



# REGULATORY DIGEST

JULY - SEPTEMBER, 2024

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Message from Chairperson, AERA



Dear esteemed readers,

It is with great pleasure to connect with you through the July-September (2024-25) edition of the FOIR Quarterly e-Newsletter. This platform serves as an essential medium for sharing updates, fostering connections, and celebrating our shared achievements. I would like to express my sincere gratitude to FOIR for its unwavering dedication to representing our shared regulatory interests and for its significant contributions to fostering a favourable regulatory environment. Like other modes of transport, the aviation industry plays a pivotal role in today's global economy by connecting nations and facilitating the growth of business, trade, and tourism, with substantial multiplier effects.

The Indian aviation sector is a complex ecosystem comprising multiple, interconnected commercial functions, including airports, airlines, cargo, ground handling, fuel supply, safety, security, and emerging green energy initiatives. Civil Aviation in India experienced an unprecedented growth in the last one decade and has emerged as one of the fastest growing sectors in the country. The airport network in India has witnessed a remarkable transformation, doubling its operational airports from 74 in 2014 to 157 in 2024, facilitating increased air travel accessibility. Similarly, the air passengers traffic grew from 190 million in FY 2014-15 to 341 million in FY 2019-20, at a CAGR of 12.5%, and after the covid impact it has now crossed the figures of 376 million in FY 2023-24. The passenger handling capacity of airports is also likely to double in the next decade to cater to the current and future air traffic growth in India. This dynamic shift has propelled India to the forefront of the global Aviation ecosystem, becoming the third largest domestic aviation market in the world.

Given the fact that the airports serve as a necessary public utility, the **Airports Economic Regulatory Authority of India (AERA)**, established under the AERA Act, 2008, inter-alia, determines the tariff for the aeronautical services and functions as an independent economic regulator in respect of Major Airports. While it aims to create a level playing field and foster healthy competition amongst all major airports to encourage investment in airport facilities, it ensures transparency and impartiality in its tariff determination process and adheres to key regulatory principles as advocated by the **International Civil Aviation Organization (ICAO)** for the economic oversight of airports, such as transparency, cost-relatedness, non-discrimination, and consultation with users.

Since its inception, the FOIR Centre at IICA has played a pivotal role in uniting policymakers, regulators, and industry experts for meaningful discussions on the development of regulatory and infrastructure sectors. The recent '**FOIR Working Group Report on Inter-Regulator Cooperation**' underscored the importance of aligning with sustainable growth initiatives. In this challenging and competitive world, while each regulator carefully navigates the path of national development, their collaborative efforts in addressing overlapping issues will pave the way for the realization of '**Vikshit Bharat@2047**'—a vision that we all aspire to, with benefits extending beyond our borders.

I look forward to our continued collaboration and the progress we will achieve together.

Best Regards,

(S K G Rahate)

## From the Editor's Desk



Dear readers,

As we celebrate the **78th Independence Day**, the call for a **Uniform Civil Code (UCC)** has become more relevant than ever. While discussions have spanned decades, it is now being recognized as the "**need of the hour**" to create a truly secular and non-discriminatory civil code for our nation. Simultaneously, the "**One District One Product**" initiative has gained significant traction, with districts across the country focusing on promoting unique local products, driving both economic growth and regional identity.

The **2024 Paris Paralympics** stands as a milestone in India's Paralympic history, marking our most successful performance to date. This achievement is a testament to the resilience, talent, and determination of India's para-athletes, alongside the nation's growing commitment to inclusivity in sports. It also embodies our broader vision of a **developed India by 2047**, reflecting the government's dedication to transforming the country.

With a new era on the horizon, the Forum of Indian Regulators (FOIR) is committed to realizing the vision of **Viksit Bharat@2047** by advancing India's regulatory landscape. In this edition, we bring you a curated selection of regulatory news and events, catering to the diverse interests of our esteemed readers.

The FOIR members' updates include IBBI's Third International Research Conference on **Insolvency and Bankruptcy**, introduction of draft **Tariff Determination Regulations for Renewable Energy** by CERC, introduction of PNGRB's **New Tariff Regulations for Petroleum Product Pipelines**, TRAI's meeting with **Access Service Providers and Telemarketers on Unsolicited Calls**, CCI's approval for **Reliance and Disney Merger**, FSSAI's study on **Microplastic Contamination in Food** etc.

Internationally, this edition includes the China's Swift Expansion of **Renewable Energy Strains Power Grid Capacity**, Vietnam plan to Buy Excess **Rooftop Solar Power**, China's Guidelines on **Green Power Trading**, **Japan's 70 MOUs on Energy Transition** at Asia Zero Emission Community (AZEC) Meeting, Uganda's upcoming initiative to **Issue New Oil Exploration Licenses in 2025-2026** etc.

During this quarter, the 57th Governing Body Meeting (GBM) of the Forum of Indian Regulators (FOIR) was held at New Delhi with active participation from the FOIR Centre at IICA, wherein the Working Group Report on "**Inter- Regulator Cooperation**" was presented and approved. Additionally, the FOIR Centre organized a webinar on "**Unveiling Insights: Exploring the Impact of IBC on the Electricity Sector**" with expert speaker **Shri Sudhaker Shukla** (*Whole Time Member, Insolvency and Bankruptcy Board of India IBBI*),

*Prof Naveen Sirohi*

**Prof (Dr) Naveen Sirohi**

Director, FOIR Centre and Founding Head, School of Finance & Management  
Indian Institute of Corporate Affairs

## Regulatory News & Trends - FOIR Members

### Insolvency and Bankruptcy Board of India (IBBI) organised the Third International Research Conference on Insolvency and Bankruptcy

The IBBI organised the third International Research Conference on Insolvency and Bankruptcy jointly with the the Indian School of Business (ISB), Hyderabad, at the ISB campus on July 2-3, 2024 . The conference was inaugurated by **Shri Ramalingam Sudhakar** (*President, National Company Law Tribunal*). **Shri Ravi Mital** (*Chairperson, IBBI*), **Prof Sanjay Kallapur** (*Professor, ISB*), **Prof Hariom Manchiraju** (*Professor, ISB*), **Mr Paul Bannister** (*Head of Policy, Insolvency Services, UK*) also delivered the key note address. The event brought together leading experts from banking, industry, law, research, and academia, both from India and abroad. They convened to discuss a diverse array of current and emerging issues within the field of insolvency and bankruptcy

The conference offered a unique opportunity to listen to thought leaders and policy makers in the two panel discussions planned in addition to around 26 research paper presentations. The panel discussions were based on **‘Investment in Distressed Assets: The Road Ahead’** & **‘Need for Speed: Fast tracking IBC’**. These panel discussions offered knowledge and thought leadership of the leading luminaries from Government, industry, legal practitioners and academicians to assess and understand the present and also to help set course for the future for the insolvency regime in India. Research paper namely, **‘Effect of a Creditor Rights Reform on Contagion Risk’** was awarded the best paper award.

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### Central Energy Regulatory Commission (CERC) notified Amendment to its Regulations for Connectivity and General Network Access to the Inter-State Transmission System (ISTS)

The CERC issued a second amendment to its Principal Regulation (PR) namely the CERC (Connectivity and General Network Access to the inter-State Transmission System) Regulations, 2022. The amendment, to be effective from July 15, 2024, makes several procedural changes pertaining to grant of permission for connectivity to the ISTS. Notably, the definition of **‘Renewable Energy Implementing Agency’ (REIA)** is introduced in the amendment to bring it under the purview of the PR. REIA acts as an intermediate procurement agency for power generated from renewable energy sources and resells the same to distribution licensees.

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## Mobile Number Portability Requests Surpass 1 Billion in India

According to the Telecom Regulatory Authority of India (TRAI), since its introduction on January 20, 2011, Mobile Number Portability (MNP) requests in India have crossed the remarkable 1 billion mark. MNP enables telecom users to retain their mobile numbers while switching between service providers across the country and serves as a key indicator of subscriber churn among telecom operators. As per TRAI, around **11 million MNP** requests are processed monthly, with May 2024 alone seeing 12 million requests submitted, as reported in the latest telecom subscription data released on July 31, 2024.

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## Petroleum and Natural Gas Regulatory Board (PNGRB) introduced New Tariff Regulations for Petroleum Product Pipelines

The PNGRB has announced new regulations for **determining transportation tariffs for petroleum product pipelines**, effective from August 1, 2024. Unlike earlier tariffs based on railway freight, the new framework introduces independent yardsticks. For pipelines commissioned before December 20, 2010, tariffs will be based on 75% of railway freight, with Liquefied Petroleum Gas (LPG) at 100%, and will include a 17% escalation, followed by annual increases from April 2025. For pipelines commissioned after 2010, and for bid-out pipelines after their first 10 years, tariffs will follow a discounted cash flow (DCF) model with 12% returns. This reform is aimed at boosting pipeline infrastructure, reducing road congestion, and providing a more economical and sustainable alternative for petroleum transportation in line with India's Vision 2070.

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## Insolvency and Bankruptcy Board of India (IBBI) hosted Conclave for Resolution Applicants

The IBBI held a '**Conclave for Resolution Applicants**' on August 5, 2024, at the India International Centre, New Delhi. The event recognized the vital role of resolution applicants in implementing the Insolvency and Bankruptcy Code (IBC), 2016 and aimed to address their concerns while strengthening the existing insolvency framework. **Shri Ravi Mital** (*Chairperson, IBBI*) highlighted the importance of discussing key issues to enhance the resolution process. The conclave featured discussions on best practices, success stories, and challenges in the submission and implementation of resolution plans, offering valuable insights to all stakeholders.

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## Telecom Regulatory Authority of India (TRAI) held Meetings with Access Service Providers and Telemarketers on Unsolicited Calls

TRAI on August 6, 2024 held a meeting with Access Service Providers and Telemarketers to address rising consumer complaints about spam calls. Key issues discussed included misuse of headers and content templates, tracing responsible entities, and controlling promotional calls like robo-calls and pre-recorded messages. TRAI emphasized the need for proactive measures, including technical solutions, to prevent bulk calls using 10-digit numbers via Primary Rate Interface/Session Initiating Protocol and urged service providers to take immediate action to curb unsolicited communications.

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## Competition Commission of India (CCI) approved Reliance and Disney Merger

The CCI has approved the \$8.5-billion merger between Disney Star and Reliance-controlled Viacom18, with some voluntary modifications. This creates one of India's largest media networks, combining major TV channels, sports assets, and streaming platforms like JioCinema and Hotstar, with a combined market share exceeding 40% in several regions. Reliance will hold 56% of the merged entity, Disney 36.84%, and Bodhi Tree 7.5%. **Mrs Nita M. Ambani** (*Director, Reliance Industries Limited*) will serve as chairperson, with **Mr Uday Shankar** (*Board Member and Director, Viacom 18*) as vice-chairperson, as the companies move toward full integration by October, 2024.

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## Food Safety and Standards Authority of India (FSSAI) launched Project to address Microplastic Contamination in Food

The FSSAI has launched a project to address microplastic contamination in food on August 18, 2024. Initiated in March, 2024, the project aims to develop methods for detecting micro- and nano-plastics in food and assess their prevalence in India. In collaboration with top research institutions like Council of Scientific & Industrial Research - Indian Institute of Toxicology Research (CSIR-IITR), Indian Council of Agricultural Research - Central Institute of Fisheries Technology (ICAR-CIFT), and Birla Institute of Technology And Science (BITS) Pilani, the study will establish protocols and generate data on consumer exposure to microplastics. This research will inform regulatory actions and contribute to the global understanding of microplastic contamination in food.

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## Telecom Regulatory Authority of India (TRAI) released Recommendations on the Framework for Service Authorizations to be Granted under the Telecommunications Act, 2023

The TRAI has released its recommendations on the '**Framework for Service Authorisations to be Granted Under the Telecommunications Act, 2023**' on September 18, 2024. Following extensive stakeholder input, including comments from 48 stakeholders and counter comments from 17, TRAI conducted a virtual Open House Discussion on August 21, 2024, with over 250 participants. Based on this input and its own analysis, TRAI's recommendations propose a major revamp of the telecom service licensing regime, aimed at fostering growth and simplifying the ease of doing business in the sector.

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## Petroleum and Natural Gas Regulatory Board (PNGRB) formed Committee to Enhance Competition in Natural Gas Sector

The PNGRB has established a high-level committee, led by **Shri Ajay Tyagi** (*Former Chairman, Securities and Exchange Board of India*) to analyze global practices related to the separation of transportation and marketing activities in the natural gas sector. The committee's main objective is to assess the current landscape in India and recommend measures to promote competition, particularly addressing issues of exclusivity for city gas distribution companies. The panel includes experts such as **Mr A K Purwaha** (*Former CMD, Engineers India*) and **Mr Shaleen Sharma** (*Former MD, British Gas India*). Key deliverables will include strategies for implementing separation practices and revising the exclusivity framework in the city gas distribution sector.

The committee will conduct a comprehensive review of international practices, evaluate the existing regulatory framework, and analyze the impact of separation on market competition and consumer welfare. Their findings and recommendations are expected by December 10, 2024, aiming to create a balanced approach that benefits both consumers and authorized entities.

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## Regulatory News & Trends - International

### China's Swift Expansion of Renewable Energy Strains Power Grid Capacity

China's rapid expansion of wind and solar capacity has intensified regional power imbalances, leading to increased curtailment of renewable energy when local consumption is overwhelmed. To address this, new government regulations aim to enhance long-distance transmission links and improve coordination of generation plans across provinces. Since 2018, China has added 1.137 billion kilowatt of total generating capacity, with most growth coming from wind (277 million kW) and solar (517 million kW). As intermittent renewables grow, China is working to improve grid management by spreading generation over larger areas and better scheduling power flows.

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### Vietnam to Buy Excess Rooftop Solar Power

Vietnam's power grid operator, Vietnam Electricity EVN, plans to purchase excess energy from rooftop solar panels on homes and offices. **Mr Tran Hong Ha** (*Deputy Prime Minister, Vietnam*) has instructed the Ministry of Industry and Trade to establish a plan for this initiative, aiming for a purchase volume of up to 10%. The proposed rate for this excess power is 671 dong (about \$0.0264) per kWh, significantly lower than what EVN pays for solar farm electricity.

By 2030, Vietnam aims for 50% of its buildings to be powered by rooftop solar, tapping into its potential of 963 gigawatts (GW). Currently, there are 103,000 rooftop solar projects with a combined capacity of 9.5 GW. Additionally, a new decree allows factories to directly purchase electricity from renewable sources via Direct Power Purchase Agreements.

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### China issues Guidelines on Green Power Trading

China has issued new guidelines for medium- and long-term green power trading, promoting a market-based approach. The guidelines also aim to facilitate participation from export-oriented businesses. However, the international recognition of China's green certificates is still uncertain. The guidelines encompass various renewable sources, including wind, solar, hydro, and geothermal power, as China aims to reform its power sector and create a unified national spot market by 2030, with most transactions currently based on medium- and long-term contracts.

The National Development and Reform Commission (NDRC) and the National Energy Administration (NEA) have established a pricing mechanism that combines electricity prices with the cost of green certificates—tradable assets for 1,000 kilowatt-hours (kWh) of renewable energy. Transactions will have no price limits unless specified by the state, and the trading should not disguise price reductions. The initiative seeks to boost green electricity consumption, reduce subsidy reliance, and standardize trading across regions. Since 2021, pilot programs in Beijing, Guangzhou, and Inner Mongolia have resulted in a 283% increase in transactions, totaling 69.7 billion kWh traded—about 1% of China's electricity consumption last year.

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## Japan Signs 70 MOUs on Energy Transition at Asia Zero Emission Community (AZEC) Meeting

Japan signed 70 memorandums of understanding (MOUs) on energy transition during the AZEC ministerial meeting in Jakarta. Proposed by **Mr Fumio Kishida** (*Prime Minister, Japan*) in 2022 and launched in 2023 with 11 partner countries, AZEC aims to promote decarbonization and cooperation in Asia.

**Mr Ken Saito** (*Minister of Economy, Trade and Investment*), announced that \$1 billion has been allocated for 14 of the projects through a global South support scheme. The initiative focuses on creating a sustainable fuel market for transportation and enhancing regional power grids while investing in new energy sources like hydrogen and ammonia. One notable MOU includes a collaboration with Toyota Tsusho to develop biofuels and green hydrogen with Indonesia's Pertamina (Indonesian state-owned oil and natural gas corporation). The complete list of MOUs signed has yet to be released.

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## World Aquatics Faces US Antitrust Lawsuits

A U.S. appeals court has ruled that a group of professional swimmers and the International Swimming League (ISL) can proceed with antitrust lawsuits against World Aquatics (currently oversees competition in six aquatics sports). The 9th U.S. Circuit Court of Appeals determined that the groups presented sufficient allegations to advance their cases, overturning a lower court's dismissal.

The swimmers and ISL claim that World Aquatics unlawfully boycotted the league's efforts to enter the professional swimming market in 2017. Top swimmers expressed concerns about potential sanctions, including loss of Olympic eligibility, for participating in ISL events. Their lawsuits challenge a World Aquatics rule that imposed penalties for engaging with the ISL, which they argue has hindered the league's ability to attract elite talent.

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## Uganda to Issue New Oil Exploration Licenses in 2025-2026

According to **Mr Matia Kasaija** (*Finance Minister, Uganda*) stated that Uganda plans to issue new oil and gas exploration licenses in the 2025-2026 fiscal year to attract investments and support economic growth. The last licensing round concluded in early 2023, awarding the final two of five blocks. Mr Kasaija emphasized that boosting investments in the Oil and Gas Sector is crucial for Uganda's economic development. The government aims to increase production volumes by issuing additional exploration licenses. Uganda is set to begin commercial oil production next year from existing fields in the Albertine Graben basin, where approximately 40% area remains unexplored and an estimated 6.5 billion barrels of oil have been discovered.

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## Article - Need for development of Pump Storage Hydro Power Projects – Policy Initiatives



**Mr Ashok Upadhyay**  
*Deputy Director (Generation)*  
*Madhya Pradesh Electricity Regulatory Commission*

### Introduction:

Energy Transition entails increasing presence of variable and intermittent Renewable Energy (RE) Sources like solar & wind in the energy mix. This occurred a grid-level challenges for stability & reliability and need for addressing the temporal considerations in power availability. Government of India has set an ambitious target to have generation of about 500 Gigawatt (GW) by 2030 from renewable energy sources. Also, our country has to achieve net zero emission by 2070. For smooth integration of increased share of infirm renewable energy and for maintaining the stability and reliability of grid, it is envisaged to have sufficient Storage capacity for peaking firm power or storage power is required. Hence, it is necessary now to holistically consider the development of RE with equivalent addition of energy storage technologies to ensure grid resilience.

Amongst the various technologies available for addressing requirement of storage, Pumped Storage Projects (PSPs) are suitable technology for megawatt (MW) scale, domestically available, time tested and internationally accepted. Pumped Storage Plant or PSP is a hydro power plant with a reversible Turbine-Generator / Motor-Pump either with fixed or variable speed operational facility. It can either be an on-stream or off-stream project which can store electrical energy in form of water potential energy that can be converted back into electrical energy. Such plants may be co-located with RE Generating Stations or may be operated on stand-alone basis. Pumped storage plants can be highly useful for facilitating integration of highly variable RE power into the power system as well as to meet the energy storage target of the nation. Other new storage technologies such as grid scale battery energy storage systems are becoming attractive globally due to its rapidly reducing cost with the technological advancement, however some of them are still at nascent stage and have yet to achieve commercial scale viability.

The National Electricity Plan 2023 foresees a need for approximately 74 GW of storage power by 2031-32, including 27 GW from pump storage plants and 47 GW from Battery Energy Storage System. There are three types of Pump Storage Projects namely;

1. On-stream PSP - In this type of PSP, both reservoirs are located on any river / stream / nallah.
2. Off-stream open loop PSP - One reservoir is located on river stream nallah. Other reservoir (off-stream reservoir) is not located on any river perennial stream / perennial nallah.
3. Off-stream closed loop PSP - None of the reservoirs is located on any river / perennial stream/perennial nallah.

## **Need of Pump Storage Hydro Power Projects:**

As part of Indian Government Plans to have non-fossil cleaner fuel of 50% of the installed capacity mix by 2030. The challenge lies in the variability of RE due to factors like time, climate, season, and location. Renewable sources such as solar, wind and run-of-the-river are not available 24x7, posing grid balancing challenges. Flexible Energy Generation Assets that can supply both Base Load & Peaking Power efficiently and economically are the need of the future and necessary to address the dynamically evolving energy needs of India.

At present, Variable Renewable Energy Sources such as wind and solar are being connected to the grid at a rapid pace owing to their low cost of installation and the thrust on sustainable & green energy. The energy supply from Variable Renewable Energy Sources can't be regulated since they are dependent on the time of the day, seasons, and the vagaries of weather. Hence, there is an ever-increasing demand for Energy Storage Assets. PSPs are best suited in the present scenario for addressing this demand, which is an ideal complement to modern clean energy systems. Pump storage plants address this by storing excess energy in form of potential energy of water and supplying it when needed, improving grid stability, enabling peak shifting, and enhancing renewable energy integration.

## **Mode of allotment of PSP Projects:**

Ministry of Power (MOP) on 10th April, 2023 issued Guidelines to promote development of Pumped Storage Projects (PSPs). As per the guidelines, the State Government may allot project sites to developers in the following manner:

### **i. On nomination basis to CPSUs and State PSUs**

States may award projects directly to Hydro CPSUs or State PSUs on a nomination basis. Due consideration shall be given to the experience and financial strength of CPSUs/State PSUs. The projects may also be allotted to Joint Ventures (JVs) between CPSUs and/or State PSUs for development of such PSPs. Further, CPSUs/State PSUs shall ensure that award of contracts for the supply of equipment and construction of the project either through a turnkey or through well-defined packages, is done competitive bidding.

### **ii. Allotment through competitive bidding**

PSPs may also be awarded to private developers by following a two stage competitive bidding process. The first stage shall be for pre-qualification based on criteria of financial strength, experience of developing infrastructure projects of similar size, past track record of developing projects, turnover and ability to meet performance guarantees. In the second stage, bids are to be called based on quantifiable parameters such as concession period of the project or any other parameter as specified by the Central / State Government. In case of allocation through above two modes (i & ii), the home state shall have the right of first refusal upto 80% of the project capacity and tariff shall be fixed by the Appropriate Commission u/s 62 of the Electricity Act, 2003. The developer would be free to sell the balance storage space under short/medium/long term PPA, or in power markets or through bilateral contract.

### iii. Allotment through TBCB

PSPs may also be awarded on a TBCB basis to developers. For this purpose, the task of carrying out S&I and preparation of DPR may be given to an SPV under a CPSU/State PSU. SPV may be responsible for pre-construction activities such as preparation of project report, land acquisition, environment and forest clearance, etc. Such a dispensation would ensure the possibility of tariff determination based on competitive bidding. The DPR may be subsequently bid out for construction and SPV transferred to the successful bidder on the basis of:

1. Composite tariff (Including the cost of input power) in case input power is arranged by the developer, or
2. Tariff for storage on a per Megawatt Hour basis, if the input power is to be arranged by the procurer of the storage Capacity.

The appropriate Commission shall adopt the above tariff u/s 63 of the Electricity Act, 2003.

### iv. Self-identified off-stream Pumped Storage Projects

In addition to the above methods, developers may also self-identify potential off-stream sites where PSPs can be constructed since these sites are away from the riverine system and do not utilize the natural resources like river streams, allotment from State Governments would not be required for the development of PSP projects on such sites. Further, all statutory clearances need to be obtained from State and Central agencies before starting construction. It will help in harnessing the off-stream potential in the country at a faster pace. Project developed in such a manner would be provided all concessions provided under MOP guidelines.

### Policy Initiatives:

Measures that have already taken by Government of India for promotion of PSPs are as follows:

**i. Utilization of financial and project execution capabilities of CPSUs:** Government of India has identified PSP sites against CPSUs to facilitate their development. A state-wise PSP sites has also been identified to help the States with work related to PSPs. States are encouraged to allocate the PSPs to CPSUs for early and prompt development.

**ii. Energy Storage Obligation:** Government of India has notified the trajectory of Energy Storage Obligation for the distribution companies to ensure the capacities regarding storage as a grid element, this would create demand for storage power. MoP, vide order dated 22nd July 2022 prescribed share of renewables in the energy mix of the country as 43.33% by FY 2029-30. Further, for the first time, year-wise target for energy storage is prescribed for the nation. It is aimed to have 4% of total energy consumed through energy storage sources by FY 2029-30, which shall be calculated in energy terms as a percentage of total consumption of electricity and shall be treated as fulfilled only when at least 85% of the total energy stored in the Storage System, on annual basis, is procured from RE sources.

**iii. Waiver of ISTS charges for PSPs:** Given the importance of facilitating RE integration in the grid and in pursuance of National Tariff Policy 2016, waiver of ISTS and other transmission charges have also been made available to Pumped Storage Projects. In order to promote the development of PSPs, the waiver of ISTS charges shall be extended to all those PSPs where construction work is awarded by 30.06.2025.



**iv. Budgetary Support for Enabling infrastructure:** The hydro projects and PSPs are often taken up in remote areas which have infrastructure deficits. The infrastructure created for hydropower / PSP enables further development of the area as the same is available for reuse for other purposes. Given the same, the Central Government is providing budgetary support for funding the enabling infrastructure of hydropower projects. This scheme also covers PSPs. The grant for enabling infrastructure is for the creation of infrastructure facilities that have alternate developmental value.

**v. Timelines for formulation and concurrence of Detailed Project Reports for Pumped Storage Projects:** The CEA has issued revised guidelines for formulation and for examination & concurrence of Detailed Project Reports for Pumped Storage Projects. As per revised guidelines, the timelines for preparation of DPR for PSPs has been reduced. CEA has further reduced these timelines for off-stream closed loop PSPs and PSPs on existing Hydro projects (where one reservoir is available). In addition, since no tariff / financial evaluation is required to be done by CEA for PSP projects allotted through Tariff Based Competitive Bidding or as part of integrated Renewable Energy Project or as captive plants, CEA has reduced the timeline for concurrence of such projects from 150 days to 75 days.

### **Benefits of PSP:**

The utilization of pump storage plants brings benefits like reduce peak deficits, lower peak tariff, carbon emission reduction, and deferred capital expenditure on transmission and distribution. Pump Storage Plants also enable energy arbitrage, providing advantages for both the grid and consumers. PSPs also provide the necessary scale of storage and have a long service life of more than 40-50 years. This is much more than any other energy storage technology presently available. This also results in a low cost of delivered energy over the life of the projects. PSPs are also non-polluting and are more environmentally friendly & Pumped Storage Projects account for over 95 percent of installed global energy storage capacity. The positive aspects of PSPs are not limited to the attributes of storage and ancillary services. PSPs are clean, green and safe. They don't produce any poisonous/ harmful by-products or pose problems of disposal. The advantages of promoting PSPs are not only based on their usefulness in maintaining grid stability and facilitating variable RE integration but also their other positive attributes when compared to other available energy storage systems.

Pumped Storage Projects (PSPs) are of paramount importance and is suited for pushing and achieving above goals, as it is green, sustainable, renewable, non-polluting, and environmental friendly source of energy it promotes conservation of fossil fuel and provides escalation free & cheapest energy in long run. It has the ability for instantaneous starting, stopping and load variation thereby ideally suited for peaking and balancing operation and improves reliability of power system. PSPs also have very long life as compared to other energy storage sources. Also, as more and more solar power is being generated in the country which is available only during day time, to store this power, PSPs are required to be installed expeditiously.

### **Advantages:**

a. Ecologically friendly - PSPs would have minimal impact on the environment in their vicinity as they are mainly envisaged on the existing Hydro Electric Projects, reservoirs, or as off-the-river projects. All components of PSPs would be connected, operated, and maintained in an environmentally friendly manner. There are no residual environmental impacts in case of PSPs.

**b. Atmanirbhar Bharat** - The PSPs primarily use indigenous technologies and domestically produced materials. Electrical & Mechanical parts of PSPs are also made in India. Other alternate solutions to storage such as batteries are heavily import-dependent.

**c. Tested Technology** - The PSPs operate on time-tested technology thereby infusing confidence in the lending institutions for a longer duration of loans. Additionally, the cost of technologies involved in the construction has reduced rendering PSPs a viable proposition. The technological surety associated with PSPs has opened the possibility for the developers to claim a higher debt-equity ratio in the projects.

**d. Local developmental** - The development of PSPs is highly capital intensive and involves the development of local transport infrastructure for the mobilization of men and materials. Local industries such as cement and steel also get impetus and drive job creation in the economy. This in turn have a salutary effect on local area development. PSPs are an ideal investment for socio-economic and regional development considerations like infrastructure up-gradation and employment generation.

**e. Longer and reliable duration of discharge** - PSPs are generally designed for a longer duration of discharge of more than 6 hours to meet the peak demand or for compensating the variability in the grid due to variable renewable energy. Currently, Battery Energy Storage Systems are designed for up to 4 hours of discharge generally. The firm capacity of PSPs during peak hours is guaranteed and relatively immune to the grid conditions.

### Challenges:

Although PSP dominates the global storage-capacity, its growth in India has been tepid. The CEA has estimated a PSP potential of 96 GW, but only 6.8 GW is currently operational/under construction in India. The slow pace can be attributed to the high cost associated with the commissioning of PSP, the long gestation period due to delays in obtaining environmental clearances, and the low recovery from the existing pricing mechanism of PSP. However, to achieve target of infusing 500 GW of RE energy into the electricity grid by 2030; it would require conscious effort to develop time-proven energy storage technology at exponential rate. Main barriers in the development of Pumped Storage Projects are as under:

**(a) Environmental clearances:** Presently, the environmental clearance and forest clearance process of PSPs is very cumbersome, since these projects are treated at par with the conventional hydro projects for the purpose of grant of EC and FC. The environment impact of PSP constructed on existing reservoirs on on-the-river sites and on the off-the-river sites is much less than conventional hydro power projects. Further, unlike the conventional hydro projects, development of PSPs do not lead to significant displacement of the people and thus, require minimum R&R. Therefore, PSPs constructed on existing reservoirs and on off-the-river sites may be treated as a separate category for processing of clearances.

**(b) Free power:** PSPs are fundamentally energy storage projects designed to cater the need of grid stability during the peak hours. Unlike conventional hydro projects, PSPs do not produce electricity. They are net consumers of electricity. Therefore, there is no question of imposing the requirement of free power on PSPs.

**(c) Cost of pumping power:** The cost of power from PSPs has three components - cost of storage, cost of conversion losses and cost of input power. One of the prerequisites to ensure the commercial viability of a PSP unit is availability of input power at affordable tariff. However, this constraint is likely to be overcome in near future, with the availability of solar and wind power at relatively cheaper rates.

**(d) Value of peak power:** The importance of PSP lies in its capability to offer peaking power. Further, other services offered by PSPs, like spinning reserves, reactive support, black start ability, frequency response ancillary services and faster start-up and shutdown, which are essential for grid stability, are not adequately monetized.

### Way forward:

India is on the path towards a clean energy transition, to reduce the emission intensity, get 50% of its installed capacity from non-fossil fuel sources by 2030. Given the ongoing energy transitions in the country, the development of Pump Storage Hydro Projects is of paramount importance for providing greater inertia and balancing power to the grid as battery storage solutions are still being scaled up and are required for short duration storage needs in grid management, PSP are a natural enabler for integrating greater amounts of wind and solar power. With its ability to store a large amount of energy, frequent starts/stops, and faster ramp-ups/ramp-downs, PSP are ideally suited to address the dynamic supply and demand. PSP can also be used for peaking operation and improve the reliability of the power system. Storage is the positive aspect would be the attributes that require incentivization in the power system to ensure appropriate capacity, comprehensive storage policy initiatives and regulatory framework are required to set the direction of developments in this regard.

Recently, private Developers have shown great interest in self-identified PSPs and a huge number of PSP sites have been identified by them. After so many year Hydro Sector, especially PSP sector has attracted huge investment, mostly in private sector. This has shown result also and accordingly. In case of increased capacity addition of PSPs by 2031-32, requirement of Battery storage shall reduce, accordingly, leading to increased fulfillment of make in India Commitment and reduced burden on import of Battery Storage.

Disclaimer: Views expressed in this article are personal just for information, general nature and do not reflect those of FOIR or MPERC.

## FOIR Events

### 57th Governing Body Meeting (GBM) of the Forum of Indian Regulators (FOIR) held in New Delhi

The 57th GBM of the FOIR was held on July 23, 2024 at the India Habitat Centre, New Delhi. The meeting, with active participation from the FOIR Centre, IICA as FOIR's knowledge partner, was attended by 24 guests representing Chairpersons and Members of FOIR Member Organizations, including **Shri Ravi Mital** (*Hony Chairperson, FOIR and Chairperson, Insolvency and Bankruptcy Board of India*), **Shri Jishnu Barua** (*Hony Vice-Chairperson, FOIR and Chairperson, Central Electricity Regulatory Commission*), **Shri S K G Rahate** (*Chairperson, Airports Economic Regulatory Authority*), and **Shri Anil Kumar Lahoti** (*Chairperson, Telecom Regulatory Authority of India*). During the meeting, potential areas for cross-sectoral collaboration among sectoral regulators were discussed in detail, which could be mutually beneficial for all the stakeholders involved.

**FOIR Working Group (WG) Report on Inter-Regulator Cooperation (IRC)** was also presented in the GBM. The WG report on IRC focused on 3 areas namely, compilation of best regulatory practices, study on tariff-determination principles and suggest areas of cooperation amongst infrastructure regulators. The report covered responses from various regulatory bodies including **CCI, IBBI, CERC, TRAI, TAMP, AERA, PNGRB, NHAI, UPERC, TNERC, WBERC and MERC**. The GBM approved the report prepared under the chairmanship of **Shri Arun Goyal** (*Member, CERC*). **Prof (Dr) Naveen Sirohi** (*Director, FOIR Centre, IICA*) steered the Working Group as Member Convenor. The report was a part of the FOIR approved Action Plan for Financial Year 2023-24. The academic, research and administrative contributions of IICA to the WG were greatly appreciated by the gathering.





## FOIR - Webinar on “Unveiling Insights: Exploring the Impact of IBC on the Electricity Sector”

The Forum of Indian Regulators (FOIR) Centre at the Indian Institute of Corporate Affairs (IICA), under the guidance of FOIR, conducted a webinar on “Unveiling Insights: Exploring the Impact of IBC on the Electricity Sector” on September 6, 2024. The expert speaker for the webinar, **Shri Sudhaker Shukla** (*Whole Time Member, Insolvency and Bankruptcy Board of India IBBI*), shared his insights on various facets of the Insolvency and Bankruptcy Code (IBC) 2016, highlighting its role in resolution of stressed assets in the Indian economy, with a special focus on the Electricity Sector. The webinar was moderated by **Prof (Dr) Naveen Sirohi** (*Director, FOIR Centre, IICA*), who outlined the significance of IBC for robust growth of power assets in his introductory address.

A total of 56 participants joined the webinar, comprising serving and former Chairpersons, Members & officials representing Central Electricity Regulatory Commission, Insolvency and Bankruptcy Board of India, Securities and Exchange Board of India, Competition Commission of India, Petroleum and Natural Gas Regulatory Board, and several State Electricity Regulatory Commission. Academicians, law professionals and professionals from other private sector entities also joined the event.

The Webinar offered an excellent opportunity for the participants to gain understanding into the landmark economic reform introduced through the IBC and its impact on the country's asset resolution landscape. Mr Shukla discussed in detail the evolution of the IBC framework and differences with the earlier regime. Thereafter, he explained some of the major provisions of the Code relevant to the Power Sector, and identified non-availability of fuel, insufficient power purchase agreements (PPAs) by states, inability of promoters to infuse equity and working capital, and tariff-related/contractual disputes as primary reasons for financial stress faced by power generation companies. He also highlighted the IBC's positive impact on resolving stressed power generation assets. Post the presentation, Mr Shukla fielded several questions from the participants, covering the application of IBC to the Power Sector and the potential for regulatory collaboration between IBBI and electricity regulators. The informative and enriching session was highly appreciated by the participants.



## About FOIR & Member Organisations

The Forum of Indian Regulators was formally registered as a Society under the Societies Registration Act, with the Registrar of Societies in the National Capital Territory of Delhi on February 4, 2000. Schedule-I provides the Memorandum of Association, while Schedule-II provides the Rules and Regulations.

The Orissa Electricity Regulatory Commission (OERC) was the first Regulatory Commission constituted in the electric power sector on November 28, 1996. This was followed by the Central Electricity Regulatory Commission (CERC) which was constituted in August 1998 and the Haryana Electricity Regulatory Commission (HERC) on March 10, 1998. Ten more followed to it thereafter. A need was felt by these regulators for a common platform to discuss emerging issues in regulatory procedures and practices, to evolve common strategies to meet the challenges before regulators in India and to share information and experiences. A meeting was convened of the CERC, OERC and HERC in February, 1999 at New Delhi to discuss the modalities for constituting a suitable forum. The idea quickly found acceptance and as more Regulatory Commissions were constituted, either under State specific Acts, or the Electricity Regulatory Commissions Act, 1998, they started participating in the activities of the Forum of Indian Regulators. The constitution of the Forum does not restrict it only to the electricity sector.

### Member Organisations

Presently, Forum of Indian Regulators has 38 regulatory authorities as its members.

[Click for List of Members](#)

### Governing Body

The Forum has a Governing Body. Any Fellow Member of the Forum is eligible for appointment to the Governing Body. All members work in an honorary capacity.

[Click for Governing Body Details](#)

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## About FOIR Centre, IICA

Forum of Indian Regulator (FOIR), with its aim to promote transparency in working of Regulators and to safeguard the consumer interest, signed MoU with Indian Institute of Corporate Affairs (IICA), a think tank under the Ministry of Corporate Affairs to establish its centre at IICA with the objective to promote cooperation and coordination among regulatory members of FOIR.

The FOIR Centre at IICA provides capacity building, education, research and advocacy support to FOIR Secretariat for academic upgradation and intellectual development for members and officials of FOIR member organisations. The centre also provides administrative support to FOIR including preparation of annual reports, statutory compliances etc.

A few notable contributions of FOIR Centre, IICA include:

- Flagship Certificate Course on Regulatory Governance
- Know Your Regulator (KYR) / Webinar Series
- Colloquium for Central Sector Chairpersons and Members
- Online / In-person Capacity Building Programs on Contemporary Issues
- Research on Contemporary Issues

### TEAM



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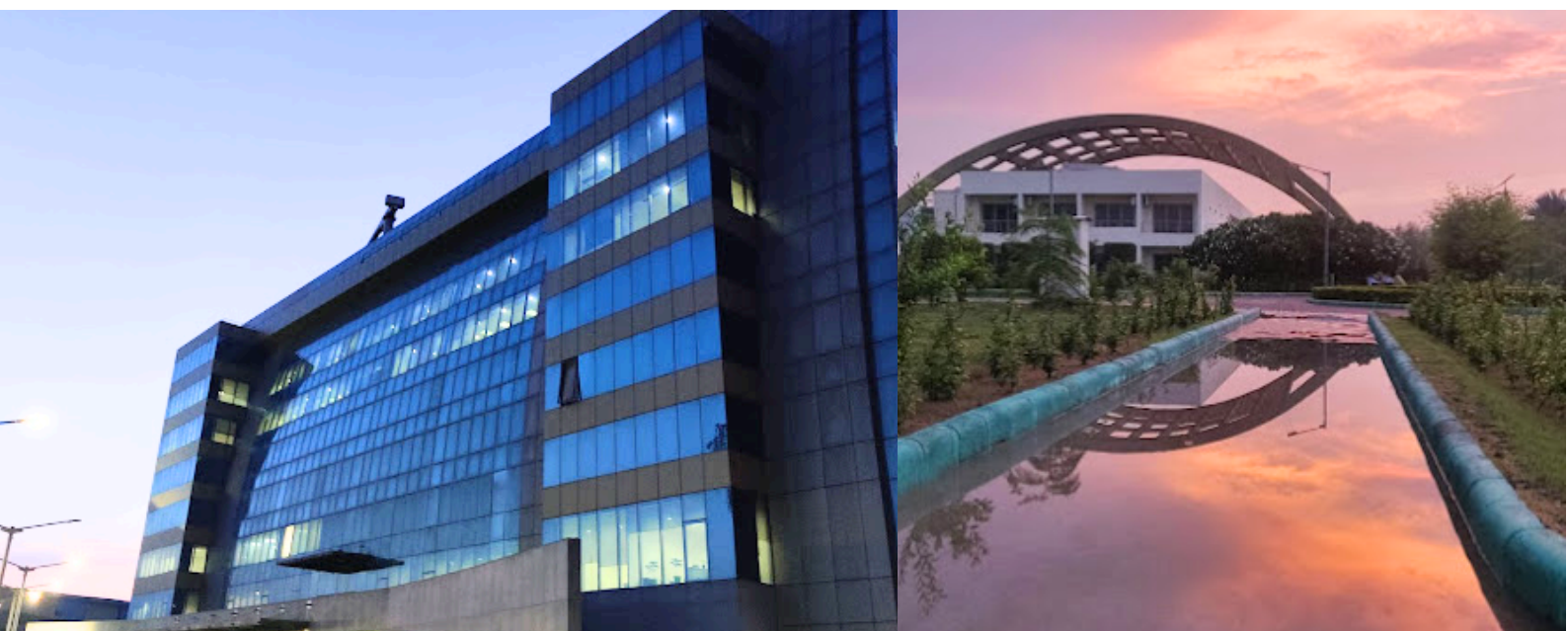
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