

# Draft Amendments to the Electricity Act 2003 Redux (2018)

Devil is in the details or are there other risks?

*A summary, analysis, and public comments Discussion Note*

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**BROOKINGS INDIA**

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November 2018

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# DISCUSSION NOTE

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2018 has brought about a new set of proposed Amendments to the 2003 Electricity Act (EA2003), which are similar to the 2014 draft Amendments. In this note, we summarise the Amendments, study the implications of the amendments, and examine differences between the 2014 proposed Amendments. We end with specific comments on the draft Amendments as part of public comments, as an appendix, with line-item suggestions.

This note is our specific interpretation, and no claim is made for the exhaustiveness of these comments. We focus primarily on a handful of key issues:

- 1) Carriage and content separation
- 2) Quality supply and procurement of power
- 3) Subsidies and pricing
- 4) Oversight and regulation
- 5) Innovation and transformation

A further disclaimer: we are not lawyers.

## Summary of key issues found

1. **Intentions versus achievements** – Some of the items in the proposed Amendments aren't "new" but are reframings or enforcements of what was already in the EA2003, but wasn't achieved/enforced. Examples include reduction of cross subsidies to 20 percent, requirement for quality supply, etc. Now, there is mandate for 24x7 supply (a desirable goal) that raises a new set of issues: Can this mandate be met soon? How would one even know without better monitoring? Does that include agriculture – they are rostered today and not promised 24x7 power? All consumers are to be metered – does that extend to agriculture?
2. **Aggressive cross-subsidy phase out** – Removal of distortions is a key focus, translating into a three-year phase out of cross-subsidies, starting with a 20 percent cap. There are three issues with these plans. Is this zero for all consumers, even within a consumer category? Second, states can still give subsidies, but these must be via Direct Benefit Transfers (DBT). Is DBT ready, especially for the poorest of the poor, or efficient compared to payments to the utility? Third, this will raise fiscal burden on states – do they have the finances? We haven't even addressed the political appetite for this change.
3. **Theory versus practice of Carriage and Content separation** – The current distribution company will be broken into a wires company (carriage) and a retailer (content), termed Distribution Licensee (DL) and Supply Licensee (SL). Will we get enough competitive Supply Licensees to improve performance, that too without the risk of cherry-picking? The Distribution Licensee (a wires company) would bear much lower risk, and we face the issue similar to today where the lowest layer of the vertical chain (now the SL) gets paid last and bears maximum risks, while layers above (today generation and especially transmission) make money.
4. **Uncertain dynamics and apportionment** – Losses aren't even known, especially in rural areas – how will they be apportioned? The same apportionment issue is there for existing PPAs. Having an Intermediary Company take over existing PPAs cannot sustain as a one-time process. By definition, SLs will grow or change or evolve, and so as an SL grows, will they mandatorily take over portions of PPAs from other SLs, or how do they balance

procurement with other (newer) supply, especially as RE is growing (and often cheaper at the margin)? The same problem of dynamics applies to loss apportionment.

5. **Quality mandated via 100% Power Purchase Agreements (PPAs)** – The requirement to mandate 100 percent PPAs equivalent to last year’s average demand is exceedingly constraining, and limits flexibility, which will be a growing need as the grid adds more RE. This should be removed, and at best turned into a system of percentage PPAs decreasing, as supply markets mature.
6. **Governance challenges** – Two challenges we have faced historically are enforcement and coordination. If central government policymakers believe states have been slow in improving performance, strengthening their institutions instead of taking away their flexibility (or even some powers) may be more sustainable in the long run (not to mention will create more state-level buy-in). There are a host of other governance issues such as limited review of what could become draconian performance standards, handling of PPAs and their compliance, etc. There is also incongruity between some linked activities of the government such as the National Tariff Policy, which differs on consumer classification, cross-subsidies, minimum performance standards, and more.
7. **Regulatory mindset over an enabling one** – The longer-term goal should be more stakeholders providing better quality services, enabled by technology, which even include storage solutions, aggregators, etc. The framework puts them into silos with their own regulation(s), instead of reducing regulations. Generation now requires a DPR to go through CEA. Storage is not even clarified as how it will be regulated, except a carve out for Electric Vehicles (EVs); in reality, it would be both a consumer and a “generator”.
8. **Problems of specification** – Too much is left “to be determined” (TBD), and a few things are over-specified. Some issues cannot be solved at a legislative level, but legislation must lay out the framework and intent for which subsequent details via rules/regulations/notifications would apply. PPA and loss apportionment are already listed as issues left TBD, and other challenges relate to performance standards. If we actually do simulation and detailed analysis, we may find some proposed rules may have fundamental flaws. Some issues can become existential challenges, and we cannot rely on “we’ll figure it out” as the process.

Ultimately, the challenge isn’t just the specifics or intent, but how do we get there? The only solution for this is deeper analysis, multi-stakeholder iteration and transparency.



# 1. Background: India's electricity sector – gaps in diagnosis lead to wider gaps in treatment plans

For any new policy, intervention or “solution”, a starting point is often asking what is the problem you are trying to solve? The draft Amendments to EA2003 appear to focus on distribution companies (Discoms) as the problem area for the Indian power sector, which is not a new revelation, and in many ways would be correct. A more nuanced examination of the issues, however, would find that it's not Discoms per se that are the problem (they're not purposely inefficient or malicious), it's the political environment in which they operate, that they do not have the resources or the freedom to operate in a commercially viable manner. While issues of affordability and the social contract for electricity as a basic public utility may necessitate changes to purely market operations, there are a number of different instruments available to address such issues, not all of which have been examined fully, let alone tried.

What are the key challenges for India's power sector? A pithy summary would be the lack of sustainability, which spans not just environmental but also economic and social equity. A long push towards adding capacity has meant that for a change, the lack of capacity isn't the challenge, especially not on average. But India needs power at the right time, place, etc. with the right characteristics (of ramping, predictability, etc.), not to mention at the right price. About 80 percent of the costs for Discoms relate to power procurement (note: this figure includes the extra procurement required due to losses in transmission and distribution), and so there's a fundamental issue when examining where is the inefficiency or scope for improvement in the system. If anything, many Discoms underinvest in hardware and processes to improve their service in a cost-effective manner, more so in rural areas. If there are complaints of lack of quality supply, and the proposed solution is new regulations asking for quality supply, aren't there rules and regulations existing that mandate quality supply? Is this simply an enforcement problem? If not, are there structural deficiencies that have prevented quality supply so far? Is the current framework, of mostly state-owned Discoms, the bottleneck? If so, would privatisation be a solution?

The EA2003 itself asked for removal of cross-subsidy mechanisms and started with a cap of these equal to 20 percent but it never happened. Why should one expect the Amendments, which have some changes in instruments but not the objective, to fare any better?

## 1.1. History and context of policy shifts in India's electricity sector

An examination of the history of change in India's electricity sector can sharpen the expectations and instruments attempted for improvements. This should also provide inputs to examine what has changed (or not).

Post-independence, India's power sector focused around state utilities, called State Electricity Boards (SEBs). These were government departments tasked with all aspects of power supply. The 1970s saw the establishment of Central entities, notably in generation (such as NTPC), to overcome shortfalls in supply and other limitations of SEBs. There was a parallel nationalisation of coal mines, leading to the creation of the coal mining behemoth public sector unit, Coal India Limited.

In 1991, in tandem with broader economic liberalisation, there was a push towards adding private sector participation in generation, including foreign participation (originally with central government counter-guarantees, for eight plants, such as the Enron Dabhol project). Towards the end of the 1990s, there was a move towards the creation of independent electricity regulatory commissions, as well as unbundling of the SEBs into separate generation, transmission, and distribution companies. In a few states such as Orissa and Delhi, there was even privatisation of the Discoms.

The 2003 Electricity Act was focused on increasing private participation in generation, and clarifying obligations of licensees as well as oversight norms. Large consumers (above 1 MW) were allowed to procure power from any supplier, dubbed Open Access. It also, on paper, specified a few pricing frameworks, such as asking for a cap on cross-subsidy surcharges.

After EA2003, there were a number of large, flagship schemes from the Central Government, focused on improving performance of the utilities, including APDP, APDRP, R-APDRP, RGGVY, IPDS, UDAY, Saubhagya, etc. These provided much-needed central government capital and also pushed operational and performance targets, for example, the mandate to reduce Discom losses (aggregate technical and commercial, or AT&C) below 15 percent. No state has privatised their operations since Delhi, though a handful of locales (mostly urban) have begun franchisee operations, handing over operations to a private third party. The major focus overall is Power for All, 24x7. This is supported by various programmes, projects, etc., some relating to operations, some finances. Synthesising some of the drivers and focused activities, these include:

- 1) **Capital** – Growing demand (with a legacy of shortfalls of supply) meant the solution was to add more infrastructure, especially generation. Given lack of capital, both within the government and domestically, there was a pull for global private capital.
- 2) **Competition** – Competition is viewed as something that lowers cost and improves quality. This was easiest to unleash for generation, as other segments had facets of natural monopolies. A dual of this was private sector participation, which was expected to be more efficient and innovative.
- 3) **Regulation** – Not only were independent regulators there to balance consumer needs with operator needs (who were increasingly from the private sector), they were also meant to unravel the Gordian knot of electricity pricing. Given the concurrent nature of electricity under the Constitution, under both Center and States, there was ostensibly a balance between the two, where different regulators had purview over electricity across versus within states.
- 4) **Improved performance** – A significant portion of the investments were for improved performance especially AT&C loss reduction and improved access to electricity.

## 1.2. Discussion on historical versus future drivers

A growing electricity system (with per capita consumption about a third of the world average) will certainly need new capacity and thus new investments, under what terms and frameworks would be a complex challenge. Capital can always be available if the risk-adjusted returns are right. But there are trade-offs in terms of frameworks — often risk is transferred instead of reduced. For example, power purchase agreements (PPAs) are good for generators, but transfer risk to the Discoms, especially if they don't need so much power later on, or if cheaper alternatives emerge, as certainly is the case for Renewable Energy (RE). The main challenge for capital isn't sufficiency, but the right terms, which are linked to risks.

While competition for generation seems a no-brainer, even this has issues because not all electricity is fungible — it varies by time, location, ramping characteristics, controllability/predictability, etc. It's a much harder question what competition means at lower layers, viz., transmission, distribution (wires), and retail. Assuming transmission and DLs operate with limited competition, exactly what will competition amongst retailers achieve? Much of their cost structures are linked to their choices or lock-ins for DLs, transmission, and generation. The other side of SL competition relates to consumer mix — if we rely on market mechanisms, this also cannot escape consumer heterogeneity, which leads to the strong risk of cherry-picking. If we rely on instruments to ameliorate such issues, or overcome underlying differences in fundamentals, it's not clear how much scope for efficiency improvements remains.

When it comes to regulation, a common lament across India (not just in electricity) has been on enforcement. Many rules are there on paper, but aren't enforced. This even extends to issues such as removing if not altogether ending cross-subsidies as presently set up — EA2003 mandated caps and gradual removal. Similarly, while EA2003 enabled Open Access, relatively few consumers have opted for this compared to the eligibility. This is because of overt if not covert resistance by Discoms, who do not want to lose their best customers, and regulations that maintain high surcharges for Open Access. Even worse, Open Access as set up is one-sided, with extensive switching possible in theory, which perhaps rightly should be resisted by Discoms since it not only raises costs for



other users, but makes planning that much harder. This should be a strong lesson for the proposed Amendments, where we could draw analogies between Open Access and retail competition (i.e., choice for all consumers, not just large consumers).

A subtle if not hidden thread of policies and programmes has been the need for a concerted, all-India effort. Rarely were outliers treated differently — norms were set and applicable to all (except sometimes private Discoms were not included in government grants). In fact, a number of schemes have been described as “bringing up the bottom”. While useful to push the laggards, this sort of “least common denominator” philosophy has a dual of not embracing the inherent as well as emergent heterogeneity across Indian utilities.

Left to themselves, different states would have progressed differently, constrained by internal issues of legacy, consumer mix, supply options, funding, political pressures, etc. To overcome many of these issues, there have been norms and mechanisms to increase inter-state transfers of electricity (so states are less prisoners of geography or history) and almost all the big pushes that involve capital investments have relied on central government funding, for example, to pay for village and household electrification, or to install proper accounting and billing systems (spanning metering, databases, etc.)

Heterogeneity is double-edged — it can be a challenge for minimum performance standards or obligations, but it can also be harnessed for enabling faster change in pockets. The question becomes at what layer of government planning should this be handled? In legislation? Or in regulations? Or in programmes/schemes?

The good news is progress has been significant, and we anticipate it’s more a matter of months and not years before we achieve universal electrification. The next challenge becomes quality, affordable power supply.

The biggest challenge in the coming years is to adjust to a new equilibrium, a so-called transition, not just with higher RE but also with more energy transactions with more players relying on newer and smarter technologies. Any proposed Amendments should be to enable such change, not restrict it. Almost all change involves winners and losers — understanding and then managing such issues is the need for not just any Amendments but complementary or secondary efforts, for example, ones that are based on efforts such as the National Electricity Plan or the National Tariff Policy. Too often, we have efforts or proposals in one layer that aren’t in sync with other layers.

Everyone wants a grid that is cleaner and smarter. But Smart Grids require a minimum scale and concentration. One cannot say that only consumers of a certain type (large size or with a certain SL) are smart, else we lose functionality such as auditing (for theft control) or smart load management. In such a case, how do we separate blanket transformations from transformations meant to be driven by focused competitive players?

## 2. Summary of EA2003 Amendments and Discussion

### 2.1. Key points in the proposed (draft) Amendments to EA2003

The proposed Amendments span a spectrum of change, ranging from simple tweaks to modest modifications to dramatically different policies. We summarise some of the key proposed changes below:

1. **Separation of Carriage and Content:** The headline change is a re-introduction of what discussions call separation of carriage and content. These actual terms are nowhere to be found, but the intent remains the same as the 2014 draft Amendments which didn’t pass, despite wide debate – to separate the wires business from the retail business, creating 2 layers within today’s Discom world, the Distribution Licensees, and the Supply Licensees (DL and SL, respectively). SLs are meant to compete by design, while there is provision for possibly having more than one DL in a jurisdiction. The transition from the existing scenario to future licensees is to be handled through a Transfer Mechanism.
2. **Quality supply and procurement of power:** The Amendments call for quality supply of power, failing which there will be penalties that can extend to cancellation of the license. There is also a mandate for licensees to

establish medium and long-term PPAs to “meet the annual average demand of power of the area which it has the obligation to serve”. There is also a Renewable Purchase Obligation (RPO) that shall be determined by the Central Government from time to time, and a new Renewable Generation Obligation, that asks non Renewable Energy (RE) generators to also produce a fraction of their output as RE.

3. **Subsidies and pricing:** The Amendments ask for removal of cross-subsidies within three years, and start with a 20percent cap on cross-subsidies. If any government wishes to provide any set of consumers a subsidy, this is meant to be paid directly to the end-user via Direct Benefit Transfer (DBT). For open access consumers, surcharges are to be capped at 20 percent of wheeling charges, and not the total or average charges. Supply licenses would be free to set their own tariffs subject to a cap established by the appropriate Regulatory Commission that goes into effect after the implementation of the Transfer Scheme. There is an exception where the appropriate Commission shall not set tariffs (including caps) where it is determined through a transparent bidding process.
4. **Oversight and regulation:** The Amendments call for increased oversight both by the commissions and of the commissions. The commissions have been given powers which may be termed as regulatory overreach. However, as the amendments now shift the momentum to a rule-based approach, the absolute autonomy of the commissions is also being limited in the Act. For example, open access shall now be governed by rules under the Act instead of State Commission’s prescription.

**By State/Central Commissions** - Licensees are subject to biennial reviews. No PPAs shall be cancelled except with commission’s approval. In case of non-meeting of standards of performance and/or RPO’s, large/progressive penalties are payable by licensees. Commissions to initiate suo motu proceedings for tariff determination in case of non-submission of petition. Commissions shall have all the powers of a Civil Court. Matters pertaining to pass through in tariff on account of change in law/duties/taxes etc. shall be decided in 30 days. All other matters have to be disposed off within 90 days. There is a secular increase in penalties payable by licensees for various violations of rules under the act.

**Of State Commissions** - Appellate Tribunal (APTEL) can review the orders passed by the Appropriate Commission under this Act for ensuring compliance of the provisions of the Act and the Tariff policy. Timeframe for disposal of an appeal reduced to 90 days (from 180 days). Composition increased from four members to six members. Forum of Regulators (FoR) to review the performance of the Appropriate Commissions once in three years with respect to their functions under this Act. Selection committees for appointment of Members of SERCs have been extensively revamped.

**Appropriate Government** - In case of any complaint against a Licensee, the appropriate Government may recommend for the revocation of license. Performance in respect of the functions of the Central/ (Central & State) Commission shall be reviewed quarterly by the Chairperson and a report shall be submitted to the Central/ (Central & State) Government. There are also committees envisaged such as the Forum of Electrical Inspectors and a National Power Committee.

**CEA** - For any new generation capacity expansion, a detailed project report shall be submitted to CEA. CEA maintains authority to specify a number of technical and operating parameters, and even market-oriented specifications.

5. **Innovation and transformation:** There is significant mention of smarter grids and renewables, and even Electric Vehicles (EVs). There is an easing of norms for decentralised distributed generation and EVs are now a legal business that isn’t treated as a resale, specifically, “transactions involving charging of batteries for electric vehicles by charging stations shall not be construed as distribution, trading or supply”.

## 2.2. Discussion of Key Points in the Draft Amendments

A lot of issues are left unsaid, and while legislation should not and cannot spell out tiny details (that is left for Regulations/Rules/etc.), a few issues are of such fundamental nature that philosophies and mechanisms need to be spelled out. This is especially important when there is a conflict or trade-off. For example, the Act already species that policies (legislations) trump Regulatory Commissions.

### 2.2.1. Carriage and Content Separation

If we consider carriage and content, the expectation is that this will lead to vibrant competition, and will drive efficiency and improvements. The obvious question is whether we will have vibrant competition, or is there a risk of limited or skewed competition, i.e., cherry-picking? Will the proposed solution for separation of content and carriage resolve long-standing Discom problems, viz., the issue of huge losses, low offtake of electricity at true delivery prices and strained infrastructure at the distribution side? The Discoms have remained the weakest link in the value chain and various reforms over the years have tried to resolve the quagmire, but have failed. As supply licensees would have an option of choosing amongst the areas available for bidding, they would choose the best option amongst the supply areas and profit immensely. The dual of this also applies – it is mainly the consumers living in wealthy or commercially attractive areas who would be able to benefit from increased competition on the supply side. Areas that are less attractive to serve can spiral down a path of low serviceability, poor quality of operations and generally low level of power supply, along with high power costs, both due to inherent or structural reasons, as well as lack of competition.

Issues not addressed and related questions:

1. How is cherry-picking avoided? Even if an SL sets up tariffs that are “non-discriminatory”, i.e., universally applied, these could still be self-selecting by being attractive only to some segments of users.
2. What happens to incumbents — will all existing Discoms be given a first right of refusal, i.e. existing Discoms shall be given an opportunity to either become a DL or SL in their current area of operations? Or, will they de-facto have both licenses?
3. If an entity has a DL, and its sister concerns/associate company/subsidiaries/any other arm competes with other SLs in Supply, how do we protect against market power? This challenge has been seen repeatedly when we considered structural separation (wires vs. retail) in the telecom space, especially outside India.
4. Is the geographic SL coverage always identical to that of the DL? This cuts both ways. Maybe a potential SL only has the resources or has a natural link to a limited area. On the other hand, we would find most interest in urban areas. Even franchisee schemes have recognised this challenge, and most have focused on urban areas or have an urban anchor.
5. What is the expectation for having multiple DLs in a coverage area?
6. DL (as the wires business) would remain mostly predictable and profitable like PowerGrid today (a wires entity), and, like today, it appears all risk would concentrate within the lowest layer of the value chain (today the Discom, and later to future SLs). Can or should they have the same expected Rate of Return?
7. Similar to how transmission has a separation between wires and operations, namely, the transmission entity (PowerGrid for the center) and the grid operators, such as POSOCO at the center, which is the independent system operator (ISO), do we now also need to balance the distribution wires licensee with a Distribution System Operator (DSO)?
8. Is there a provider of last resort? What is the default? What happens to existing customers of Discoms?
9. Is the demarcation point between the DL and SL the meter? It is not explicitly clarified. This is not just an issue of who owns it but who creates the specifications and who maintains these.

10. What is the mechanism for apportioning losses, cost structures, etc. across SLs in an area? They are unlikely to be similar in terms of consumer mix, consumption, etc. Even if a static calculated could be estimated, this would be dynamic, changing over time. What is the planned periodicity of such updates?
11. The Transfer Mechanism focuses mainly on assets. What about PPAs, other obligations, and other contractual issues – how do these transfer? Proposed Amendments briefly mention takeover of existing Discom PPAs by an Intermediary Company, but this cannot sustain via a one-time process. How do PPAs get allocated among future SLs? How do SLs balance procurement with other (newer) supply, especially as RE is growing, and yet their consumer mixes are changing?
12. Can there be better mechanisms for license terms and renewals? If terms of renewal are onerous, then no licensee will risk capital investments towards the end of their tenure.

### 2.2.2. *Quality supply and procurement of power*

There is a requirement to provide 24x7 power, but this is tied to having enough medium- and long-term PPAs equivalent to the annual average demand. Complaints by consumers should also be addressed in a timely manner. The review for the first two points (PPAs and 24x7 reliable supply) is listed as once in two years.

First, it shouldn't take two years to figure out if there is a shortfall in supply! Equally importantly, this restricts licensees based on PPAs they are obligated to undertake. In a high-RE world, we need more market or flexible mechanisms, instead of PPAs that treat all power the same. Current PPA norms aren't sufficient since they don't factor in time of day, so having enough energy (kW) on average doesn't inherently meet all the instantaneous capacity requirements, especially for peak power.

RPOs are now explicitly Central Government-driven, a change from before, and the policy seems to be doubling down by creating Renewable Generation Obligations (RGOs). It's constraining to specify RE for both demand and supply – both can't have a float in terms of their prices with fixed volumes.

There is also a slightly regressive move towards semi-licensing new generation, which was earlier de-licensed. This now requires submission of a Detailed Project Report to CEA. Hopefully, this is only for coordination and not permission. If CEA has the authority to deny a generation capacity from being set up on non-technical grounds, that places enormous burden on the government as it is now taking a call on the viability or need for any particular generation capacity, which is a call ideally made by the generation entity.

Issues not addressed and related questions:

1. Is agriculture itself also meant to receive 24x7 power? As of now, the language says all consumers. Rostering is a norm in many utilities, and may even be appropriate (not just due to economics per se but because they can allocate supply to off-peak periods).
2. There are attempts to monitor and measure quality of supply, which is at a feeder level. Without such data, it's difficult to benchmark and measure compliance. This needs to be made universal and (near) real-time. While we have feeder metering in most locations, it is not universal, and the data are not yet examined for supply quality (instead, focusing on measurement of power flows).
3. We don't even know the proper losses in many areas, especially rural, that were outside the purview of R-APDRP. Without knowing losses, apportioning them is a fundamental challenge.
4. If we do have a DL/SL split, what happens to existing PPAs?
5. If consumer needs are the basis for an SL procuring power, how can they make any commitments if there is market uncertainty in consumer share? If this is left up to the DL, then an SL is limited to if not hamstrung by the choices and contracting of the DL. Plus, this would violate some of the philosophy of wires and retail separation.

6. How shall we enforce uniform infrastructure availability and maintenance, despite market pressures of different SLs asking for different specs or dealing with different consumer mixes?
7. How can we have specific quality supply unless we have wider if not universal quality supply? (see the detailed example below)
8. There are specified penalties for poor quality supply – is this then going to simply covert to an economic basis for choosing when it's worth load-shedding?
9. Should there not be an inflation indexation for all costs/prices mentioned, e.g., penalties for non-performance? What if the penalties are more attractive than the cost to do the right thing, i.e., the intended performance such as quality supply or RE share? These risk become just a “cost of doing business”.
10. Will there be continued differences in how public and private utilities are regulated or viewed? The latter often miss government funding for key schemes. Instead of public versus private, there can be other criteria for differentiated support, for example, giving extra support to laggard or more challenged utilities such as in the Northeast or hilly regions.

Let us consider an illustrative example on issues of systems-level problems that cannot be addressed piecemeal. Recall that load-shedding occurs at a feeder level, often with hundreds if not thousands of consumers, where supply is controlled at the sub-station level. Let us assume there is an area with poor supply today. And we now have multiple SLs competing, with a single DL. Say we have a consumer who is willing to pay a premium for quality power (to the level they won't even need to buy a diesel generator or batteries). How can an SL provide contractually assured 24x7 power to some consumers but not others, e.g., their “gold” plan? There are only three ways for this to happen:

- i. There is 24x7 supply overall – not yet a reality, and if we had this, then we wouldn't be having this conversation;
- ii. That consumer has their own dedicated feeder, maybe a smaller one (“express feeder”) – this has its limits, especially for mid/smaller consumers;
- iii. The utility needs to deploy smart meters for all consumers on a feeder so there can be current limited supply during shortfall periods.

Note how these solutions are based on infrastructural constraints, and paper-driven separation of retail to competing licensees will not solve the problem.

### 2.2.3. *Subsidies and pricing*

In theory, with independent regulators, subsidies for consumers should have been a non-issue for utilities as the state government was meant to pay any subsidies chosen above and beyond the notified tariffs. The tariffs, in theory, would keep the utilities whole, even if it relied on some cross-subsidies across consumer categories. The amendments aim to change both aspects – removing cross-subsidies in a three-year period, and then also shifting subsidies directly to the end-users via Direct Benefit Transfer (DBT), instead of payments owed to the utility.

If one of the major challenges in the past was states delaying promised subsidy payments, leading to cash crunches, why do we expect them to release timely payments to end-users either? There are other problems with DBT, other than the transaction costs. The experience of DBT from other sectors has focused on cost savings via eligibility and leakage – here, physical connections are the criteria for subsidies and cross-subsidies, not “per person”. Even worse, DBT has never had close to 100% success, and the ones who most miss out on DBT they are notionally entitled to most likely be the most deserving, the poorer if not poorest of the poor. Sending money to the end-user also carries a number of other challenges, in that it may go to a notified person, often the head of the household (aka male), and may not be saved to cover the full cost of supply that the consumer is now to be billed. Given the concern here is not eligibility/leakage but payments, and these anyways have to come from the state, making lump-sum payments to the utility would likely be more effective and efficient.



Governments across the world use cross-subsidisation as well as progressive schemes (like tax rates) as a means of extracting payments from consumers to enable redistribution of wealth. Electricity slabs within a category can be viewed as something similar. In some cases, cross-subsidies may be a better contained and efficient tool than direct taxes for identification of consumers with high-paying ability, a benefit tax wherein people willingly pay a portion of service costs to avail such services, towards rooting out of inframarginal beneficiaries (people who would have engaged in an activity even without subsidy), and cross-subsidies can operate as a hidden tax which is politically efficient.

The amendment’s proposal of progressively reducing and subsequently eliminating cross-subsidisation in consumer tariff categories appears distortionary. Due to the difference in number of consumers (volume of units) across categories, the per unit over-payment doesn’t match the per unit under-payment. A representative Discom-level illustrative example is shown below:

*Table 1: Changing from today’s cross-subsidy levels to a 20% cap*

| Consumer Category | ABR/ACoS (Current Levels) | Total Cross-subsidy (in Rs. Cr.) at Current Levels | ABR/ACoS (with 80-120% cap) | Cross-Subsidy after capping (in Rs. Cr) | Difference in cross subsidies with vs. without cap (Rs. Cr.) |
|-------------------|---------------------------|--|-----------------------------|---|--|
| Institutions      | 123%                      | 8.19   | 120%                        | 7.12                                    | -1.07  |
| Commercial        | 140%                      | 596.11   | 120%                        | 298.04                                  | -298.07  |
| Heating & Motive  | 112%                      | 96.44  | 112%                        | 96.44                                   | 0  |
| Temporary         | 195%                      | 107.29   | 120%                        | 22.58                                   | -84.71   |
| HT-II             | 134%                      | 1721.58  | 120%                        | 1,012.63                                | -708.95  |
| HT-IV             | 153%                      | 79.65  | 120%                        | 30.06                                   | -49.59   |
| Domestic          | 90%                       | -486.36  | 90%                         | -486.36                                 | 0  |
| IP                | 61%                       | -1912.79   | 80%                         | -980.92                                 | 931.87   |
| PS                | 86%                       | -147.21  | 86%                         | -147.21                                 | 0  |
| HT-I              | 86%                       | -65.72   | 86%                         | -65.72                                  | 0  |
| HT-III            | 60%                       | -1.79  | 80%                         | -0.9                                    | 0.89   |
| SHORTFALL         |                           | near zero  |                             | -214.24                                 |  |

Note: Categories are as per Karnataka tariff regulations; HT = High Tension, IP = Irrigation Pumpsets

Using BESCOM’s published tariff filing details (FY 19), we observe that ABR/ACoS (Average Billing Rate/Average Cost of Supply) ratio ranges from as low as 61 percent (for agricultural, or irrigation pumpset [IP] consumers) to 153 percent (for one of the HT categories). We find the difference would be starker if ABR/VCoS [voltage level based Cost of Supply] was used instead of ACoS.

Undercharging subsidised users results in a revenue shortfall of Rs 2,613 crores, and regulators try and meet this entirely via notified tariffs to cover this amount through overcharging other users. In reality, even this undercharging per tariffs is not paid by many users, who receive a government subsidy (overwhelmingly in the agricultural (IP) sector) totaling Rs 2,444 crores.

Putting a cap on overpayments doesn’t realise a net zero-sum game vis-à-vis underpayments. Limiting the cross subsidising consumer categories to 100%-120% produces only Rs 1,466.87 crores overpayment, while the subsidy requirement would be Rs 1,681.11 crores. This leaves an incremental net shortfall of Rs 214 Crore as shown.

The IP Category is the largest cross subsidised category by value, and to achieve an ABR/ACoS ratio of 80 percent for these consumers, the tariff would need to be hiked by at least 30 percent. Even to maintain a 70 percent ABR/ACoS, the total cross-subsidy requirement will shoot up to Rs 2,171.55 Crore with a resultant gap of Rs 704.68 Crore.



*Table 2: Required tariff increases to meet cross-subsidy targets*

| Category | Tariff Increase required for zero cross-subsidy |
|----------|---|
| IP       | 63.45%  |
| PS       | 15.84%  |
| HT-I     | 16.23%  |
| Domestic | 11.11%  |
| HT-III   | 67.08%  |

Critically, these are totals across consumer categories, and due to telescopic slabs within categories, the required tariff increase for “no cross subsidy” can be far higher for multiple subsets of consumers.

As annually tightening caps are used until the zero-subsidy stage proposed in three years, all the incremental gaps in utility earning have to be borne somewhere – will consumers pay any portion of this or will all of this add to the government’s burden? This suggests further tax increases required, which would result in passing the burden of cross-subsidisation from a small set of consumers, i.e., Industrial/Commercial consumers, to a larger set of cross-subsidisers, i.e., all taxpayers (direct and indirect), which was likely never the intent of the planned removal of cross-subsidies.

The initial resistance to the removal of cross-subsidies may also lead to State Governments exploring loopholes to bypass the removal. One of the ways it can be done is through differentiated electricity duties. In fact, Maharashtra has in place differentiated electricity duties to generate variable duties based on differentiated consumer categories and their consumption. While today such schemes mean the so-called paying customers double pay extra (to the utility first and then the government), in the future, this may be a backdoor to maintaining end-user price differentials, which can also impact the relative competitiveness of different energy options, especially as self-generation options increase.

Removing cross-subsidies might make sense to signal the true cost of energy, and spur efficiency. The dual of this is the reality that most subsidies are mis-focused, for example, their thresholds for eligibility are more about entitlement or political gains than truly helping the poorest and deserving. Better creation of lifeline supply criteria and thresholds would be more useful than bypassing the utility via DBT. An alternative to generic DBT would be to have strictly limited thresholds for discounted consumption worthy of subsidy (which could even be paid to the utility instead of consumers), and the rest of the system would have mild subsidies within consumers, i.e., limited cross-subsidies. Note that almost all utilities have cross-subsidies compared to the true costs to serve a consumer. The category “residential” spans dense apartment complexes to rural hamlets, all with vastly different cost structures. Most countries limit the segregation into sub-categories, partly for transaction cost reasons, but more as a policy choice.

It is not clear how cross-subsidies are defined for calculation purposes – these depend heavily on assumptions on costs to serve, which vary across states. In theory, removal of cross-subsidies would be a zero-sum game, except we have not just subsidies but net losses by current utilities (in most states).

Cross-subsidies are a tricky issue that will need innovation. Say we have states already doing well, with limited cross-subsidy. They need to be rewarded. Unfortunately, practical realities including tariff shocks will require that widely lagging states will need the most time, if not even fiscal support.

Issues not addressed and related questions:

1. When the Amendments aim to end cross-subsidies, does that mean all consumers will be billed identically per unit? If not, what are the criteria or metrics for differentiation? If it is the cost to serve, it is more linked to size and location than segmentation by residential versus commercial. The planned updates to the National Tariff Policy indicate differentiation by physical parameters, viz., size of connection and voltage. This should also explicitly enable differentiation by time of day (ToD).

2. Is removal of subsidies only by category (residential/commercial/industrial/etc.) or also within consumer categories, i.e., the end of tiers or “slabs”?
3. All consumers must be metered – does this apply to agriculture as well?
4. Cost to Serve is often an averaged out number, not reflective either of granularity or time of day. The marginal cost to serve a consumer can vary measurably. Are there any requirements to move to such calculations? Time of Day pricing is mentioned only in passing.
5. How are costs to be allocated across various licensees? (see points before, on carriage and content separation)?
6. What is the basis for determining what an appropriate level of cost allocation or subsidy is? If the latter is only the state’s choice, the former is a complex calculation based on inherent fundamentals including usage patterns. Any marginal consumer (lifeline, especially rural) will cost much more to supply than average given their fixed costs of wiring, metering, etc. that will dominate their energy costs.
7. What is to prevent states from extending taxpayer subsidies exactly equal to the removal of cross-subsidies? Or even higher, as these now become outside the regulatory purview?
8. How would inclusion of electricity in GST impact the end user rates of consumption as well as lead to any distortions in the ecosystem? There are likely to be different GST rates for different aspects of the ecosystem, e.g., renewable energy components enjoying lower GST rates.

#### 2.2.4. *Oversight and regulation*

The amendments focus on providing more teeth to State Regulatory Commissions, and in the process, there is a risk it can create a regulation/licensing “Raj” in theory. This needs specific and periodic review and oversight. However, these changes are often subtle, and they also don’t address a key challenge – the difference between theory and practice today. If an SERC (State Electricity Regulatory Commission) doesn’t fulfil its obligations (such as timely Tariff Orders) or isn’t given appropriate help by the State (e.g., appointment of Members, or funding for staff), what can be done about this? This is before we tackle the elephant in the room, i.e., interference by the state in SERCs.

When it comes to ERCs, while there is an upper age limit of 65, there is no minimum age listed. However, it invariably leans towards government officers (from the Administrative Services and Utilities mostly) taking such positions post-retirement. How does one bring in new blood and fresh thinking, especially ones that can think in a more holistic manner instead of the current breakdown of eligibility or skills across accounting/engineering/legal/etc.? Further, as the selection of the members of the ERCs shall now be done through a Centre heavy panel, could it not end up creating bodies with inclinations towards the Center, let alone one linked to the ruling party in the Centre? In addition to a Selection Committee, shouldn’t there be emphasis on a Search Committee to identify worthy candidates?

As APTEL has been given a wide-ranging power, of suo motu review of commissions’ orders, wouldn’t that be construed as a backdoor entry of the Central Government in State Commissions’ functioning? Given a three-yearly comparison of State Commissions by FoR’s Committee, would this report be for “informational purposes only”? Who would be able to act on this report? FoR has limited statutory power. CERC has limited purview over states. Would APTEL? What actions can be taken by the Central Government based on quarterly review of functions of Commissions by their Chairpersons?

There is heavy emphasis but significant ambiguity in what is termed Standards of Performance, failing which Licensees face a range of punishments from financial penalties to loss of their License. Any such standards shouldn’t be determined top-down but reflect starting points, what the norms are (others are doing, etc.) It’s utterly unrealistic to have a utility with 50 percent cross-subsidy jump to 20 percent as a starting cap overnight. All targets should have realistic trajectories, else either there is a transfer of the burden (to consumers or governments) or stakeholders will be pressured to find loopholes to beat direct compliance.

Realistic expectations extend to oversight – there is a strong disconnect between the once in three-year review proposed and a mechanism that, with ambiguity, states any complaints and non-performance can be penalised to the extent of cancellation of the License.

Issues not addressed and related questions:

1. What are the powers of the Ombudsman to make decisions, as opposed to being a point of contact or interface?
2. What is the interface between state actions and Regulator actions? Is there a mandate to compile (and perhaps factor in if not limit) state subsidies into decision-making and planning at a Regulator level?
3. How do we ensure timely tariff orders? Is there a requirement to make these cost reflective? One major challenge has been where states don't raise tariffs for some time (often under political pressure), but then are forced to have large jumps, which then become a burden and have their own political costs.
4. What would be the roles and responsibilities of Power Committees? How will this coordinate with existing Regional Power Committees and other stakeholders, to ensure efficiency and reduce risks of an extra layer of bureaucracy?
5. How would tweaking the Selection Committee for members of ERCs result in maintenance of autonomy of the commissions?
6. How do we ensure alignment of incentives for licensees? While the amendments talk a lot about penalties in case of any laxity by the licensees, scope of incentives seems missing. There is anyways a ceiling on prices, and "efficiency" likely has its limits.
7. Is a Commission the right body to address what is ostensibly a commercial decision, to cancel a PPA? In theory, the PPAs themselves should handle issues of cancellation. If this is a more structural or policy problem, isn't this better addressed through policy-makers than Regulatory Commissions? If alternatives aren't working, and the Commissions are the (short-term) right vehicle to intervene, this is a band-aid on a larger, systemic problem.
8. Does suo motu Review of orders passed by State Commissions by APTEL (now called the Appellate Tribunal for Energy) mean that State Commissions shall now be answerable to APTEL? In case of persistent disagreements between APTEL and State Commissions, can APTEL carry out any actions against such State Commissions?
9. What is the intention of the three-yearly review of State Commissions by the Committee under FoR? (The terms of engagement are stated to be TBD). Three years is a long time to catch ongoing issues worthy of tweaks or updates. On the other hand, if they identify non-compliance, what is the remedy or recourse? How do we ensure this is not a form-filling or paper compliance exercise?
10. There are many rules for Licensees – where are the corresponding rules for consumers, except as relates to theft and payment? Experience from Open Access showed that regular switching is problematic for Discoms not merely due to losing "paying customers" but because it wrecks havoc on planning.<sup>1</sup> One suggestion has been to limit provider switching.

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<sup>1</sup> Daljit Singh (2017), Brookings India Impact Paper "Newer Challenges for Open Access in Electricity: Need for Refinements in the Regulations" available at [https://www.brookings.edu/wp-content/uploads/2017/04/open-access\\_ds\\_042017.pdf](https://www.brookings.edu/wp-content/uploads/2017/04/open-access_ds_042017.pdf)

### 2.2.5. *Innovation and transformation*

Information technology (IT) can spur efficiency, but some aspects of a Smart Grid, or edge-based RE generation, can also enable disruption that may have negative consequences either for a utility or selected consumers. There is no clarity on how the negative sides of such transformations are to be handled. A number of solutions begin with subsidies or indirect support, and while that may be helpful for nascent technologies, eventually these will scale to the point of being not second order but rather primary. Importantly, we want to ensure we do not subsidise the rich.

If so-called paying customers (those with the highest tariffs, especially commercial and industrial) are the first to increase their RE usage, this isn't an exit from the grid, but rather partial exit only. If they then come back to the grid during other periods (for example, in the evening, which is the peak at present) then such transformations become a hidden cross-subsidy.

Can one mandate or legislate innovation? While a number of programmes have had top-down support if not push, the frontier of viability and optimality will vary by Discom. What the policies should focus on is enabling transformations that are positive and manage issues of winners and losers. If something is net societally positive, but the pathway to reaching there is challenging, due not just to tradeoffs across users but also transaction costs and up-front costs/effort, then we need frameworks to overcome such hurdles. The actual equilibria should be left to the market.

This links back to an earlier challenge – how much of what appears to be a viable market for a new entrant is attractive due to underlying differentials if not distortions? This creates a space with a problem that is the opposite of cherry-picking. Many solutions may only be viable for a niche or subset of a licensee's consumers. Is there clarity on where and how widespread providers must offer any particular service, or must all services be universal and “non-discriminatory”?

There is another subtle challenge – some disruptions are singled out for support, for example, EVs. Why should we pick winners in terms of technologies or applications? The superset of EVs is actually storage solutions, which can help many consumers and the grid overall. Is a battery to be treated as a generator or consumer? If EVs are desirable, what about solutions for food cold storage? That also seems worthy – and this may be mobile or stationary, and it may need to draw power from various sources (RE, microgrids, regular grid, storage, diesel, etc.), and even be resold. Shouldn't it be equally enabled? Similarly, many future solutions may rely on third parties, aggregators, etc. These need not be burdened equally as traders.

Issues not addressed and related questions:

1. Are licenses only split as DL, SL, trading, etc.? What about if there is an overlap, of roles, e.g., via batteries?
2. How is demand response different from a virtual power plant? How is storage to be viewed?
3. How do we enable third-party aggregators, equivalent to how Ola/Uber operate?
4. A smart meter is a lynchpin of a Smart Grid – who decides its specifications? Who has access to the data? Say, for example, one SL wants to offer Time of Day tariffs based on pre-set buckets, while another wants to offer real-time pricing, (a) will the hardware enable this; (b) who will be responsible for configuring this setup?

### 2.3. Other issues unaddressed or missing

While the above five key domains have been discussed above, there are other issues and topics not covered or lacking clarity in the Amendments. Below is a list of some ideas worthy of being added to the Amendments in some form; these are distinct from the edits suggested in the last section of this note.

1. **Preparedness** – Are utilities ready for this? What is the minimum preparedness or steps needed to make these amendments succeed? Some aspects may relate to proper, granular, and transparent data required, e.g., level and quantum of load-shedding. The Amendments should specify what data are required, what homework is required, etc.
2. **Stage-gate approach** – One mechanism to handle preparedness is a stage-gate approach. On the other hand, if utilities don't perform, they'll be perpetual laggards. Hence, there have to be mechanisms to handle non-performance, for example, they go down an alternative path, such as privatisation. We also have to be willing to experiment and take risks. Unfortunately, the current system of oversight (CBI, CVC, CAG, Courts, dubbed the 4 Cs) disincentivises major change and we end up only with incrementalism, unless explicitly sanctioned from above. This is where smaller sized experiments or learning in a limited coverage area may be helpful, instead of aiming for scale (all India).
3. **Credible threats** – If there is non-performance by any entity, there have to be consequences. While many options are laid out for licensee failures, there is much less written about Regulator and State failures. While there is a political risk of some people who are penalised crying foul or discrimination, a combination of carrots and sticks may spur compliance. At the extreme, just like as has been done for large defaults relating to the banking system, the RBI may need to step in, linking state transfers to compliance with expectations of payments, for example, subsidies. Leaving non-payments up to contracts isn't sufficient, as arbitration clauses are rarely likely to be invoked, especially in a world with a monopsony buyer (e.g., the Discom).
4. **Minimum Standards** – While there may need to be heterogeneity in performance standards, there need to be minimum standards across utilities.
5. **Other structural changes** – there are a number of complementary aspects that will be key to success. One of the lessons of deregulation in the US and elsewhere was the need to maintain some amount of integrated planning, instead of leaving stakeholders in silos, somethings with opposing interests. Specific suggestions for these include:
  - i. **Separation of wires and operations for transmission** – Just like POSOCO is an ISO (Independent System Operator) at the central level, independent of PowerGrid (the Central Transmission Unit), we need separate ISOs at the state level
  - ii. **Stop treating all power the same** – Whether it's PPAs or even ~market mechanisms, the system must differentiate between different power based on its characteristics (time, predictability, ramping, etc.). While retail Time of Day (ToD) will take time to roll out, wholesale differentiation can begin sooner. India should set a date of n years from now where all procurement will be time of day linked. One need for this is to come up with mechanisms to handle existing PPAs, which didn't have such clauses. This may require intermediation or other solutions.
  - iii. **Locational marginal pricing (LMP)** – to signal granular value of injections and withdrawals of power varying by time and location. This will become more important as RE rises, which is poised to grow disproportionately across states. Even coal-based generation has immense spread in costs by location due to transportation costs.
  - iv. **Escrow and other securitisation mechanisms for generators (or other stakeholders as applicable)** – If there are specific clauses on generators to perform, the converse should also apply to utilities and states for delayed or renege payments.



- v. **GST** – While the decision to include electricity into the GST umbrella is one taken by Finance Ministers (it is outside GST as of now), how should the implications be propagated is a question worthy of debate. Would lower GST slabs for poorer consumers be a fair mechanism for handling the affordability gap across various consumers?
6. **Scope for learning, iteration, and alternatives** – Given India has had limited success with learning and iteration based programmes, it may require institutionalisation of these mechanisms. Instead of being told all the details of what is to be done, one mechanism for innovation is to set performance specifications, instead of specific technology or operational specifications. As an example, if the goal is to reduce carbon, then adding more rooftop solar isn't the only option (and may not even be the best option). Without the scope for feedback mechanisms, many top-down programs either wither away, or are hastily supplanted by alternatives, instead of being fixed.
  7. **Access to Data** – Even if one doesn't believe that data is the new oil, increasingly granular and dynamic electricity systems require far better data. The Act (Amendments) should define improved best practices and a framework to handle the same, perhaps under an appropriate Commission or Committee. Data access isn't just making everything online – there needs to be a segregation based on three possible types:
    - i. **Raw data to be made public** – These are to be placed online, and should be ideally in the right formats (electronic, historical archives, etc.).<sup>2</sup>
    - ii. **Limited access data** – these should have appropriate access control (e.g., consumer data only going to the consumer themselves, or aggregated/anonymised data made available to third parties with a need to know.
    - iii. **Confidential or restricted data** – These need to be protected by the entities collecting the same.

A vital task is for appropriately designated neutral bodies to define what the contours of these types are, else utilities or stakeholders would always prefer to limit access, not only for competitive reasons but also for reducing their compliance and other burdens.

Improved data are also key to reducing risks, especially when one aims to do a transfer or draw in new stakeholders. If one has high uncertainty or if stakeholders don't believe the data, this raises their risks, which they would price in their bidding or operations. Alternatively, false data painting a rosier picture than reality raise the risks to the new entrant.

8. **Identification and resolution of non-compliance** – This links to the issue of credible threats against non-compliance, and is a first step. Periodic reviews, committees, etc. may not be enough, and there should be alternative mechanisms as well. Most cases via the Ombudsman or even Commissions limit activity based on a petitioner's or questioner's locus standing.
9. **Identification and resolution of failures** – This is distinct from non-compliance as this may be a stressed asset or broader failure of objectives, e.g., it is entirely possible that stakeholders may be compliant with the letter of the law, but the underlying objective is not met. Today, there is an NCLT to deal with failing companies and power plants, but many failures are smaller than at a company level and don't involve the banking sector. They are also worthy of identification and remedial action well before they reach the stage of true failure!
10. **Privatisation** – While there is an expectation of new entrants, what if they aren't forthcoming? Is there any intent or push for privatising existing utilities, or is that now entirely on the back burner?

<sup>2</sup> A recommendation for best practices for public data in the energy and power sector, "Energy sector data: Suggestions for improving data quality and usability", by Sahil Ali and Tongia (2018), is available online at: <https://www.brookings.edu/research/energy-sector-data-suggestions-for-improving-data-quality-and-usability/>



## 2.4. The big picture of the Amendments – scope for improvement

These Amendments have been, in some ways, four years in the making. Spending a little time on both some details as well as pathways to make them a success is worth investing in, even if this delays their enactment a few months. Beyond many of the issues already elucidated, there are a few more points that need clarity or debate. Legislation is best aimed towards providing scope, guidelines, and objectives – the specific details should be left to subsequent regulations, notifications, etc.<sup>3</sup> Not only should some specific numbers like penalties be best handled at the level of National Tariff Policy or other similar instruments, these should be in sync with all instruments at play (proposed amendments to the National Tariff Policy (NTP) earlier this year differ on provisions related to consumer classification, cross-subsidies, minimum performance standards of utilities).

An important question – what aspects of the Act or Amendments are too specific, and worthy of removal because they over-specify and thus constrain?

Either on purpose or inadvertently, there is a shift in power towards the center from the state. This can be viewed as a positive in terms of inertia but taken too far, will cause states to resist. At the extreme, they may not want the Amendments to pass – that was an issue in the previous avatar in 2014. This isn't just an issue of balance of power between states and centers – state Regulatory Commissions were designed to be under the states, and the DisComs are predominantly state-owned entities.

As we consider the Amendments and future of electricity, it will be even less integrated than the past, with multiple stakeholders, indicating we need more alignment of diverse entities. A country famous for 'jugaad' will otherwise innovate around the intentions. If something is imposed on folks, they often ignore, resist, or play games. This happened with the limited uptake of Open Access, is being seen today with the push for RE, and has happened for years in terms of tariffs. If we combine the top down policy goals with addressing bottom-up pain points, we're more likely to find solutions that are win-win (rather, win-win-win = consumers, providers, and governments [at both levels, state and center]).

The Act post Amendments must make a choice how much or which interventions are best handled at the edge, and which need changes at the core. Changes for changes' sake or under assumptions that may not hold are unlikely to work. At a fundamental level, electricity is a complex, dynamic system, where there is a balance between averaging and socialising pricing structures versus granularity. Some consumers are inherently expensive to serve. They are also the least able to pay. But if socialising is the answer, this directly sets up an incentive to cherry-pick. This legislation cannot answer what is ultimately a choice – but it should protect the utility and guard against concentration of power at any layer. It's a false dichotomy to expect only either regulated rate-of-return stakeholders and free markets. There can be hybrid solutions, and even free markets need strong regulation (to prevent market power, and ensure fulfilment of the social contract). It's especially problematic to aim for entirely free markets only in a subset of the system, while having caps, ceilings, floors, etc. in some other areas' pricing, especially when we extend this to generation and fuel supply.

The Amendments sound good in theory, and policy should focus on enablement and a level playing field, but what happens if we don't get enough participants to make a difference (a corollary of cherry-picking)? What good will threats of license revocation be for areas that have only a single provider? For rural/unprofitable areas, licensees may call the Commission's bluff. The presence of an incumbent (today governmental) provider may be starker than some realize. If it operates on a near-non-profit basis, while a private player needs a market rate of return, they will inherently have different cost structures. There is a limit to how much efficiency can make up.

If entire cities in the US have gone into administration aka receivership due to failing to meet their obligations, then why do we insist on never calling a spade a spade, i.e., some utilities need a revamp. The challenge has always

<sup>3</sup> Legislation is best viewed as equivalent to the Army's "Commander's Intent", e.g., "Capture that hill". The details of how should be left to specialists. E.g., in the US, the Clean Air Act empowered the government to regulate "pollutants harmful to human health". They did so by establishing the Environmental Protection Agency, who then issued notifications on what pollutants were harmful and how they were to be regulated. See Tongia (2013) for more details at: [https://www.huffingtonpost.in/rahul-tongia/overruled-why-maximum-gov\\_b\\_9234308.html](https://www.huffingtonpost.in/rahul-tongia/overruled-why-maximum-gov_b_9234308.html)

been political – the current owners are the states themselves, and they would be loathe to do so. This comes back to the issue of credible threats against non-performance. This is the ultimately root case of issues – a lack of political will for certain changes or giving utilities a free hand to operate under sound business principles, even with a bound of the social contract. Instead of so much detail and specification, with “corrections” and carve outs galore, a much simpler framework with more competitive instead of regulated structures may serve India better in the coming years.

### 3. What has changed: 2014 vs. 2018 Draft Amendments

The 2014 draft Amendment bill required the presence of a Government company as a Supply Licensee in an area of supply which has now been removed in the 2018 Amendment. However, the 2018 version has no mention of the provider of last resort which leaves an uncertainty in the event a supply licensee ceases to deliver its functions. In the 2014 draft, as a policy measure, only one distribution licensee in any area of distribution was allowed, however, in the 2018 version, there can be multiple distribution licensees in any area of distribution creating duplicities of infrastructure, thus weakening the DLs instead of strengthening them.

In the earlier Draft, there was no obligation to tie up long-term/medium-term PPAs equal to the annual average demand. Even the mandate for 24x7 power supply was far less explicit or strict. Further, there was no mandate to State Commissions to adjudicate over cancellation of PPAs. A large penalty for violation of PPAs is also something new. All of these changes can be attributed to the recent phenomena of stranded assets in thermal power generation. Further, Direct Benefits Transfer for subsidies have also been introduced as a way to reflect the true cost of power, while at the same time, allowing as a means to deliver state subsidies in the power sector.

The 2018 Amendments also set out norms for generating companies establishing or expanding capacity to submit a detailed project report to CEA. The proposed change is not only new in 2018 when compared to 2014, but also holds immense value taken the fact that generation was delicensed with enactment of EA'03. This needs clarity, and we suggest specific language for the same in the Appendix.

A number of other differences remain, and some have already been discussed in other sections, for example, the increased concentration of regulation/oversight by the Center. There is even some possible control over generation, a step back in some ways from the original 2003 Act. One last area that doesn't have sufficient clarity is what happens to existing PPAs – there is mention of an Intermediary Company in passing, but it is not defined. Handling existing PPAs and their apportionment is a key issue for any Transfer Scheme.

### 4. Detailed suggestions and comments (line-item based) [Appendix]

These are provided in the Appendix, based on a conversion of the .pdf into a Word document in which to suggest language changes using track changes and explanatory comments. The conversion may have unknown errors. The proposed Amendments are in bright red, while our suggested changes appear in a different color.

We may not have the coverage to convert all points discussed above into specific line-item changes, notably some additions on missing points – importantly, some cannot be addressed without analysis and consensus.



QUALITY.

INDEPENDENCE.

IMPACT.

BROOKINGS INDIA