

# Comments on Draft National Energy Policy

**Navroz Dubash**  
**Partha Mukhopadhyay**  
**Radhika Khosla**  
**Shibani Ghosh**  
**Madhura Joshi**  
**Ankit Bhardwaj**  
**Swetha Sridhar**

Centre for Policy Research

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**Draft National Energy Policy**

Niti Aayog

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Navroz K Dubash, Partha Mukohpadhyay, Radhika Khosla, Shibani Ghosh, Madhura Joshi, Ankit Bhardwaj, and Swetha Sridhar

*These comments are drafted based on internal discussion at the Centre for Policy Research. They should not be considered an institutional position, as CPR does not take institutional positions on issues. Rather, they reflect the result of internal deliberations, aimed at understanding and reflecting on the draft NEP, with the aim of constructive feedback to NITI Aayog.*

The draft National Energy Policy (NEP), is a very welcome effort to articulate a forward looking energy policy for India. It could serve an important purpose in bringing together disparate energy sub-sectors and enables reflection on the rapidly changing context for energy decision making.

There are four innovations that are particularly worthy of note in the draft NEP. First, it clearly identifies the objectives of energy: access, security, sustainability, and growth. This is an important innovation, as it focuses attention on what energy is used for, rather than as an end in itself. Also, the draft NEP recognizes that there may be trade-offs across these objectives. Second, governance issues feature prominently in the draft policy, which is again an important recognition that governance has been a stumbling block in the sector. Third, the policy starts with the demand side, and emphasizes its win-win nature, rather than, as most reports have done, treating the demand side as a residual category. Fourth, at various points, the report recognizes the fast changing nature of the sector, particularly around coal and renewable energy, which provides a necessary basis for strategic thinking in the future.

While recognizing these important innovations, for the purpose of contributing ideas to a final NEP, we have focused in the rest of this note on areas of possible strengthening and improvement.

1. **Strengthen high level messages:** The high level messages of the policy do not come through adequately. Consequently, there is a slight risk of the actual policy actions coming across as an undifferentiated 'laundry list'. If one of the purposes of the NEP is to guide strategic thinking, then providing some prioritisation and a basis for prioritising among actions would be very useful. Also, an Executive Summary that synthesizes main messages would be useful.
  - a. *Better use of four-objective framework:* One of the strengths of the NEP is that it is an integrating document, but these integrating points are not sufficiently clear. While the four objective framework is very useful, its practical value is limited because the rest of the report does not make use of this structure. It would help to link sub-sectoral chapters to these objectives. For example, there could be more discussed on whether there is a trade-off between rapid energy access and sustainability. Also on rapid deployment of RE and job creation in energy.
  - b. *Clarify introductory organizing framework:* The overarching framework in the introduction is a bit unclear. For example, Figures 1a and 1b, which are useful, are not well connected to para 2.8, which sets out the priority areas. These various elements of a framework – the objectives, para 2.8 and the figures – could be better integrated.

- c. *Pull out high-level messages in a summary:* Some high level messages that are embedded in the report and that could be pulled out include:
    - i. The ‘immense potential’ of demand side interventions (p. 92)
    - ii. An integrated look at governance interventions collectively drawing on the report.
    - iii. The financial context of the sector, which is not drawn together in one place at the moment (see comment 4. below).
    - iv. Key constraints, such as the financial health of the discoms, and what to do about it (see Comment 4 below).
    - v. The interlinked future of different fuels in the electricity mix: the future of coal depends on RE cost trajectories, the availability of gas, and the viability of nuclear. Other such key interlinkages could be highlighted. The NEP is currently a bit too silo-based.
2. **Clear references and sources for numbers:** We strongly encourage NITI Aayog to include clear references to the numbers used in the study. NITI has made great strides, along with its partners, in systematising energy data across the country and making it transparent through a new portal. This is a great achievement. However, there remain data inconsistency issues in the sector, and it is very important for the credibility of this NEP that there be full transparency and clarity on the data. If there are any inconsistencies, they can be clearly flagged, in the interests of shifting toward consistency. This would cement the great work the NITI Aayog has done already, and set a precedent that GoI policies are firmly rooted in clear and consistent data analysis. Examples of current inconsistencies that could be fixed include:
- a. For example, the draft policy states 500 million reliant on solid fuels (p. 4) while a widely cited number from census 2011 is 800 million. The latter may well be outdated, but it would be good to know the source of the more recent number.
  - b. Similarly, the preamble refers to 521 kgoe/cap consumption for 2014 but p. 10 states 670 kgoe for 2015. MOSPI (Energy Statistics 2017) states 526 kgoe for 2015/16. Such uncertainties would be avoided by clear citation.
3. **More explicit treatment of uncertainty and a rapidly changing policy environment:** The draft NEP at several places refers to the uncertainty in the broader energy environment, but the implications of this uncertainty could be engaged with more completely. When faced with uncertain future situations, such as the future of coal in the electricity mix, the draft NEP currently seeks to lay out a definitive conclusion to inform policy. But perhaps in some cases, this is premature and potentially misleading, and it may be better to lay out the options to inform future choices as more information becomes available. It may also be helpful, in an overarching Executive Summary, to identify areas of certainty and areas of uncertainty. Some examples and discussion follows:
- a. *Energy efficiency gives certain gains:* Some dimensions of the NEP are relatively certain, such as the gains from energy efficiency. As para 2.6 notes, energy efficiency contributes definitively to all four objectives. Where such certainty exists, this can be flagged and clear policy formulation laid out.
  - b. *Coal future is uncertain:* Para 5.3 mentions that coal-based capacity would have to double to make productive use of the additional investment in coal mining leading to a target of 1 billion tons by 2019. But the policy does not discuss other salient estimates of required coal capacity, such as the CEA’s draft National Electricity Policy of 2016, which appears to project lower coal-based electricity generation than appear consistent with the data in the NEP. There are also a range of third party

studies that provide different projections. These sorts of studies should be explicitly considered and discussed. At the moment, it is very hard to give a definitive answer to future coal needs, because it depends on demand estimates, costs and adoption of RE and other electricity sources and so on. For such issues, it is important to rely on a broader range of projections and sources, and lay out 2-3 options, and their implications, to guide future policy as more information becomes available, rather than prematurely come up with a definitive conclusion. To be clear, we are not suggesting the policy can say nothing, but it can lay out two or at most three pathways.

- c. *Better contextualize long-term projections:* Chapter 15 draws on the IESS India Vision 2040. It may be helpful to contextualize this by noting the range of other studies that come up with different projections and some of the reasons for these.<sup>1</sup>

4. **Integrated perspective on finance:** Financing is an area where an integrated perspective is needed. The overall implications of the full set of policies and measures proposed needs to be understood as also the interaction effects. Asking whether and how the financing of the various interventions or projects will be achieved will provide a better picture of the implementation challenges of this policy. More discussion would be helpful of the following points:

- a. *Broaden sources on investment costs:* The document quotes an overall figure on the costs of infrastructure required for India from the IEA. While the number is indicative, the IEA projections may not be based on India's current plans, and may be based on different assumptions about India's energy future. Basing these assumptions on current plans will be more reflective of the overall requirement. For example, the CEA's draft National Electricity Policy, 2016 has some estimates on the financial implications of power capacity additions from different sources.
- b. *Discuss link between energy and banking sector:* The link between the energy and banking sector needs to be made more explicit. According to the Financial Stability Report of the Reserve Bank of India released in December 2016, non-performing infrastructural loans (such as power generation, steel, telecom) have been one of the key contributors to the current banking crisis. A sectoral credit stress test carried out by the RBI in the report highlights that "the shocks to the infrastructure segment will impact the profitability of banks considerably, with the most significant effect of the single factor shock being on the power and transport sectors". The implications of this situation for future financing needs to be explicitly discussed.
- c. *Discuss aggregate financing challenges:* Existing projects are stranded and financially stressed: A key lacuna in the NEP is the lack of a systematic discussion of the financing aspect of the policy. It recognises that there are serious financing challenges, e.g., it proposes that the "Government will consider a rehabilitation package for revival of the stranded hydel projects. The project life of hydro projects will be considered for a longer time frame (60 years instead of the present 35 years), which will enable them to access long term financing, but policy per se does not reflect the effect it could have on the financing environment and how it could constrain the execution of projects. In addition to stranded hydel, there are also news reports of similar problems with large coal units (<http://www.financialexpress.com/industry/tata-power-adani-power-crisis-mundra>)

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<sup>1</sup> Navroz K. Dubash, Radhika Khosla, Narasimha D. Rao and K. Rahul Sharma, "Informing India's Energy and Climate Debate: Policy Lessons from Modelling Studies." Centre for Policy Research research Report (30 April).

[units-on-offer-at-re-1-guvnl-says-ready-to-take-100-pct-stake/738707/](#)) that would make financial institutions very reluctant to finance such projects.

- d. *Discuss implications of suggested RE policies on financing:* Suggested changes in renewable pricing will affect financing. Even in the case of renewables, the policy suggests changes in policy that would affect the pricing of renewable power, with serious implications for financing of RE projects. (See Para 6.5.5. which proposes building in financing mechanisms to transfer costs from discoms to the RE industry)

5. **Integrated perspective on environment:** The explicit attention to sustainability as an overarching objective is welcome, but a more integrated view is also needed. The NEP acknowledges the need to integrate environmental concerns while formulating and implementing energy-related decisions. This suggests the need for explicit discussion on the effectiveness of existing mechanisms for inter-ministerial coordination. Chapter 14 on Air Quality enumerates some of the environmental concerns in the power, transport, agriculture and urban sectors. The policy document refers to recent efforts by the MoEFCC to regulate environmental impacts of coal-based thermal power plants, the need for improved post-harvest technologies to deal with agricultural waste, and phasing out of inefficient power plants and emphasizes on the need to price water appropriately (to disincentivise power plants in water-stressed regions). Reference to smart city planning from the environmental perspective is significant (page 84). However, this could be strengthened in a few ways:

- a. *Broaden definition of sustainability:* The four primary objectives includes 'greater sustainability' which has been defined in terms of climate change and poor local air quality, as well as energy security. This definition should be widened to include other environmental concerns such as deforestation, water usage/ pollution, waste disposal (e.g. fly ash), as well as social concerns (reduction in agricultural productivity, rehabilitation issues).
- b. *Discuss aggregate effect of policy on environmental outcomes:* The policy does not aggregate the net effect of all the various energy measures being discussed. Yet, the policy should have an overarching view of these effects. It would help if these aggregate effects were considered in an overarching conclusion or an Exec Summ.
- c. *Discuss reasons for stranded hydro:* On large hydro (page 41), the Policy indicates the co-benefits, and suggests greater attention to large-hydro which has witnessed slow growth. However, there is no engagement with major environmental and social concerns relating to large hydro beyond stating that there are 'adverse consequences' requiring quality research. Financial rehabilitation of on-going projects has been suggested - but it is important to first understand why these projects are stranded - may not have been good investments, financially or environmentally, in the first place. The impact of climate change on the hydrology of many Indian rivers is a serious concern for the viability of hydro projects. As intensity and frequency of extreme weather events, such as the Uttarakhand floods, increase, it may have implications for the feasibility and desirability of large hydro in the country. Projects with Nepal and Bhutan have also been referred to. It is unclear what quality of environmental impacts assessments (if any) have been undertaken while initiating/ undertaking projects in these countries.

6. **Better elaboration of demand-side issues:** The NEP's explicit attention to the demand side is praiseworthy. The document starts with a focus on consumption and energy demand, and this emphasis is reinforced throughout the policy, marking a significant shift from earlier

supply-oriented planning documents. We suggest two ways in which the focus on energy demand can be better elaborated.

- a. *Explicitly consider structural changes with effects on energy efficiency:* Energy efficiency is correctly highlighted in the NEP as a determinant of energy demand. However, alongside, there is another and complementary determinant of future energy demand is the manner in which energy consuming infrastructures are planned for and built.<sup>2</sup> As a late developing economy that is now embarked on infrastructure development, this is particularly important for India. A few examples elaborate this point.
  - i. First, while most building energy programs tend to focus on technology adoption and efficiency choices, the building shell design – chosen at the time of construction -- is critical to reducing building energy use. If built sensibly with passive lighting and cooling measures, the building shell can dramatically reduce or potentially remove the need for additional efficiency measures.
  - ii. Second, if the networks of buildings and transport are developed together, it can have material impact on people's preferred mode of transport. For instance, if the development of public transit corridors, such as bus rapid transit, are placed adjacent to new housing developments, residents will have access to a mobility option which has the potential to induce preferences favouring public transportation. Alternatively, if the city's transportation plans solely focus on improving vehicle fuel efficiency, it would miss the chance to significantly reduce vehicle ownership. In this manner, because most of India's infrastructure development is yet to occur, the NEP can also focus on opportunities that reduce energy update by choosing alternative infrastructure and technological pathways at the time of construction.
- b. *Discuss CEA demand projections:* The NEP makes a welcome emphasis on the demand side. However, it would be useful to include other recent and salient government announcements that also effect the future size of India's grid, in particular those made by the Central Electricity Authority. Specifically, the CEA estimates that the demand of electricity, or the size of the future grid, will be significantly lower than earlier projections. There is 25% drop in electricity generation projections between the 18<sup>th</sup> and the 19<sup>th</sup> EPS, based on a lower estimated demand.
- c. *Load profile shifts with urbanisation.* The NEP assumes that the rate of urbanization will be 40% in 2040. Available load curves from various SLDCs suggest the urbanization shapes the demand profile. The NEP should ideally provide more clarity on how projected generation resources matches with the evolving demand profile as the country urbanises.

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<sup>2</sup> Creutzig F, Fernandez B, Haberl H, Khosla R, Mulugetta Y, Seto KC. 2016. Beyond Technology: Demand-Side Solutions for Climate Change Mitigation, Annual Review of Environment and Resources, Vol. 41. pp 173-198  
Khosla et al., 2017. 'Deploying Low-carbon Technologies in Developing Countries: A view from India's buildings sector', Environmental Policy and Governance, Vol 27, pp 149 -162.

<http://www.thehindubusinessline.com/opinion/columns/reimagining-indian-energy-planning/article9104413.ece>

<http://www.thehindubusinessline.com/opinion/columns/how-indian-cities-can-help-in-the-fight-against-climate-change/article9663449.ece>

7. **Electricity:** The diagnosis and solution of long-standing problems in the electricity distribution sector is, arguably, incomplete, and there are reasons to believe that the proposed solution may not work.<sup>3</sup> The draft NEP suggests that the key problem is lack of commercial discipline. This is largely true. But the reason for this is competitive populism in states by competing parties seeking political advantage through the electricity sector. I.e. the problem rests, in a sense, outside the confines of electricity institutions. The proposed solution of separating carriage from content to introduce commercial discipline does not solve the underlying problem, and will likely be improperly implemented and short-circuited for the same reasons open access had limited success. We elaborate on these points below:
- a. *Separation of carriage and content does not deal with underlying political challenge:* Separation of wires and supply will introduce commercial discipline, but the effect of this will be to make vulnerable poorer consumers, who constitute the vast number of voters. These consumers are unlikely to be attractive to new private players. They will have to be serviced by the incumbent or private players will have to be given inducements. Pressures on the proposed explicit tax mechanism will be considerable, as only the poorest will be left, and there will be recourse to cross subsidy. The challenge will be, in essence, to set up a very strong and disciplined regulatory system to meet needs of poor consumers without placing stress on the system. But this is exactly where we are today, and the regulatory and political system has not proved up to the task.
  - b. *International experience with retail competition not very favourable:* The international experience with retail competition suggests that not many customers opt to switch, some private players have questionable marketing strategies and small consumers get left behind (Competition and Choice paper on Mapping Power website).<sup>4</sup> This is not an encouraging track record on which to base our policy.
  - c. *Consider discussing alternative approaches such as public discom reform:* A more viable approach to commercial discipline, which has worked in some states (AP and WB) is to commercialize and introduce internal reform in the public discom, with explicit support from the political class cutting across party lines. The political class has to buy into a reform process, and be convinced that it will not cost votes. This is a long and cumbersome route, but there is no quick fix by seeking to by-pass the structure by introducing new actors that immediately bring commercial discipline.
8. **Mixed messages on regulators:** The draft NEP strongly suggests expanding energy regulators, but also recognizes problems with existing state regulators including political meddling, weak capacity (p. 63), sub-optimal decision making (p. 52) and so on. The Policy should ideally explain why future regulators will not suffer the same fate. To some extent the policy falls prey to the common approach of asserting what should happen with regulators in the future, but does not provide a credible diagnosis of why the problem is happening and how to avoid it in the future. The literature and global experience on regulation suggests some further points which could be considered:
- a. *Note challenge of over-burdening regulators:* There is a danger of over-burdening regulators and placing obligations they cannot meet. Indian energy regulators are typically under-resourced and staffed by people who are seconded from within the public sector, and often rely heavily on consultants. In this context, placing on them obligations such as envisioned in 9.1 risks over-burdening them. For example,

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<sup>3</sup> For a project on state electricity distribution politics, and background papers please see <http://www.cprindia.org/projects/mapping-power>.

<sup>4</sup> Singh, Daljit. 2016. 'Competition and Choice in Electricity Distribution in India', Working Paper, Initiative on Climate Energy and Environment, New Delhi. Centre for Policy Research.

regulators cannot be expected to integrate with macroeconomic policy. Balancing state and federal concerns cannot also be feasibly undertaken by regulators. Global experience suggests that regulators need to have a clear hierarchy of objectives against which they regulate, failing which regulatory actions are inconsistent. Social protection policy, for example, has to be clearly mandated by the executive, rather than being left up to the judgement of the regulator

- b. *Discuss challenge of regulators addressing political issues:* Regulators cannot be expected to manage a reform process that involves taking decisions about winners and losers. They are not directly politically accountable and so should not be placed in this decision. This includes de facto political decisions like open access implementation through setting a cross subsidy surcharge. These decisions have to be taken at the political level and implemented by regulators. The recent experience in India is arguably worsened by regulators being put in the position of taking decisions. The NEP should be explicit about the need to minimize the political exposure of regulators. The recent past of regulators suggests that a key problem is that regulators are expected to be apolitical even while they are frequently put in the position of having to juggle political pressures.<sup>5</sup> Without addressing this issue, future regulators risk following the same path as past regulators.
- c. *Highlight procedural and transparency role of regulators:* A key role of regulators is procedural and transparency, which the report usefully notes. Regulators could help shed light on thorny issues and who are winners and losers, through the public hearing and comment process.

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<sup>5</sup> Navroz K. Dubash. 2017. "New regulatory Institutions in Infrastructure: From De-politicization to Creative Politics." In Devesh Kapur, Pratap Bhanu Mehta and Milan Vaishnav (eds.) *Rethinking Public Institutions in India*. New Delhi: Oxford University Press.