%
Gearing of Debt (g)	C	17.00%
Gearing of Equity(1-g)	D	83.00%
Fair Rate of Return	**E = (C*B) +(1-C) *A**	**13.00%**

6. Return on land

In addition to Return on RAB (@ FRoR), AERA also considers Return on land.

i. In case land is provided free of cost, no return is given on land.

ii. Return will be given only on the cost of land used for aeronautical activities.

iii. In case land is purchased by Airport Operator, either from private party or from the State Government, the compensation is given in the form of equated annual instalments, computed at actual cost of debt or SBI base rate plus 2%, whichever is lower, for a

period of 30 years.

iv. When the land has been provided to the operator on lease, the lease rent will be provided to the operator as a part of O&M cost, subject to reasonability.

v. AERA also gives land development cost to Airport Operators for aeronautical activities only, wherever applicable.

7. Operating and Maintenance Expenses (Opex)

i. The major heads of Opex includes the following:

- Payroll Expenditure
- Administration & General Expenditure
- Repairs & Maintenance Expenditure
- Utilities & Outsourcing Expenditure
- Other Outflows

ii. These elements are scrutinized in details for the essentiality and reasonability of the costs etc. and only the aeronautical portion is considered.

- Payroll expenses include salary, allowances and benefits to the employees, PF contribution, gratuity, overtime training cost etc.
- Admin & General Expenditure includes admin charges directors' fees, travelling and convenance charges, Legal and consultancy fees etc.
- Repairs & Maintenance Expenditure- It includes R&M charges for all the aeronautical assets. AERA has fixed the cap of 6% of opening RAB (net block) of each tariff year for the Control Period. In case of true-up, actual R&M expenditure is considered. AERA considers normative benchmark in respect of R&M expenses.

Illustration for R&M expenses *(₹ Crores)*

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	TOTAL
Expenses Claimed by AAI (Other than Runway Resurfacing) (A)	10.79	11.75	12.92	14.22	15.64	**65.32**
Runway Resurfacing (B)	6.70	6.70	6.70	6.70	0.00	**26.79**
Total (C= A+B)	**17.49**	**18.45**	**19.62**	**20.92**	**15.64**	**92.11**
Opening RAB (D)	87.88	94.62	955.24	954.00	887.06	
6% of Opening RAB (E= D*6%)	5.27	5.68	57.31	57.24	53.22	
Allowable expenses (F= 6% of Opening RAB or A, whichever is lesser)	5.27	5.68	12.92	14.22	15.64	**53.73**
Total R&M Expenses allowed by the Authority (G= F + B)	**11.97**	**12.37**	**19.62**	**20.91**	**15.64**	**80.52**
Difference (H= A-G)	5.52	6.07	-	-	-	11.59

- Utilities & Outsourcing Expenditure- It includes water and electricity charges. It is considered based on the number of units consumed as per the effective rate per unit for aeronautical portion.
- Other Outflows- It includes other outflows of Airport Operator like UDF collection charges etc.

iii. OPEX also includes the cost incurred in compliance to directions received from regulatory agencies including Director General Civil Aviation (DGCA) and statutory operating cost incurred on account of fees, levies taxes and other charges directly imposed on Airport Operators by regulatory agencies.

iv. Interest on working capital for short term loans not more than twelve months is considered under the head "Operating and Maintenance Expenses".

v. AERA considers the forecast of inflation index (wherever applicable) published by RBI while estimating OPEX for the Control Period.

Illustration for Operating and Maintenance Expenses (₹ Crores)

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Payroll Costs	23.60	26.20	27.77	29.44	36.80	**143.81**
Repair & Maintenance Expenses	11.97	12.37	19.62	20.91	15.64	**80.52**
Utilities & Outsourcing Expenses	4.08	5.25	5.49	5.75	6.02	**26.60**
Upkeep Expenses	1.21	3.89	4.04	4.19	4.35	**17.69**
Admin. & Other Expenses	36.39	38.53	40.71	43.04	45.51	**204.17**
Other Outflows	1.19	1.37	1.57	1.79	2.00	**7.92**
Total O&M Expenditure	**78.45**	**87.62**	**99.21**	**105.12**	**110.32**	**480.71**

9. Taxation

i. It represents payments by Airport operator in respect of corporate tax on income from assets/facilities /services taken into consideration for determining ARR.

ii. No interest payment, penalty, fines associated with the corporate tax shall be considered for calculation of tax.

Sample for taxation computation *(₹ in Crores)*

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Aeronautical Revenue	87.44	244.99	309.05	406.51	517.13	**1,565.13**
O&M expenses	78.45	87.62	99.21	105.12	110.32	**480.71**
*Depreciation	9.10	9.34	97.65	94.14	84.64	**294.87**
Profit Before Tax	(0.10)	148.03	112.20	207.25	322.17	**789.55**
Set-off of prior period tax losses	-	(48.46)	-	-	-	**(48.46)**
PBT after set-off of prior period tax losses	(0.10)	99.57	112.20	207.25	322.17	**741.09**
Tax rate (%)	25.17%	25.17%	25.17%	25.17%	25.17%	
Tax	-	25.06	28.24	52.16	81.09	**186.56**

**Depreciation for taxation is calculated on the basis of Income tax Act 1956]*

10. AERA is also mandated to monitor the set the performance standards relating to quality, continuity and reliability of service as may be specified by the Central Government or any other Authority.

11. Aggregate Revenue Requirement (ARR)

After considering all the above building blocks, ARR is computed in the table below:

ARR approved by AERA for the control period 2023-2028.

(₹ Crores)

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Average RAB = A	91.25	524.93	954.62	920.53	853.66	
Fair Rate of Return = B	13.00%	13.00%	13.00%	13.00%	13.00%	
Return on average RAB C= A*B	11.86	68.22	124.07	119.64	110.95	**434.75**

Depreciation – D	6.78	35.16	64.97	66.95	66.79	**240.65**
O&M expenses – E	78.45	87.62	99.21	105.12	110.32	**480.71**
Tax expense – F	-	25.06	28.24	52.16	81.09	**186.56**
ARR per year = SUM (C: F)	**97.09**	**216.07**	**316.49**	**343.87**	**369.14**	**1,342.66**
Shortfall carried forward from previous Control Period, if any	*164.75*					
Gross ARR – G	**261.83**	**216.07**	**316.49**	**343.87**	**369.14**	**1,507.40**
NAR	13.66	15.43	17.53	19.68	21.81	**88.13**
Less: 30% NAR – H	4.10	4.63	5.26	5.91	6.54	**26.44**
Net ARR = (G-H)	257.73	211.44	311.23	337.97	362.60	**1,480.97**
Discount factor (@ 13%)	1.00	0.88	0.78	0.69	0.61	
PV of ARR (₹ Crores)	257.73	187.12	243.75	234.25	222.41	**1,145.26**
Sum Present value of ARR (₹ Crores) as on March 31, 2024	**1,145.26**					**1,145.26**

12. Aeronautical Revenue

Estimated aeronautical revenue is computed considering increase in tariff allowed by AERA, in such a manner that PV of Aeronautical revenue after tariff increase is equal to PV of ARR.

Illustration for Aeronautical Revenue

(₹ in Crores)

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Parking and Housing Charges	0.02	0.03	0.03	0.04	0.05	**0.17**
UDF Domestic	45.75	173.56	224.84	307.58	401.9	**1,153.62**
Landing Charges	33.31	61.32	72.72	86.24	101.35	**354.94**
CUTE charges	4.75	6.31	7.19	8.2	9.19	**35.65**
Ground handling charges	1.15	1.29	1.44	1.62	1.79	**7.29**
Royalty from AAICLAS	0.27	0.28	0.3	0.31	0.33	**1.49**
Land Lease – Oil Companies / Ground Handling Companies	2.2	2.2	2.53	2.53	2.53	**11.98**
Total Revenue (b)	**87.44**	**244.99**	**309.05**	**406.51**	**517.13**	**1,565.13**

The above computation is based on traffic increase in various components of aeronautical services approved by AERA.

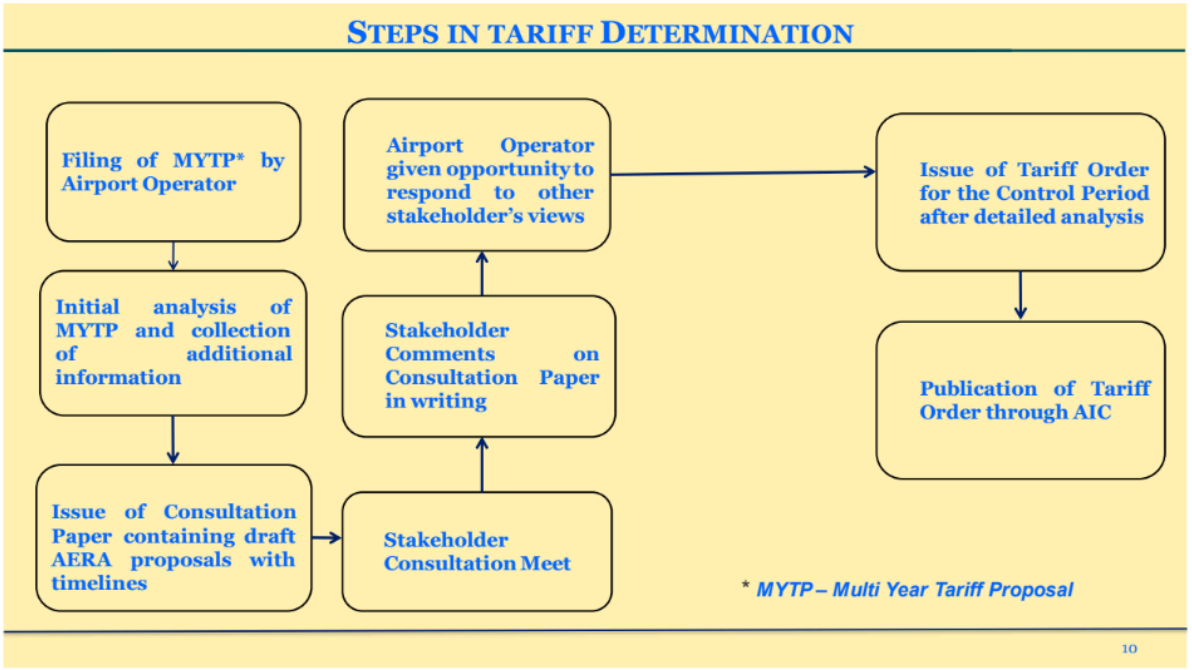
13. AERA computes the ARR (in Present Value i.e. PV terms) for a given control period based on regulated building blocks. The ARR so arrived is compared with PV of Aeronautical Revenue for the control period and the shortfall in Aeronautical revenue is met by increase in unit rate of Aeronautical services so as to match PV of Aeronautical Revenue after tariff increase with the PV of ARR.

Aeronautical Revenue approved for the control period *(₹ in Crores)*

Particulars	FY 2023-24	FY 2024-25	FY 2025-26	FY 2026-27	FY 2027-28	Total
Total PV of ARR including true up (₹ in Crores) (a)			**1,145.26**			**1,145.26**
Total Revenue (b)	**87.44**	**244.99**	**309.05**	**406.51**	**517.13**	**1,565.13**
PV factor	1.00	0.88	0.78	0.69	0.61	
PV of Aero Revenue (c)	87.44	216.81	242.05	281.75	317.20	**1,145.26**
∑ PV Projected Aero Revenue (d)			1,145.26			**1,145.26**
Surplus/ (Shortfall) proposed to be carried forward for Next Control Period (d) – (a) (as on March 31, 2024)					-	-

Thus, it is concluded from the above table that as per AERA's principles, Airport Operator is entitled to recover an ARR of ₹ 1,145.26 Crores (in NPV terms). The present value of total projected Aeronautical revenues is ₹ 1,145.26 Crores (in NPV terms), which is equivalent to the Target Revenue/ ARR.

Steps to determine Tariff for Major Airports.



B. <u>Potential Areas of Collaboration among the FOIR Members.</u>

(i) <u>Collaboration between AERA and the Electricity Sector on the issue of net metering for green energy:</u>

The collaboration between the AERA and the Electricity Sector will further facilitate & speed up the transition to greener technologies at the airports, particularly on the issue of net metering for green energy generation at the airports, which have several benefits as elucidated below:

- Net metering allows airports to generate their own renewable energy, such as solar or wind power, and feed surplus electricity back into the grid. This promotes the use of clean energy sources, reducing carbon emissions and environmental impact.
- By generating their own electricity, airports can potentially reduce their electricity bills and operating costs in the long term.
- Collaboration can help in facilitating generation of renewable energy and smooth implementation of net metering schemes at airports.
- Presently, many airports have surplus land available with them, which is used for solar electricity generation at the airports and to avoid dependence on the electricity produced at coal-based plants.

  However, Current Legislation/States have put limits to the net metering (buy-back of surplus solar electricity) and significant portion of surplus electricity generated through green/ renewal sources at the airports gets wasted and the airport operators are not fully compensated for supply of green electricity back to the grid, this impedes the ambitious plan of the GoI to make the airports carbon neutral & work towards achieving net zero emissions in phases.

- Therefore, on the issue of the net metering, there is a need for coming together of Sectoral Regulators & other key stakeholders viz., Airport Operators, State Electricity Distribution Companies etc. to sort out the inter-regulatory issues limiting net metering at the airports. AERA can coordinate the same for Airport

sector.

- Collaboration among the Airport & Electricity Sector Regulators is needed to frame supportive policies for net metering to ensure that the entire surplus green electricity generated at the airports is taken back into the grid and airport operator is fully compensated accordingly. Collaborative efforts between Airport & Electricity Regulators will facilitate & promote unhindered generation of clean electricity at the airports.

(ii) <u>Collaboration between PNGRB and Airport Regulator regarding Policy framework and development of ATF Pipeline in the Country:</u>

- Airport Sector and Petroleum Sector Regulators should work together to finalize policy framework for development of ATF pipeline network, for connecting major airports, both existing & upcoming greenfield airports in the country.
- While developing police framework for the development of ATF pipeline network in the country, the existing regulatory framework of AERA for the Airport Operators/ Fuel Farm Operators at the major airports, may also be considered from regulatory perspective.
- At present, the ATF to the airports is mainly delivered through browsers/oil tankers. As of now, Delhi & Mumbai airports are already connected with ATF pipelines and Fuel Farm Facilities at the upcoming airports at Jewar (UP) & Navi Mumbai (Maharashtra) are also being connected through the ATF pipeline network.
- Collaboration between Petroleum & Airport Sector Regulators for the development of dedicated ATF pipeline network for all the major brownfield & upcoming greenfield airports in the Country would be a welcome step, towards reducing ATF transportation costs & to ensuring reliable, safe & continuous supply of ATF at the major airports.
- The successful implementation of environment friendly green initiative of PNGRB will benefit all the stakeholders in the airport ecosystem, while reducing carbon emissions connected with conventional mode of transportation of ATF from Refineries to Airports.

(iii) <u>Capacity Building and Training</u> - enhance capacity building and knowledge base

of Regulatory teams of FOIR members through following initiatives:

- Organizing joint training programs, workshops, seminars, and sharing study materials on basic regulatory philosophy, covering the aspects of regulatory frameworks specific to infrastructure sector/ PPP projects.
- Development of knowledge sharing platforms, online resources, and expert networks to facilitate continuous learning and exchange of experiences in the regulatory field among the regulatory teams.

(iv) AERA is open to further discussion on the above points and can collaborate with other regulatory teams of FOIR group in respect of above and other innovative steps to achieve synergy in the entire ecosystem.

PETROLEUM AND NATURAL GAS REGULATORY BOARD (PNGRB)

Best Practices

PNGRB Engagement with Infrastructure Regulators and Departments – Best Practices

Petroleum and Natural Gas Regulatory Board (PNGRB), a statutory body for facilitating economic activities for development of oil and gas transportation infrastructure including natural gas distribution with the objective to promote competitive market, create infrastructure and increase share of natural gas in country's energy mix. Accordingly, PNGRB authorises entities for laying, building, operating or expanding Natural Gas Pipeline (NGPL), Petroleum Product Pipeline (PPPL) and City Grid Distribution (CGD) Networks. PNGRB was constituted under The Petroleum and Natural Gas Regulatory Board Act, 2006 (NO. 19 OF 2006) notified via Gazette Notification dated 31st March, 2006. The Act provides for the establishment of PNGRB to protect the interests of consumers and entities engaged in specified activities relating to petroleum, petroleum products and natural gas and to promote competitive markets and for matters connected therewith or incidental thereto. Further as enshrined in the act, the board has also been mandated to regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum, petroleum products and natural gas excluding production of crude oil and natural gas so as and to ensure uninterrupted and adequate supply of petroleum, petroleum products and natural gas in all parts of the country.

India is an emerging economy where Greenhouse Gas emissions are set to increase, albeit from a low base, in pursuit of its development and poverty eradication goals. India is among the fastest growing economies globally and will soon become the world's most populous country. While road transport expansion and improvement typically serve as a catalyst for socio-economic development, as has happened in many countries, it has unleashed several negative environmental problems in India, namely, burgeoning emissions of CO2 as well as air pollutants such as nitrogen oxides (NOX) and fine particulate matter (PM2.5). As per IEA report, in 2021, India's road transport accounted for 14% of total final energy consumption, lower than the global average of 20%.

Overall, road transport accounted for 12% of national CO2 emissions from fossil fuel combustion in 2021 and is a key contributor to urban air pollution. As India seeks to meet the increasing demand for private mobility and the transport of goods, energy use and CO2 emissions from road transport could double by 2050.

Presently in India the share of natural gas in energy consumption basket is around 5.78% as compared to global average of around 24% (2022 energy mix). The Government has set a target to raise the share of natural gas in energy mix to 15% in 2030. Various steps taken by the Government in this direction including expansion of National Gas Grid Pipeline, expansion of CGD network, setting up of Liquefied Natural Gas (LNG) Terminals, allocation of domestic gas to Compressed Natural Gas (Transport) / Piped Natural Gas (Domestic) CNG(T)/PNG(D) in no cut category, allowing marketing and pricing freedom with a ceiling price to gas produced from high pressure/high temperature areas, deep water & ultra-deep water and from coal seams, Sustainable Alternative Towards Affordable Transportation (SATAT) initiatives to promote Bio-CNG, etc.

GOI has launched SATAT initiative on 1st October 2018, with the aim of establishing an ecosystem for production of Compressed Bio Gas (CBG) from various waste/ biomass sources and for promoting its use along with Natural Gas. Further, Government has also issued guidelines for co-mingling of domestic gas for supply for Compressed Natural Gas (Transport) & Piped Natural Gas (Domestic) segments of City Gas Distribution (CGD) Networks for synchronization of CBG with CNG in CGD Network to enhance use of CBG. CBG Blending Obligation (CBO) will promote production and consumption of Compressed Bio-Gas (CBG) in the country. In a major step towards enhancing use and adoption of CBG, the National Biofuels Coordination Committee (NBCC), announced the introduction of phase wise mandatory blending of CBG in CNG (Transport) & PNG (Domestic) segments of CGD sector. The key objectives of the CBO are to stimulate demand for CBG in CGD sector, import substitution for Liquefied Natural Gas (LNG), saving in Forex, promoting circular economy and to assist in achieving the target of net zero emission etc.

Government has also identified LNG as a transport fuel as a priority area considering the potential of manifold benefits in terms of reducing vehicular pollution, saving in terms of import bill of the country and wide ranging benefits that may accrue to fleet operators, vehicle manufacturers and other entities in the gas sector. The use of CNG as a transport fuel is a mature technology and widely used in different parts of the world. Further usage of LNG as transport fuel is gaining momentum in India. Expanding the usage of the relatively cost-effective, abundant and cleaner Natural Gas (to replace diesel and petrol) would be one of the realistic and practical options for India in the near/mid-term for meeting the increasing vehicular fuel demand, with lower emissions.
So far PNGRB has authorised 33,347 Kms NGPL (38 NGPL), 13596 Kms PPPL (26 PPPL) and 307 Geographical Areas in the country for transportation and distribution of oil and gas to PSU's, JV's of PSU and Private entities. This inter alia include creation of pipeline infrastructure and other facilities for the supply of Piped Natural Gas (PNG) to domestic, commercial and industrial units and Compressed Natural Gas (CNG) to the transport sector through CNG Stations.

Future growth in the gas consumption is mainly going to come from City Gas Distribution (CGD) sector. PNGRB has authorized entities to distribute the natural gas across almost the entire country to cover whole of India (except Andaman & Nicobar and Lakshadweep) under City Gas Distribution. The initiative to develop eco-system of gas infrastructure across the country has a potential for investment of about Rs. 2 Lakh Crore and help displace polluting fuels.

Finalizing the Regulations after Extensive Stakeholder Consultation: PNGRB issues the Public Consultation on draft Regulations based on the necessity for change/ requirement of Regulations. The Public Consultation aims at soliciting preliminary views of the stakeholders on different aspects of amendments. The comments are received from various stakeholders such as transporters, consumers, shippers, traders, terminal operators, etc. Subsequently, Draft Regulations are redrafted after taking into consideration many issues including issues raised in the Public Consultation and comments thereon and even issues otherwise raised by the stakeholders. The PNGRB based on comments received on the draft Regulations, extensive consultations with all the stakeholders finalizes the Regulations. Further, PNGRB also issues Public

Consultation while determining tariff of each individual pipeline and follows the same approach as above.

Unified Tariff: PNGRB has amended PNGRB (Determination of Natural Gas Pipeline Tariff) Regulations to incorporate the regulations pertaining to Unified Tariff for natural gas pipelines with a mission of "One Nation, One Grid and One tariff". The same has been made applicable effective from 1st April 2023. The reform will specially benefit the consumers located in the far-flung areas where earlier the additive tariff was applicable and facilitate development of gas markets and vision of government to increase the gas utilization in the country.

Gas Exchange Regulations: PNGRB notified Gas Exchange Regulations in 2020 and authorised 1st Gas Exchange in the country in December, 2020. Development of gas trading hub is a key step towards the direction of gas based economy, i.e. by creating a platform to facilitate development of gas market in a transparent and non-discriminatory environment. As evidenced in major gas markets, hub-based pricing mechanism can help to bring the required transparency in pricing of gas, attract gas supplies by addressing price distortions. From a strategic perspective for India to move to gas-based economy, hub provides most optimal solution for producers, importers, transporters, consumers and Government.

Regulatory Oversight: City Gas Distribution (CGDs) are required to do year wise work program for number of domestic Piped Natural Gas (PNG) connections, number of Compressed Natural Gas (CNG) stations and Inch kilometre of steel pipeline network as mentioned in the authorisation letter. PNGRB acts as facilitator and also reviews the status periodically.

PNGRB is also doing periodical review of the status of the Natural Gas Pipeline and Petroleum Product Pipeline as well. In order to ease the process of regulatory oversight pngrb is in the process of improving the process of seeking information by strengthening digiltalisation processes and dissemination of information through our website.

In order to develop Oil & Gas Infrastructure, PNGRB either on receipt of the request from the entities or may suo-motu initiate proposal inviting entities to participate in the process of selection of an entity for laying, building, operating or expanding pipeline along any route.

Consumer Grievance Redressal Mechanism: PNGRB constituted various committees to review a) the extant consumer protection provisions and recommend a way forward to ensure comprehensive consumer protection framework, b) the extant Safety framework and c) on Vision-2040 Natural Gas Infrastructure.

Hydrogen transmission in Natural Gas Pipelines and CGD Networks: PNGRB organised a mega-stakeholder interaction on Hydrogen transmission in Natural Gas Pipelines and City Gas Distribution Networks. Petroleum and Natural Gas Regulatory Board (PNGRB) is progressing on the task of transporting Green Hydrogen through Natural Gas transmission lines by blending hydrogen with Natural Gas. This mega-stakeholder interaction will also pave way forward to achieve the target of 5 MMTPA Green Hydrogen production by 2030, set by Government of India under its clean energy agenda through National Green Hydrogen Mission.

Other Initiatives:

- 100% coverage of country's area (except islands) for the development of City Gas Distribution (CGD) network, PNGRB along with City Gas Distribution entities launched a campaign from January 26th to March 31st, 2024 aimed to promote the adoption of PNG among households and to expand PNG consumer base across a broader segment of the population.
- PNGRB took an initiative for organizing a conference of International Oil and Natural Gas Regulators in GOA. The inaugural edition of the International Conference of Petroleum and Natural Gas Regulators was held under the aegis of the Petroleum and Natural Gas Regulatory Board (PNGRB) between 5-8th February 2024 during the India Energy Week 2024.

- PNGRB as a facilitator has been holding meetings with various state government officials for rationalizing the state taxes and other issues pertaining to the development of the gas infrastructure in the State.

Tariff Determination

Tariff determination of Natural Gas Pipeline

The natural gas pipeline tariff shall be determined by considering a reasonable rate of return on normative level of capital employed plus a normative level of operating expenses in the natural gas pipeline.

1. Financial Feasibility

The entity to which these regulations apply **shall submit all technical, operating, financial and cost data** of the natural gas pipeline project that may be required by the Board in determination of the natural gas pipeline tariff.

2. Method for determination of natural gas pipeline tariff

The unit rate of natural gas pipeline tariff to be charged for a period shall be calculated based on the **"Discounted Cash flow" (DCF)** methodology considering the reasonable rate of return to be the project's internal rate of return.

3. Reasonable rate of return

The rate of return on capital employed shall be the rate of return on capital employed equal to **twelve percent (12%) post-tax.** The rate of return on capital employed once applied to a natural gas pipeline project shall remain fixed for the entire economic life of the project.

The interest on debt during construction phase as well as post commissioning of pipeline is not allowed.

4. Return on total capital employed

i. The reasonable rate of return shall be **applied on the total capital employed** to determine the return on capital employed in the project over its economic life and the **authorized entity is free to leverage the financing of the project** in any suitable manner.

ii. The **total capital employed** shall be equal to the **Gross Fixed Assets** in the project **less accumulated depreciation plus Normative Working Capital** (equal to

thirty days of operating costs excluding depreciation and eighteen days natural gas pipeline tariff receivables).

iii. The **Line pack value of natural gas** is to be **included in total capital employed** and considered as non-depreciating asset.

5. Operating costs

Operating costs required in the operation and maintenance of the natural gas pipeline over its economic life shall be computed, on an actual basis or based on a normative assessment by the Board, whichever is lower, over the following functional cost heads, namely: -

1. consumables;

2. utilities;

(a) power; (b) fuel including system usage Gas @ maximum 2% of volumes considered in tariff determination is included in operating costs; (c) water; (d) transmission loss @ 0.1% of actual volumes

(3) salaries and wages;

(4) repairs and maintenance;

(5) insurance premia on assets;

(6) administrative overheads,

Adjustment of Miscellaneous income against Operating Costs (only in case the entity is making returns greater than 12%)

6. Volumes to be considered in determination of the unit natural gas pipeline tariff

The volumes of natural gas to be considered as divisor in the determination of the unit natural gas pipeline tariff over the economic life of the project shall be computed on a **normative or actual basis, whichever is higher.**

The normative volume is considered at **75% of the capacity** of natural gas pipeline. **Ramp-up** is provided on 75% capacity for first 10 years of operation or subsequent expansion in capacity from **30% to 100%** over 10 years. From 11th year onwards, 100% of the 75% of capacity is considered.

Adjustment is carried out in the normative volumes, where normative being higher than actual volumes. The extent of adjustment shall be maximum upto the difference between actual volumes higher than the normative volumes considered in any of the year(s) of the economic life of the pipeline.

7. Economic life

The economic life of the pipeline shall be considered as **thirty years** from the date of commissioning for the purpose of tariff determination.

In case, the natural gas pipeline has been authorized for more than thirty years or its authorisation has been subsequently extended beyond thirty years or is in operation beyond thirty years, the DCF model for the tariff computation may be made for the entire period of authorization or operation till the next tariff review, including the extended period.

Inter-Sectoral Collaboration Inputs

While laying the various infrastructures the authorised entities have to deal with various other ministries and departments for various permissions and faces issues which needs resolution in order to create gas based economy in the country. Some of the departments or ministries from which the coordination is required are being summarised as under:

1. Ministry of Housing and Urban Affairs ("MoHUA")

The Ministry of Housing and Urban Affairs is the apex authority of Government of India at the national level to formulate policies, sponsor and support programme, coordinate the activities of various Central Ministries, State Governments and other nodal authorities and monitor the programmes concerning all the issues of housing and urban affairs in the country.

1.1. Scope:

CGD entities are highlighting that high RoU and Road cutting/ Restoration charges, licensee fee etc. is being levied and significant time is being taken for grant of RoU by various authorities under the MoHUA. They also highlighted that PNG is not being considered as an essential service and is not being factored in town planning and building norms. Therefore, Streamlining the process of permissions, rationalisation of RoU and Road cutting/ Restoration charges will help in development of the CGD networks across the country. Integration of CGD infrastructure with urban development projects will ensure that new urban areas are equipped with CGD networks shall also be beneficial.

1.2. Area of Co-operation: Permissions and process streamlining for infrastructure laying, Conversion of residential complexes, townships and other facilities to PNG.

1.3. **PNGRB Action Taken:** PNGRB took up with Ministry of Housing and Urban Affairs for their cooperation on various aspects and correspondence made.

2. National Highways Authority of India ("NHAI")

NHAI has been constituted as an Authority for the development, maintenance and management of national highways and for matter connected therewith or incidental

thereto.

2.1. Scope:

a. It has been highlighted by the entities that delay in obtaining timely permission/ approvals for laying of pipeline infrastructure is a significant impediment.

b. NHAI and CGD, NGPL & PPPL entities can coordinate in order to streamline the approval process for the projects and resolve any conflicts or bottlenecks that may arise.

c. Integrate CGD & Pipeline infrastructure development with highway projects which could involve incorporating pipelines along national highways, interchanges, and other infrastructure.

d. Optimise land use by utilizing the corridors across the highways which enables efficient establishment of pipeline infrastructure. Coordination between NHAI and CGD/ pipelines entities can ensure that pipelines are laid during highway construction or expansion projects, minimizing disruption and optimizing resource utilization.

2.2. Area of Co-operation: Permissions and process streamlining for infrastructure laying, and Optimizing land usage.

2.3. **PNGRB Action Taken:** PNGRB has approached Ministry of Road Transport and Highways for Streamlining grant of permissions for laying of pipeline by authorities under MoRT&H.

3. Ministry of Home Affairs

The Ministry of Home Affairs discharges multifarious responsibilities, the important among them being - internal security, border management, Centre-State relations, administration of Union Territories, management of Central Armed Police Forces, disaster management, etc.

3.1. Scope:

a. One major roadblock for poor viability of natural gas is high road repair charges for pipeline laying and high VAT rates across UTs.

b. Permissions & process streamlining for infrastructure laying, and taxation relief in Union Territories.

3.2. Area of Co-operation: Reduction/ rationalization of VAT, permission & restoration charges to ensure timely grant of permissions across UT.

3.3. PNGRB Action Taken: PNGRB has taken up with Ministry of Home Affairs for Rationalisation of VAT on CNG & PNG, Road cutting/ Restoration Charges and Grant of timely permissions / approvals across UTs and Conversion of residential complexes, townships and other facilities to PNG.

4. Ministry of Road Transport and Highways ("MoRT&H")

An organisation under the Central Government entrusted with the task of formulating and administering, in consultation with other Central Ministries/Departments, State Governments/UT Administrations, organisations and individuals, policies for Road Transport, National Highways and Transport Research with a view to increasing the mobility and efficiency of the road transport system in the country.

4.1. Scope:

a. It has been highlighted by the entities that delay in obtaining timely permission/ approvals for laying of pipeline infrastructure is a significant impediment.

b. Integrate planning efforts to ensure that CGD & Pipeline infrastructure are seamlessly integrated with road transport and highway projects.

c. Designate specific corridors along highways and roadways for CGD & pipeline infrastructure development by aligning CGD & pipeline expansion plans with road development initiatives to accelerate the deployment of natural gas infrastructure and enhance accessibility for consumers.

d. Facilitate infrastructure sharing and collaboration to optimize the use of resources and reduce costs along with grant of timely permissions and approvals.

4.2. Area of Co-operation: Streamlining and reducing time taken for grant of permissions for laying of pipeline by authorities under MoRT&H to speed up the

process of granting permissions as well as facilitating timely allotment of land throughout the corridors of highways.

4.3. **PNGRB Action Taken:** PNGRB has taken up with MoRT&H for Streamlining grant of permissions for laying of pipeline by authorities under MoRT&H.

5. Ministry of Defence ("MoD")

The Government of India is responsible for ensuring the defence of India and every part thereof. The Supreme Command of the Armed Forces vests in the President. The responsibility for national defence rests with the Cabinet. This is discharged through the MoD, which provides the policy framework and wherewithal to the Armed Forces to discharge their responsibilities in the context of the defence of the country.

5.1. Scope:

a. It has been communicated by the CGD entities that one of the major impediment in transition to PNG is allocation of budget by MoD.

b. Adoption of PNG in defence establishments viz. messes, residential accommodations etc. throughout the country.

c. Adoption of CNG in MoD's vehicles, trucks etc. across the country.

5.2. **Area of Co-operation:** Transition of defence establishments to PNG and conversion of transport vehicles to CNG across the country.

5.3. **PNGRB Action Taken:** PNGRB has taken up with MoD for Allocation of budget towards transition of defence establishments to PNG.

6. Ministry of Petroleum and Natural Gas

The Ministry of Petroleum & Natural Gas is concerned with exploration and production of Oil & Natural Gas, refining, distribution and marketing, import, export and conservation of petroleum products. Oil and Gas being the important import for our economy, many initiatives have been taken by the Ministry for increasing production and exploitation of all domestic petroleum resources to address the priorities like Energy Access, Energy Efficiency, Energy Sustainability and Energy

Security.

6.1. Scope:

a. CGD entities have highlighted that one major roadblock in development of CGD infrastructure is infrastructure has been high RoU, Road cutting/ Restoration Charges, License fee etc. being levied by the various Municipalities/States along with time is taken in grant of RoU by various authorities.

b. Streamlining the process of grant of timely permissions, rationalisation of RoU and Road cutting/ Restoration charges across the country.

6.2. **Area of Co-operation:** Taking up the matter of timely permissions and process streamlining for infrastructure laying with State Governments, Introducing policies for subsidizing PNG and promotion of Natural Gas.

6.3. **PNGRB Action Taken:** Letters from PNGRB have been sent to Joint Secretary and Secretary, Ministry of Petroleum and Natural Gas for: -

a. Timely grant of permissions and Rationalisation of RoU and Road cutting/ Restoration charges incurred by the CGD entities across the country.

b. Inclusion of provisions of PNG-LPG Sahay Yojana to provide subsidized PNG to BPL families into existing PMUY scheme to incentivise the conversion of BPL families to PNG.

7. Ministry of Environment, Forest & Climate Change

The nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry policies and programmes.

7.1. Scope:

a. It has been observed that certain forest clearances were pending since almost a year for critical pipelines in the country. Further, major industries, commercial establishments as well as transport sector are using polluting fuels.

b. Grant of timely permissions to entities for development of CGD, NGPL & PPPL projects in the country.

c. Promotion of Natural Gas as fuel in Industries, Commercial establishments and Transport Sector.

7.2. **Area of Co-operation:** Permissions and process streamlining for infrastructure laying, Promotion of Natural gas in Industries, commercial establishments and transport sector.

7.3. **PNGRB Action Taken:** Matter from PNGRB has been taken with Ministry of Environment, Forest & Climate Change for: -

a. Directing the industries, commercial establishments as well as transport sector to reduce the usage of pollutant fuels.

b. The delay in grant of forest clearances for NGPL & PPPL projects.

8. Ministry of Consumer Affairs, Food & Public Distribution

Department of Consumer Affairs is one of the two Departments under the Ministry of Consumer Affairs, Food & Public Distribution. It was constituted as a separate Department in June 1997 as it was considered necessary to have a separate Department to give a fillip to the nascent consumer movement in the country.

8.1. Scope: Support for development of Consumer Protection regulations and raise awareness of consumer protection regulation.

8.2. **Area of Co-operation:** Consumer protection framework in oil & gas sector.

8.3. **PNGRB Action Taken:** PNGRB has taken matter with Ministry of Consumer Affairs, Food & Public Distribution for support for High Level Expert Committee to review extant consumer provisions.

9. Ministry of Chemical & Fertilizers, Ministry of Power & Ministry of Steel

The Ministry of Chemical & Fertilizers is entrusted with the responsibility of planning, development and regulations of the chemicals, petrochemicals and pharmaceutical industry sector.

The Ministry of Power is mainly responsible for evolving general policy in the field of energy.

The Ministry of Steel is the branch agency of the Government of India, responsible for formulating all policies regarding steel production, distribution and pricing in India.

9.1. Scope:

a. Natural Gas as a fuel for industries under Chemical & Fertilizers.

b. Increasing the Power generation from Natural Gas based power plants. **c.** Natural Gas as a fuel for industries under the Ministry of Steel.

9.2. **Area of Co-operation:** Conversion of residential complexes, townships and other facilities to PNG and usage of Natural Gas in the industries.

9.3. **PNGRB Action Taken:** Communication sent to Ministry of Chemical & Fertilizers, Ministry of Power & Ministry of steel for conversion of residential complexes, townships and other facilities to PNG.

TARIFF AUTHORITY FOR MAJOR PORTS (TAMP)

Best Practices

Contribution to the Working Group for Inter Regulatory Co-operation

A. Best Practices followed by TAMP:

1. In its tariff function exercise, TAMP has followed a transparent process and complied with all the guidelines issued by the Government from time to time. TAMP has followed a detailed consultative process with all stakeholders and to ensure greater participation of stakeholders, has held hearings at port level, before disposing of tariff proposals. Moreover, the orders passed by TAMP are well reasoned and speaking orders.

2. TAMP followed the Tariff Guidelines while fixing the tariff of Major Ports and Public Private Participation (PPP) Concessionaires operating thereat. Over the last 2 decades, moving in tandem to the changes in the port sector, the tariff guidelines have evolved from strict cost-plus regime to norm based tariff regime to a simplified Annual Revenue Requirement (ARR) Model. A copy each of the following Tariff Guidelines are attached:

(i) Tariff Guidelines, 2005: Cost based tariff for Major Ports and PPP operators operating thereat (Annex – I)
(ii) Tariff Guidelines, 2008 Norm based tariff for PPP operators – fixed upfront before bidding (Annex – II)
(iii). Tariff Guidelines, 2013 Reference Tariff with Performance Incentive – fixed upfront before bidding (Annex – III)
(iv). Tariff Guidelines, 2019 ARR Model for PPP operators pre 2008 – Flexible to fix the tariff within the ARR (Annex – IV)
(v). Tariff Guidelines, 2021 ARR Model for Major Ports – With the new MPA Act, 2021 coming into force, the ports are empowered to fix tariff on their own within the ARR (Annex – V)
(vi). Tariff Guidelines, 2021 Market based tariff to be determined by the Concessioners for future PPP Projects. (Annex – VI)

Each of the above said tariff guidelines are also uploaded on the TAMP website tariffauthority.gov.in under the “Guidelines” section.

3. The key initiatives brought in by TAMP in major ports are-

(i). Uniformity in concepts, definitions, norms and practices across the Scale of Rates of all Major Ports. For example - Uniform single tier Port Dues and Berth Hire on per GRT, Pilotage fees are prescribed in three tier with sliding rates, reduction in unit of berth hire from 24 hour to one hour, etc.

(ii). Rationalisation and simplification in the Scale of Rates of all Major Ports.

(iii). Users friendly initiatives in the SOR. For example - Users not responsible for delays caused by the port / operator, imposition of penal ‘interest’ on delayed payment by users as well as delayed refund by ports, etc.

(iv). Tariff in the Scale of Rates are ceiling level. The ports, therefore, have a flexibility to respond to the market situation by charging lower tariff or offering higher discounts on the approved tariff.

4. Major Port Authorities Act, 2021

A new Act viz. the Major Port Authorities (MPA), Act 2021 has come into force with effect from 03.11.2021. The tariff fixing mandate conferred upon TAMP by the erstwhile Major Port Trusts Act, 1963 has been withdrawn.

The MPA Act, 2021, provides more autonomy to major ports to manage the ports, gives flexibility to the Major Ports to fix their own tariff, thereby enabling Major Ports to be more competitive in the market, adjust their pricing strategies based on market dynamics and attract more business and trade. Thus, the major ports have moved away from strict cost plus regime of tariff fixation to market based tariff.

Further, under the new Act, a new Adjudicatory Board is being constituted by the Government to resolve disputes between Major Ports, PPP Concessionaires and users, to suggest measures for revival of stressed projects, etc. As stipulated in the MPA Act, 2021 and till the constitution of the Adjudicatory Board, TAMP is discharging the functions of the Adjudicatory Board at present.

The key decisions taken by TAMP while discharging functions of Adjudicatory Board are as follows:

(i). In compliance with the direction of the Hon'ble High Court of Madras, the Authority has decided that the Vessel which had been engaged in maintenance/ repair work in under Sea cable and had not made use of the wharf for any unloading/ discharge, has to be treated as a Vessel and not as 'cargo', even if the vessel has been categorized as 'cargo' in the Import General Manifest (IGM)/ Export General Manifest (EGM). Based on the above and in order to have clarity and uniformity in the levy of charges across all the Major Ports, the Notes were formulated by TAMP and all the Major Ports were directed to incorporate the said notes in their Scale of Rates:

(ii). Dispute between the Visakhapatnam Port and a user about levy of vessel related charges on the non self propelled jack up rig which had come onboard a vessel for carrying out repairs in the port was resolved by the Authority. After seeking inputs from the Directorate General of Shipping, the Authority held in the said matter that vessel related tariff on both the rig and vessel should be levied at concessional coastal rate instead of foreign rate levied by the port.

(iii). Dispute between the Visakhapatnam Port Authority and PPP Concessionaires on payment of revenue share on storage charge for the period the project was stressed was resolved by the Authority. The Authority held that the Annual Revenue Requirement from storage charge is to be considered as per the upfront tariff Order with applicable indexation and it was also amplified that actual storage charge recovered" is to be interpreted in its literal sense as actual storage charge recovered by the PPP Concessionaire and not the rationalized storage charge revenue

5. ISO Implementation:

(i). TAMP has implemented ISO 9001:2008 and ISO 9001: 2015 relating to Quality Management Systems (QMS) since 2014. This has helped TAMP to streamline and standardize the process, document it and set annual targets for disposal of cases and constant monitoring, reviewing and improving efficiency.

(ii). TAMP has also implemented ISO 27001: 2013 relating to Information Security Management Systems (ISMS). This has helped TAMP in ensuring continuity of business, assessment of risk and its mitigation, vulnerability assessment of all IT infrastructure and its mitigation from time to time and regular security audits of TAMP website for GIGW compliance. TAMP has its Crisis Management Plan (CMP) in place to handle cyber security / threats.

(iii). With regular backup of information in place, even during the COVID pandemic, the officials of TAMP could do productive work from their homes.

ANNEX.

FINANCIAL VARIABLES FOR TARIFF DETERMINATION - FACTUAL ANALYSIS

TARIFF AUTHORITY FOR MAJOR PORTS (TAMP)
Tariff for Build, Operate, Transfer (BOT) Terminal Operators in Major Ports*

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
1	Total Capital Employed (TCE) for application of RoCE	**Cost-plus Return methodology** used for arriving at ceiling Scale of Rates - SOR (tariff) for various facilities and services provided by ***Major Ports.*** Ceiling Annual Revenue Requirement (ARR) for upcoming financial year Y4 admitted by TAMP = **$(AE^{Y1}+AE^{Y2}+AE^{Y3})/3$ + RoCE*TCE** • **AE^{Yt}:** Actual Total Expenditure for immediate preceding three years Y1, Y2 and Y3 as per the final audited accounts • **RoCE:** 16% Return on Capital Employed • **TCE:** Total Capital Employed (as on March 31/December 31 of Y3)	**Cost-plus Return methodology** used for arriving at ceiling Scale of Rates - SOR (tariff) for various facilities and services provided by BOT operator Ceiling Annual Revenue Requirement (ARR) for upcoming financial year Y4 admitted by TAMP = **$(AE^{Y1}+AE^{Y2}+AE^{Y3})/3$ + RoCE*TCE** • **AE^{Yt}:** Actual Total Expenditure for immediate preceding three years Y1, Y2 and Y3 as per the final audited accounts • **RoCE:** 16% Return on Capital Employed • **TCE:** Total Capital Employed (as on March 31/December 31 of Y3) **Value of TCE** for RoCE base includes: • Gross Fixed Assets (property, plant,	**Normative Cost plus Return Approach for arriving at the Upfront Tariff for the various services to be provided by the BOT Operators.** Norm based Annual Revenue Requirement (ARR) = OE + ROCE x TCE. • **OE:** Norm based operating cost & Misc cost. • **RoCE:** 16% Return on Capital Employed estimated. • **TCE :** Capital cost based on normative list covering civil, equipment and Misc. Capital costs. Misc. capital costs includes upfront fee, interest during construction, working capital margin etc.

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
		Value of TCE for RoCE base includes: • ***Net*** Fixed Assets (property, plant, equipment) as on March 31/December 31 of Y3 (computed based on ***Major Ports depreciation policy***) as per audited Annual Accounts. • Capital Work in Progress as on March 31/December 31 of Y3 as per audited Annual Accounts. • Working Capital Reason for considering capital work in progress in capital employed to enable the major ports to get return to the extent of capital invested in fixed assets.	equipment) as on March 31/December 31 of Y3 (computed using Indian Generally Accepted Accounting Principles-IGAAP) • Capital Work in Progress as on March 31/December 31 of Y3 as per audited Annual Accounts. • Working Capital BOT operators are required to submit **fixed assets statement as per IGAAP** for ARR computation. Reason for considering capital work in progress in capital employed is to enable the BOT operators to get return to the extent of capital invested in fixed assets and to keep them at par with Major Ports Authorities. Since the return on capital employed for BOT operators governed by 2008 guidelines and 2013 guidelines is allowed on Gross Block of assets, following the same analogy, the 2019 guidelines also considers gross block of fixed assets for calculating the ROCE.	

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
2	Return on Capital Employed (RoCE)	**16% RoCE** admitted by TAMP for ARR calculation used for drawing up ceiling SOR 16% pre-tax ROCE is arrived in accordance with the Capital Asset Pricing Model (CAPM) prescribed in the earlier Tariff Guidelines of 2005. Key parameters are – (i). the Risk Free Rate (Rf) based on the transaction - weighted yields on Govt. of India Bonds having a residual maturity of 10 years considered over the period. (ii). the Market Risk Premium (Rm -Rf) based on the a review of the various methods for calculating the risk premium in India's context. (iii). the Equity Beta (Be) based on the review of the asset Betas of port sector and other domestic sector companies.	**16% RoCE** admitted by TAMP for ARR calculation used for drawing up ceiling SOR. 16% pre-tax ROCE is arrived in accordance with the Capital Asset Pricing Model (CAPM). Key parameters are – (i). the Risk Free Rate (Rf) based on the transaction - weighted yields on Govt. of India Bonds having a residual maturity of 10 years considered over the period. (ii). the Market Risk Premium (Rm -Rf) based on the a review of the various methods for calculating the risk premium in India's context. (iii). the Equity Beta (Be) based on the review of the asset Betas of port sector and other domestic sector companies. (iv). the Debt Risk Premium (Rd) based on the risk profile of the port sector as assessed as 'investment grade'; (v). the Debt : Equity ratio for the industry, presently factored as 1 :1; and	**16% RoCE** prescribed in the Guidelines.

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
		(iv). the Debt Risk Premium (Rd) based on the risk profile of the port sector as assessed as 'investment grade'; (v). the Debt : Equity ratio for the industry, presently factored as 1:1; and (vi). the Corporate tax rate applicable as per the Income Tax Act and rules there under.	(vi). the Corporate tax rate applicable as per the Income Tax Act and rules there under.	
3	Cost of Debt	Interest on loans is **not considered a part of actual expenditure** for ceiling ARR determination. [This is because return is allowed on capital employed which would include debt also]	Interest on loans is **not considered a part of actual expenditure** for ceiling ARR determination. [This is because return is allowed on capital employed which would include debt also]	Not considered.
4	Capital Expenditure/Additional Capital Expenditure (capex)	Capital Expenditure incurred during previous three years forms part of the Net Fixed Assets if the asset is commissioned or forms part of the Works-in- progress.	Capital Expenditure incurred during previous three years forms part of the Gross Fixed Assets if the asset is commissioned or forms part of the Works-in- progress. Capital employed includes Gross Fixed Assets	Tariff is fixed upfront (before the bidding process) based on various norms as listed above. The tariff is applicable for the entire life of project subject to only indexation. As such, question of considering additional capital

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
		Capital employed includes Net Fixed Assets and Work in progress as reflected in the audited Annual Accounts of the relevant years.	and Work in progress as reflected in the audited Annual Accounts of the relevant years.	expenditure during the course of the project does not arise. Additional Capital Expenditure over the estimated capital cost reckoned for computation of ARR is not allowed.
5	Return on Additional Capex	16% return on Capital employed as determined in Sr.No.4 above during the previous three years is allowed.	16% return on Capital employed as determined in Sr.No.4 above during the previous three years is allowed.	Return on Additional Capital Expenditure over the Estimated Capital Cost is not allowed for reasons given in Sr. No. 4 above.
6	Depreciation	**Depreciation submitted by Major Ports** as per audited annual accounts (Indian Accounting Standard-IND AS) is considered by TAMP In case of **variation** reported under **IND AS and IGAAP**, IGAAP figures are to be considered for ARR calculation	**Depreciation submitted by BOT operator** as per audited annual accounts (Indian Accounting Standard-IND AS) is considered by TAMP In case of **variation** reported under **IND AS and IGAAP**, IGAAP figures are to be considered for ARR calculation	Straight Line method as per the Companies Act 2013.
7	Working Capital (WC)	**Components of WC** considered by TAMP: ● **Inventory:** *Capital spares* equivalent to 1 year's	**Components of WC** considered by TAMP: ● **Inventory:** *Capital spares* equivalent to 1 year's average consumption and *other inventory* (excluding fuel)	Norm based capital cost captures working capital margin.

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
		average consumption and *other inventory* (excluding fuel) equivalent to 6 months' average requirement ● **Sundry Debtors** Two months Estate Income & Rly. Terminal Charges) ● **Cash:** Equivalent to 1 month cash expenses	equivalent to 6 months' average requirement ● **Sundry Debtors:** Advance payment of revenue share/royalty and lease rental/license fee to landlord port a part of sundry debtors ● **Cash:** Equivalent to 1 month cash expenses	
8	Interest on WC	Not considered.	Not considered.	Not considered.
9	Interest During Construction (IDC) and Incidental Expenditure During Construction (IEDC)	All capital expenditure incurred during the construction phase and upto commencement of operations is capitlaised and forms part of the Gross & Net Block of Assets.	All capital expenditure incurred during the construction phase and upto commencement of operations is capitlaised and forms part of the Gross Block of Assets.	Norm based capital cost captures IDC and IEDC.
10	Operations & Maintenance (O&M) Expenditure	**Operating expenses** (including depreciation) as per audited annual accounts is considered as **part of actual expenditure** for ARR calculation.	**Operating expenses** (including depreciation) as per audited annual accounts is considered as **part of actual expenditure** for ARR calculation.	Normative Costs (determined based % of the capital cost of the project) which includes - (i). Power and Fuel (ii). Repairs and Maintenance

Sr. No.	Variable	TREATMENT		
		MAJOR PORT AUTHORITIES	BOT OPERATORS	
		2021 Tariff Policy for Major Ports	2019 Tariff Guidelines for PPP Concessionaires	2008 / 2013 Guidelines for PPP Concessionaires
				(iii) Insurance (iv) Depreciation (v). Licence Fee for lands and buildings and other port assets allotted by the Port under the Concession Agreement. (vi) Other expenses (Salaries & wages, Management & Gen. overhead expenses etc.)
11	Inflation Indexation	Ceiling ARR assessed as on March 31/December 31 of Y3 (for upcoming financial year Y4) is indexed by **100% of Wholesale Price Index (WPI)** for the year Y4. Ceiling Scale of Rates (SoR) is drawn to ensure that the total revenue from the revised tariff for Y3 traffic is within the ceiling indexed ARR. The **SOR** is **indexed annually to inflation** up to **60% of variation in WPI** (announced by Government of India occurring between January 1 to December 31 of the relevant year)	Ceiling ARR assessed as on March 31/December 31 of Y3 (for upcoming financial year Y4) indexed by **100% of Wholesale Price Index (WPI)** for the year Y4. Ceiling Scale of Rates (SoR) is drawn to ensure that the total revenue at the revised tariff for traffic (Average of last 3 years) is within the ceiling indexed ARR. The **SOR** drawn is **indexed annually to inflation** up to **60% of variation in WPI** (announced by Government of India occurring between January 1 to December 31 of the relevant year)	Upfront / Reference Tariff caps to be automatically indexed to inflation but only to an extent of 60% of the variation in Wholesale Price Index (WPI) occurring between 1 January 2008 and 1 January of the relevant year. The Reference Tariff fixed are linked to Performance Indicators. In the event of PPP operator achieves performance, the tariff can hiked upto 15% over the indexed Reference Tariff for that relevant financial year (and this will be the Tariff Cap).

*Tariff for BOT terminal operators in major ports before enactment of Major Port Authorities Act 2021. Post enactment of MPA act 2021, TAMP no longer determines tariff for ports, PPP concessionaires or service providers and is primarily responsible for adjudicating disputes between these stakeholders.

Main References:

1. Tariff Policy for Major Port Authorities 2021 (after the MPA Act 2021 into force) https://tariffauthority.gov.in/writereaddata/UploadFile/Tariff%20Policy%20for%20Major%20Port%20Authorities2021_1339.pdf
2. Tariff Guidelines, 2019 for Determination of Tariff for BOT Operators operating in Major Port Trusts and previously governed by 2005 Tariff Guidelines

   https://tariffauthority.gov.in/writereaddata/UploadFile/Guideline2019_1603.pdf
3. Working Guidelines to operationalize the Tariff Guidelines, 2019 for Determination of Tariff for BOT Operators operating in Major Port Trusts

   https://tariffauthority.gov.in/writereaddata/UploadFile/Cobineeng_1059.pdf

4. Guidelines for upfront tariff setting for PPP Projects at Major Port Trusts, 2008
https://tariffauthority.gov.in/writereaddata/UploadFile/guidelines08_1595.pdf

5. Guidelines for Determination of Tariff for Projects at Major Ports, 2013 (Reference Tariff Guidelines)
https://tariffauthority.gov.in/writereaddata/UploadFile/Guidelines-G214-08082013_1885.pdf

Supplementary References:

1. Tariff Policy for Major Port Trusts, 2018
2. Working Guidelines to operationalize the Tariff Policy for Major Port Trusts, 2018 for determination of tariff for Major Port Trusts

Reference Orders –

(i). Proposal received for General Revision of Scale of Rates from Chennai Port Trust (CHPT) – Detailed Speaking Order and SOR

https://tariffauthority.gov.in/writereaddata/UploadFile/CHPTG447ORDRPASD10102019ORDRALL_1060.pdf and

https://tariffauthority.gov.in/writereaddata/UploadFile/CHPTG376ORDRPASD10102019ORDRALL_1912.pdf

(ii). Proposal from TM International Logistics Limited (TMILL) for general revision of its Scale of Rates - Detailed Speaking Order and SOR

https://tariffauthority.gov.in/writereaddata/UploadFile/TMILLG253ORDRPASD01062020ORDRALL_1418.pdf and
https://tariffauthority.gov.in/writereaddata/UploadFile/TMILLG215ORDRPASD01062020ORDRALL_1263.pdf

(iii). Proposal received from Kolkata Port Trust (KOPT) for fixation of Reference tariff for the project of "Setting up a Liquid Jetty at Haldia Dock-II, Shalukkhali, Haldia through PPP mode on Design, Build, Finance, Operate and Transfer (DBFOT) basis" at KOPT –

https://tariffauthority.gov.in/writereaddata/UploadFile/KOPTG263ORDRPASD3032016ORDRall_1062.pdf

Inter-Sectoral Collaboration Inputs

B. Inter sector learning:

1. At Major Ports, Radio Frequency Identification (RFID) is implemented to track real time movement of cargo/ containers. It could be explored whether the same could be considered in airports for tracking real time movement of checked- in baggage of passengers.

2. Experience may be shared by various Electricity Regulatory Commissions/ AERA of best practices and technologies for energy conservation to reduce overall energy consumption in Major Ports.

3. Port Community System (PCS) is implemented in major ports. PCS provides an integrated platform for providing electronic flow of trade related documents between various stakeholders involved in supply chain and government bodies viz., shipping lines, customs, stevedores, CFS, etc. for exchanging data in a secured manner. This has contributed in ease of doing business in ports, reduced the paperwork, quicker decisions and streamlined operations.

4. ISO in Quality Management System and Information Security Management System can be adopted by other Regulators.

C. Indicative possibility of collaboration:

The Working Group in its meeting held on 30 January 2024 has identified a few potential areas of collaboration amongst regulators which are worth appreciation and welcomed. Apart from that, the following could be other possible avenues of potential collaboration between Major Ports and other regulators:

(i). Under the Green Shipping initiative, major ports have implemented and initiated various activities to help reduce greenhouse gas emissions from the ports and shipping

sector. Few ports viz., V.O. Chidambarnar Port, Paradip port have been identified to be developed as export hubs for hydrogen and other such eco-friendly fuels.

"Harit Sagar" Guidelines issued in May 2023 by the Ministry of Ports, Shipping and Waterways, plans quantifiable reductions in carbon emissions over defined timelines.

Unlike AERA and electricity Sector, there could be scope for collaboration between Electricity Regulatory Commissions and Major Ports as well to enhance energy efficiency in major port operations, exploring opportunities for renewable energy integration, advocate areas of green ports initiative etc.

Further, Major Ports have vast areas of land under their control. Hence, there could be collaboration between Major Ports and Electricity regulators to identify the port area land which can be optimally utilized for generation of alternate source of energy viz. solar and wind energy to make ports self-sufficient in power generation and simultaneously meet the targets of the Government in this regard.

(ii). Transformation of Major Ports to digital led smart ports is being envisaged. Smart ports will be data-driven, use automated devices, Internet of Things (IoT), and leverage analytical technologies for safer and more efficient management of resources.

These new and innovative initiatives require a lot of Research and Development (R&D). Considering airport and ports both deal with cargo operations and are moving towards digital transformation, there could be strategic partnerships and collaborations between AERA and Major Ports for doing R&D in these areas. There could also be collaboration for sharing common pool of experts/consultants.

(iii). As a part of the initiative under the Amrit Kaal Vision 2047, Government of India is aiming to reduce carbon emissions from maritime sector. Multiple initiatives are on anvil to increase the adoption of solar and wind energy, providing shore power to port crafts and using electricity powered port equipment for promoting sustainability development strategy, adoption of alternate fuels such as LNG, Hydrogen / ammonia and biofuels for port vehicles, so as to make all the major ports carbon neutral.

In this key initiative, there is a tremendous opportunity for the knowledge sharing and adopting the best practices being followed by the Airport Authorities, as the land side facilities/ground support equipment for the clearance of cargo/ passengers, by Major ports.

(iv). Many major ports and private terminals handle liquid cargo/ POL/ Crude through pipelines laid in sea and port land, in connection with the transportation of these cargo. There could be co-operation and collaboration between the concerned port / PPP operators in major ports to take the expertise of PNGRB in laying of pipelines for existing/ future PPP projects for seamless transportation, maintenance and safety aspects, etc.

(v). One of the initiative suggested in the Maritime Amrit Kaal Vision 2047 is to reduce emissions while at berth, to provide electricity to the ships from the national grid instead of producing electricity by the ship's own auxiliary diesel generators. To this endeavor, a policy framework can be formulated involving an umbrella organization of Major Port Authorities under the aegis of Ministry of Ports, Shipping and Waterway, State Electricity Regulatory Commission and CERC to make the initiative more robust and sustainable.

(vi). Another initiative envisaged in the Amrit Kaal Vision 2047 is LNG bunkering (Ship to Ship Bunkering or Shore to Ship Bunkering). In this regard, a collaborative support from the Petroleum and Natural Gas Regulatory Board (PNGRB) can be taken by an umbrella organization of Major Port Authorities under the aegis of Ministry of Ports, Shipping and Waterway for the technical and best practices for transportation of LNG from shore to ship so as to ensure uninterrupted and adequate supply of LNG bunkering at the ports and maintaining the safety norms.

(vii). The Airport in India have reached a considerable achievement in providing the passengers with facilities akin to the international standards. The passenger traffic at Seaports is very miniscule and is at a nascent stage as compared to Airports. As an initiative to promote Ocean, Coastal & River Cruise passenger traffic, Amrit Kaal Vision

2047 suggests to develop Cruise/ ferry terminals with world class passenger terminal facilities.

In this regard, there could be a collaboration between Airport Authorities and concerned Major Ports for sharing of knowledge and best practices being adopted by the Airport Authorities for providing the best passenger services, with the Major Ports.

(viii). The port has, in coordination with the Customs and related parties taken various initiatives to improve the standards of ease of doing business by reducing the transactional cost and time for example implementation of Port Community System (PCS) in major ports which integrates electronic flow of data/ information amongst the various stakeholders in ports like shipping lines/ customs/ stevedores / government bodies in a secured manner which increases efficiency, ease of doing business and reduces cost. The Airport Authorities can explore to adopt the similar practices in their sector for their cargo terminals.

(ix). The coastal shipping and inland waterways sector in India are still in its nascent stage compared to other countries and other modes of transport. Despite the fact that water transportation is cost-effective, sustainable and environment friendly mode of movement, India is not able to fully utilize its long coastline and inland waterways. The Maritime Amrit Kaal Vision, 2047, identifies the key initiatives for enhancing modal share of coastal shipping and inland water transport, which include creation of port based agglomeration centers/ expansion projects etc. In this regard, there could be a collaboration between Airport Authorities and Major Ports so that the Major Ports can take some cue from Airport authorities on this matter.

(ix). While considering the aspect of addressing regulatory overlap on competition issues between generic regulators like CCI and sector specific regulators, it is relevant to bring out that as per the new enacted MPA Act, 2021, Major Ports and the BOT Operators operating thereat are allowed to fix their own tariff based on the market forces. However, such tariff is not to be inconsistent with the provisions of the Competition Act, 2002. In this regard, it also needs to be explored as to what is the possibility of seeking the advocacy of the Competition Commission of India (CCI), if any

complaints, are received by the Adjudicatory Board from the users / competitor port or operator on the tariff levied which is not inconsistent with the Competition Act, 2002.

Considering that the collaboration is envisaged between the Major Ports and the various FOIR members, it may be fruitful to get views of all Major Ports through its umbrella body i.e. Indian Ports Association (IPA), Delhi, on these matters.

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TELECOM REGULATORY AUTHORITY OF INDIA (TRAI)

Best Practices

Annexure to the letter No. M/(2)/2024-Coord dated 05.07.2024

I. BEST REGULATORY PRACTICES

Telecom Regulatory Authority of India (TRAI) follows a well-defined regulatory process to ensure transparency and fairness in the telecommunication sector. Here are the key steps involved in the TRAI's regulatory process:

Transparent and inclusive Consultation process:

TRAI has been following a very transparent and open consultation process for arriving at a decision in the form of recommendations, regulation etc. There is a well- established practice of our consultation process through issue of Consultation paper which is placed in public domain inviting comments and counter comments from stakeholders. All the comments and counter comments are also placed in public domain on TRAI website. After receipt of comments and counter comments, Open House Discussion (OHD) is conducted in which all stakeholders can participate. Since 2020, the OHDs are being conducted online which facilitates wider participation from across the world. Based on the deliberations and inputs of stakeholders, TRAI formulates its recommendations or regulations and the same are also displayed in Public domain.

Monitoring and implementation:

TRAI closely monitors the implementation and compliance of its regulations by the telecom service providers. For monitoring the performance of service providers, TRAI collects Performance Monitoring Report (PMR) from service providers on quarterly basis and publishes the Reports on TRAI Website. TRAI also does field audit to verify PMRs and assessment of quality of services in the field.

Protection of Consumer Interest:

To protect the interest of telecom consumers, TRAI has laid down the framework for Redressal of grievances of telecom consumers by service providers through the Telecom

Consumer Complaint Redressal Regulations, 2012. As per this framework, Telecom Service Providers are required to establish a two-tier complaint/grievance redressal mechanism for handling consumer complaints. In terms of this mechanism, a consumer can lodge service-related complaints at the complaint centre of their Telecom Service Providers (TSPs). In case the complaint is not redressed satisfactorily by the service provider at the complaint centre, an appeal can be registered with Appellate Authority of the TSPs.

Regulatory Approach as regards tariffs:

As regards the scheme of regulation of telecom tariffs, TRAI has primarily followed a policy of "forbearance" in matters of determination of tariffs with active regulation being restricted to only a few telecom services. The TRAI believes that forbearance regime has led to introduction of new and innovative tariff products in the market designed to provide telecom services at affordable and competitive price to the consumers. Further, while on one side, TRAI, through its tariff regulation, has enlarged the scope of forbearance regime, on the other side, it has continuously endeavored to provide adequate safeguards required to protect and promote consumer interests. The 'forbearance' is subject to requirement of reporting all tariffs launched by TSPs with the Authority **("Reporting Requirements")** and adherence by TSPs to specified principles of tariff assessments, namely, (a) transparency; (b) non-discrimination; and (c) non-predation, in the matters related to tariff.

Ensuring Quality of Service:

TRAI collects periodical reports from all the service providers for monitoring the performance against set QoS parameters. Show Cause Notices (SCN) are issued to respective service provider for non-compliance of prescribed QoS benchmarks. The reply submitted by the service provider is considered by the Authority before taking a decision on imposition of Financial Disincentives (FD) for non-compliance of prescribed QoS benchmarks.

TRAI also conducts periodical Drive Tests through engagement of Agencies as well through operator assisted drive tests (OADT) with the help of the operators on regular

basis to monitor the Quality of Service provided by Service providers. The periodical reports are published on TRAI Website.

TRAI Apps

For assessment of Quality of Service, TRAI has taken some initiatives by developing mobile applications which facilitate interaction with consumers. Periodical upgradation of Apps is being done as per feedback and changing requirements due to technological advancements etc.

TRAI MySpeed App: Collects millions of data points on daily basis which are spread geographically across the country and measured over different points of time in a day. These data points are used to assess wireless data Speed of the network. TRAI Analytical Portal presents data speed of the networks in a particular area to the visitors in an interactive manner. It compares speed for different TSPs which empowers customers to take informed choice for choosing the network.

TRAI MyCall App: Collect ratings of the voice call quality from several thousand customers on daily basis from different pockets of the networks.

Existing Collaborations with Other Agencies

II. COLLABORATION WITH OTHER REGULATORY BODIES

TRAI has been actively participating in various collaborative activities on the FOIR platform. At TRAI's initiative, a Working Group of the FOIR was constituted on "Cross Sector Collaborative Regulation between Telecom Regulators and Electricity Regulators" and gave its recommendations for effective cross-sector partnership between Telecom and Power sector.

Another working Group "to study the opportunities and challenges associated with adoption of 5G and related technologies" has been constituted with members from different regulatory bodies of FOIR viz. Power, Finance, Law, and Aviation Sector etc.

Also, TRAI has been included as member of another Working Group of the FOIR on "Inter-Regulator Cooperation", which has been constituted to enhance coordination and partnership among diverse sector-specific regulators.

A Joint Committee of Regulators (JCOR) has been formed in 2021 at TRAI's initiative for collaboration with the financial sector regulators. The committee has representatives from TRAI, RBI, SEBI, Ministry of Consumer Affairs. The committee is actively engaged in handling the challenges posed by unsolicited commercial communication and fraudulent communications and takes several collective steps both for prevention and correction of such occurrences for consumer protection.

Inter-Sectoral Collaboration Inputs

Potential areas of collaboration between Regulatory bodies

A. Collaboration with CERC for Aerial Fiber and Small Cells Deployment

Working with the Central Electricity Regulatory Commission (CERC) is one of the main areas where TRAI may cooperate. The ubiquitous and easily accessible nature of electrical poles makes them a great place to put small cells and lay aerial fibre. This strategy offers a number of benefits.

In order to facilitate effective planning and implementation of telecom infrastructure, CERC can onboard specialist agencies that can identify the assets appropriate for telecom deployment and can create an online catalogue of such assets that is enabled by geographic information systems. Furthermore, electricity poles could be constructed in the future to easily accommodate the installation of telecom equipment.

B. Collaboration with other Regulatory bodies

Physical assets that can be reused for telecom infrastructure can be identified and catalogued by authorities working together. Other domains where coordination is necessary include -

Simplified Permission Procedures: Authorities should build up transparent and quick procedures for authorising telecom installations on their property. The Telecommunication Act of 2023 requires that RoW procedures be streamlined in order to expedite the building of telecom infrastructure. Every regulatory body is required to make sure that the organisations under their control abide by these new rules.

Key aspects include:

- **Standardized Fees and Charges:** Uniform fee structures across jurisdictions will reduce inconsistencies and enhance predictability for telecom operators.
- **Dispute Resolution Mechanisms:** Efficient mechanisms for resolving disputes related to RoW issues can prevent delays and legal entanglements.

The collaborative approach among TRAI and other regulators will lead to several benefits:

1. **Enhanced Network Coverage:** Utilizing a wide range of public assets will improve network reach and quality, particularly in underserved areas for user agencies.
2. **Cost-effectiveness:** By utilising the current infrastructure jointly, less new investments are required.
3. **Accelerated Deployment:** Digital communication infrastructure will be deployed more quickly thanks to streamlined procedures and fewer administrative roadblocks.

In summary, the deployment of digital communication infrastructure may be greatly aided by TRAI's cooperation with other regulatory agencies in accordance with the Telecommunication Act of 2023. This strategy guarantees that India is ready to fulfill the needs of a digitally linked future while also making the most use of the country's current resources.

UTTAR PRADESH ELECTRICITY REGULATORY COMMISSION (UPERC)

Best Practices

Best Practices/ Initiatives by UPERC

Traditionally, the regulatory bodies have been in the role of implementation of law and monitoring & supervision of the operational activities of entities being regulated. However, over the last few years, the functions of regulators in the power sector has transformed considering the role in achievement of national targets and the number of options that are available to achieve these targets. Moreover, in the age of communication where technology has contributed to enhanced awareness, having due consideration for consumer services is also important. Abreast with these challenges and opportunities, efforts have also been made by the Commission to take initiatives which will be instrumental in achieving the targets. Some of the initiatives that have been taken are as below:

Promotion of sustainable energy

Blockchain Technology Based P2P Platform for Green energy Trading -

There are various initiatives that have been taken from the point of view of Promotion of sustainable energy in the State. Uttar Pradesh (UP) is the first state in India to release Guidelines for P2P trading of solar energy on blockchain based platform which will help in promotion of clean energy. P2P trade could help uptake of RTPV and increase in local generation that could reduce the quantum of power procured through open access which will help reduce power procurement cost of the utility and contribute towards fulfilment of their RPO targets as a result of increased uptake of RTPV systems. This groundbreaking regulation is expected to open up a new era of local clean energy communities transacting clean energy amongst their peers which will be an important step towards a Net Zero Power Sector in India. The goal of these guidelines is to promote rooftop solar, efficient asset utilisation, and the implementation of innovative technologies by facilitating rooftop solar energy on blockchain-based P2P platform.

The pilot study comprising of 12 participants (19 prosumers and 3 consumers) to test the technical feasibility was conducted. As part of this trading of around 4500 units of

energy could be done in six months period comprising of both lean months (December to February) and peak generation months (March to May). Based on the pilot study, trading rules were established that formed part of the guidelines framed by the Commission.

Mini Grid Regulations - Uttar Pradesh is the first State to have regulations for development of mini/ Micro Grids with a view to promote decentralized generation of clean & green power by harnessing renewable energy e.g. Solar, Biomass etc. These regulations have been one of its kind which put in place a conducive investment climate to stimulate private sector participation in decentralized generation of renewable power on the one hand and on the other hand ensure power supply to nearly 02 crore households in the State to meet the minimum household needs of power e.g. lighting, fan, mobile charging etc. This will also be beneficial for the distribution licensees as there will be reduction in investments required for development of long-distance transmission lines and will also reduce the line losses in power transmission resulting due to commonly low demand of electrical power in rural areas.

The Mini grid regulations are pivotal in spreading environmental awareness among the general public, enhance skills and create employment opportunities at local level by promoting establishment of local manufacturing facilities and socio-economic development of backward areas. Overall, it has contributed in harnessing new technology for building clean and sustainable electrical power capacity.

These Regulations laid the platform for establishing mini grids across the State. Currently around 2,000 mini grids of capacities ranging from 30kWp to more than 100kWp), are in operation. These have ensured access to electricity in remote areas in the State at affordable prices. More than 50,000 consumers are connected through these mini grids and are able to fulfill the basic requirements.

Implementation of Rules and Policy of the Government

Promotion of Rooftop Solar PV System - UPERC has been making continuous efforts to adopt Rules and policies of the Central as well as State Government, which are in the

interest of the consumers, at the earliest. In this regard, the Commission has introduced the provision of net feed-in/ net billing arrangement in RSPV Regulations to adopt the rules of ministry of Power, Government of India. The Commission also expanded the scope of net metering, in line with UP Solar policy 2022, to allow net metering to public institutions as well.

Green Energy Tariff - There is an increased awareness in certain class of consumers specially from C&I segment who want to contribute towards their responsibilities by way of Environment, Social and Governance (ESG) and are willing to pay a premium for "Green Energy". This will also help the C&I segment in getting market access to countries where green energy is given priority. Furthermore, there has been a mandate by Govt. of India for the Commission to provide Green energy tariff. UPERC is only second State in the country to approve green Tariff for its consumers who "opt" for it by requesting for the same to respective licensee. The Commission had approved Green Energy Tariff of Rs. 0.54/ unit in FY 2022-23 and Rs. 0.88/ unit in FY 2023-24.

Parallel License under Data Center Policy – As per the Data Center policy issued by the UP Government, DC park developers/ operators shall be eligible for seeking license for power distribution and consumption within the DC park as per regulations issued by the Commission. The Commission has granted Parallel to one of the Data centers in the area of Greater Noida. This has laid the foundation for the practical application of the policy of the government leading to economic growth in the State.

CGRF Framework as per Rights of Consumer Rules – The CGRF regulations have been framed by the Commission, in line with the Rights of Consumer Rules of the Ministry of Power, to launch a three-level consumer grievance redressal forum (CGRF), which includes forum at urban, rural, and company levels with aim to empower consumers across all segments of society and promptly address public grievances effectively. This reflects commitment of the Commission towards ensuring that every consumer's voice is heard and their concerns are addressed, thereby paving way for fair and just resolution of their problems. This has been a significant achievement as more than 150

CGRFs will be established in the State which will be operational upto Circle level in comparison to 20 CGRFs under earlier regime.

Standards of Performance – The Commission has framed Standards of Performance Regulations which allow Electricity consumers in Uttar Pradesh to legally claim compensation for a default in the delivery of services by the electricity distribution utilities. As part of the Regulations, standards of performance will form the basis to measure performance against the standards for the licencee in providing service and ensuring that distribution companies meet minimum standards which are necessary from the perspective of consumers.

Solarizing Ayodhya - The Govt. of Uttar Pradesh has nominated Ayodhya to be developed as a "Solar City", where the renewable energy potential shall be utilized to the maximum extent for fulfilling the electricity requirements of the city. This dashboard details the action plan, the annual targets, the Renewable Energy (RE) potential and ongoing activities to support the transformation of Ayodhya to a Solar City. The Commission, using its power to relax has ensured that the hindrances causing delay in achieving the target are addressed at the earliest.

Other Initiatives

Asset sharing with Telecom Operators: The Commission framed the Facilitation of Telecommunication Network to provide conducive environment for installation of telecommunication network on its distribution assets. There are two-fold benefits of that will be realized. Firstly, there will be additional income will be derived by the distribution licensees from such other business activities. Secondly, provisions have been provided for signing of the connection agreement collectively and Consolidated bill of all the connections for all the distribution assets. Further, billing of such connections is to be done through Smart Meters. This has contributed to Non Tariff Income of Discoms in the State to the tune of Rs.75 Crore in FY 2022-23.

Individual Connections in Multi Storied Buildings - The Commission amended the supply code and made multipoint connection mandatory for high-rise apartments as a

result of which power is supplied directly from distribution utilities to individual flats. This brought a huge relief to consumers living in high risers as they could now avail electricity directly from the Electricity Department which entails multiple benefits to the consumers. There were around 1300 multi storied buildings having single point connection out of which around 900 buildings have opted to be converted to multi point connection. This conversion has also taken place in phased manner.

Key Focus points of UPERC

While framing Regulations, procedures etc there are certain key points that are focused which act as the guiding principles. These include consumer protection, efficiency, transparency and competition. Apart from this, the novel areas such as energy transition have gained prominence in the last few years. A brief snapshot on the initiatives/ action taken by the Commission is provided.

Consumer Protection

Several Suo Moto proceedings have been initiated by the Commission to ensure that the rights of the consumers are violated. For example, the Commission initiated the proceedings against the departmental employees for delay in filing of FIR in case of thefts. The Standards of performance Regulations have been framed by the Commission to measure performance against the standards for the licencee in providing service and ensuring that distribution companies meet minimum standards which are necessary from the perspective of consumers.

Various initiatives have also been taken by the Commission from the perspective of Tariff being charged. The Commission has rationalised the existing structure to reduce the number of categories/ sub-categories/ slab to make it simpler, easy to understand & implementation. While rationalising the Commission has ensured that there is no adverse influence on any consumer category while safeguarding the interest of distribution licensee as well.

Performance based Regulations – Efficiency

The Commission has framed Regulations as part of which due consideration has been provided to the controllable factors of all the electricity utilities including generation,

transmission and distribution wherein it has been ensured that approvals for adequate capital investments are granted which will contribute towards efficiency of the system as whole. These controllable factors primarily include O&M expenses and line losses. The commission also provides norms for such controllable factors. It has been ensured that, benefits in excess of the achievement of performance (lower expenses in comparison to norms), as a result of investment approved by the Commission, is passed on to the consumers.

Transparency

All intra-State transmission projects shall be consistent with the STU Transmission Plan. No intra-State transmission project shall be considered for implementation, unless the project is a part of the STU Transmission Plan and has been duly approved by the Commission. Prior approval of the Commission is required in Implementation of augmentation/ strengthening works (excluding O&M works) at the intra-State transmission substation and/or line, being part of the STU Transmission Plan.

Competition

The Electricity Act 2003 introduced the concept of multiple licensees in distribution, allowing for the entry of parallel distribution companies in a particular area. This provision aimed to foster competition among distribution companies. UPERC issued a parallel distribution license to NIDP Developers Pvt Limited for data centre within the area served by the incumbent licensee NPCL. This move is in line with the broader objectives of the Electricity Act to introduce competition and encourage more participation in the electricity distribution segment.

All new greenfield intra-State transmission projects of 220 kV & above voltage level, being part of the STU Transmission Plan, shall be implemented through Tariff Based Competitive Bidding (TBCB) in accordance with the guidelines issued under Section 63 of the Act and any deviation from the guidelines should have prior approval of the Commission.

Apart from the above, the procurement of power by the distribution licensees has to be done through competitive bidding only, except for cases such as waste to energy-based plants, battery storage etc.

Energy Transition

Various initiatives have been taken by the Commission in regard to smooth transition to cleaner energy and achievement of targets set at national level. For example, the trajectory for RPO for distribution licensees is in line with the trajectory given by Ministry of Power. Apart from this, initiatives such as P2P platform for green energy trading, approvals for projects such as Solar City Plan for Ayodhya, incorporating Net Feed-In provisions, Banking for captive, conducting study under Regulatory Sandbox approach etc. have also contributed towards smooth transition.

Biomass Cofiring:

The primary objective is to reduce pollution and utilize the biomass resource in an effective way which will simultaneously lead to developing a sustainable ecosystem for the farmers.

Ministry of Power, Govt. of India through Office Memorandum dated 17.11.2017 issued "Policy for Bio-mass Utilisation for power generation through Co-firing in pulverized coal fired boilers" (i.e., Biomass Policy) thereby introducing the concept of blending coal with biomass pellets of agro-residue in the range 5-10%. Subsequently, MoP through O.M dated 23.09.2021 decided that the Commission for Air Quality Management and Central Pollution Control Board would impose penalty on thermal power plants that do not comply the mandate to compulsorily use biomass in their power station. Further, on 08.10.2021, MoP issued Revised Biomass Policy to promote use of biomass pellets in coal based TPPs with modifications specifying percentage use (5%, 7% & 10%) and type of biomass pellets for different combinations of existing Coal Mills. The UPERC, in recognizing the needs to address the various concern of treating Biomass-cofiring in coal based thermal power plants provides 'Draft methodology for Co-firing of Biomass and recovery of its cost in the capacity charges as well as Energy charges" in January 2024. This Methodology provides different framework for different categories of

Thermal Power plants (i.e., Section 62 & section 63 projects) and made the power plants share fuel details with the beneficiaries in a transparent manner.

Electric Vehicle

Considering the growing need and the spur in demand of EVs, the Commission has recognised the separate tariff category of EV Charing. Apart from this, in order to ensure that development of EV charging stations does not hinder the growth of EVs, the provision has been provided wherein All the metered domestic consumers covered under the LMV-1 category are allowed to charge their Electric Vehicle at their residence, provided the load of Electric Vehicle does not exceed the connected / contracted load. Apart from this, other category of consumers will not require separate connection for EV charging and are charged Tariff applicable for their respective category.

Tariff Setting

The Commission had framed (Multi Year Tariff for Distribution and Transmission) Regulations, 2019. The Multi-Year Tariff framework is based on the following elements:

(i) A detailed Business Plan based on the Operational Norms and trajectories of performance parameters as stipulated in these Regulations, for each year of the Control Period;

(ii) The ARR Petition comprising the forecast of ARR and expected revenue from existing and proposed Tariff shall be submitted by the Licensee along with audited / provisional accounts of previous year and available data of 6 months in books of Accounts for the current financial year;

(iii) Annual Performance Review (APR) of operational and financial performance vis-à-vis the approved forecast shall be submitted annually by the Licensee as per the Table shown in Regulation 4.1;

(iv) ARR / Tariff Petition along with APR and True-Up shall be submitted annually by the Licensee for each year as stipulated in these Regulations;

Inter-Sectoral Collaboration Inputs

Inter Regulator Support

There are different perspectives from which the need for inter-regulator cooperation is required. Firstly, the cooperation between the regulators may be useful in addressing the concerns and bottlenecks in the system which are causing hindrance. Secondly, the cooperation might lead to synergies in cases where the policies and framework in two sectors complement each other.

Synergies based cooperation

Telecom & Electricity –

- There are several opportunities for Telecom companies and electricity utilities to utilize the existing assets. The electricity utilities have already developed huge infrastructure comprising of poles and towers. These may be utilized by the companies in telecom sector. The framework might be developed which will ensure that the assets can be shared which on the one hand can lead to additional income for the electricity utilities and at the same time capital investment that would be required in the telecom sector can be reduced. Based on cost benefit analysis for the telecom companies as a result of reduced capital investment can be conducted. A share of such benefit when passed on to the electricity utilities would result in additional income.
- Smart Metering Infrastructure: The Electricity Regulatory Commission and TRAI could collaborate on the deployment of smart metering infrastructure for electricity consumers. TRAI's expertise in telecommunications can be leveraged to establish communication protocols and standards for smart meters, enabling real-time data exchange between utilities and consumers. This collaboration would support the implementation of advanced metering infrastructure AMI and promote energy efficiency through demand-side management programs.
- Demand Response Programs: The Electricity Regulatory Commission and TRAI could collaborate on leveraging telecommunications infrastructure for demand response programs in the electricity sector. TRAI could support the deployment

of communication networks and protocols for demand response signals, while the Electricity Regulatory Commission could establish tariff structures and incentives for participating consumers. This collaboration would enable utilities to manage peak demand more effectively and optimize grid operations.

Electricity & Finance - As per the report by World Bank, mini grid companies' expansion into new villages and districts remains limited by the availability of financing to install new systems and serve new locations. Therefore, in case Electricity Regulatory Commission and Finance regulatory authorities can collaborate on developing financing mechanisms and incentives it will be a boost to for arrangements such as mini grids. This may also be extended for other initiatives to promote investment in clean energy projects, grid modernization, and energy efficiency initiatives.

Airport & Electricity – In the bids that are invited for development of airport, it may be mandated to install RSPV system wherein power generated may be supplied to Discoms at subsidized tariff. Such conditions may be approved by Airport Authority in collaboration with Electricity Regulators to ensure that such supply is done within the regulatory framework that has been prescribed.

ERC and NHAI

- Integration of Electric Vehicle (EV) Charging Infrastructure with Highway Projects: The Electricity Regulatory Commission and NHAI could collaborate to integrate EV charging infrastructure into highway development projects. NHAI could incorporate designated areas for EV charging stations along national highways, while the Electricity Regulatory Commission could provide guidelines for standardization, licensing, and tariff determination for these charging stations. This collaboration would support the growth of EV adoption and promote sustainable transportation.
- Joint Development of Solar Corridors along Highways: The Electricity Regulatory Commission and NHAI could collaborate on the development of solar corridors along national highways. NHAI could allocate space for solar panels along highway medians or adjacent areas, while the Electricity Regulatory Commission could facilitate the connection of these solar installations to the grid and

establish regulatory frameworks for PPAs between solar developers and utilities. This collaboration would leverage India's vast highway network to expand renewable energy generation capacity.

ERC and Inland Waterways Authority of India

The Electricity Regulatory Commission and IWAI could collaborate on the integration of floating solar power plants on water bodies managed by IWAI. Floating solar installations could be deployed on reservoirs, lakes, and canals along inland waterways, with the Electricity Regulatory Commission providing guidelines for grid connection and tariff determination. This collaboration would optimize land use and enhance renewable energy capacity in the region.

Addressing Bottlenecks

Real Estate & Electricity – There are several issues that are faced by residents in multi-storied buildings as well as other consumers while purchasing real estate property. Particularly in case of issues related to electricity, the intervention of electricity regulator is hindered as percolate from the matters related to real estate. In case policies and guidelines are framed by real estate regulator in association with electricity regulator, most of the issues can be addressed at early stage which will ensure harassment of consumers can be contained. Apart from this, the promotion of green energy may also require intervention at the end of real estate regulator. For example, the electricity regulatory may facilitate promotion of mini grids by granting relaxation in compliance with the legal framework such as requirements of license etc. however, the growth is limited as the availability of land act as the biggest constraint. The real estate regulator, in collaboration with electricity regulator may facilitate in arrangement of suitable packets of land.

Highways & Electricity – Considering the recent developments that have taken place, there are various areas wherein the development of highways can complement the goals in achieving sustainability. However, the level of benefits that are realized may be limited due to lack of synchronization of such projects with electricity regulations. For example, it is pertinent that the projects related to development of highways

incorporate development of EV Charging stations as well. However, the infrastructure development and evacuation of power will require regulatory approvals. Thus, unless such concerns are not addressed, EV infrastructure may remain underdeveloped thereby creating vacuum in growth of EV.

UPEIDA has come up with RfP for development of Solar expressway as part of which solar panels will be installed on both sides of the expressway with a purpose to generate clean energy which will be directly pooled into State Grid and supplying power to way side amenities. However, such initiatives can only be successful if the issues related to evacuation and compliance are addressed at the initial stage itself otherwise it may become unviable. Thus, collaboration with electricity regulator will be important.

TAMIL NADU ELECTRICITY REGULATORY COMMISSION (TNERC)

Best Practices

AGENDA 3:

COMPILATION OF BEST REGULATORY PRACTICES IN TNERC

1. Consumer's safety:

Provision of RCD in every consumer installation has been made mandatory in the TNE Regulations, to avert indoor electrical accidents and ensure public safety.

2. Consumer Grievance Redressal:

Various avenues by means of consumer complaints center, online portal, whatsapp complaints mechanism have been created for effective and timely redressal of consumer grievances.

44 nos. CGRF has been constituted in all 44 nos. distribution circles individually throughout the State. Ombudsman has been appointed as an appellate authority to settle grievance of the aggrieved consumers over the decision of the CGRF.

Inter-Sectoral Collaboration Inputs

AGENDA 2:

INTER-REGULATORY CO-ORDINATION

1. **Electricity and Telecom :**

Telecom towers have to be provided with generators (having adequate fuel storage for minimum period of 72 hours) as standby source of electricity during natural calamity so that seamless communication is ensured for co-ordination agencies of all departments during restoration work.

Optic fibre cables laid with the property of electricity department can be used for the purpose of both departments with sharing of revenue under a statutory mechanism.

2. **Electricity and NHAI:**

The major constraint for fast development of EV charging stations is paucity of land. The land nearer to every toll gate in NH may be spared by NHAI with required space for charging station and vehicle parking and for installation of DT and related switch gears. If scope for additional land is available, installation of solar plant can also be planned.

3. **Railway:**

Along the overhead metro rail route, a duct beneath the rail corridor can be made available for placing the cable either by electricity department or telecom department as standard provisions and same shall be utilized by respective Utilities by obtaining clearance from Railways. Railways shall issue clearance within four weeks time.

Inputs from Other Regulatory Bodies

NATIONAL HIGHWAYS AUTHORITY OF INDIA (NHAI)

Inter-Sectoral Collaboration Inputs

National Highways Authority of India (NHAI) Inter Sectoral Collaboration

With Power Sector:

National Highways Logistics Management Limited (NHLML) - a wholly owned subsidiary of NHAI, is the executive agency for development of wayside amenities (WSA) along the highways. The WSAs also include electric vehicle (EV) charging infrastructure for users. The power tariff for the same has been on the higher side. Thus, highway authorities and Central/State Electricity Regulatory Commissions can come together for tariff rationalization, which is also helpful for promoting EV adoption.

Background

It has been targeted by GoI to achieve 30% electrification of country's vehicle fleet by 2030. With support from various government schemes such as Faster Adoption of Manufacturing of Electric Vehicles Scheme – II (FAME-II) under MHI (Ministry of Heavy Industries) Scheme and the Production Linked Incentive Scheme, significant growth has been observed in recent years in EV adoption. However, the provisioning of EV charging facilities across National Highways is still in its nascent stages. Further, it has been observed various private entities are providing EV charging facilities in range of Rs.20 to Rs.30 per unit to highway users (car passengers). Looking into the costs of EC Vehicle and per unit cost for EV charging, the overall cost for EV charging is on comparatively higher side. Due to this, there is an emergent need to augment EV charging infrastructure across NH and Expressways at competitive rates.

2. It is to mention that MoRTH in its endeavor to make highway travel safe, comfortable, and convenient for highway users, envisions the need to provide EV Charging facilities across un-utilized space available across all NH toll plazas/ Wayside Amenities. At present, there is a network of ~46,179 km of Four-Lane National Highway over which, there are ~1000 Toll Plazas. Provisioning of EV charging facilities across these toll

plazas shall enable MoRTH to meet its objective to make **EV charging facilities Affordable, Accessible and Reliable** for highway users.

3. It is proposed to roll out installation, commissioning, operation, and maintenance of ~6000 EV charging units across toll plazas/ Wayside Amenities along four-lane NH. EV charging facilities shall be planned along each side of toll plaza/ Wayside Amenities equipped with 3 units of the following specifications:

a) 2 No.'s EVSE units: 100/120 KW fast charger with dual gun which can cater 02 cars simultaneously.
b) 1 No.'s EVSE units: 240 KW fast charger which can cater 01 bus/truck.

4. An area shall be required on each side of the Toll Plaza/ Wayside Amenities for providing the EV Charging Infrastructure. Further, at each facility, in addition to EVSE units, the following additional facilities shall be provisioned within the area:

a) Parking Facility for 4 Cars and 2 Buses
b) Toilet & Package F&B
c) Utilities
d) Circulation Space & Open Area

5. The following project structure is proposed towards development of EV charging infrastructure on PPP mode:
a) NHLML shall conduct feasibility studies to assess investment requirement and revenue generation at each toll plaza/ Wayside Amenities.
b) User Charges shall be pre-fixed across all locations.
c) NHLML shall appoint Service Provider (Preferably State-wise Packages) towards Commissioning, Operational and Maintenance of EV Charging Facilities on Lease Basis.
d) Duration of Lease shall be 15 Years (including Development Period of 4 Months)
e) NHLML shall take up the project on PPP basis wherein VGF/ Premium will be offered by the developer.
f) Viability Gap Funding (VGF) based development model is proposed towards appointment of Service Provider. The bidder quoting lowest VGF towards installation,

commissioning, operation, and maintenance of EV charging infrastructure for bundles invited in state-wise packages shall be awarded the contract.

6. An MoU shall be signed between Power Ministry,MHI, respective State Govt. and NHLML for providing interrupted Power Supply for EV Charging Stations at subsidized rates as per the State Policy.

With Telecom Sector:

NHLML plans to develop 20,000 km of Optical Fiber Cable (OFC) Network along national highways with guidance from the Telecom Regulatory Authority of India (TRAI). Under the project, NHLML will develop OFC support infrastructure (utility corridors for OFC ducts, manholes and handholes for direct access to ducts, network operation centres for supervision, monitoring and control of the installed and leased OFC network, etc). For this, multiple consultations have been held between NHLML, Department of Telecommunications (DoT) and TRAI to finalize the allotment mechanism for the OFC infrastructure. A three-member committee representing TRAI, DoT and the Ministry of Road Transport and Highways (MoRTH) was formed to review policy, viability of the project and way forward. As a result of the collaboration, on-ground works for two pilot projects namely Delhi-Mumbai Expressway (DME) and Hyderabad-Bangalore National Corridor, have already started. In February 2024, NHAI/NHLML and TRAI conducted a drive test along with all the telecom operators in the Delhi to Dausa section of DME to check network connectivity.

With Oil & Gas Sector:

NHAI acquires land for utility corridors along the highways, which is earmarked for laying the pipeline infrastructure for transportation of gas, oil, etc. In this regard, there exists scope for collaboration with the Petroleum and Natural Gas Regulatory Board (PNGRB) for working out the modalities of undertaking pipeline construction at the time of construction of the highway projects. Additionally, a mechanism for issuing faster clearances and permissions to pipeline-laying entities can be worked out together by the respective agencies, which can help avoid duplication of efforts and resource wastage.

With Ports Sector:

The Port Connectivity Roads (PCR) initiative by NHLML offers a potential area of collaboration between executive agencies in both the sectors for laying connectivity roads to the port. NHLML has planned the development of 108 PCR projects for improving road accessibility to the ports. Coordination between port authorities and NHLML can ensure smoother and faster completion of the projects which, in turn, can lead to efficiency gains and reduction in logistics/transportation costs for port users.

With State Governments and Railways for implementing 35 Multimodal Logistics Park Projects:

MMLPs have been conceptualized to act as freight aggregation and disaggregation centers to enable freight movement on more efficient modes such as higher sized trucks, rail or coastal shipping, thereby improving the efficiency of freight movement and reducing logistics cost. MMLPs shall enable the shift from the point-to-point freight movement to an ideal hub-and-spoke model of freight movement by integrating connectivity through roadways, railways, and waterways/ airways at feasible sites.

MMLPs are being developed through Public-Private-Partnership (PPP). Project Specific SPVs are being formed following the principle of PM Gatishakti between Ministry of Road Transport and Highways (through NHLML), Ministry of Railways (through RVNL), Ministry of Ports Shipping and Waterways (wherever applicable through Port Authorities) and State governments (through industrial development corporations of the State Governments and land-owning agencies) to develop MMLPs.

Presentation by NHAI | 3rd Meeting of the Working Group (May 21, 2024)

National Highway Logistics Management Limited

National Highways & Logistics Management Limited (NHLML), a fully owned subsidiary of NHAI, is responsible for driving strategic initiatives of NHAI to improve freight & passenger movement efficiency and monetization of assets

Key Asset Classes under NHLML

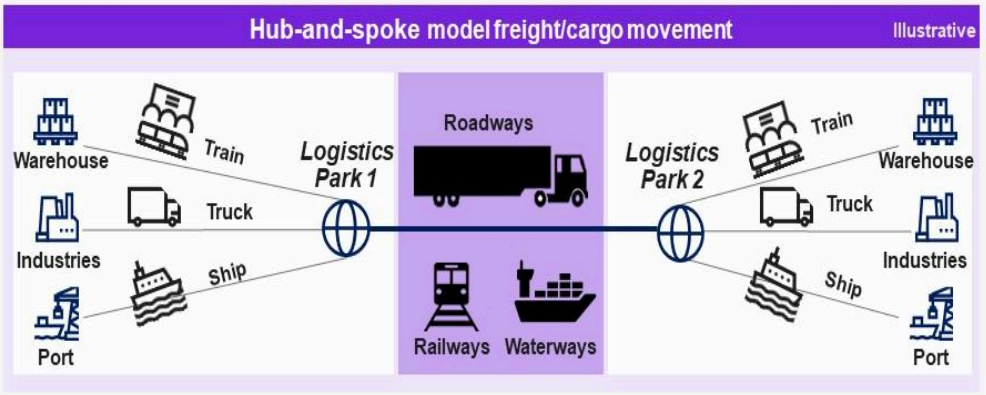
NHLML's strategic initiatives		
1. Improving efficiency of freight movement	**2. Improving passenger convenience**	**3. Optimal Utilization of 'Highway Assets'**
1A. Multi Modal Logistics Parks (MMLPS)	2A. Wayside Amenities (WSA)	3A. Optical Fiber Cable (OFC)
1B. Port Connectivity Roads (PCR)	2B. Ropeways	3B. Solar Power
1C. Warehousing Zones	2C. Public Transport Terminal Infrastructure	

1A Multi Modal Logistics Parks (MMLPs)

MMLPs enable seamless intermodal freight/cargo movement and offer multiple functional benefits and services

MMLPs shall facilitate a shift from Point-to-point to Hub and Spoke model

Integrated Logistics Model (facilitated by MMLP)



Features of an MMLP facility

- Min. area of 100 acres
- Rail, Port/Airport connectivity
- Higher cargo volumes
- Logistics services like Aggregation, Processing, Assembling, Storage & Distribution

Functionalities	Freight aggregation & distribution	Multimodal freight movement
Services offered	Storage and warehousing solutions	Value Added Services (custom clearance, etc.)
Impact Envisaged	Logistics Cost ↓	Carbon footprint ↓

Case Study: MMLP Bangalore

Institutional Structure: Project Specific SPVs formed in collaboration with various Central/ State Government bodies to develop the MMLP in PPP mode

MMLP Bengaluru SPV: Authority

रेल विकास निगम लिमिटेड
Rail Vikas Nigam Limited

Karnataka Industrial Area Development Board
GOVERMENT OF KARNATAKA

MoRTH
Ministry of Road Transport and Highways
NHAI
NHLML

PPP
DBFOT model

RVNL	KIADB	NHLML	Private Party(s) (Consortium) as Concessionaire

RVNL:
- RVNL shall provide **dedicated rail siding line to the MMLP**, to improve rail connectivity

KIADB:
- **KIADB** shall **provide land** for development of MMLP at proposed location & **procure** relevant **approvals**

NHLML:
- Act as **appraisal / nodal agency** and provide **external trunk infrastructure**

Concessionaire:
- **Design, construct, finance, operate and maintain** the project for 45 years concession period

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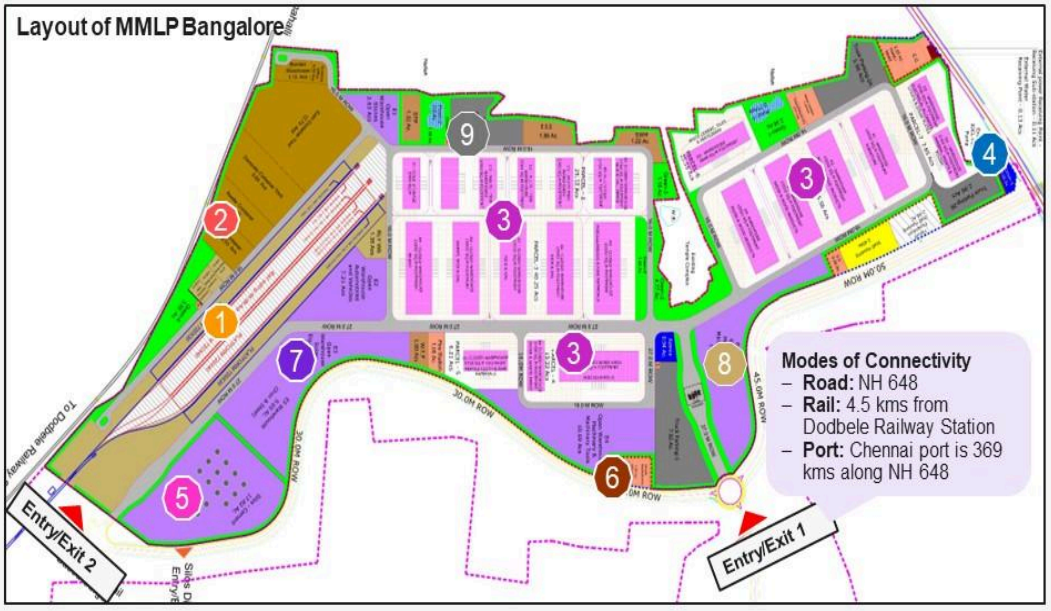
Case Study: MMLP Bangalore

MMLP Bangalore being developed, under PM GatiShakti, in an area of 400 acres to cater freight traffic volumes of ~30 MMTPA in 45 years

Permissible Services

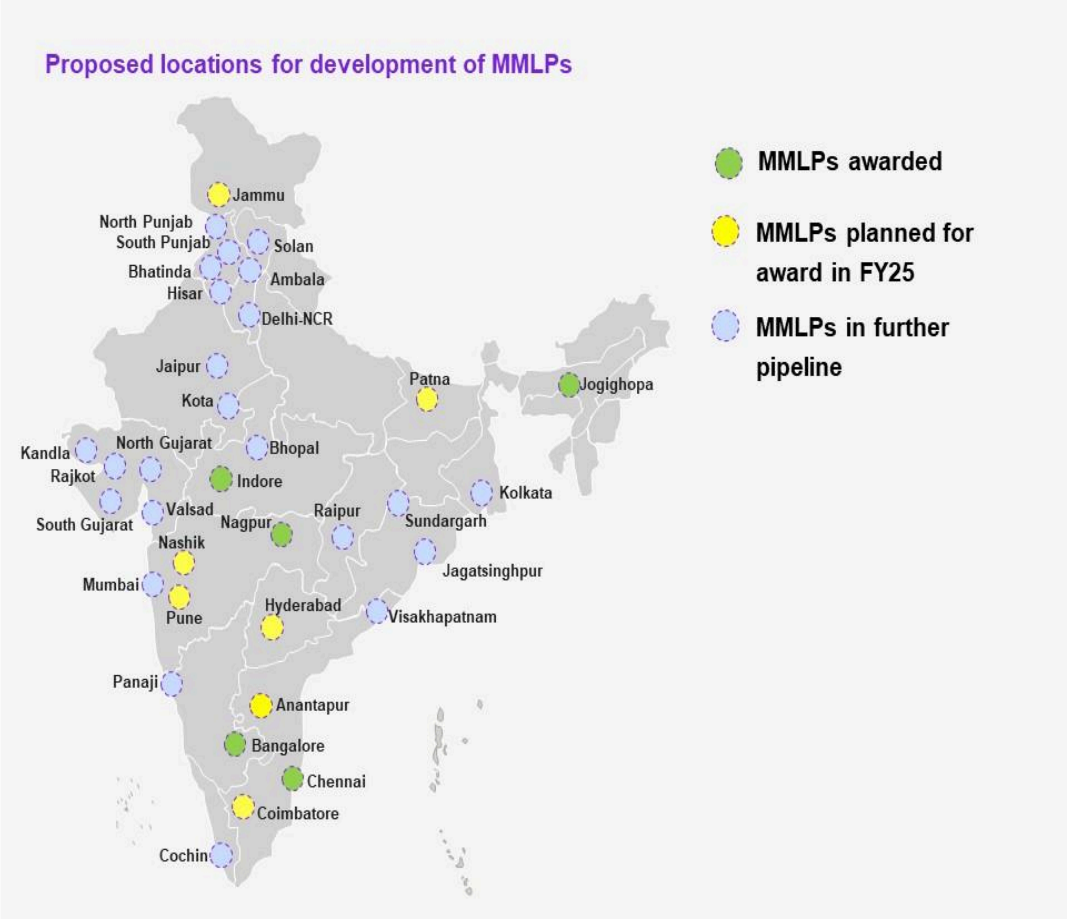
- **Core Logistics Services:** Warehousing, freight transportation, cargo aggregation & distribution
- **Value Added Services:** Custom clearance, sorting, packaging, assembling, IT services, affixing & printing, mixing etc.
- **Support Services**: Parking, recreational services, O&M services for transporters

Layout of MMLP Bangalore

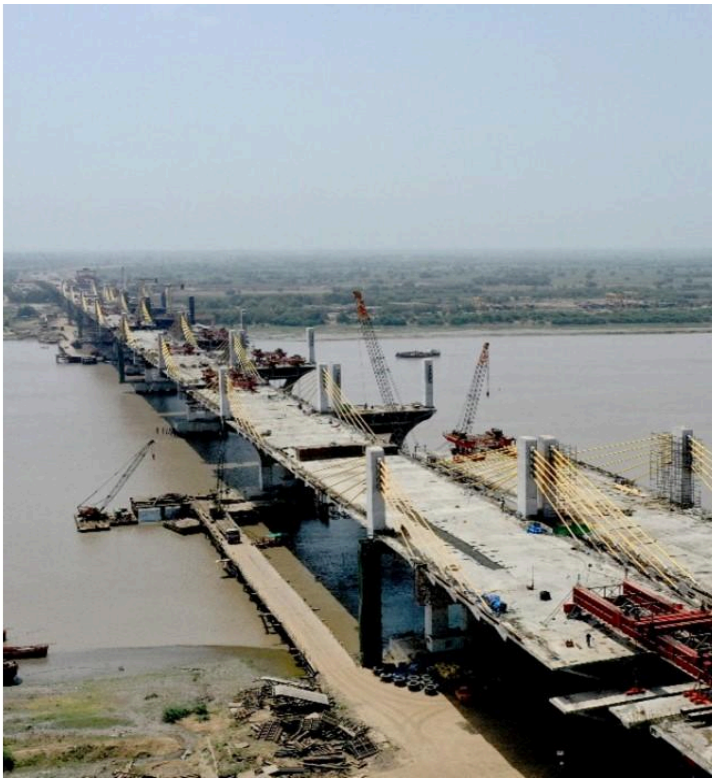


1. **Railway Siding** — 2 railway sidings; 4 more sidings provision
2. **Container Yard** — along railway siding
3. **Closed Warehousing** — Storage of cargo under closed & controlled conditions
4. **Commercial Area** — Retail outlets, office spaces, hotels, etc.
5. **Cement Silo** — Cement handling area
6. **Trucker's Facilities** — Vehicle maintenance, lodging & other facilities
7. **Open Warehousing** — automobile, solar equipment, etc.
8. **Custom bonded area**
9. **Cold Storage**

35 strategic locations identified for development of MMLPs under Bharatmala Pariyojana



1B Port Connectivity Roads (PCR)



MoRT&H has planned the development of 108 PCR projects of ~3,700 kms to improve connectivity to Operational and UI ports in the country

1C Warehousing Zones (WHZ)

NHLML plans to develop 6 Warehousing Zones across India in FY2024-25

Need for Warehousing Zones

- **NHAI has acquired large parcels of land** for development of highways
  - But certain land parcels remain unutilized (e.g. – land inside interchanges, alignment changes etc.)
  - There is increased **risk of encroachment** on such unutilized land parcels
- NHLML is planning to develop **warehousing zones** to utilize these land parcels thus monetizing land & help reduce congestion of nearby cities

Current Status

- **1 site at Dasna** awarded for development in PPP mode
- 5 more sites planned for award in FY2024-25

2A Way Side Amenities (WSA)

To improve the comfort and convenience of the highway users, NHAI has planned development of 600+ state-of-the-art Way Side Amenities (WSA)

Mandatory facilities

- Toilet facility
- Drinking Water facility
- Food court, Dhaba and Convenience Stores
- Car / Bus / truck parking
- Medical Room
- Helipad / Drone landing*
- Electric charging Station*

* Wherever applicable (post meeting site specific demands)

Other Permissible facilities

- Fuel Stations
- Hotels
- ATM
- Vehicle repair shop

Delhi-Mumbai Expressway: Kota-Jhabua Section - Package 21

12 Ha sites on Chainage 589+086

Delhi-Mumbai Expressway: Kota-Jhabua Section - Package 21; Chainage 589+086

FOOD COURT

RESTAURANT

TRAUMA CENTER

SHOPPING COMPLEX

Delhi-Mumbai Expressway: Kota-Jhabua Section - Package 21; Chainage 589+086

MOTEL

DORMITORY

DHABA

PARKING

Delhi-Mumbai Expressway: Kota-Jhabua Section - Package 25

2 Ha sites on Chainage 679+460

Delhi-Mumbai Expressway: Kota-Jhabua Section - Package 25; Chainage 679+460

2B Ropeways

Ropeway has been taken up as a new Asset class with an aim to overcome these challenges and make it an affordable, safer, and accessible alternative mode of transportation

1 Affordable

Promoting "Make in India" to develop India as a manufacturing and export hub for ropeway components in the next 3-5 years

2 Safer

Enhancements of standards and guidelines for inspection / auditing to improve ropeway safety

3 Accessible

Improving accessibility in hilly and difficult mountainous areas with limited / no conventional mode of transport & decongesting urban areas

To improve logistics and transportation via Ropeways, MoRT&H has announced National Ropeway Development Programme – Parvatmala Pariyojana

Current Status

- In the **Union Budget 2022-23**, **National Ropeways Development Programme (NRDP) was announced** to improve connectivity and convenience for commuters, besides promoting tourism
- MoRTH vide **letter no. NHLML/Ropeways/SoP/2021** dated 07.03.2022 **issued SOP to the State Govt. for submission of proposals to the Ministry/ NHLML** for the development of Ropeway/ Alternate/ Innovative Mobility Projects in the State
- **363 Proposals** are received from **24 States / UTs till date** for implementation of ropeways
  - **Works** have been **initiated** on **~136 projects** till date and are **under various stages** of **Project Lifecycle**

State-level Partnership (comprising of NHLML + State Govt.) shall be formed for implementation of Ropeway project under PPP mode

NHLML:

- Act as **appraisal / nodal** agency; **execute project**
- **Procure** statutory **clearances** related to **Center**
- **Capex investment, Payment of Annuity, and O&M**
- **Collect all revenues**

State Government:

- **Provide land** for development of Stations, Towers, and facilities
- **Procure** all **statutory clearances** related to **State**
- **Provide Aerial Right of Use**

Ropeway Developer:

- **Design, construction and O&M** of the project **under suitable mode** (EPC / HAM / BOT)
- Undertake **commercial development** & advertising

MoUs are signed between State Govt. & NHLML to define the modalities of project implementation

2 different options for execution have been suggested to State Govt. for implementation of Ropeway projects

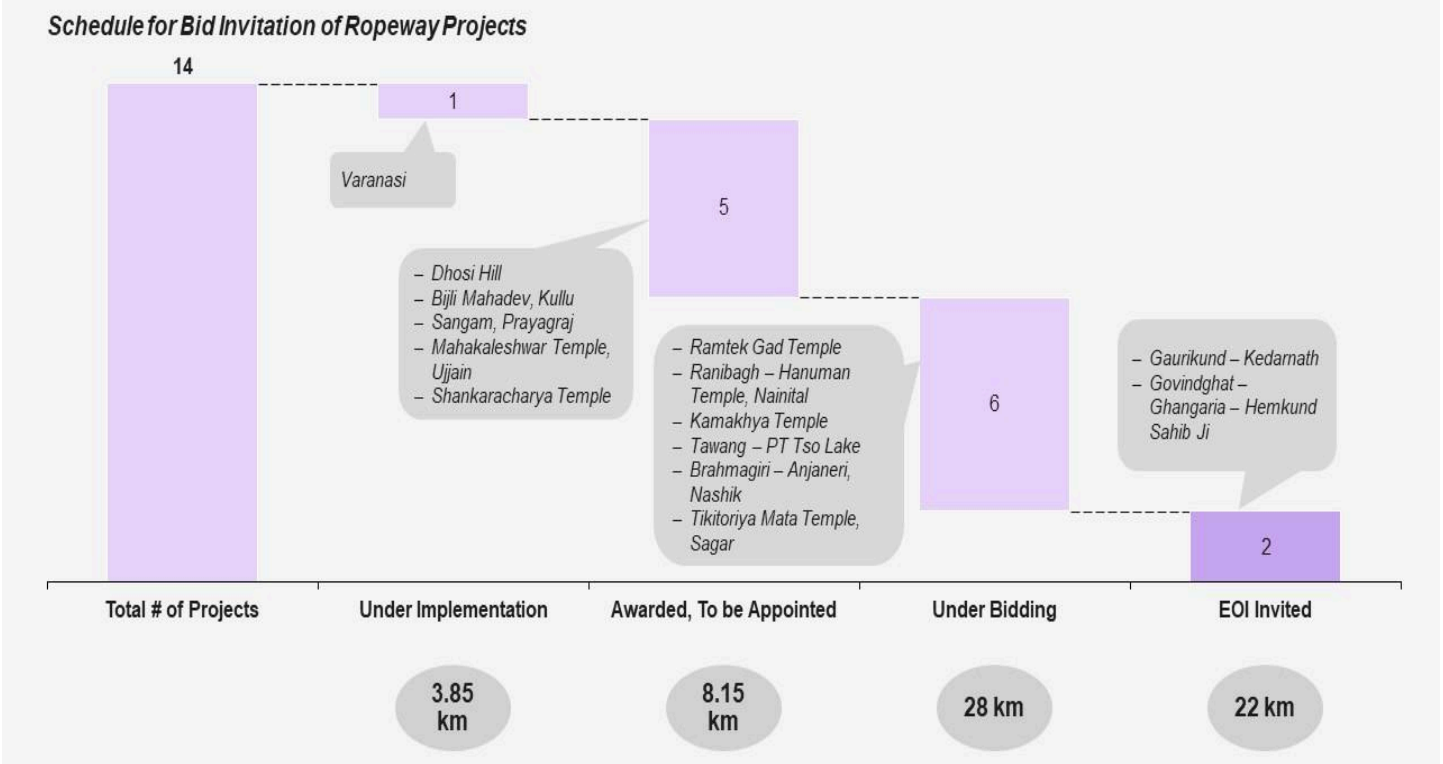
Option A: Development of Ropeways through SPV formation

- **SPV** to be formed between **NHLML** and **State Govt.** for implementation of ropeway projects **with defined responsibilities**
- **NHLML** shall be the **lead stakeholder** by arranging funds for development of the project
  - **NHLML** shall be responsible for **project prioritization, appraisal and implementation** of the project
  - **NHLML** shall facilitate preparation of the **Pre-Feasibility Studies and Detailed Project Reports** (DPR)
  - **NHLML** shall manage **implementation and operations and maintenance** of the Projects
- **State Government** shall contribute **at least 26%** equity in **SPV**, which also includes **land for development of stations, towers** and land for associated commercial development (as per the circle cost) along with utility shifting & clearances cost, if any

Option B: Development of Ropeways through independent execution by NHLML

- **State Government** shall provide **land for development of stations, towers** along with land for associated commercial development and enable utility shifting with respective local agencies as **grant to the project**
- **NHLML** shall be the **key stakeholder** by providing funds for development of the project
  - **NHLML** shall be responsible for **project prioritization, appraisal and implementation** of the project
  - **NHLML** shall facilitate preparation of the **Pre-Feasibility Studies and Detailed Project Reports** (DPR)
  - **NHLML** shall manage **implementation and operations and maintenance** of the Projects

14 Projects of length 62 km are under various stages of project lifecycle as per the Budget Announcement 2022-23



2C Public Transport Terminal Infrastructure (PTI)

NHLML plans to develop Public Transport Terminal Infra. (PTI) as a one-stop solution for interfacing and interconnecting a variety of intercity, regional and local public transport systems

What is a Public Transport Terminal Infrastructure (PTI)?

PTI Katra Design

- PTI is an integrated **state-of-the-art facility** acting as **public transport terminal hub**
- Consists of **2 components**, namely,
  - **Transport Zone**
  - **Commercial Zone**
- **Capacity to handle passenger** volumes for next **~30 years**
- **Integrates multiple modes** of transport solutions **under one roof**

Transport Zone and Commercial Zone shall offer state-of-the-art facilities for both, passenger movement and commercial activities

Facilities within Transport Zone

- **Bus Port / Terminal**
- **Taxi Stand**
- **Integration with other transport modes** *(Rail, Metros, Ropeways, etc.)*
- **Parking facility** *(Multi-level Car Parking preferred)*

Facilities within Commercial Zone

- **Yatri Complex** *(Dormitories, Reservation counters, etc.)*
- **Commercial Complex** *(Offices, Malls, etc.)*
- **Hotels** *(4-star, 5-star and budget hotels)*

Common amenities offered

- **Airport style air-conditioned concourse** *(skylit)* **& waiting areas**
- **CCTV security system and digital display systems**
- **Smart lighting system**
- **Walkways, travelators and glass door elevators**
- **Landscaped courts and green waiting areas**
- **Paid Baggage trolley systems**
- **Food court, retail outlets**

3A Optical Fiber Cables (OFC)

OFC (dark-fibre) infra. Being developed in-line with NBM[1] & PM Gati Shakti

10% increase in the **broadband penetration** of any developing country like India is expected to **boost the GDP growth rate by ~1.4%**[2]

Key features

National Broadband Mission

- **Enable** fast track **growth of digital** communications **infrastructure**
- **Bridge** the digital **divide for digital empowerment and inclusion**
- **Provide affordable and universal access** of broadband for all
- **Create a digital fiber map** of Digital Communications network targeting **50 lakh kms of OFC by 2024**

राष्ट्रीय ब्रॉडबैंड अभियान
National Broadband Mission

PM Gati Shakti initiative

- **Ensure integrated planning** and **implementation** of infrastructure projects
- **Leverage synergies across Ministries (E.g.** DOT and MoRTH for OFC)

PM GatiShakti
National Master Plan for Multi-Modal Connectivity

NHLML plans to award **~20,000 kms of OFC (dark-fibre) infrastructure**

1. National Broadband Mission
2. As per study conducted by World Bank

In Phase I, two pilot projects – DME & Hyd-Bang were awarded

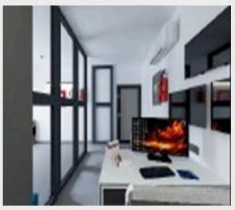
On-ground works started for both the pilot projects

Hyderabad-Bangalore National Corridor

Delhi-Mumbai Expressway

The planned OFC infrastructure shall be developed within 1.2 m Right of Way (RoW) and consists of 6 key technical components (1/2)

Key Technical Components

Component	Description	Qty. designed per corridor	Salient features
Ducts 	Ducts act as **supporting infrastructure** for cables	**3 ducts of 40/33 mm** dia. **+ 3 ducts of 63/50 mm** dia.	– Each **duct** shall be **Permanently Lubricated with High Density Poly-Ethylene** material – Each **duct** shall also have a **Hauling Rope**
Cables (dark-fibre) 	Optical Fibre Cables **carry data through light pulses** at very high speed	**1 cable of 96 fibre** to be installed **in each 40/33 mm duct**	– **Total fibre-pairs** available for leasing = **144** (i.e., 96 fibre cable each in 3 ducts) – Each **cable** shall be **LT[3] Single Mode Armored Cable**
Network Operation Centers (NOC) 	NOCs are required to **supervise, monitor, control and maintain** the installed & leased OFC network	**1 NOC Room** to be developed **per corridor** (2 for DME)	Each NOC room shall comprise of, – **RFMS[1]**: Facilitate 24 x 7 monitoring of all fibres through integration with Telco Rooms – **GIS[2]**: Geographic mapping of developed/leased infra. – Space for **CCTV control center, server, etc.**

1. Remote Fibre Monitoring System; 2. Geographic Information System; 3. Loose Tube

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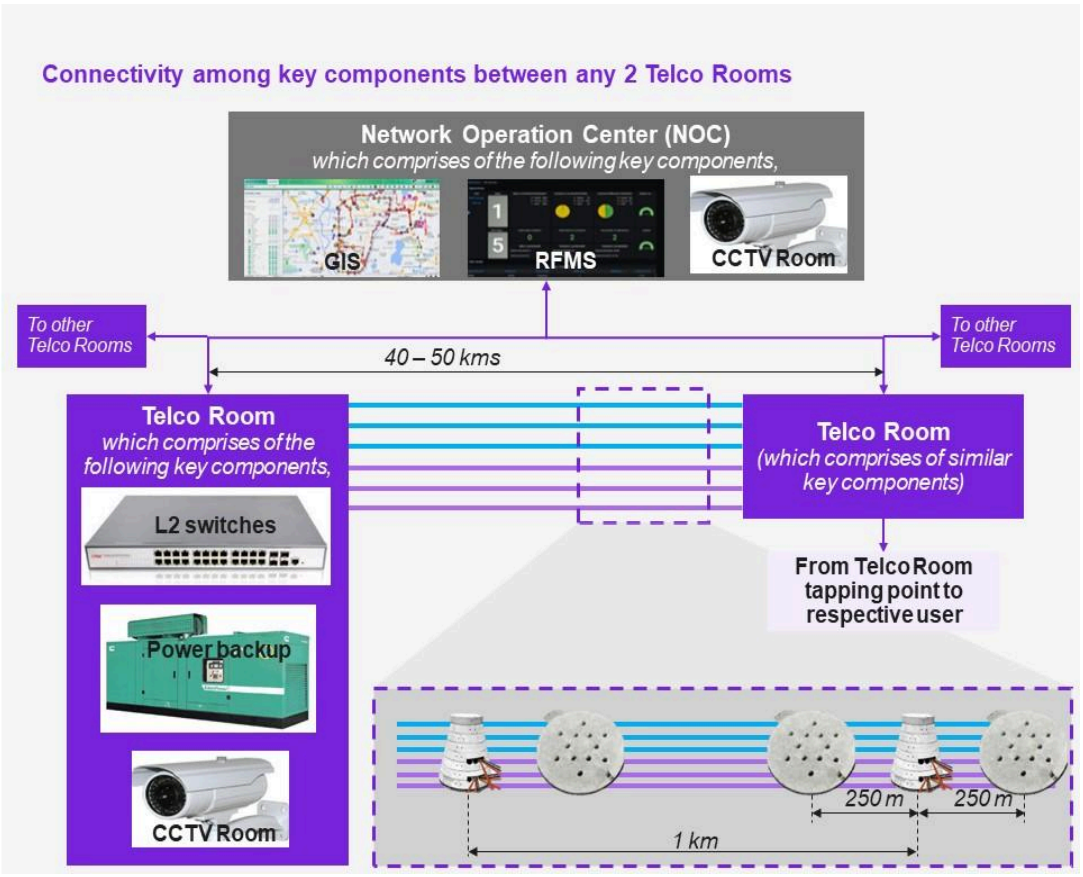
The planned OFC infrastructure shall be developed within 1.2 m Right of Way (RoW) and consist of 6 key technical components (2/2)

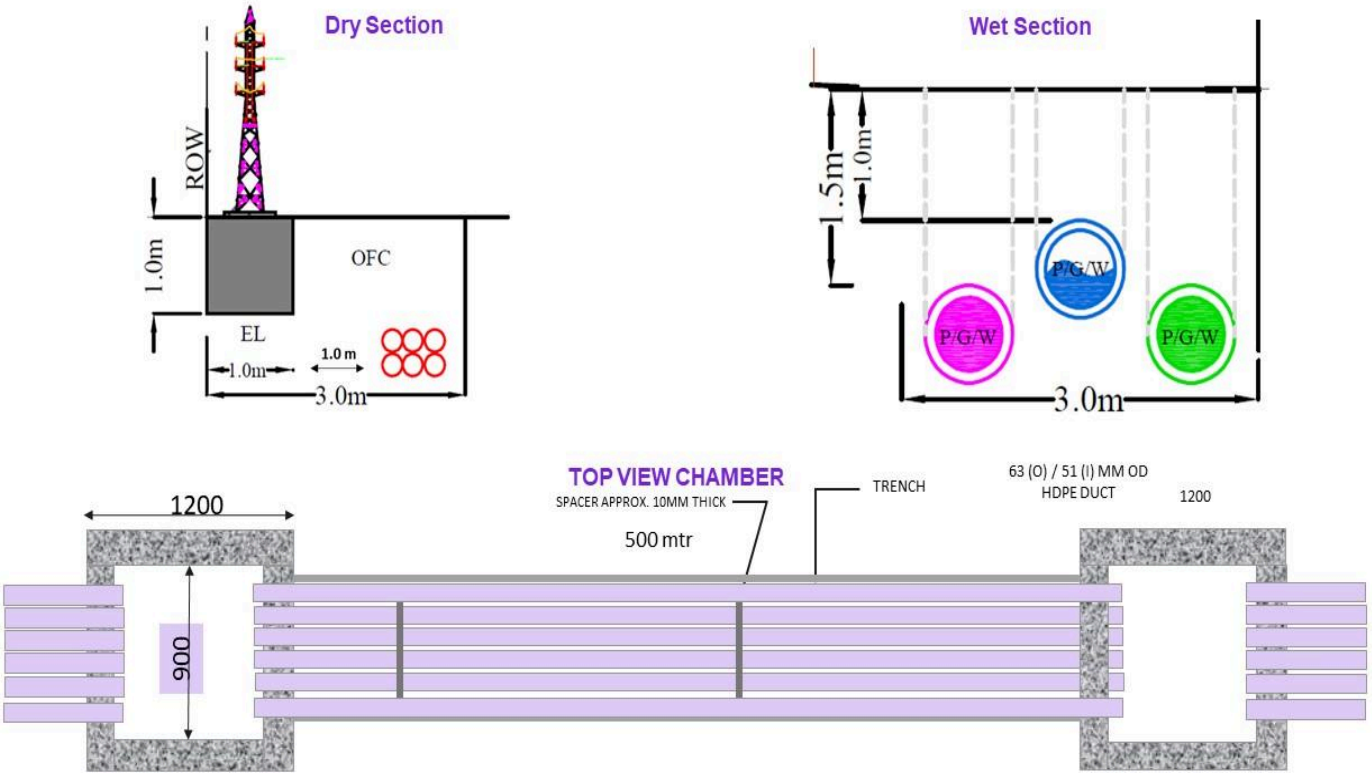
Key Technical Components

Component	Description	Qty. per corridor	Salient features
Telco Rooms 	Telco Rooms **provide tapping points** for leasing, as required by any user	To be **installed at every 40-50 kms** along NH	Each Telco room comprises of, – **Emergency power back-up, CCTV room, L2 switches, etc.**
Manholes 	Manholes and handholes **provide direct access to the installed OFC infrastructure**	To be **installed at every 1 km** along NH	– Manholes shall be **pre-cast covering 1.2 m dia.** with a **depth of 1.5 m** – Manholes and Handholes aid with, – **Installation and construction of OFC infrastructure** – **Regular and periodic O&M** – **Replacement of any sub-component**
Handhole 		To be **installed at 250 m** on either side of each Manhole	

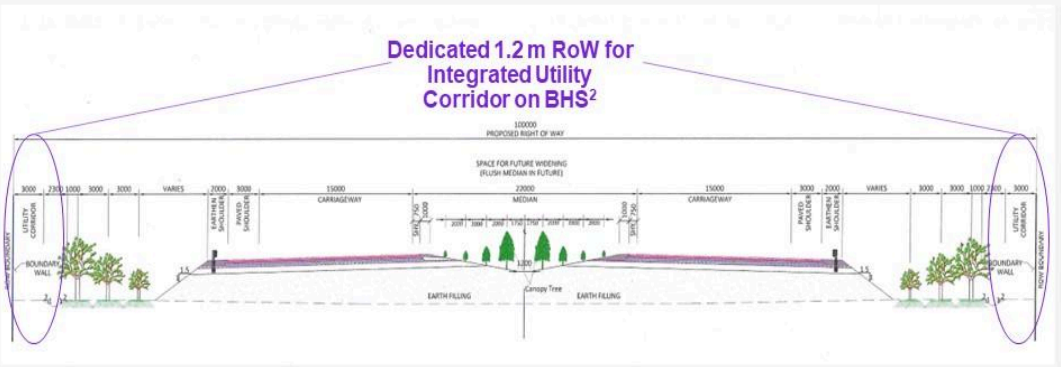
All key technical components are interlinked

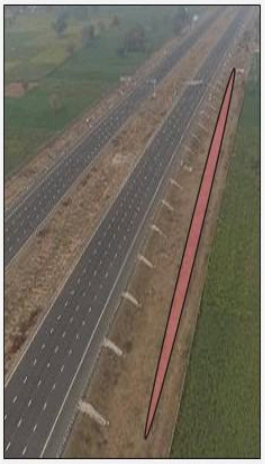


The following diagrams show the typical cross section of utilities for Utility Corridor



Cross Section & Development of OFC in Delhi – Mumbai Expressway





Existing collaborations between NHAI/ NHLML and TRAI

– As per the guidance from TRAI, NHAI/NHLML plans to develop 20,000 km of Optical Fiber Network Across the country in line with the National Broadband Mission.

  – Multiple consultations have been held between NHLML, DoT and TRAI to finalize the allotment mechanism for the fiber infrastructure

– NHAI/NHLML in collaboration with TRAI is working on the **improvement of internet connectivity** along the highways/expressways in the country

  – In this regard, a drive test was conducted by TRAI along with all the telecom operators in the Delhi to Dausa section of DME in Feb 2024

3B Solar Power

Solar Power Projects being developed under PM KUSUM Scheme along NH

- Pilot projects planned in **Rajasthan and Haryana states** on the vacant land parcels (interchanges) available along **Amritsar-Bhatinda-Jamnagar** (Trans-Rajasthan) and **Ambala-Kotputli** (Trans-Haryana) corridors
- **MoU** signed with Rajasthan & Bids under evaluation for **6 sites** with **~27 MW** potential along Trans-Rajasthan corridor
- MoU shared with Haryana govt. to award solar projects along Trans-Haryana corridor

NHLML:

- Provide **vacant land parcels** at interchanges **along the National Highways**
- Receive **land lease rent** from DISCOM

Solar Developer:

- **Execute project** RESCO mode (similar to DBFOT model)
- **Provide power** to DISCOMS **at bid out price** for 25 years term

State DISCOM:

- Select developer per **PM KUSUM Scheme**
- **Purchase of power** from developer at bid out price
- **Payment of lease rent** to NHLML

Thank you

COMPETITION COMMISSION OF INDIA
SECRETARIAT

Best Regulatory Practices adopted by the Competition Commission of India (CCI)

The Competition Commission of India (CCI), as part of its commitment to enhancing best regulatory practices and fostering a competitive environment, has instituted several best practices in the realm of competition law enforcement. These initiatives are designed to provide clarity, foster compliance, and facilitate a smoother regulatory process for stakeholders. This note highlights two such best practices: the issuance of Frequently Asked Questions (FAQS) on various aspects of Competition law and the Pre-filing Consultations (PFC) mechanism for Mergers & Acquisitions (M&As).

(i) Issuance of Frequently Asked Questions(FAQs)

The CCI recognizes the importance of regulatory clarity and certainty for stakeholders operating within the competitive landscape of India. To this end, the Commission regularly publishes Frequently Asked Questions (FAQs) covering various aspects of competition law and its enforcement under the Competition Act. These documents serve multiple purposes:

Guidance: They offer clear, accessible explanations of complex legal provisions, helping stakeholders understand their obligations and the scope of the law.

Transparency: These documents promote transparency in regulatory enforcement.

Consistency: Regular review and updates of these documents ensure that they remain consistent with the latest legal precedents, policy changes, and emerging market realities.

Stakeholder Engagement: FAQs and Guidance Notes are developed considering the queries and feedback received from various stakeholders, ensuring that the guidance provided is relevant and practical.

The proactive approach of the CCI in issuing these documents reflects its commitment to an informed, compliant, and competitive marketplace.

(ii) Pre-filing Consultations (PFC) for M&As

Understanding the complexities involved in mergers and acquisitions and the regulatory scrutiny such transactions undergo, the CCI has established a Pre-filing Consultation (PFC) mechanism. This initiative is aimed at facilitating a smoother and efficient merger review process under the Competition Act:

Early Engagement: Parties to the transaction are encouraged to engage with the CCI before formal filings for approvals.

Guidance on Regulatory Processes: The PFC mechanism provides an opportunity to stakeholders to gain insights into the information/ submission requirements, and procedural aspects of merger filings.

Time Efficiency. By clarifying requirements and potential issues in advance, the PFC mechanism can lead to a more streamlined and expeditious review process once the formal merger filing is made.

This mechanism underscores the CCI's dedication to a regulatory approach, aimed at facilitating business transactions while safeguarding competitive principles.

Conclusion-

The CCI's best practices, including the issuance of FAQS on various aspects of Competition law and the Pre-filing Consultations mechanism for M&As, exemplify the Commission's proactive and forward-thinking approach to competition law enforcement. These practices not only enhance the transparency and predictability of regulatory processes but also promote a culture of compliance and cooperation between

the regulator and stakeholders. It is hoped that sharing these practices will contribute to a richer compendium of regulatory best practices, fostering an environment of shared learning and continuous improvement across sectors under the overarching goal of ease of doing business.

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INSOLVENCY AND BANKRUPTCY BOARD OF INDIA (IBBI)

Best Practices

Inputs for FOIR Inter-Regulatory Working Group on "Inter-Regulatory Cooperation" Regulatory best practices adopted by IBBI

1. Consultative mechanism for issuing Regulations

The IBBI has established a comprehensive and consultative process for making and issuing regulations which is governed by the IBBI (Mechanism for Issuing Regulations) Regulations, 2018.

The regulation making process followed by IBBI entails the following steps:

i. **Prior public consultation** on all proposed regulations, including amendments to existing regulations (except urgent amendments).

ii. **Dissemination of information**: The Regulations require the IBBI to upload the following material on its website seeking comments from the public: (a) draft of proposed regulations; (b) the specific provision of the Code under which the Board proposes regulations; (c) a statement of the problem that the proposed regulations seek to address, (d) an economic analysis of the proposed regulations; (e) a statement carrying norms advocated by international standard setting agencies and the international best practices, if any, relevant to the proposed regulations; (f) the manner of implementation of the proposed regulations, and, (g) the manner, process and timelines for receiving comments from the public.

iii. Apart from soliciting public comments the Board also seeks **advice of its Advisory Committees** and crowd sources the ideas through collaboration with the industry/ institutes/organisations, and **round table discussions.**

iv. All comments and suggestions along with the views of the operating division of the IBBI are placed before the Governing Board (GB) of IBBI for a decision. The regulation making process culminates with final notification by IBBI pursuant to

GB approval.

v. The **agenda notes of the GB and decisions taken thereon** are also placed on the website offering stakeholders insight into the consultation process and the rationale behind final regulatory decisions.

In addition to the above, the Regulations require **review of regulations every three years** to evaluate if they need to be repealed or amended. This review is conducted concerning regulatory objectives, outcomes and international best practices on the subject. For this, the Board invites the comments of the public through its electronic platform on its website. The comments/suggestions received are processed together and following the due process, regulations are further modified to the extent considered necessary.

Wherever any **clarifications** on the extant legal position is required, the Board has been providing the same **through issue of circulars**.

The inclusive approach adopted by IBBI for making Regulations ensures that stakeholders are active partners in the regulatory design process. This transparent approach facilitates the exchange of information between the IBBI and stakeholders, fostering a collaborative approach conducive to effective regulation framing.

2. Continuous stakeholder engagement

Programmes for stakeholder engagement

The IBBI engages with stakeholders on a continuous basis through roundtable discussions organized across various cities, either independently or in collaboration with industry, institutes, or organizations. These forums provide an opportunity to elucidate the intent behind proposed regulations and gather diverse perspectives to inform regulatory implementation. By actively involving stakeholders in the regulatory process, the IBBI enhances regulatory efficacy and promotes stakeholder confidence in the insolvency and bankruptcy framework.

Monthly meetings with regulated entities

Further, the IBBI holds monthly meetings with the MDs/CEOs of the Insolvency Professional Agencies (IPAs), Information Utility (IU) and Registered Valuer

Organisations (RVOs). As such, these are regular opportunities for the regulated entities to provide feedback and other suggestions to the Board on the extant regulations and proposed regulations, including measures for easing compliance burden.

Electronic engagement

To ensure that engagement forum or feedback mechanism remains accessible to all regulated entities throughout the year, the IBBI engages with them electronically. The following electronic means are utilised for this:

(a) Comments on Proposed Regulations: The IBBI obtains comments of the public, through an electronic platform on its website, on proposed regulations or proposals in discussion papers, regulation and sub-regulation-wise.

(b) Suggestions on the Extant Regulations: The IBBI has a standing arrangement (electronic platform on its website) to receive suggestions from public, including the stakeholders and the regulated, on the extant regulations on a continuous basis. These comments/suggestions are processed together and following the specified process, regulations are further modified to the extent considered necessary.

(c) General Feedback: The IBBI receives general feedback on various provisions of the Code, rules and regulations, including compliance burden through a dedicated email (feedback@ibbi.gov.in).

3. Evaluation of regulatory performance

(i) Third-party external evaluation

In 2021, the IBBI while deliberating on the theme, '*Reimagining IBBI as a regulator in an evolving insolvency landscape*', decided to, unilaterally and proactively, assess its regulatory performance as distinct from the Insolvency and Bankruptcy Code, 2016 (Code). In this regard, the Board engaged the Investor Education and Protection Fund Chair Unit at the National Council of Applied Economic Research (NCAER) to undertake a third-party evaluation of the performance of the IBBI. The NCAER evaluated the performance of the Board in 2021 and submitted its final report titled '*Evaluation of*

Regulatory Performance of the Insolvency and Bankruptcy Board of India' on December 29, 2021.

The report laid down the following performance evaluation framework to assess IBBI's performance as a regulator, distinct from the Code:

(i) Pillar I - Governance: The governance arrangements of the regulator, including its organisational structure, standards of behaviour, accountability and transparency measures, levels of outreach and engagement, and quality of output were assessed. These parameters were grouped under *three* broad heads:

(a) Conduct of the Governing Board
(b) Responsiveness
(c) Quality of output

(ii) Pillar II - Fulfilment of statutory powers and functions*:* The functions of the regulator, as laid down in the establishing legislation, are to be fulfilled. In such pursuit, it is expected that the regulator will develop high-quality processes and procedures. The statutory powers and functions of the IBBI were grouped under *three* broad heads (below), and the quality of processes/procedures deployed to fulfil them were evaluated:

(a) Executive functions
(b) Quasi-legislative functions
(c) Quasi-judicial functions

(iii) Resource Availability - The availability of resources (human resources, financial resources and use of technology) with the IBBI were evaluated.

(iv) Stakeholders' perception of the IBBI - Stakeholders' perception of the regulator were also documented in the report with recommendation to further improve performance.

Summarising, the report developed a set of 97 performance indicators to reflect whether (i) statutorily required actions were being fulfilled, and (ii) if the rule of law, including good regulatory practices, were being met. The results of the evaluation

indicated that in case of Governance under Pillar I, out of 25 indicators, IBBI was rated as *'Excellent'* in respect of 17 and in the context of fulfilment of statutory powers and functions under Pillar II, out of 72 indicators IBBI was rated '*Excellent*' in respect of 58 indicators.

The report is available in the public domain on IBBI website.

(ii) Internal Evaluation

As a step towards strengthening review mechanisms, the Governing Board (GB) of IBBI devised a Self-Evaluation Questionnaire to evaluate its performance on a yearly basis. It is broadly done on three dimensions:

(a) Board Composition and Quality, which cover aspects such as expertise and experience of Board Members, strategy to achieve the laid down objectives, quality of debate and discussion in its meetings and its engagement with stakeholders;

(b) Board Meetings and Procedures, which cover aspects such as regularity and frequency of Board meetings, accuracy of minutes, amount of time spent on strategic and important matters and follow up on actions arising from Board meetings; and

(c) Board Functions and Development, which include aspects such as integrity of accounting and financial reporting, promoting transparency and good governance and open channels of communication with the top management.

The GB has been undertaking its self-evaluation yearly since 2018-19 and has been reporting the same in its annual report.

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WEST BENGAL ELECTRICITY REGULATORY COMMISSION (WBERC)

Best Practices

BEST PRACTICES IN ELECTRICITY REGULATORY SECTOR

1. REGULATION FRAMING PROCEDURE:

- Regulatory requirements are identified to enhance operational efficiency, implementing provision of Rules and to deal with the market externalities.

- Internal presentations are made before the Commission highlighting the best practices across the sector and how the proposed regulation (s) is expected to solve the issue considering the sector specific constraints.

- Draft Regulations and Explanatory memorandum are placed before the Commission for approval

- The Draft Regulations and Explanatory Memorandum are published in the website of the Commission with notice in widely circulated newspapers seeking suggestions/ objections/ comments from the stakeholders and public.

- All the suggestions / objections received within the specified timeline are considered and analyzed while finalizing the Regulations. Presentations are made before the Commission. A detailed Statement of Reasons (SOR) is prepared duly mentioning the suggestions/ objections received and the observation/ analysis of the Commission to arrive at certain decision.

- The finalized Regulations and the Statement of Reasons are placed before the Commission for approval.

- The approved Regulations are notified through Gazette and uploaded in the website of the Commission. The Statement of Reasons (SOR) are also uploaded in the website of the Commission.

- The notified regulations are laid before the House of State Legislature.

2. GRIEVANCE REDRESSAL MECHANISM:-

- A two tired grievance redressal system to address the grievance of the consumers are constituted in terms of section 42 of the Electricity Act 2003.

- Tire 1: 'Grievance Redressal Forum'
  Each Distribution licensee constitute 'Grievance Redressal Forum' at each sub-district/district/region/zone and at least one Central Grievance redressal officer at the distribution licensee's corporate headquarter.

- Tire -2: 'Ombudsman'
  The Commission appoints Ombudsman to settle the grievance of the consumers, when they are not satisfied with the decision of 'Grievance Redressal Forum'.

- Consumer first apply before the Grievance Redressal Forum and if still not satisfied or his/her grievance is not addressed, they made appeal before the Ombudsman.

- Working procedure of Grievance Redressal Forum and Ombudsman are specified in the Regulations in detail. A gist of procedure and name & address of Grievance Redressal Officers and Ombudsman are to be displays in the bill payment centers and offices of Distribution licensees

- Ombudsman submits monthly, quarterly, half yearly and annual report to the Commission highlighting the nature of grievances, settlement status, etc.

MAHARASHTRA ELECTRICITY REGULATORY COMMISSION (MERC)

Best Practices

Best Practices adopted in Maharashtra Electricity Regulatory Commission

1. E-Hearing:

To overcome restriction of lockdown imposed on account of Covid-19, the Commission has conducted 1st E-Hearing on 14 May 2020. Since then, 1000 plus e-hearing including Public Hearings on Tariff matter has been conducted through e-hearing platform. Concept of test run / trial run for participant being conducted a day or two before the scheduled e-hearing enable smooth and hassle-free e-hearing. It helps save time and resources of all stakeholders for attending physical hearings. Also, these e-hearings are live streamed through link uploaded on MERC website which enables any person to witness these e hearings on their mobile/laptop/computer from comfort of their premises. **Considering the benefits of e-hearing, the Commission in its updated Transaction of Business Regulations 2022 has made e-hearing as default option** with provision for physical hearing if any party request for the same.

2. E-filing:

E-filing portal, which enabled filing of Petition in digital format, was finally launched on 15 August 2021 after mock trials by involving all stakeholders. A total of 721 users (Organizations – 278, Individuals- 262, Employee – 85 and Advocates – 96) have been registered on this portal who can file / access documents related to them digitally. Initially, digital filing was made parallel with physical copy. **With ease of access and positive feedback from stakeholder Transaction of Business Regulations 2022 have made digital filing as an only option. No hard copy is required to be filed.**

E-Hearing/E-filing initiatives and converting it into mandatory process has not only saved resources and time of stakeholders but also improved transparency and effective participation of large number of consumers from ease of their premises. This helps the Commission to reach upto doorstep of consumers.

3. MYT Regime

Multi Year Tariff Regulations 2019 was notified on 1 August 2019. It is applicable for the 4th Control Period from FY 2020-21 to FY 2024-25. Some of key/new features included in the MYT Regulations are as follows:

a. While the Commission has maintained the overall RoE (15%/16%) for the utilities as was stipulated in 2015 Regulations, in order to commit from utilities better quality of supply, Commission has divided admissible RoE into Base RoE and a performance based Additional RoE on achievement of norms prescribed by Commission.

b. Monthly fixed cost recovery of generating stations divided into peak hours and off peak hours. Recovery allowed separately for High Demand Season and Low demand Season to be specified by SLDC.

c. Generating company is mandated to submit annual fuel utilization plan to ensure generation from full capacity of least cost Plants.

d. Instead of owning an asset, service model is being allowed through Opex to infuse latest technologies. While the utilities would get benefit of the services for efficiency gains, the associated cost of capitalization would be saved.

e. It has been made mandatory that at least 20% of O&M Expenses would have to be incurred on Repairs and Maintenance if approved O&M costs are to be claimed. Utilities cannot use this amount for establishment or other Expenses.

f. In addition to audited Account, submission of Cost Audit Report is made mandatory. The provision aligns with that of Company Law and would assist in checking prudency of expenses and inventory management.

4. As Billed GCV for Energy Charge computation:

Generating company pays to Coal Companies based on billed GCV of coal which is much higher than received GCV of coal. Credit note is given by Coal companies for proven grade slippage in billed coal. So, instead of allowing all grade slippage as cost pass

through to tariff, Commission has shifted from 'as received' coal GCV to 'as billed' GCV after providing for a band of 300 kCal/kg (which is relax to 650 kCal/ke after considering practical issues) for compensating generators for statistical errors in computing coal quantity based on billed GCV.

5. Deviation and Settlement mechanism

In Maharashtra, FBSM (Final Balancing and Settlement Mechanism) was in operation since 1 August 2011 as State-wise energy settlement mechanism. Under said mechanism, centralised Merit Oder Despatch was to be followed. Generators was not pool participants and said mechanism was not inline with national level mechanism.

The said mechanism was replaced by DSM Mechanism w.e.f. 11 October 2021 when the commercial implementation of the DSM Regulations began. Objective of these Regulations is to maintain grid discipline and grid security as envisaged under the Grid Code through commercial mechanism for Deviation Settlement through drawal and injection of electricity by the users of the grid. This DSM mechanism is consistent with CERC's DSM mechanism.

14 buyers and 47 sellers have been registered under the DSM Regulations. Bills are being issued on weekly basis in regular manner.

6. RE Forecasting & Scheduling

Wind and Solar Generators are having must run status but are intermittent source of generation as it depends on nature. Infirm nature of these sources poses challenges to manage the grid. MERC RE F&S Regulations have been notified in the State on the similar lines of CERC Regulations with an objective to facilitate Grid integration of Wind and Solar energy generated in Maharashtra while maintaining Grid stability and security.

Wind and Solar generator connected through pooling station or directly connected to grid with capacity of 5 MW and above are covered by this Regulations. Around 139 PSS and 8142 MW is covered under the RE F&S framework. The details are given below:

Transmission Level	Pooling Sub Station	Capacity (MW)

Wind	51 nos.	4261 MW
Solar	49 nos.	2744 MW
Hybrid	5 nos.	810 MW
Total	**105 nos.**	**7816 MW**
Distribution Level		
Wind	25	245
Solar	9	81
Total	**34**	**326**

94% of the RE plants are integrated at SLDC, however, intermittent real time visibility is an issue particularly for remote RE plant sites (availability of around 65% RE plants for visibility). RE generators have been reasonably managing their deviations within +/-15 % band allowed (where no deviation charges are payable). There is a need to revise the deviation band for these generators.

These generators are required to be brought under a Scheduled based payment regime to avoid deviation impact on the contracted distribution licensees.

7. Green Tariff

The Commission determined Green Power Tariff for the consumers opting for meeting its 100% of power requirement through RE sources in the Case No. 134 of 2020 dated 22 March 2021, which is stipulated as Rs 0.66 per kWh.

As the concept is still at nascent stage with limited participation, in MTR order dated 31 March 2023, the Commission continued the Green Tariff of Rs 0.66/kWh for remaining period of 4th Control Period (i.e. FY 2023- 24 and FY 2024-25).
Green tariff which is optional for consumer charged over and above the retail tariff.

8. Supply Code, SoP and Power Quality Regulations

These Regulations deals with the practical day to day operations of the Distribution Licensee and customer service matters. It lays down procedure to be followed, timeline for each activity and compensation for delay/ deficit in services. The Commission has notified MERC (Electricity Supply Code and Standards of Performance of Distribution Licensees, including Power Quality) Regulations, 2021. Salient feature of this Regulations are as follows:

a) Digital Transformation of the Distribution Licensees: The Regulations have been framed with an intent to increase Consumer awareness and transparency through automation and digitisation with an objective to achieve better, efficient and high-quality services to Consumers. All consumer related services (filing of application, submitting document, payment of fees, tracking of application status etc.) are to be made available through online mode.

b) Minimum Requirement of number of documents for releasing new connection: Requirement of number of documents have been kept minimal i.e. proof of identity and proof of ownership/occupancy required for releasing new connection. The option of availing e-KYC facility is also provided to the consumers.

c) Timelines for release of new connections: Timeline for processing the application for release of new connections have been stipulated. Further, Timelines for providing various services to consumers such as release of new connection, name change, load change etc. have been stipulated along with rate of compensation which Distribution Licensee has to pay to concerned consumer for delay in service.

d) Automatic Compensation and rationalisation of compensation amount for delay in service: Automatic Compensation under which Distribution Licensee on its own shall compensate to consumer for delay in service/for violation of Standards of Performance for all the parameters has been introduced. In case Distribution Licensee fails to pay such automatic compensation and consumer has to approach to the Forum/Ombudsman, then Licensee has to pay twice the applicable compensation amount specified in the Regulations. The amount of automatic compensation to be paid by Distribution Licensee to the honest and paying customers has rationalised and the compensation for restoration of supply is capped to the amount of fixed charges payable by consumer during the month.

e) Automated system for computation of Reliability Indices: To improve the transparency of reliability data and to avoid any manual intervention for computation, Distribution Licensees are required to make provision for automation so that feeder interruption data is collected through the automated system for computation of

Reliability Indices.

f) Meter reading through Smart Meter: All new connections or existing meters to be replaced shall be done only by Smart Meter or Meter having remote meter reading facility. This will help in generating energy bill based on actual meter reading.

g) Submission of Meter reading through Mobile Application/Email: The low voltage consumer shall have the option to provide the Meter reading to the Distribution Licensee through Mobile App (through registered mobile number) or through e-mail whenever the Distribution Licensee is unable to take meter readings of the Consumer due to door lock or such other situations.

h) Promotion of bill payment through Digital Mode: To promote digital means of payment, which not only reduces cash transactions, but would also serve to reduce the operational costs of the Distribution Licensees in setting up and manning collection centres, cash payment of bills shall be restricted to Rs. 5,000/- and the same shall be reviewed time to time by the Commission.

i) Communication through Digital Mode: The Commission has permitted all the digital mode of communication, SMS, e-mail, Whatsapp etc between the licensee and the consumer with responsibility cast upon the licensee that communication is complete.

j) Provision for Monitoring Power Quality parameters:

i. The Commission has introduced comprehensive set of provisions for monitoring Power Quality (PQ) considering the importance of ensuring quality of power supply to consumers as per specified standards.

ii. To have effective monitoring of power quality parameters and sharing of data between the stakeholders i.e. the Licensee, Consumer and the Regulator, the licensee needs to establish a central data base for all the PQ meters installed through effective communication channel and share the relevant data online by giving access to central data base.

9. CGRF Regulations:

The Regulations have been framed such that the process of grievance redressal is simplified, and consumers get speedy redressal for their grievances with greater focus on consumer awareness and consumer advocacy. Salient feature of these Regulations are as follows:

a) **Internal Complaint Redressal System:** Earlier Regulations requires mandatory filing of grievance before Internal Grievance Redressal Cell (IGRC) and then to CGRF. Experience shows that IGRC is not effective and causing delay in resolving consumer grievance. Therefore, in new Regulations, the Commission has abolished the IGRC by providing a better alternative through Internal Complaint Redressal System. **The Internal Complaint Redressal System, which is a web-based portal to be created by each Licensee,** is to be integrated with the complaint handling system through the Consumer Call Centres, which will be helpful to the consumers for redressal of their grievance. The mandatory feature of this web-based portal will be the auto generated complaint number and the date and time of the complaint. The Consumer have now been given choice to directly approach the CGRF for any complaint/grievance.

b) **Facility of conducting E-Hearings:** The facility of conducting Hearings through videoconferencing has been enabled for Cases at CGRF and Electricity Ombudsman level, in case the consumer has access to such facilities and he opts for the same. This will ensure that the consumer does not have to travel to the office of the CGRF or Electricity Ombudsman to get redressal for his grievance.

c) **The Time limit for deciding the cases by the Forum:** Time limit has been specified for deciding the cases by the Forum. Priority has been given to cases related to disconnection/new connection/re-connection/non-supply, which shall be disposed of within 15 working days from the date of registering the grievance. (Against the general time limit of 60 days for other cases)

d) **Consumer Satisfaction Survey:** The Distribution Licensees is now required to

undertake a Consumer Satisfaction Survey, once in every two (2) years, through an independent third party agency, which shall address parameters related to power quality, service, billing and payment, information availability, and complaint handling.

10. Promoting Distributed RE:

a. Rooftop RE installation upto 5 MW is allowed under Net-metering arrangement.

b. Group Metering provisions wherein surplus energy from rooftop installation can be utilized at other premises of same entity is allowed.

c. Regulation is being amended to provide for virtual net-metering wherein consumer who do not have roof or vacant space for installation of RE plant in its premises may opt for setting up of RE plant at other location and consume such energy through Open Access.

11. Green Hydrogen/Green Ammonia production **is being promoted** by granting exemption from cross-subsidy surcharge, additional surcharge and transmission charges for sourcing green energy through Open Access.

12. Enablement of Green Energy Open Access: The Commission has notified the MERC (Distribution Open Access) (Second Amendment) Regulations, 2023 on 10 November 2023 and enabled Green Energy Open Access. Highlights of Regulations are as follows:

a. The Consumers having Contract Demand or Sanctioned Load of 100 kW or more, or Entity through multiple connections aggregating 100 kW or more located in same electricity circle of a Distribution Licensee, shall be eligible to take power from Green Energy through Open Access.

b. There shall be no limit of supply of power for the captive consumers taking power under Green Energy Open Access.

c. Green Energy Open Access consumers shall not change the quantum of power consumed through open access for at least twelve-time blocks.

d. After meeting eligibility criteria under Green Open Access, Consumer having Roof Top Renewable Energy Generating Systems can simultaneously avail Open Access.

e. For Short-Term Green Energy Open Access, Maharashtra State Load Despatch Centre (MSLDC) and for Medium / Long Term Green Energy Open Access, the State Transmission Utility (STU) shall perform duties of Nodal Agency as stipulated in the procedure framed by Central Nodal Agency.

13. Revision in RPO trajectory:

a. On 23 February 2024, MERC notified its RPO Amendment Regulations, 2024 and following RPO Trajectory has been specified:

Year	Wind renewable energy	HPO renewable energy	Distributed renewable energy	Other renewable energy	Total renewable energy
2024-25	0.67%	0.38%	1.50%	27.35%	29.91%
2025-26	1.45%	1.22%	2.10%	28.24%	33.01%
2026-27	1.97%	1.34%	2.70%	29.94%	35.95%
2027-28	2.45%	1.42%	3.30%	31.64%	38.81%
2028-29	2.95%	1.42%	3.90%	33.10%	41.36%
2029-30	3.48%	1.33%	4.50%	34.02%	43.33%

- Wind RPO – RPO that shall be met by energy produced from Wind Power Projects (WPPs) commissioned after 31st March 2024.

- HPO – energy produced from all Hydro Projects (including Pumped Storage Projects (PSPs) and Small Hydro Projects (SHPs)) commissioned on and after 31March 2024.

- Distributed RE: shall be met only from the energy generated from renewable energy projects that are less than 10 MW in size and shall include solar installations under all configurations (net metering, gross metering, virtual net metering, group net

metering, behind the meter installations and any other configuration)

- Other RPO - RPO that may be met by energy produced from any Renewable Energy project not covered above.

b. MERC in its RPO amendment Regulations has recognized the Storage obligation as below:

Year	Storage (on Energy basis)
2024-25	1.5%
2025-26	2.0%
2026-27	2.5%
2027-28	3.0%
2028-29	3.5%
2029-30	4.0%

c. Penal Mechanism for non-compliance of RPO target:

- The Distribution Licensee shall be subjected to reduction in Aggregate Revenue Requirement at a rate of Rs. 0.10 per kWh for cumulative shortfall in total RE procurement target.
- Other Obligated Entities (CPP & OA consumers) shall be subjected to penalty of Rs. 0.10 per kWh for cumulative shortfall in total RE procurement target for each year.

14. Scrutiny and approval of the Capital Investments by the Licensees:

MERC has notified the MERC (Approval of Capital Investment Schemes) Regulations, 2022 (Capex Regulations 2022) on 12 July 2022. The prime objective is to have prudent check on the necessary investment and protect the consumer from unwanted burden. The Capex Regulations, 2022 provides that Schemes of a value exceeding Rupees Twenty-five crore shall be submitted to the Commission for in-principle approval.