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To

**Shri Sanjeev Kumar Sharma,**  
**Advisor (Broadband and Policy Analysis),**  
**Telecom Regulatory Authority of India**  
**Mahanagar Door Sanchar Bhawan,**  
**Jawahar Lal Nehru Marg, New Delhi – 110002**

email id: [advbbpa@traigov.in](mailto:advbbpa@traigov.in);

Cc: [jtadvbbpa-1@traigov.in](mailto:jtadvbbpa-1@traigov.in); [jtadvbbpa-3@traigov.in](mailto:jtadvbbpa-3@traigov.in).

[sttelemediagdc.in](mailto:sttelemediagdc.in)

**Subject: Consultation Paper on Regulatory Framework for Promoting Data Economy Through Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India.**

Dear Sir,

STT Global Data Centres India Private Limited ("STT GDC India"), a majority-owned subsidiary of ST Telemedia Global Data Centres of Singapore, is a market-leading and long standing data centre services provider in India with a nationwide portfolio of 21 facilities across 9 cities with a critical IT load of ~ 200MW and a significant investment outlook in the country. With rapidly growing parameters in digital adoption and consumption, data centers have a critical role in supporting India's \$1 Tn digital economy goal.

STT GDC India has contributed to the creation of the National Data Centre Policy, the 1<sup>st</sup> draft of which was released for public consultation by the Ministry of Electronics, Information and Technology (MeitY) in Nov-20. Post significant stakeholder inputs, we understand that the policy is at an advanced stage of rollout readiness.


We welcome the opportunity provided by TRAI to amplify and reiterate the core areas that need to be addressed to create an enabling policy framework for the data centre sector. The data centre ecosystem has to be build-up with necessary measures to be taken focusing on creating an enabling environment for investments and ease of doing business across the country including Tier2 and Tier 3 cities with a focus on addressing key challenges with respect to key input parameters- availability and unhindered access to power, renewable energy & backup power, land, data centre specific building norms, dark fiber connectivity and overall ease of doing business. Data centre operations are required to be further safeguarded through inclusion under essential services.

Fundamentally, this national policy should serve as the baseline policy applicable throughout the country overriding any state-specific rule/mandate in case of a conflict. Also, State policies, if any, should harmoniously co-exist with the national policy in terms of adding fiscal and non-fiscal competitiveness to the state over and above the clear guidelines of the national policy. Further, we would want to stress on the necessity for the stewardship of the National Data Centre policy with MeitY given its advanced stage of draft and to protect investor and operator interests.

We are pleased to submit our detailed response to the questions specific to datacenters in the referenced consultation paper which is attached with this letter for further discussion.

Sincerely  
With Best Regards

For and on behalf of  
STT Global Data Centres India Private Limited



Lalit Khanna  
General Counsel

## TRAI CONSULTATION PAPER NO. 10/2021

### REGULATORY FRAMEWORK FOR PROMOTING DATA ECONOMY THROUGH ESTABLISHMENT OF DATA CENTRES, CONTENT DELIVERY NETWORKS, AND INTERCONNECT EXCHANGES IN INDIA

#### RESPONSE BY STT GLOBAL DATA CENTRES INDIA PRIVATE LIMITED

**Q.1: What are the growth prospects for Data centres in India? What are the economic/financial/infrastructure/other challenges being faced for setting up a Data centre business in the country?**

As per IDC estimates, the collective sum of the world's data will rise to 175 Trillion GB by 2025 growing at a CAGR of 61%. Most of this, comprising both consumer and enterprise data sets will flow through or be stored in data centres that are physical facilities where computing and network equipment are concentrated for collection, storage, processing, distribution and access enablement of data .

With world-leading parameters in digital adoption and consumption and growing at a rapid clip, data centres' importance in supporting India's \$1 Tn digital economy goal cannot be overemphasized. Against this background, the Government of India has already recognized data centres as a distinct and critical national enabler and sought to create a National data centre policy via the Ministry of Electronics and Information Technology ( MeitY), the draft of which was published in Nov-20 and now post comprehensive stakeholder feedback is expected to be rolled out in the near term.

The data centre colocation market in India is currently estimated to be ~ INR 4,800 Cr with ~ 500 MW of 3rd party colocation data centre design capacity. This doesn't include captive data centres operated or being built by some enterprises. Based on the overall digital impetus in the country, the digital infrastructure required to support and enable the growth is critical. Communication infrastructure has witnessed rapid development in the last decade and a half. Data centre infrastructure, on the other hand severely lags behind global peers.

**It is expected that the demand for data centre colocation services will grow at a compounded annual growth rate of 20-25% over the next 5-7 years and grow from the current 500MW levels to around 1200-1400MW.** This will help cover critical demand-supply gaps and support the overall digital growth story. The positive growth thesis in the Indian market will propel rapid expansion by existing data centre players, forward and backward integration by ecosystem players and entry of new players fuelled by institutional investments.

**India has developed into a global IT-BPM hub, has one of the largest and fastest-growing internet populations, driven to a significant extent by soft-touch policy support and private participation.** With a strong demand and digitization thesis, there is ample reason to believe that India can position and develop itself as a Data centre powerhouse in the APAC region with the right policy ingredients to address the fundamental requirements and challenges of the data centre industry.

**The fundamental challenges for the data centre sector relate to the following:**

**1. Commercial competitiveness and availability/ease of access to critical input parameters:**

- a. **Suitably located, sized and priced land** In key data centre hubs, suitable land availability is increasingly challenging and expensive. This has a downstream impact on the overall commercial attractiveness of India as a data centre.
- b. **Stable and Competitive Primary & Backup Power** India has added significantly to its power generation capacity over the last decade. However, the availability of continuous power in the right quantum at the required locations is a challenge with poor transmission & distribution infrastructure and significant variance in state laws including for that of open access for green

power. Backup power which is critical for the redundant architecture of data centres is increasingly a challenge.

- c. **Connectivity** in India is for the most part is governed by a licensing regime that restricts the establishment of connected data centre platforms owing to an over-reliance of data centre operators on telecom licensees. This impacts design and operational flexibility, adaptability to client requirements and commercial competitiveness

## 2. **Policy coverage, certainty, uniformity, equal applicability, and enforcement:**

Third-party data centres providing hosting and colocation services have been in existence in the country for nearly 20 years. In some select states, these facilities were categorized under the ambit of the IT/ITES framework and corresponding policies and benefits. The last 2 years have seen intense activity across central government and state to promote data centre investments with increasing recognition that data centres are critical digital infrastructure and India is an underserved market for the extent of data centre infrastructure required. **However, there are certain very evident areas of concern:**

- a. **Policy multiplicity** : Post-MeitY's draft national policy on data centres, there has been a slew of data centre policies either being discussed or launched by many individual state governments. While the overall intent is positive, the multitude of policies has a heterogeneous and at times conflicting set of rules, regulations, incentives, norms, applicability and eligibility. There are significant variations between the policies/drafts rolled out by states and central government, which is both confusing and time-consuming for the operators.
- b. **Implementation gaps** : In reality, data centre operators are unable to avail any of these new policy benefits due to significant execution and implementation gaps in the concerned state departments like power, environment, pollution control boards, registrations etc, who either do not have the mandate or the contextual communications regarding implementing the newly rolled out policies
- c. **Policy stewardship** : With overlaps across multiple ministries and departments, norms applicable to data centres are applied by multiple bodies without due recognition of the mission-critical essential services status of data centre operations leading to unwarranted disruptions

## 3. **Ease of doing business across the data centre build and operate lifecycle:** The single biggest critical challenge faced by data centre operators is in terms of ease of doing business.

- a. **Multiplicity of clearances** required across the design and build phase, across the operational phase hamper planning, construction timelines and operations. A majority of the single window clearances offered presently have not proved very effective on the ground and this window is mostly a front end for other departmental windows.
- b. **The clearances and compliances with overlap across multiple government departments/bodies** lead to conflicting directives which again handicap both construction timelines and operations
- c. **Clearances typically far exceed any stipulated timelines** with a lack of any mechanism for timebound deemed approvals for data centre projects. Typical approval cycle for the ground-breaking of any new greenfield data centre project is 8 to 10 months from the date of initial application. This leads to delays, backlogs and loss of end-customer interest.

## 4. **Capital intensive nature of the data centre business:**

Data centres are capital intensive investments with much of the investment being front-loaded in terms of land, building, MEP infrastructure and rising cost of input parameters can increasingly strain the fiscal viability of the sector which would have a cascading impact on the sectoral investment outlook.

**Q.2: What measures are required for accelerating growth of Data centres in India?**

**Q.3: How Data centre operators and global players can be incentivized for attracting potential investments in India?**

**Q.4: What initiatives, as compared to that of other Asia Pacific countries, are required to be undertaken in India for facilitating ease of doing business (EoDB) and promoting Data centres?**

**Q.6: Will creation of Data centre Parks/Data centre Special Economic Zones provide the necessary ecosystem for promoting setting up of more Data centres in India? What challenges are anticipated/observed in setting up of new Data Parks/zones?**

**What facilities/additional incentives should be provided at these parks/zones? Do give justification.**

### **1. One Uniform National Policy with Unambiguous Stewardship:**

The Ministry of Electronics, Information and Technology ( MeitY) is in the process of drafting the National Data centre policy which had come up for public consultation in Nov-2020. The draft policy has undergone extensive industry consultation and is understood to be at an advanced stage of rollout readiness.

- a. Data centres should come under the unambiguous stewardship of the National Data centre policy being drafted by MeitY. This should serve as one single umbrella under which all necessary rules, norms and amendments to existing ones should reside cutting across all applicable departments and bodies.
- b. The national policy should serve as the baseline policy applicable throughout the country overriding any state-specific rule/mandate in case of a conflict
- c. State policies, if any, should harmoniously co-exist with the national policy in terms of adding fiscal and non-fiscal competitiveness to the state over and above the clear guidelines of the national policy. Ease of interpretation and execution is key.

### **2. Uniform Applicability of Policy:**

- a. A data centre is the actual physical facility involved that provides services to end customers and are operated by specialized data centre operators like STT GLOBAL DATA CENTRES INDIA PRIVATE LIMITED .
- b. A data centre park/cluster is more of a large tract of land earmarked specifically for the development of either standalone data centres or data centre campuses as well as other supporting infrastructure like captive power plants, fibre and power cableways etc.
- c. The policy should apply to the overall data centre sector as a whole and not just designated data centre clusters/parks, if any, for the long-term health and growth of the sector.
- d. All envisaged incentives under the policy umbrella should apply to all data centre facilities from where the services are provided by the operators to the end customers.
- e. All policy benefits should apply to data centre service providers who intend to set up their own data centre campuses/parks in conformance with all policy-related mandates outside of designated data centre zones.
- f. Adequate safeguards need to be incorporated for the optimal use of Government land allocated for data centre parks.
- g. Policy applicability should be uniform for all players and not mandate any cross-dependence of the operator upon the developer for any procedural, infrastructural, fiscal or non-fiscal benefits envisaged.

h. The policy coverage should not be restricted to upcoming investments only to ensure that investments on the ground by existing data centre operators are not adversely impacted in terms of commercial competitiveness.

**3. Continuity:** Most existing data centres today are registered under the existing IT/ITES policies across states where a data centre policy does not exist. There have been challenges in availing benefits which need to be addressed from an ease of doing business perspective. Importantly, it is critical to ensure a smooth transition between policies and ensure benefit continuity, i.e., benefits proffered under previous policy regimes should be baselined and benefits envisaged under the new data centre policy should be over and above for the same category unless subsumed.

#### **4. Ease of Doing Business :**

a. **Effective Single Window:** For effective implementation, of the time-bound single-window clearances for both pre-commencement and post-commencement approvals,

- I. A specialized empowered desk for data centre projects only is recommended. Once approvals are filed for, a dedicated DC focused team should orchestrate, and program manage the entire process till approval receipt.
- II. Single window clearance for all statutory approvals like building plan approvals, Fire NOC, Pollution control board, Environmental Clearance, Occupancy Certificate etc. Presently, BPA and Fire related approvals are part of the local municipal corporation or Industrial corporation, CTE/CTO clearances rest with the Pollution control board and EC with the Environmental impact assessment group. All clearances sought including from MoEF should be considered deemed approved, if necessary, approvals are not received in 30 days.
- III. There are duplications and overlaps involved in clearances which lead to timeline inefficiencies such as in the case of CTE and CTO. Fire safety related approvals are dual-layered owing to the mandatory requirement of special gas-based suppression systems alongside hydrants and sprinkler systems. This is required to be simplified into a one-time approval. Red categorization for operation of backup power should be removed.

b. **Inclusion under Essential Services:** Data centres support 24\*7 mission critical services and are a critical enabler of the digital economy.

- I. Therefore, the sector should be unambiguously included and categorized under the Essential Services Management Act. Instead of state specific notifications, the data centre industry should be categorised as 'essential services' by the Union Government by amending the Essential Services Maintenance Act, 1968. [ Please refer to response to consultation area #19]
- II. With respect to operation of backup power, data centres should be kept out of the ambit of divergent SPCB norms with respect to installation and operations of DG sets with a single applicable directive by the CPCB.

#### **5. Land & Building Incentives & Norms:**

a. **Land Availability & Subsidy:** Data centre locations are driven by end-customer demand and quantum of such demand, the bulk of which is concentrated in a few data centre hubs. Adequate provisioning for land availability/facilitation in existing geographies of customer demand with a mechanism for availing such land at commercially viable prices is recommended. Subsidies for land purchases to the tune of at least 50% of transaction value be extended for purchase/lease of land from state agencies

- b. **Stamp Duty Waiver:** Given the scale of investment, 100% waiver on stamp duties for 1<sup>st</sup> and 2<sup>nd</sup> transactions should be considered under the aegis of the policy. Lease/sublease of area of a building earmarked for a data centre also should be considered.
  - c. **Land Subsidy** - Subsidies for land purchases to the tune of at least 50% of transaction value should be extended for purchase/lease of land from state agencies.
  - d. **Capital Subsidy:** Data centres are extremely capital intensive with a significant chunk of investments being executed upfront. To de-risk investments by improving commercial viability, capital subsidies should be extended under the aegis of the policy.
  - e. **Building Code :** The inclusion of data centres as a separate category under the building code is a longstanding requirement of data centre operators and enablement of the same would significantly impact the capital efficiency of data centre projects. Presently, Data centres are classified as office buildings under NBC 2016.
    - I. **Owing to the current classification,** a car park is mandated for every 100 to 200 sqft of Gross built-up area leading to significant wastage of space and capital owing to the vastly different manpower requirements of data centres. Mandated parking requirements to be linked to the size of the office space within the DC building and not the Gross built-up area and not exceeding 5% of the overall Gross built-up area.
    - II. **FSI/FAR-**
      - Up to 60% ground coverage for Data centre facilities/parks.
      - FAR/FSI be allowed up to 5.
      - Space for storage of DG sets is not to be considered for computation of FSI/FAR. Multi-level DG stacking to be allowed with due Fire safety NoC without any impact on FSI/FAR
      - Further, basement parking, storage areas and rooftop chillers should not be computed under FAR/FSI.
    - III. There should be no restrictions on the floor to ceiling height.
    - IV. Boundary walls up to 4m in height to be permitted for DC buildings considering the unique security requirements.
    - V. Construction of boundary walls up to 3.6m height with further 1m fencings should be permitted.
    - VI. Relaxation in openings in buildings such as windows is required for Data centres considering while fully adherent to building and fire safety regulations.
    - VII. Setbacks & open space: DC Buildings are very low on human occupancy & therefore people movement is quite limited & therefore, does not require increased setbacks corresponding to an increase in height of the building / overall covered area of the building. Presently, the setback is higher of approx. 9m or 1/3rd of the height of the building. This adds to the inefficiency & needs to be re-looked / rationalized
6. **Infrastructure Status:** Infrastructure status to the data centre sector, on par with sectors such as railways, roadways and power, to enable the industry to avail benefits such as long-term credit from lenders on easier terms has been a long time ask and its recent pronouncement in the Union budget is a welcome move.
7. **Power:** [ Please refer to responses for consultation areas #17 and #19]

## 8. Connectivity:

- a. **Right of Way & Dial Before You Dig:** Provisioning of the right of way free of costs under a single roof/window clearance system and making network and cabling information available before digging is requested.
- b. **Enablement of connected data centre platforms:** ROW for dark fibre without additional licensing burden on data centre players is recommended to create effective and competitive inter-data centre connectivity with implications on redundancy, disaster recovery and load balancing
- c. **Improvement in overall fiberization and broadband connectivity:** Overall broadband speeds and degree of fiberization has headroom for improvement in the country despite significant improvements. The National Optic Fibre Network and programmes like the NeGP should be accelerated in public-private partnership mode to translate into the ability for data centre providers to establish themselves at almost any location within the country.

## 9. Other Incentives:

- a. **GST:** It is requested that; a GST holiday window is considered for Data centres under a stipulated period. Alternately, GST reimbursement for Data centres operational for a stipulated period linked to fixed capital investment may be considered. GST on building works is not eligible presently for the Input Tax credit. It is requested that the GST component for the entire upfront and recurring Capex be reimbursed at 100% for the 1st 5-10 years
  - b. **Property Tax:** It is requested that; Property taxes for Data centres be equalised with residential rates to improve fiscal attractiveness for the operative period of the respective Data centres. In addition, 100% waiver of property taxes for a specified period may be considered
  - c. From the perspective of ease of doing business, it is requested that the package envisaged under the policy be proffered upfront rather than retrospectively.
10. **Data Localisation:** Data protection and localization laws spur the growth of data centres. The finalization of the PDPB with more clarity on restrictions on the transfer of data offshore or strong data privacy laws is recommended to provide a further tailwind to the data centre sector with increased demand for local storage and processing.

**Q.5: What specific incentive measures should be implemented by the Central and/or the State Governments to expand the Data centre market to meet the growth demand of Tier-2 and Tier-3 cities and least focused regions? Is there a need of special incentives for establishment of Data centres and disaster recovery sites in Tier-2 and Tier-3 cities in India? Do justify your answer with detailed comments.**

The pervasive democratisation of digital consumption across the length and breadth of the country has resulted in increased focus on establishment of digital infrastructure in Tier-2 and Tier-3 cities. The advent of 5G, lower latency use cases, distributed computing, Smart Cities, IoT, industrial automation and the recently triggered trend of remote working will massively accelerate consumer and enterprise digital adoption and consequently the requirement for digital infrastructure including regional and edge data centres.

**To enable and accelerate this process, the following is recommended:**

- a. Unlike the scale of data centres in major data centre hubs, the scale of capacity built-in Tier-2/3 cities would be lower. To ensure the viability of such projects, specific government incentivisation including fiscal benefits for such locations over and above those recommended in the preceding responses would be required
- b. Implementation guidelines for a single-window clearance to fast-track projects for smaller data centres can boost the development of data centres in underserved markets.

- c. Unavailability of uninterrupted power supplies, fibre, clean water, quality land zones in proximity to customer locations is an essential requirement that is always a challenge for DC establishment and operations in Tier 2 and 3 cities.
- d. The power and telecom infrastructure remains a challenge for the wider pervasiveness of data centres beyond major hubs. These need to be addressed for the sector on a focused basis for the establishment and operations of data centres in Tier 2 and 3 cities

**Q.6: Will creation of data centre parks/data centre Special Economic Zones provide the necessary ecosystem for promoting setting up of more Data centres in India? What challenges are anticipated/observed in setting up of new data parks/zones?**

**What facilities/additional incentives should be provided at these parks/zones? Do give justification.**

A Data centre is the actual physical facility involved that provides services to end customers and are operated by specialized Data centre operators like STT GLOBAL DATA CENTRES INDIA PRIVATE LIMITED. A data centre park/cluster is more of a large tract of land earmarked specifically for the development of either standalone data centres or campuses as well as other supporting infrastructure like captive power plants, fibre and power cableways etc.

**The creation of special zones/parks should be looked at through the following prism:**

- a. The national and state policy should apply to the overall data centre sector as a whole and not just designated Data centre clusters/parks, if any, for the long-term health and growth of the sector.
- b. The establishment of such parks/SEZ/Zones while provisioned for scale may have challenges in terms of disaster recovery and service continuity in case of a utility failure/any other disruption. The scale of the power and water requirement concentrated in a specified area may hamper local communities in terms of the availability of resources
- c. Furthermore, the primary driver for data centre locations is customer demand and there should be no mandate for policy applicability for specified data centre zones/parks. Data centre operators should be free to establish data centres completely driven by customer

**Q.7: What should be the draft broad guidelines to be issued for Data centre buildings, so as to facilitate specialized construction and safety approvals?**

[ Please refer to the response to consultation areas #3, #4 and #5 for recommended building norms and ease of doing business with respect to data centre build phase approvals]

Technologies with minimal to zero environmental hazards should be encouraged for the construction of data centres. E.g. Water Consumption during construction activity, Power utilization during construction activity, dust and debris generation during construction, localization of production of construction material, materials supporting daylight harvesting are areas that should be looked into.

**Q.8: Is there a need to develop India-specific building standards for construction of Data centres operating in India? If yes, which body should be entrusted with the task? Do provide detailed justification in this regard.**

**Q.9: Till India-specific standards are announced, what standards should be followed as an interim measure?**

**Q.10: Should there be a standard-based certification framework for the Data centres? If yes, what body should be entrusted with the task?**

**Q.11: Should incentives to Data centres be linked to the certification framework?**



The Indian economy is getting increasingly globalized with tighter integration and alignment with the world economy. The major customer categories driving the demand for data centres are global and hence the pressing need specifically for data centre operators is to follow well-considered global standards to meet customer expectations. The local building standards should recognize the unique requirements about data centres and should be tweaked appropriately as outlined previously.

There are global standards like TIA942 / Tier Standards from UPTIME institute which are followed the world over by data centre customers & data centre operators. The adherence to the same should continue to meet the end-user's requirement. In addition, we already have ISO 90001 standards on quality management, ISO 14001 standards on environmental performance enhancement and OHSAS 18001 standards on occupational health and safety management. This will enable the DC industry to fast-track growth and reduce time to market.

**Therefore, India specific building/data centre certifications neither should be mandated nor linked to any incentives for certifications.**

Single window time-bound approvals are far more pertinent for improving the global competitiveness of the Indian data centre sector along with regulatory clarity on stewardship under the National data centre policy to be rolled out by MeitY.

[ Please refer to the response to consultation areas #3, #4 and #5 for recommended building norms and ease of doing business for data centre build phase approvals]

**Q.12: Are there any specific aspects of the disaster recovery standard in respect of Data centres that needs to be addressed? If so, then provide complete details with justification.**

There are no specific standards for disaster recovery for data centres. However, there is a common standard ISO 22301 which focuses on a business continuity management framework. Further, the service continuity process in data centres adhere to ISO 20000 and is commonplace.

Data centre colocation service contracts have extensive and stringent SLAs with due penalties and recourse for customers. The nature of these SLAs varies significantly depending on the customer segment. **Therefore, the prescription of a certain disaster recovery standard may be counterproductive.**

**Q.13: Whether trusted source procurement should be mandated for Data centre equipment? Whether Data centres should be mandated to have security certifications based on third-party Audits? Which body should be entrusted with the task? Should security certifications be linked to incentives? If so, please give details with justifications.**

For major equipment categories, procurement can be recommended but not mandated through a set of established and verified OEMs. The Security certification which is followed in data centres is ISO 27001. Security certifications audits are conducted by various 3<sup>rd</sup> parties like BSI, Bureau Veritas etc. Security certification can be further linked with availing of fiscal incentives as part of the overall data centre policy.

**Q.14: What regulatory or other limitations are the Data centre companies facing with regards to the availability of captive fibre optic cable connectivity, and how is it impacting the Data centre deployment in the hinterland? How can the rolling out of captive high-quality fibre networks be incentivized, specifically for providing connectivity to the upcoming Data centres/data parks? Do justify.**

- a. Under the existing telecom regime, licenses like ISP or NLD licenses are required by data centre operators to interconnect data centre buildings through captive fibre and offer bandwidth to their customers. Management of these licenses & their compliances is tedious and challenging and runs against the grain of soft-touch regulation.

- b. A few existing telecom service providers are also data centre services providers, and this impacts new entrants or 3rd party data centre service providers in terms of cost competitiveness in obtaining captive fibre connectivity from them due to conflict of interest
- c. Competing, inclination to make additional investment in 3rd party data centre service operators by the telcos is lacking.
- d. Existing telecom providers should be mandated to provide captive fibre connectivity at a reasonable cost and stringent SLA to DC providers. Such telecom providers can be incentivized

**Q.15: What are the necessary measures required for providing alternative fibre access (like dark fibre) to the Data centre operators? Whether captive use of dark fibre for DCs should be allowed? If so, please justify.**

- a. Use of dark fibre and creation of internal/captive transmission networks between various locations of data centre operators' providers should be allowed without any attendant to licensing regime.
- b. These dark fibres should be from different ISP/NLD providers to maintain resiliency at the DC provider end. This way scaling of bandwidth required by various Hyperscalers for the provision of cloud services, as well as enterprises, will become feasible. This will also immensely simplify and accelerate the process for commissioning the required connectivity

**Q.16: What are the challenges faced while accessing international connectivity through cable landing stations? What measures, including incentive provisions, be taken for improving the reliable connectivity to CLS?**

- a. International connectivity is mainly at major telcos premise CLS. The connectivity to these places is at a premium cost since these premises are one hop away from CLS. The demand for such connectivity is high.
- b. International cable providers should be permitted to distribute bandwidth to DC provider buildings using point to point connectivity with diverse paths. This will enable customers to subscribe to these bandwidths locally at DC premises rather than having the last mile to telcos CLS. International connectivity service providers should be incentivised for providing such connectivity to reduce hops and increased reliability to DC service providers. Monitoring guidelines to be reaffirmed for such connectivity for data & voice traffic.

**Q.17: Is the extant situation of power supply sufficient to meet the present and futuristic requirements for Data centres in India? What are the major challenges faced by Data centre Industry in establishment of Data centres in naturally cooled regions of India? What are the impediments in and suggested non-conventional measures for ensuring continuous availability of power to companies interested in establishing Data centres in the country? What incentivization policy measures can be offered to meet electricity requirements for Data centres?**

**India Power Situation:** The availability of adequate 24\*7 power for data centres is a paramount necessity for uninterrupted delivery of mission-critical services. Given that the potential addition of DCs will be in the region of 1GW in terms of IT load in key micro-markets of Mumbai, NCR, Chennai, Hyderabad, Bangalore in the next 5-7 years, seamless power availability of ~ 2GW is required.

Major micro markets continue to attract a plethora of expansion and new data centre projects for which power sanctions have been applied. This is anticipated to only grow in the near term.

While India has geared up its power generation capacity over the last decade and presently boasts surplus power generation capacity, the key lacunae are in terms of adequate transmission and distribution infrastructure. Considering the huge power demand applications in process and much more anticipated in the future, state transmission companies of all existing and upcoming data centre

hubs have to significantly strengthen their 400 KV and 220 KV Transmission System (Transmission Lines and Sub-stations) to cater for the upcoming massive power demand.

**Major challenges for the establishment of data centres in naturally cooled regions of India:** There are major reasons for power availability, stability and overall security that may be deterrents to naturally cooled regions of India not being attractive from the perspective of data centre investments. Even though on all India basis, the power surplus position has been achieved, naturally cooled regions of India are still power deficit. Further, these states do not, on a relative scale, have robust transmission & distribution infrastructure. This is aggravated by system reliability issues resulting in unstable power supply manifested in long power cuts etc. Additionally, potential security factors could be a challenge in attracting DC investments. However, as with the rest of the country, digital adoption is rapid and the requirement for digital infrastructure would only grow in these regions

**Incentivization/Power availability & Access:** On a broader level, the following set of measures are recommended

- a. Adequate grid power availability should be made for approved/registered data centre projects in India across micro-markets irrespective of location. Allocated /contracted power for the Data centre to be always made available to meet customer demand. The power grid infrastructure needs to be likewise strengthened. A minimum of 40-50 MW should be made uniformly available to all upcoming DC projects with the ability to scale to 200-300 MW
- b. Power sanction timelines are critical for a timely transition to operations for Data centre projects and strict timelines for the same should be mandated
- c. The process for upgrade/downgrade of sanctioned power is made simple and timebound without the involvement of 3rd parties.
- d. any bottlenecks/ restrictions on availing grid power and load sanction when renewable energy supply is live be removed.
- e. Electricity charges contribute to over 50% of opex for a typical data centre operator over a 25-year commercial life of a data centre and hence are a key lever for competitive commercial differentiation
- f. A 20-year exemption on electricity duty be provided for approved/registered data centres
- g. A similar exemption on transmission charges on consumed grid power be extended for a specified period
- h. A partial reimbursement mechanism for power for a specified period be extended which will significantly aid improve commercial competitiveness and project viability.
- i. The process for converting the tariff regime envisaged under the policy should be seamless without bottlenecks and be handled by an empowered Data centre specific desk.
- j. Continuation of Industrial tariffs or Commercial Tariffs (whichever is lower ) under the present IT/ITES and Industrial schemes and automatic eligibility of existing Data centre units for the same.
- k. Dual Grid Power Supply: Given the critical importance of uninterrupted operations of Data centres that support mission-critical services for the economy and the Government, redundant grid power feed is essential. It is requested that dual grid power supply be made available for all approved Data centres under the aegis of the policy.
- l. Power Stability: Stable power is a prerequisite for effective Data centre operations, and it is requested that due measures be taken to eliminate fluctuations and interruptions.
- m. Deemed Distribution License: A distribution license shall enable Data centre operators to directly procure power from generation companies (including renewable power) without any qualifying restrictions and shall also improve the cost competitiveness from an end customer perspective. It is therefore requested that Deemed Distribution license for Data centre operators (both new and

existing) for power distribution and consumption within the Data centre campus be considered under the aegis of the policy.

**Q.18: Should certification for green Data centres be introduced in India? What should be the requirement, and which body may look after the work of deciding norms and issuing certificates?**

Beyond the green building certifications/standards that presently exists (LEED, IGBC), a well-defined framework towards reducing carbon footprint and Certification methodology for green Data centres will encourage developers and operators to create more efficient infrastructure.

**Q.19: Are there any challenges/restrictions imposed by the States/DISCOMs to buy renewable energy? Please elaborate. Please suggest measures to incentivize green Data centres in India?**

Key Challenges and mitigation measures for the promotion and procurement of green energy are outlined below

**1. Energy Banking:** Energy Banking refers to the surplus renewable energy injected in the grid and credited with the distribution licensee post consumption set off in the same Time of Day (ToD) slot as specified in Distribution Open Access Regulation. As per present regulations in many states, banking is restricted to daily or monthly. Additionally, energy banked during peak ToD slots can be drawn during off peak ToD slots but the vice-versa is not allowed.

Recommendations:

- a. To mandate energy banking for data centres on a yearly basis
- b. To permit the energy banked during off-peak ToD slots for usage in peak ToD slots

**2. Limitations of Purchasing Renewable Energy Certificates (REC):** Renewable Energy Certificates (REC) are market-based instruments. A buyer is required to go through a cumbersome process of registration with energy exchanges and requires sophisticated software applications

Recommendations:

- a. The process of purchasing REC's should be simplified for data centre operators
- b. In addition to the purchase of RECs on the power exchanges, enabling provisions for entering into bilateral arrangements with RE generators for RECs should be included.

**3. Open Access Quantum restriction based on Contracted Demand:** OA quantum is subject to the linkage of the current transformer (CT) ratio to the contracted demand affecting maximum achievable resultant power flow. As a result, practically, Open Access gets limited to a maximum of 1.3-1.4X of the contracted demand in most states

Recommendations :Consider unrestricted Open Access to Individual Captive Power Plants (ICPPs) where the entire output is consumed by a single consumer/entity such as a data centre to cater to the humongous requirement of renewable power requirements of the data centre industry

**4. Wind Solar hybrid policy:** At present, Commercial & Industrial(C&I) consumers procure RE separately from Solar power plants and/or Wind power plants. In most cases, respective project developers set up these plants on separate land parcels and use separate power evacuation/transmission systems for transmitting the produced RE to their C&I consumers.

Recommendation: Given that Solar and Wind energy generation are almost complementary to each other, the "hybridization" of the two technologies would help enhance project viability, grid stability and promote optimum utilisation of land and power evacuation/transmission systems. This would also enable the enhancement of RE procurement quantum from individual power plants by data centre operators

**5. Charges for green power:** Many states in India impose a slew of charges including Transmission Charges, Wheeling Charges, Cross subsidies Charges (on third party PPA), Additional Surcharges(on third party PPA),Banking charges etc which make green power uncompetitive.

Recommendation: Reduction/removal of such charges would be in the interest of the promotion of data centres

**6. Capital Subsidy for setting the Renewable Energy Power Plant:** Data centres are committed to power the demand load with green energy. However, installing non-conventional power plants is still a capital-intensive affair due to the lack of investment promotion rebates. Presently capital subsidies are available for Off-grid solutions such as rooftop solar installations or solar agricultural pumps, etc.

Recommendation: A special incentive package aimed to provide capital subsidy and incentivizing data centre developers to develop utility-scale grid-connected RE projects. This initiative shall contribute to The National Action Plan on Climate Change (NAPCC) and also help reduce the cost of energy purchase.

**7. Single window clearance for setting up of Renewable Energy Plant for Data centres:** The process of establishment of a Renewable Energy power generation plant in many states requires coordination across multiple state agencies for statutory clearances. For data centre players keen on sourcing renewable energy through Captive Power Plants, this adds significantly to the overall complexity and timelines of the project.

Recommendation: Establishing a single-window mechanism for all such Captive Power Plants, where renewable energy is being procured by data centres is critical.

#### **Q.20: What supportive mechanisms can be provided to Data centre backup power generators?**

Backup generators are an integral constituent of the redundancy that is required for modern data centre operations that cater to mission-critical requirements of businesses across sectors and governments. HSD DG sets are intrinsic to the redundancy required for 100% uptime of data centres. With dual redundant power feeds, DGs are a backup of backups with an average runtime of less than 1% annually and the large output (<2250 KVA) DGs used by operators meet the most stringent of emission norms out of the box.

In 2019, the National Green Tribunal (NGT) had observed that there existed no post-commissioning regulation for sub 800 KVA category of DG sets and ordered for retrofitting of emission control devices (RECD) on such equipment post their approval by a set of 5 CPCB laboratories. In a very anomalous interpretation of the NGT order, of late, multiple state PCBs have issued notifications mandating the immediate retrofit of RECDs on “all” DG sets > 125KVA or a shift to gas-based generators within unrealistic timeframes. The notices stand effective despite a further CPCB clarification on the applicability of the NGT order.

There is limited 3rd party RECD solutions available today and none certified by the CPCB labs as effective for DG sets >800 KVA. Furthermore, the mandated shift to gas-based generators in the absence of retrofit is premature as the technology efficacy is as yet unproven for the medium to long term and nearly impossible to fit into existing operational facilities apart from the hazard posed by the onsite storage of gas.

#### Recommendations:

- a. The Data centre sector is completely committed to the sustainability agenda, most leading players consume a very high proportion of renewables and have robust ESG roadmaps. Given the technical and commercial un-viability of existing solutions within shorter timeframes, **a more aligned glide path towards sustainable power backup including natural gas-based generators with complete alignment with sectoral requirements is required.**
- b. Furthermore, till such technologies mature and achieve techno-commercial viability, to ensure that data centre operations, so mission-critical to the economy can run unhindered, **DG sets should be allowed to operate as backup power infrastructure without any hindrance from state pollution control boards. To achieve the same, a clear policy led directive recognizing the unique position of data centres even within essential services is necessary along with an unambiguous mandate from the CPCB.**
- c. Again, till relevant technology maturity is achieved, new data centres should be permitted to install DG sets and should not be forced to install gas-based generators.
- d. Data centres should be exempt from “red category” with respect to DG set operations and they should be permitted to be operated by data centres even under the GRAP norms

**Q.21: Availability of Water is essential for cooling of Data centres, how the requirement can be met for continuous availability of water to the Data centres? Are there any alternate solutions? Please elaborate.**

24\*7 uninterrupted water supply is essential to the Data centre operations. While technology shifts have occurred and usage of air chillers is the norm for new Data centres, water continues to be a critical utility.

Recommendations:

- a. Water supply to Data centres be declared as special-purpose supply and not be subject to any de-prioritization/interruption.
- b. Capital subsidies are extended for the establishment of water treatment plants
- c. Further, efficiency in the use of water and water conservation practices such as rainwater harvesting be incentivized under the aegis of the policy
- d. DC premises should be allowed to store water that can last for 6 to 7 days and corresponding local governing water authority can ensure a continuous supply.
- e. To ensure stringent conservation and optimization practices, DC providers should be mandated to meet the ISO14001 standard for environmental sustainability.

**Q.22: Whether the existing capacity building framework for vocational or other forms of training sufficient to upskill the young and skilled workforce in India for sustenance of Data centre operations? What dovetailing measures for academia and industry are suggested to improve the existing capacity building framework, and align it with the emerging technologies to upskill the workforce in India?**

Data centre design and operations require specialized skillsets geared to meet the demand requirements of 24\*7 availability of mission-critical services. They require a diverse range of technical skillsets encompassing multiple engineering disciplines like civil, mechanical, electrical, network, computers etc. Given the growth of the sector, skilled manpower availability is projected to be a major challenge. Towards this end, operators such as STT GLOBAL DATA CENTRES INDIA PRIVATE LIMITED created Centres of Excellence inside its Data centres and are pioneering industry-academia collaboration.

Recommendations:

- a. Incentives should not be linked to the employment generated owing to the difference in employment patterns vis-à-vis technology-related services or manufacturing setups.
- b. Special incentives are accorded to Data centre operators for the promotion of specialized skill development and public-private partnerships in this regard be encouraged.

**Q.23: Is non-uniformity in state policies affecting the pan-India growth and promotion of Data centre industry? Is there a need for promulgation of a unified Data centre policy in India, which acts as an overarching framework for setting Data centres across India? What institutional mechanisms can be put in place to ensure smooth coordination between Centre and States for facilitating DC business? Do support your answers with detailed justification.**

**Q.24: What practical issues merit consideration under Centre-State coordination to implement measures for pan-India single-window clearance for Data centres?**

[ Please refer to responses to consultation areas #3, #4, #5 with respect to policy stewardship and uniformity]

**Q.25: Is there a need for Data centre Infrastructure Management System (DCIM) for Data centres in India? What policy measures can be put in place to incentivize Data centre players to adopt the futuristic technologies? Elaborate with justification.**

DCIM is mainly required for managing IT infrastructure elements. DCIM is not necessary for maintaining DC infrastructure elements. Systems like BMS, EPMS, CPM are essential for monitoring DC infrastructure.

Presently, overall data centre management systems, tools and processes are implemented by all operators in their data centre assets and are customised as per customer requirements which vary significantly. These systems are also certified as part of overall certifications by Uptime and TIA.

A National level DCIM is not necessary and may impede client customisation. Instead of a focus on DCIM, due focus and incentivization for the adoption of technologies based on AI and Machine Learning for data centre operations and management.

**NOTE: Questions 26-30 are not data centre specific**

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**Q.31: In case a registration/licensing framework is to be prescribed, what should be the terms and conditions for such framework?**

Data centres are digital infrastructure and are presently registered under IT/ITES and/or data centre policies in the respective states of presence. The sector is looking forward to a national data centre policy under MeitY's stewardship which shall help standardize rules, norms, and benefits across the country.

With the unflagging momentum in the Indian digital story and strong government focus on advancing the digital economy, there has been significant growth in the data centre sector over the last few years and investment commitments suggest massive growth going forward. The sector has and shall continue to further thrive with soft touch regulatory enablement. A licensing framework shall be inimical to the interests of all stakeholders- investors, customers, operators, other ecosystem players and the government. Such a regime could potentially derail the growth trajectory. Hence, any additional registration/licensing framework beyond MeitY's upcoming National data centre policy is strongly not recommended.

**NOTE: Questions 32-50 are not data centre specific**-----  
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**1. Key Challenges**

- a. Suitable land at affordable cost
- b. Stable Primary and Backup Power
- c. Dark fibre for data centre interconnectivity
- d. Policy uncertainty, multiplicity, stewardship and implementation gap
- e. Ease of doing businesses affected by multiplicity and timelines of Clearances and Compliances
- f. Significant upfront capital investment

**2. Key Policy Measures Recommended**

- a. Uniform policy, applicability and continuity with clear national policy under the unambiguous stewardship of MeitY
  - b. Policy applicability to be for all data centres and not just data centre parks or designate data centre zones. Policy umbrella to be extended to existing data centres
  - c. Enforce effective ease of doing business processes and implementation framework
  - d. Inclusion of data centres under ESMA, 1968 ( Essential Services Management Act)
  - e. Inclusion of data centres as a separate category under the National Build Code catering to their specific requirements
  - f. Universal benefits/incentives across states on Land/Building/capital/Power/ROW/Tax etc.
  - g. Support for data localisation
  - h. Measures Recommended - Market and Growth/Demand in Tier 2/3 cities
    - Availability of connectivity , competitive power, fiscal incentives package and expedited single window for all clearances needed at state level
  - i. Follow global alignment in terms of standards and practices .No separate India specific standards required right now including for building and disaster recovery
  - j. Procurement can be recommended not mandated from a set of verified OEMs
  - k. DC operators to be permitted the use of use dark fibre for captive purposes outside of a licensing regime and without required dependency on existing licensees
  - l. ILD players should allowed to provide fibre till data centres for international connectivity
  - m. Power: 24X7 Power with Minimum 40-50 MW availability with escalation to 200-300 MW
  - n. 20 Years Electricity duty waiver, lower of industrial/commercial tariff, dual grid power supply, National open access policy, removal of open access related surcharges/duties, deemed distribution license for DC operators, yearly energy banking, simplification of Power purchase, hybrid wind-solar policy, capital subsidies and single window clearances for renewable energy projects for data centres.
  - o. DG sets should be allowed to operate as backup power infrastructure without any hindrance from state pollution control boards
  - p. Glide path towards sustainable power backup including natural gas-based generators with complete alignment with sectoral requirements
  - q. Uninterrupted water supply and capital subsidy for water treatment plant.
  - r. No separate/additional National level DCIM, it may impede client customisation.
  - s. No requirement of any registration/licensing framework for data centres as it would impede innovation and investment sentiment
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