

Centre for Policy Research  
Input to a National Energy Policy for India on  
**Institutional Framework and Energy Data Issues**

**Introduction**

The President's address to the Parliament on 9<sup>th</sup> June 2014 declared the Government's intent to frame a National Energy Policy (NEP). Niti Aayog has been entrusted to take this work forward. The NEP must be futuristic, address institutional issues and examine energy access, affordability, and security.

The Centre for Policy Research has been approached by Niti Aayog and agreed to provide input to the NEP on the topic of Institutional Framework and Energy Data Issues. A meeting was convened on October 12<sup>th</sup> with technical experts from government, industry, civil society and think tanks to discuss these issues and provide input. This document is informed by that meeting.

A starting point for this discussion is that enhanced institutional framework and energy data should serve multiple goals of energy policy:

- Provision of modern, clean and affordable energy services to all citizens;
- Development of the sector through robust planning, policy and regulatory processes;
- Provision of a level playing field for investment related decision making;
- High standards of operational performance (technical and financial efficiency) and optimal utilization of resources;
- Socially and environmentally sustainable development by addressing local and global impacts.

Moreover, the institutional framework and approach to energy data should be guided by the following design principles:

- A comprehensive, consistent and integrated approach to energy governance that spans the objectives above;
- Efficiency in design and implementation, avoiding duplication and redundancy by building on existing capacity;
- A central role for states in keeping with cooperative federalism;
- Attention to both immediate policy-relevant issues, and complementary attention to long-run and strategic concerns.

Accomplishing the goals above, consistent with the design principles listed, requires attention to two sets of issues. First the information and analysis base for energy policy and strategy must be sound. Second, explicit mechanisms for coordination across ministries and at different levels of government are required, which provide both short term coordination and long term strategic capacity. This input note addresses these two issues.

## **Building a Data Spine and Enhancing Capacity for Energy Analysis<sup>1</sup>**

Collection and dissemination of energy data is very important to support research, analysis and policy formulation on one hand and to support decision making by governments and businesses on the other. Government data agencies should publish such data in the public domain at requisite quality, granularity and frequency and in convenient, machine-readable formats.

Data agencies within ministries dealing with supply of commercial energy (namely coal, petroleum and natural gas, power, renewables and nuclear) and with consumption of commercial and non-commercial energy (institutions such as NSSO, CSO, BEE, PCRA, MoRTH and MoA) are the primary sources of energy-related data in the country. In addition, regulators dealing with electricity, oil and gas sectors collect a lot of technical and financial data from utilities and other regulated entities. Some data is also available through private agencies such as industry associations and survey agencies. In addition, energy relevant data, for example social and environmental impact data related to the upstream energy segment, is available with states and state pollution control boards.

Currently, energy data is collected primarily for the purposes of administrative and operational management. As a result, there are several gaps in availability of energy data in India both on the supply and demand side, as well as weaknesses regarding the frequency, consistency and usability of the data. A particularly large gap is on the energy consumption side for which data which is generally hard to collect or estimate. Moreover, gathering data on the use of non-commercial energy, primarily in the form of biomass and non-motorized transport, on which data are hard to gather, is a further problem. Some data gaps also exist due to lack of infrastructure such as feeder level automated meters, which can help to generate disaggregated power consumption data with little manual intervention. These are just some examples of different data gaps that exist. A systematic inventory of available data and a matching of available data with data needs is required in order to build a robust data spine.

Looking ahead, a three step approach is necessary to improve the data spine for the country's energy sector and provide an appropriate analytic underpinning.

### *a) Improve current processes of data collection and dissemination by existing data agencies:*

- Data collection agencies can adopt modern technologies to enable automatic data collection and dissemination. An example from the power sector is automated metering at generation interconnection points and distribution feeders and smart meters at consumer facilities;
- Uniform, user-friendly formats and effective use of software, internet and web infrastructure can enable electronic collection, reporting, processing and dissemination of data that requires minimal human intervention. This can help streamline data management at providers as well as consumers of data and minimize operator error;
- Uniform dissemination standards along with an advance release calendar, data quality assessment and punctual dissemination should be complied with in order to provide comprehensive and timely access to quality data to the public;

---

<sup>1</sup> This section draws heavily on input from the Prayas Energy Group, who kindly contributed results of their past work.

- States can play an important role in the effort of energy data collection. Capacity of state level statistical agencies could be strengthened along the lines of the Indian Statistical Strengthening Project, so that they can design and execute state-specific surveys;
- Existing surveys can be improved and/or new surveys can be introduced to plug many data gaps;
- Survey design and estimation methods can be optimized through collaborative efforts to minimize the resources employed in data collection. Technology can also play an important role in improving survey efficiency and reducing costs.

*b) Appoint an empowered and adequately staffed autonomous Energy Data Agency to collate, harmonize, reconcile and publish energy data from multiple sources, operating through a 'hub and spoke' model:*

Existing sources of data are a good start, but incomplete. A second step is therefore to ensure better harmonization, validation and dissemination of data across energy sub-sectors in a manner useful for policy formulation, research and investment decision making. To this end, an empowered and adequately staffed nodal agency to collate, harmonize, reconcile and publish energy data from multiple sources is necessary. Such an 'Energy Data Agency' should have statistics and energy sector expertise and sufficient leverage to be able to suggest refinements to current data management practices. This central agency would work alongside existing agencies that currently collect data (including central, state, private sector and non-governmental) in close coordination with the nodal agency to improve quality of data, its harmonization and its dissemination. It would also work closely with state agencies, including land, health and environment departments, and state pollution control boards, and, where feasible, with private sector entities, to make full use of available data sources in a 'hub and spoke' model. An important challenge for an energy data agency is to design mechanisms to induce other partners who collect data to share necessary information.

*c) Appoint an autonomous Energy Analysis Office to identify key analytical issues and coordinate analysis*

In addition to a central agency responsible for managing energy data, there is also a need for an autonomous energy analysis office within the Government with the expertise to analyze energy sector data and inform policy formulation. This agency could either be joined with the data agency or operate separately. Over time, such an analysis office should develop the capacity to frame key research questions (working in conjunction with strategic bodies as described below), and coordinate with existing research organizations inside and outside government. The energy analysis office should also help to support a vibrant eco-system of energy related research organizations in the country that can collaborate with the Government and among themselves to enrich energy policy formulation in the country. Key roles for an energy analysis office include:

- ensure linkage between the Energy Data Agency and users to ensure use of data for analysis;
- identify and provide analysis on key policy research questions;
- foster links with the ecosystem of energy analysts;
- incubate innovate tools for data analysis;

- stimulate debate through periodic analytical reports;
- ensure cross-sectoral analysis;
- track and coordinate with comparator organizations globally; and
- ensure coordinated long-term and strategic analysis of key issues in Indian energy.

### **Building Institutions for Coordination and Strategic Planning**

The need for coordination on energy policy-making and implementation is driven by the diverse nature of the existing energy policy landscape. At the central level, energy policy-making is currently divided across several sub-sectorally focused energy supply ministries and departments – coal, oil and natural gas, power, nuclear, and renewable energy – with several accompanying large and unwieldy state-owned enterprises also associated with different sub-sectors. Moreover, energy demand is implicitly determined through policies of another set of ministries, such as on urban development. In addition, and very importantly, states have a considerable role in energy policy in multiple ways. For example, electricity is a concurrent subject and so divided between national and state jurisdiction. Energy demand-side policies not only cross central ministries, but also are substantially under state and city control. Coordination across different levels of government is also, therefore, essential, particularly for the demand side. Not least, there are also strong foreign policy aspects of some energy issues, such as access to overseas assets, security of supply and climate change.

While the central need is coordination within government, another aspect of coordination pertains to ongoing engagement with non-governmental actors such as industry, civil society, and academia, as well as global knowledge agencies. Maintaining these connections, drawing appropriate input, engaging in broader discussions on energy policy are all essential in the current energy policy sphere.

Finally, while coordination often implies focusing on short term implementation issues, there is also need for a complementary long-term and strategic perspective. This perspective is required, for example, to address long-running and entrenched issues in energy that have developed over time through a set of historical circumstances, such as the problems of distribution sector reform. It is also required for long-term challenges, such as future technology trajectories. A strategic approach is required for large problems that require transformative change, such as bringing about a transition to modern cooking fuels for those dependent on biomass based fuels, or the energy implications of urbanization. Another area of strategic concern is the implications of geostrategic considerations such as climate change on India's energy security. A platform through which to address these integrated strategic challenges is required.

To serve these functions additional dedicated institutional mechanisms are required:

*a) Create a National Energy Advisory structure consisting of a National Energy Advisor (NEA) and a related National Energy Advisory Board.*

The NEA would play the primary role in facilitating coordination, in particular across central ministries. This position would require high-level authority to convene multiple ministries, in order to solve coordination problems. Analogous examples are the Prime Minister's Special Envoy on Climate Change and the National Security Advisor.

The NEA would be complemented by an NEAB with a rotating membership consisting of senior representatives from industry, civil society, and academia. The role of the NEAB would be to provide strategic guidance to the NEA, and, through linkage with the broader community, ensure that energy policymaking is informed by broader debates and trends. The NEAB would also play the role of encouraging broader public debate on key energy issues, and seek to build public consensus on difficult and contentious challenges. The NEAB would work closely with the analytical and data institutions described above, to ensure data collection is relevant and robust, and to guide and provide quality checks on analytical work. In particular, the NEAB would operate outside executive decision making, could:

- Inform on key technological trends;
- Provide early warning on emergent problems;
- Advise on future geostrategic concerns such as climate change, and energy security;
- Steer long-term energy scenario development;
- Promote informed public debate and discussion on key energy issues;
- Provide guidance on the functioning of energy data gathering and analytical institutions.

*b) Facilitate and enhance the role of states and urban and local bodies in energy policy through newly created energy institutions.*

As discussed above, the states have a particularly important role in energy policy making, particularly (but not exclusively) on the demand side. In the context of cooperative federalism, states and local bodies must be engaged in energy policy processes in a facilitative rather than directive manner. To do so, the full suggested energy institutional framework of data agency, analytic agency, and National Energy Advisor and Advisory Board, should be harnessed to facilitate an enhanced role for states. In particular, these roles could include:

- Provide technical support to states for state-led initiatives and provide comparative data to back such initiatives;
- Encourage states to serve as laboratories of creative experimentation and serve as an information clearinghouse for state-led energy initiatives;
- Facilitate lesson learning and scaling up of successful state-led efforts;
- Serve as a conduit for state input to centre-led energy policy development, where relevant, to ensure that state concerns and realities are adequately addressed.

### **Summary of Recommendations**

A long term, integrated perspective on Indian energy policy requires enhanced institutions for data collection, analysis, coordination and strategic thinking. The following suggested steps would provide the necessary enhancement of India's institutional framework for energy to achieve these objectives:

- *Improve current processes of data collection and dissemination by existing data agencies;*
- *Appoint an empowered and adequately staffed autonomous Energy Data Agency to collate, harmonize, reconcile and publish energy data from multiple sources, operating through a 'hub and spoke' model;*
- *Appoint an autonomous Energy Analysis Office to identify key analytical issues and coordinate analysis;*

- *Create a National Energy Advisory structure consisting of a National Energy Advisor (NEA) and a related National Energy Advisory Board;*
- *Facilitate and enhance the role of states and urban and local bodies in energy policy through newly created energy institutions.*