

February 10, 2022

To,

**Shri Sanjeev Kumar Sharma,**  
Advisor, (Broadband and Policy Analysis),  
Telecom Regulatory Authority of India,  
Mahanagar Doorsanchar Bhawan,  
Jawaharlal Nehru Marg,  
New Delhi, Delhi 110002

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

Dear Shri Sharma,

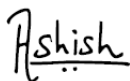
At the outset, we like to convey our appreciation to the Telecom Regulatory Authority of India (**TRAI**) for the opportunity to provide our comments in relation to this important sector which has a wide-ranging impact on the Indian software/technology industry.

We have enclosed our submissions on the Consultation Paper on Regulatory Framework for Promoting Data Economy Through the Establishment of Data Centres, Content Delivery Networks, and Interconnect Exchanges in India (**CP**).

We hope our inputs are able to assist the TRAI in framing its eventual recommendations on the issues raised and look forward to a favourable consideration of our submissions. We remain available to address any queries you may have in respect of our submissions.

Thank you.

Yours sincerely,



Ashish Aggarwal  
Vice President and Head of Public Policy  
NASSCOM

## **A. Preliminary Submissions**

### **I. Scope of the CP**

We commend the TRAI for initiating a conversation around data centres (**DCs**) in India. As recognised by the TRAI in its Consultation Paper (**CP**), India has tremendous potential to become a global data centre hub.<sup>1</sup> Investments in data centre infrastructure and the increased use of cloud and edge computing services in India, will be a key driver for transformation and economic development in the digital age.

However, it is unclear as to how some of the issues relating to supporting DC infrastructure, as contained in the CP, are proposed to be addressed by the TRAI or the Department of Telecommunications (**DoT**) within the regulatory remit flowing from the Telegraph Act, 1885 and the TRAI Act, 1997.

Further, as noted in the CP,<sup>2</sup> the Ministry of Electronics and Information Technology (**MeitY**) has already initiated a policymaking process to formulate a comprehensive DC policy for India, in November 2020 (**MeitY Draft Policy**).<sup>3</sup> Several issues addressed in this Paper have been captured in the MeitY Draft Policy, and as the line ministry for information technology, MeitY has been regulating all major issues concerning India's tech ecosystem, including digital infrastructure.

We respectfully submit that in an age of converged communications, several policy objectives set forth in the National Digital Communications Policy, 2018 (**NDCP**) would necessarily require inter-ministerial coordination, and a harmonised implementation approach – a theme which has been specifically recognised in the NDCP.<sup>4</sup> In the absence of an implementation roadmap clearly setting forth coordination mechanisms, and demarcating the division of responsibilities amongst ministries and regulators, there is likely to be a duplication of efforts, as well as confusion amongst stakeholder as to the relevant implementing agencies.

Resultantly, while the CP is a step in the right direction with respect to understanding the key drivers for the growth of DCs, Content Delivery Networks (**CDNs**) and Internet Exchange Points (**IXPs**) in India, we would urge the TRAI to limit the scope of its eventual recommendations to issues that can be meaningfully addressed within the scope of telecommunications regulations.

While issues relating to ancillary infrastructure such as building codes, power supply, etc. and other ease of doing business related issues can be best addressed by MeitY and other appropriate line ministries and State Governments, TRAI is best placed to address issues relating to connectivity and telecommunications infrastructure. **Resultantly, our**

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<sup>1</sup> Para 2.7 of the CP.

<sup>2</sup> Para 1.23 of the CP.

<sup>3</sup> See, Draft National Data center Policy issued by MeitY, November 2020, Available at: [https://www.meity.gov.in/writereaddata/files/Draft%20Data%20Centre%20Policy%20-%2003112020\\_v5.5.pdf](https://www.meity.gov.in/writereaddata/files/Draft%20Data%20Centre%20Policy%20-%2003112020_v5.5.pdf).

<sup>4</sup> See, National Digital Communications Policy, 2018, Available at: <https://dot.gov.in/sites/default/files/EnglishPolicy-NDCP.pdf>; At para (g), page 7 of the Connect India Mission, the NDCP recognises the need for amending the Indian Telegraph Act, 1885 and other relevant acts for the purpose of convergence in coordination with respective ministries, in order to reap the benefits of convergence. Similarly, under para 3.4 of the Secure India Mission, the NDCP envisages Establishing institutional framework to promote monitoring of activities, rapid dissemination of early warning disaster notifications and better coordination and collaboration between relevant Ministries / Departments, including the National Disaster Management Authority of India.

**responses to the queries raised in the CP have been limited to issues relating to deployment, use and utilisation of telecommunications infrastructure by DCs.**

Nonetheless, given that NASSCOM has been engaging extensively with the industry, relevant Central Ministries, and State Governments, to map the key requirements for growing India’s DC footprint, we have enclosed as **Annexure – A**, a list of key requirements identified by DCs currently operating in India, and solutions currently being pursued by NASSCOM with relevant Government stakeholders.

**II. Regulatory Treatment of CDNs**

At present, CDNs represent a constantly evolving, competitive and growing market in India. The competitiveness of this sector, is evident both from the diversity of established players (such as Akamai, which listed in 1999) and new players (such as Fastly, which listed in 2019; alongside other content-first companies such as Netflix and Google) active in the market – indicating the lack of significant entry barriers, and the constant decline in prices offered to content providers.<sup>5</sup>

In fact, reports indicate that significant price drops occurred simultaneously with the onset of the Covid-19 pandemic, represent a CAGR price erosion of almost 10% for CDN services in India – with additional CDN capacities likely to fuel further decline in transit and CDN services.<sup>6</sup>

Adding credence to efficiency of CDN, peering and transit arrangements, the OECD has previously noted that *“the Internet has developed an efficient market for connectivity based on voluntary contractual agreements. Operating in a highly competitive environment, largely without regulation or central organisation, the Internet model of traffic exchange has produced low prices, promoted efficiency and innovation, and attracted the investment necessary to keep pace with demand.”*<sup>7</sup>.

Moreover, as noted in the consultation paper, India’s CDN market will witness a growth of over 700 percent during the period 2018 – 2027 (from USD 435.2 million in the year 2018 to USD 2846.8 million by 2027).<sup>8</sup> Therefore, **in the absence of clearly identified market failures, TRAI should proceed cautiously in its treatment of the CDN market, since unwarranted regulations could raise entry barriers, and risk stunting the growth of the market.**

**(i) Licensing Requirements**

The CP, at page 99, appears to suggest the possibility of a non-level playing field between CDNs and Telecommunications Service Providers (TSPs), and accordingly seeks suggestions on developing an appropriate regulatory and licensing framework for CDNs. We submit that the TRAI’s concerns in this regard are not supported by any evidence or rationale and therefore

<sup>5</sup> See, Rayburn D., “CDN/Media Pricing See’s Big Drop for Largest Customers: Pricing Down to \$0.0006”, Streaming Media Blog, Available at: <https://www.streamingmediablog.com/2020/05/q1-cdn-pricing.html>

<sup>6</sup> See, Reilly K., “Global IP Transit Prices Keep Doing What They Do Best”, Telegeography Blog, Available at: <https://blog.telegeography.com/global-ip-transit-prices-decline-pandemic-covid19>

<sup>7</sup> See, Weller, D. and B. Woodcock (2013), "Internet Traffic Exchange: Market Developments and Policy Challenges", OECD Digital Economy Papers, No. 207, OECD Publishing, Paris, Available at: [https://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange\\_5k918gpt130q-en](https://www.oecd-ilibrary.org/science-and-technology/internet-traffic-exchange_5k918gpt130q-en)

<sup>8</sup> Para 3.26 of the CP.

we find them unwarranted. Our view is strengthened by the fact that the CP fails to highlight any scope for regulatory arbitrage between CDNs and TSPs.

At their core, CDNs (Edge CDNs and Virtual CDNs) provide software and servers for computing and storage. Depending on whether CDN providers build their own connectivity or not, most CDNs are either a customer of licensed TSPs/ Internet Service Providers (**ISPs**), or operators of a private network interconnecting with licensed TSPs/ISPs, through transit and peering arrangements. For the sake of abundant clarity, it is therefore worth stating that the CDNs are not telecommunications operators and should not be regulated as such.

Further, as noted in the CP,<sup>9</sup> most leading jurisdictions, such as Australia, South Korea, and Norway, do not require CDNs to obtain licenses to operate. Given that any licensing requirements **are likely to raise entry barriers and impact the competitiveness of the CDN market in India, we urge the TRAI to refrain from recommending licensing requirements for CDNs at this stage.**

## **(ii) Other Regulatory Requirements**

### *(a) Interconnection with TSPs and ISPs and Network Neutrality*

The CP, at pages 96 to 97, alludes to the possibility of dominant CDNs dictating terms for interconnection with smaller networks, as well as the possibility of dominant ISPs creating exclusive tie-ups with CDNs or content providers – thereby excluding other players from direct access on equal terms. While these concerns may or may not arise in the future, it is important for the regulator to adopt a cautious approach when intervening with *ex-ante* regulations – given the lack of evidence of such market failures.

Moreover, such practices are likely to be counterintuitive for the CDNs, since the relationship between ISPs and CDNs is that of a “mutual facilitator”, but on the basis of a case-by-case cost share rather than a revenue share model. Indulging in the practices highlighted in the CP, is likely to reduce network efficiency and impact both ISP’s and CDN’s revenues.

In any event, these issues can be adequately addressed by the Competition Commission of India (**CCI**) on an *ex-post facto* basis, in exercise of its powers under the Competition Act, 2002 (**CA02**), and subsequent to the establishment of appreciable adverse effects on competition in the relevant market for CDNs. In fact, it is worth noting here that the DoT’s expert committee on Net Neutrality had, in 2018, recommended that, since CDN interconnection arrangements are business decisions, discrimination in access or adoption of anti-competitive practices is best left to be covered under competition laws. Other concerns relating to discriminatory tariffs and traffic management practices in relation to content peered through CDNs, have been adequately addressed through relevant regulations<sup>10</sup> issued by the TRAI/DoT in this regard.

Resultantly, **we urge the TRAI to refrain from imposing ex-ante obligations for mandatory interconnection between CDNs and ISPs.**

### *(b) DNS filtering, Content blocking and Security*

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<sup>9</sup> Paras 3.27 to 3.31 of the CP.

<sup>10</sup> [https://traai.gov.in/sites/default/files/Regulation\\_Data\\_Service.pdf](https://traai.gov.in/sites/default/files/Regulation_Data_Service.pdf) ; Also read Clause 2.3 of Unified License available here: <https://dot.gov.in/sites/default/files/1%20UL%20AGREEMENT%20with%20Audiotex%20M2M%20without%20INSAT%20MSSR%2017012022.pdf?download=1>

The CP, at page 98, raises concerns relating to DNS filtering, content blocking and security, in the context of Statutory Take-down Orders issued under Section 69A of the Information Technology Act, 2000 (**IT Act**). In this regard, it is submitted that CDNs as well as ISPs qualify as “intermediaries” for the purposes of the IT Act, and resultantly are required to comply with the provisions of Sections 69 (Lawful Interception), 69A (Content Blocking), 69B (Network Monitoring for Cyber Security Purposes), as well as relevant Rules issued thereunder, including the Information Technology (Intermediaries Guidelines and Digital Media Ethics Code) Rules, 2021 (**Intermediary Rules**) issued under Sections 79 and 69A of the IT Act.

The relevant provisions of the IT Act and Intermediary Rules are a self-contained code, sufficiently addressing the requirements highlighted in the CP in a technology-neutral manner and providing appropriate consequences for non-compliance with directions issued under the IT Act. Resultantly, **further regulations in this regard should be avoided.**

### **III. Regulatory Treatment of IXPs**

Similar to CDNs, IXPs provide an essential component of the infrastructure underlying the digital economy. IXPs that successfully attract a sufficient number of members create network effects that strongly decrease the cost of interconnection and increase its value. In a 2012 study on the impact of IXPs in Kenya and Nigeria for the Internet Society, consultancy Analysys Mason noted that “*Overall, the IXPs have had the direct effect of lowering the operating costs for local ISPs, while increasing the traffic, and where relevant corresponding revenues, of ISPs, with further benefits for those sectors that have incorporated the IXP in their delivery of services*”<sup>11</sup>

Likewise, similar to the market for CDNs, the market for IXPs is characterised by negligible barriers to entry. Capital investments and technology required for establishing an IXP business are low, since in their simplest form, IXPs provide a simple layer-2 network switch.

Moreover, as the TRAI rightly notes in the CP,<sup>12</sup> multiple successful models exist for IXPs, whether cooperative and not-for-profit or commercial IXPs. The most successful IXPs around the world charge a per-port fee and are sustained by their members or customers' fees.

Against this backdrop, we submit that several queries raised for consultation in the CP, appear to be misguided, for the following reasons:

- (a) IXPs have flourished in the absence of regulation, due to the nature of their business models, and the tremendous efficiencies brought forth by their services. As such IXPs do not undertake the provision of any licensed telecommunications service and should therefore not be regulated as such. Moreover, as noted in the CP, no jurisdiction till date, has imposed regulatory/licensing requirements upon IXPs, and TRAI should avoid setting an inappropriate precedent in this regard.
- (b) Mandating networks to join IXPs would be poor policy that will result in market distortions and inefficiencies. It would amount to a regulatory intervention in the interconnection market, which has thrived so well without any regulation.

Therefore, and in the absence of any evidenced market failures, the TRAI **should refrain from imposing regulatory or licensing obligation on IXPs or other entities**

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<sup>11</sup> See, Kende M., Hurpy C., “Assessment of the Impact of Internet Exchange Points – Emperical Study of Kenya and Nigeria”, Internet Society and Analysys Mason Report, April 2012, Available at: <https://www.internetsociety.org/wp-content/uploads/2017/09/Assessment-of-the-impact-of-Internet-Exchange-Points-%E2%80%93-empirical-study-of-Kenya-and-Nigeria.pdf>

<sup>12</sup> Paras 4.35 to 4.37 of the CP.



**providing peering services in the nature of IXPs (including licensed TSP/ISPs), since the core activity of such entities extends to merely providing traffic interchange points.**

#### **IV. Treatment of Data Protection Related Issues**

Chapter 5 of the CP deals with aspects of data ethics, privacy, and security in relation to the telecommunications sector. Specifically, the CP solicit suggestions on ways to replicate, for the telecom sector, the Account Aggregator (AA) framework being tested out in the financial sector – in line with the Government’s vision that the Digital Empowerment and Protection Architecture (DEPA) be used to empower users to manage their consents and enable seamless data sharing between data processors.

Additionally, the TRAI seeks inputs on other aspects relating to data protection that have not already been touched upon under the scheme of the Personal Data Protection Bill, 2019 (PDPB) and the TRAI’s earlier Consultation Paper on Privacy, Security and ownership of the Data in the Telecom Sector dated 16th July 2018 (Privacy CP).

The overall objective of creating a secure and seamless mechanism for transferring telecommunications subscriber data is appreciable. However, the CP does not outline a specific use-case for creating an independent and standalone architecture for telecommunications subscriber data – beyond the potential use cases highlighted by the NITI Aayog in its vision document for DEPA. It is also not clear whether the CP also intends for TSPs to become part of the AA framework as financial information providers.

Further, the AA framework, currently being piloted by the Reserve Bank of India (RBI), aims to operationalise well-defined use-cases in the financial sector, and is centred around a specific set of categories of ‘financial assets’ defined by the RBI. The AA framework is also still nascent and is likely to be fine-tuned after implementation based on practical learnings.

We also note that, upon the eventual enactment of the PDPB – now renamed as the Data Protection Bill (DPB) as per the recommendations of the Joint Committee released in December 2021 – account aggregators will be regulated as “consent managers” under that law and will likely be overseen by the Data Protection Authority (DPA).

There is no doubt that the TRAI will be an essential stakeholder in shaping the eventual regime governing data sharing in the telecommunications sector. The DPB requires the DPA to consult and coordinate with relevant sectoral regulators in framing codes of practice which may be used to regulate data fiduciaries and data processors as identified in specific sectors. After the implementation of the DPB, new institutional arrangements on data sharing will be required to be set up.

In view of the nascency of the AA and DEPA frameworks, and the institutional architecture set forth under the DPB, **we submit that the TRAI should visit these issues at an appropriate stage, subsequent to the enactment of the DPB**, once sufficient learnings are accumulated from the implementation of the AA framework in the financial sector.

#### **B. Response to Queries Raised in the CP**

**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 incentivised,**

**specifically for providing connectivity to the upcoming Data Centres/data parks? Do justify.**

**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.**

Currently, the terms and conditions contained in the revised Guidelines for Infrastructure Service Providers (Category – I) (**IP-1 Guidelines**), prohibit entities holding an IP-1 registration from providing dark fibre to unlicensed entities. Additionally, unlicensed entities, such as DCs, are prohibited from engaging in the deployment and operation of dark fibre networks, and there is lack of clarity amongst UL and UL VNO licensees holding relevant authorisations for access services or national long distance (**NLD**) services, on whether they can offer dark fibre to connect non-licensed customers. Even if a DC registers itself under the IP-1 category, IP-1 registered entities cannot directly provide dark fibre for point-to-point connectivity between two DCs of the same company.

Resultantly, DC operators are unable to buy or lease dark fibre in order to construct, operate and efficiently manage their own networks – configured and optimised to suit customer requirements – and are entirely dependent on licensed TSPs for connectivity requirements.

This is problematic because traditional networks operated by TSPs are principally designed for voice (Mobility) or public data services, such as IP broadband services, using best-effort redundancy principles. They are not suitable for cloud services, which require very high availability, bandwidth, and low latency for extremely high amounts of data; and achieving these outcomes using the services of licensed TSPs is especially difficult given India's vast geography, increasing demand for low-latency and high-bandwidth DC services, and relatively limited existing technology infrastructure and broadband deployment. Cloud services, especially, require high bandwidth and the ability to transmit very high volumes of data in the quickest manner possible. For these reasons, access to captive fibre optic networks is crucial for the growth of the DC industry in India.

Taking the example of submarine cable systems, where in view of growing demand for bandwidth, several over-the-top communications providers (**OTTs**) and cloud service providers (**CSPs**) have been investing in building new undersea cables, which for long had been the domain of telecom carriers – the TRAI should consider ways to enable CSPs and DC companies to invest in laying intra-city and inter-city fibre networks in the country.

In this regard, the TRAI should consider:

1. Allowing DC companies to lay their own dark fiber between two or more DCs of the same company, in order to connect customers equipment located within such DCs.
2. Providing a clarification that UL and UL VNO licensees holding relevant access service and NLD service authorizations, are allowed to lay fiber and provide dark fiber connectivity to DCs for the purposes of connecting customer equipment located in two or more DCs of the same company.

**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?**

Presently, DCs and other enterprise customers face two primary hurdles in terms of International Cable Landing Station (**CLS**) and submarine cable infrastructure landing in India – the first is the lack of a diverse and reliable network of usable cables, which can serve

the increasing bandwidth and capacity requirements of Cloud Service Providers (**CSPs**), Over-the-Top Applications providers (**OTTs**), and other enterprise customers. The second, is the lack of firm and expedited timelines for obtaining requisite regulatory approvals for cable repairs in Indian territorial waters.

### ***Need for Facilitating Additional CLS Infrastructure for Network Diversity and Augmenting Bandwidth***

While capacity requirements for international submarine cable bandwidth have gone up significantly over the last 5 years, actual usable cables which can cater demands of such customers are very limited (5-6 options in western India, and 4 options towards Eastern India). All these usable cables land in Mumbai (for connectivity to Europe) and in Chennai (for connecting Asia Pacific destinations), so there is limited network diversity at play in current scenario. Moreover, other existing CLSs in Cochin, Trivandrum, Tuticorin are either low-capacity systems, or aging systems approaching to End-of-Life (EOL).

Resultantly, there is a need to encourage and facilitate the establishment of additional CLSs but closer (<150-200kms) to main cities like Mumbai, Chennai, Hyderabad, Bangalore, and Pune which are currently candidates for the establishment of hyper-scale DC infrastructure. Potential landing points could be identified in other cities near Mumbai (Vapi, Daman, Mongrol, Mahuva, Mundra, etc.), cities north of Chennai (Vizag, Chirala, etc.). These places are not too far from key aggregation locations. For instance, Vapi/Daman can be connected with Mumbai with 150-200kms fiber backhaul or Vizag can be connected with Hyderabad with less than 250kms fiber backhaul network.

Therefore, the TRAI should consider incentivising new entrants to build, land and operate submarine cable systems by rationalising access charges, removing regulatory hurdles and minimising barriers to investment in submarine cable systems landing in India. This will encourage global and domestic carriers to land more subsea cables into India and improve its international connectivity and adding route redundancies.

### ***Need for Expediting Timelines for Regulatory Approvals Required for Cable Repairs in Indian Territorial Waters***

Currently, submarine cable repairs in Indian territorial waters require approvals from multiple agencies, all of which are requisitioned through the DoT acting as a single window. Additionally, customs approvals are also required for import of repair vessels. Despite this, the timeline for obtaining all requisite is approximately 12-16 weeks, resultantly delaying the process of cable repair beyond 3-4 months. In comparison, similar approvals are typically obtained within to 3-4 weeks, in markets like Europe, Singapore, and US.

Resultantly, the TRAI should consider appropriate recommendations to expedite the process of obtaining regulatory approvals for submarine cable restorations, impacted in the course of operations. One of the potential solutions could be to award advance approvals for 18-24 months so that any repair required can be expedited in 2-3 weeks.



**Annexure – 1****Overview of Measures Required to Promote the DC Industry in India****I. High Level Summary of Measures for Enabling Development of DCs**

Some important measures for enabling development of DCs and addressing the issues that developers of DCs face are listed below.

**1. Power**

- **Establish dual power grid networks to ensure uninterrupted supply of electricity.** DCs operate round the clock and their customer contracts, require them to be functional up to 99.995% of time. Dual grid supply will, in most cases, ensure one power source is functional when the other faces a breakdown.
- **Allow DCs to consume Renewable Energy (RE) procured directly from power producers through the open access system, without any restrictions.** Discoms have put in various restrictions around usage of RE, even if procured directly from the power producer, and this stands in the way for companies meeting their commitments on usage of RE. Therefore, DCs should be allowed to procure power directly from open access systems. However, factors such as restrictions around using RE in peak hours, frequent changes in open access regulation, delay in connectivity & injection approvals from the governing authorities, insufficient transmission capacity should be addressed in order to incentivise DC operators to buy renewable energy through open access or invest in Renewable Energy Power Plants.

**2. Network & Connectivity (Other Issues)**

- **Enable Data Centres entities to import dual use network equipment for internal use and network infrastructure.** Currently, DCs in India are prohibited from importing certain dual use equipment, even if they do not intent to use such equipment for telecoms services. These restrictions lead to operational challenges and affect the quality and efficiency of DCs and CSPs.
- **Implement a Dial Before You Dig Policy (DBYDP), which would allow authorities responsible for carrying out construction work to access information about the underlying network infrastructure before digging.** Frequent digging of roads due to construction work and lack of coordination between multiple agencies, poses a continuous threat of cable breaks or “hits” to DC operators. DBYDP can minimise the cable breaks.
- **Create Common Service Ducts and utility corridors in all new cities as well as State / National highway road projects.** Common Service Ducts and utility corridors along with efficient and cost-effective mechanisms for infrastructure companies including DC companies to gain access to them will bring down maintenance and repair costs for the companies.

**3. Building Code**

- **Recognise Data Centres as a separate category in the National Building Code.** Currently, the building codes in India do not recognise DC as a separate category. So, the building norms of office buildings are applied to Data Centres. These norms are not suitable for the needs of DCs, reduce the spatial efficiency and

unnecessarily increase the operations cost. Recently, in Dec 2021, MEITY has formed a working group, with members from relevant departments/ government agencies and various industry associations including NASSCOM. The mandate of the Working group is to study, evaluate building code requirements and to formulate a new building code for the data centre industry.

#### 4. Ease of doing business

- **Introduce deemed approval system for statutory clearances.** About thirty different approvals are required from central and state governments (see **Table 1** below), before a DC can start operations. While a single window system for statutory clearances exists in many states (21 states as on Dec 2019), no such system exists at the level of Union Government. Further, to prevent delay in these clearances, a deemed approval system with specified timelines, should be introduced both at the Central level and State level. Under this deemed approval system, an application would be deemed as approved, if the government fails to act on the application within the specified timeframe.

Currently, DPIIT is developing a National single window system for regulatory clearance related to new investments. This initiative is expected to enable pan-India single-window clearance for Data Centres

- **Notify DCs as Essential Services under “The Essential Services Maintenance Act, 1968”.** In times of calamity and other crisis, the status of Essential Services could provide the basis for State Governments to consider providing necessary support to DCs on a preferential basis.
- **Enable the Establishment of DC Parks.** DCs have unique infrastructural requirements, particularly on account of power, land and connectivity. The power demand (critical IT load) of a DC, today, ranges from 15 - 100 MW. To provide a comparison, the average power demand of a district in India is around 500 MW. This huge requirement of power makes it challenging to build a DC in a mixed-use zone or even in an industrial estate, as the power distribution network is generally not designed to meet such huge demand in such area. Further, a DC would require anywhere between 3-12 acres of land and high bandwidth connectivity for its operations.

Considering that all of these factors require government intervention, one of the potential interventions would be the establishment of dedicated DC Parks. These DC Parks will be demarcated enclaves, pre-provisioned with the necessary infrastructure, designed to host multiple hyper scale DCs. These parks with their pre-provisioned infrastructure should operate on a plug and play model, significantly reducing the time required for establishing and operating a DC.

#### **Table 1: Illustrative List of approval / clearances required before commencement of operation**

The approvals required to establish a Data Centre facility may have some variations in different states. As an illustration, the clearances required to build a Data Centre in Chennai is provided in the below table.

S. No	Clearance	Authority	Under single window
<b>Statutory Approvals - Pre-Construction Stage</b>			
1	Environment Clearance	Ministry of Environment & Forest (MOEF)	No
2	Consent to Establishment	Metropolitan Development Authority & Central Pollution Control Board (CPCB)	Yes
3	Provisional Fire No Objection Certificate (NOC)	State Fire and Rescue Services / National Fire Protection Association (NFPA)	Yes
4	Storm Water Permits	State Pollution Control Board	Yes
5	Sewage Discharge Approval	State Pollution Control Board	Yes
6	Tree Cutting NOC	Central Pollution Control Board (CPCB) - Forest Department	No
7	Drainage/ Garden NOC	Metro Water Supply and Sewage Board	Yes
8	Building Permit / Approvals	Metropolitan Development Authority	Yes
9	Commencement Certificate	Metropolitan Development Authority	Yes
10	Telecom	Service provider / Controller of Communication Accounts of State	No
11	Water Supply	Metro Water Supply and Sewage Board	Yes
12	Power Connection Feasibility, Design & Sanction	State Electricity Board	Yes
13	Traffic Approval NOC	Commissioner of Traffic	No
14	NOC for High Rise Structure	Airport Authority of India (AAI)	No
<b>Pre-Construction Stage Compliance</b>			
15	Registration with DIC	Director of Industry (DIC)	No
16	Registration IEM	Ministry of Commerce	No
<b>Statutory Approvals - During Construction Stage</b>			
17	220 kV Power connection cable laying from Substation to project premises	State Electricity Board	Yes
18	220 kV Power Connection Substation Testing and Charging	State Electricity Board	Yes

19	Form V Approval - Labour	Labour Department - State Government	Yes
20	Plinth Checking Certificate	Metropolitan Development Authority	Yes
21	Electricity Safety License	Central Electricity Authority (CEA) / Chief Electrical Inspector to Government (CEIG) / Public Works Department (PWD) Electrical Inspector	No
22	Elevator Permits & Certification - Safety License	Central Electricity Authority (CEA) / Public Works Department (PWD) Electrical Inspector	No
23	Diesel Generator System approval	CEIG/ State PCB / PWD-Electrical Inspector	No
24	High Speed Diesel License	Petroleum and Explosives Safety Organisation (PESO) / Chief Controller of Explosives Department (CCOE) / PWD - Electrical Inspector	No
<b>Statutory Approvals - Post-Construction Stage</b>			
25	Lift Operating Licenses	Public Welfare Department - State Government - Lift Inspector	Yes
26	Occupancy Certificate	Metropolitan Development Authority - Fire Department	Yes
27	Completion Certificate	Metropolitan Development Authority	Yes
28	Consent to Operate Certification	Central Pollution Control Board (CPCB)	No
<b>Statutory Approvals- Fire and Explosive</b>			
29	Preliminary Explosive Licence for HSD	Petroleum and Explosives Safety Organisation (PESO) / Chief Controller of Explosives Department (CCOE)	No
30	Final Explosive Licence for HSD	Petroleum and Explosives Safety Organisation (PESO) / Chief Controller of Explosives Department (CCOE)	No