ENERGY DATA MANAGEMENT

for inclusive growth

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Context

- Five basic element of life -(*pancha maha-bhoot*) namely - land (*sthal* or *prithvi*), water (*jal*), air (*vaayu*), fire (*tej*) and space (*aakash*)
  - ***Almost all Economic activities is dependent on energy***
- 200 years ago, all human needs for energy were fully met by renewable sources.
- Now, more than 80 per cent of world energy consumption comes from fossil fuel, a finite and non-renewable sources.
- World- 1/4th of energy consumption is for manufacturing
- There remains a need for close link between energy and economy for a comprehensive analysis to ensure inclusive growth and minimize economic loss

Why Energy data management?

- Data is critical enabler to formulate energy policy, actions, crisis planning and performance evaluation of programs & policies
- EDM helps to plan for an efficient use of resources in a targeted and structured manner
- Supervise -energy activities
- Improve governance process
- Provides competitive advantage
- Critical for industries to plan for economical and efficient production
- Support the Analytical tool and Market analysis
- Overall demand supply balance, etc.

Agencies and types of Energy data handling

Indian Agencies	Types of data functional areas
Coal Controller's Organization (Ministry of Coal)	Coal reserves, production, grades of coal, demand/consumption points, calorific value, Pricing, State-wise reserve positions, historical data , etc.
Petroleum Planning & Analysis Cell (MOP&NG)	Petroleum production, demand/ consumption, price build-up, under-recoveries, sector-wise product consumption, LNG import, import –export data of petroleum, Marketing of petroleum products, stat-wise Retail pumps, Customer base Historical data, etc
DGH (MoP&NG)	Hydrocarbon resources, crude oil/gas Exploration & production activities, NELP contract management, Lease areas, unconventional hydrocarbons- shale oil/gas, CBM, tight oil & gas, technological details, gas Hydrates , historical data , etc

Agencies and types of data handling

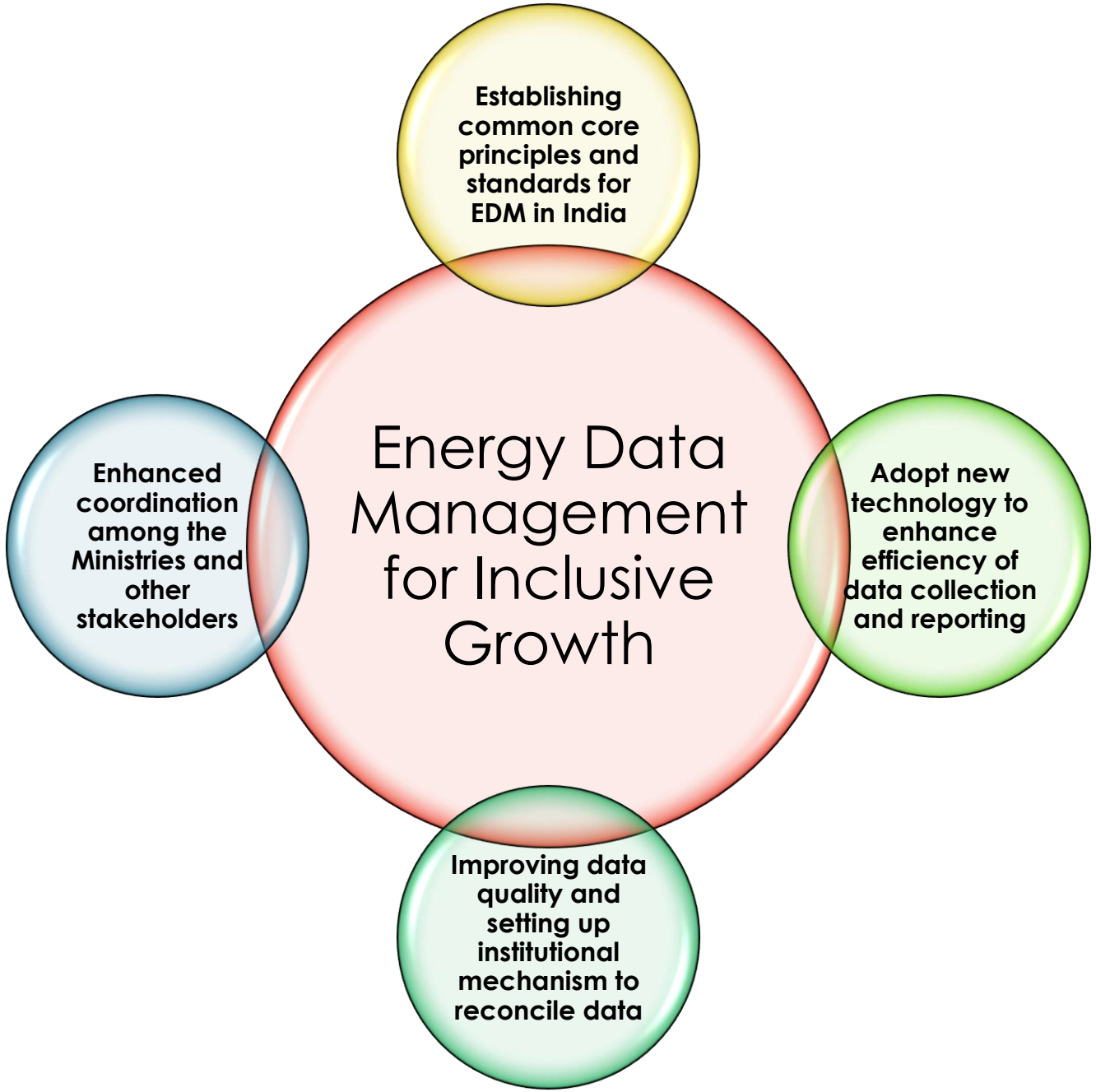
Indian Agencies	Types of data functional areas
Central Statistical Organization (MOSPI)	• Energy statistics/data collection from the line ministries and departments and compilation of data, analysis and publication of reports. • They conduct surveys on periodic basis and publish reports • Produce India Statistics (Agriculture, Industry, Services, Social Sector, Miscellaneous sectors) • National Accounts, SDP, CPI index, GDP data
Central Electricity Authority (CEA) -MOP	Set up under the Electricity Act • Advisory Role to MOP- Planning exercise and technical inputs • Maintain & collect data on Power generation, transmission, trading, distribution and utilization of electricity, studies relating to cost, efficiency, Grid related information • Data on thermal , Hydro, Power Systems, Grid operations, Recently created **wing on Renewables** • Publication of reports and investigations, etc.

There is lack of coordination for robust and efficient energy data management

5 ministries (Ministries of Coal, Power, Petroleum and Natural Gas, and New and Renewable Energy, & Department of atomic Energy) to deal with energy

1. A lot of crucial energy data is still in physically scanned formats
2. Limited mandate of govt. institutions to disseminate data to the general public
3. Many gaps in energy consumption data because it is more difficult to gather this data
4. Recent initiatives (formation of the National Statistical Commission and the National Data Sharing and Accessibility Policy) do not explicitly cover data related to energy sector
5.
   - No nodal agency that collates all the data from all the different responsible ministries and departments
   - MOSPI- Energy Balance

NITI Aayog has initiated an exercise to strengthen the Indian energy data management system



Constituted 8 subgroups

- ❖ 4 in demand Sectors (Transport, Industry, Buildings, Agriculture)
- ❖ 4 in supply sectors (Oil & Gas, Electricity, Renewables, Coal)
- ✓ Subgroups have identified data gaps and provided recommendations for improvements
- ✓ Institutional strength, surveys, etc.

NITI Aayog's Initiatives

INDIA ENERGY DASHBOARDS

INDIA ENERGY SECURITY SCENARIO (IESS)

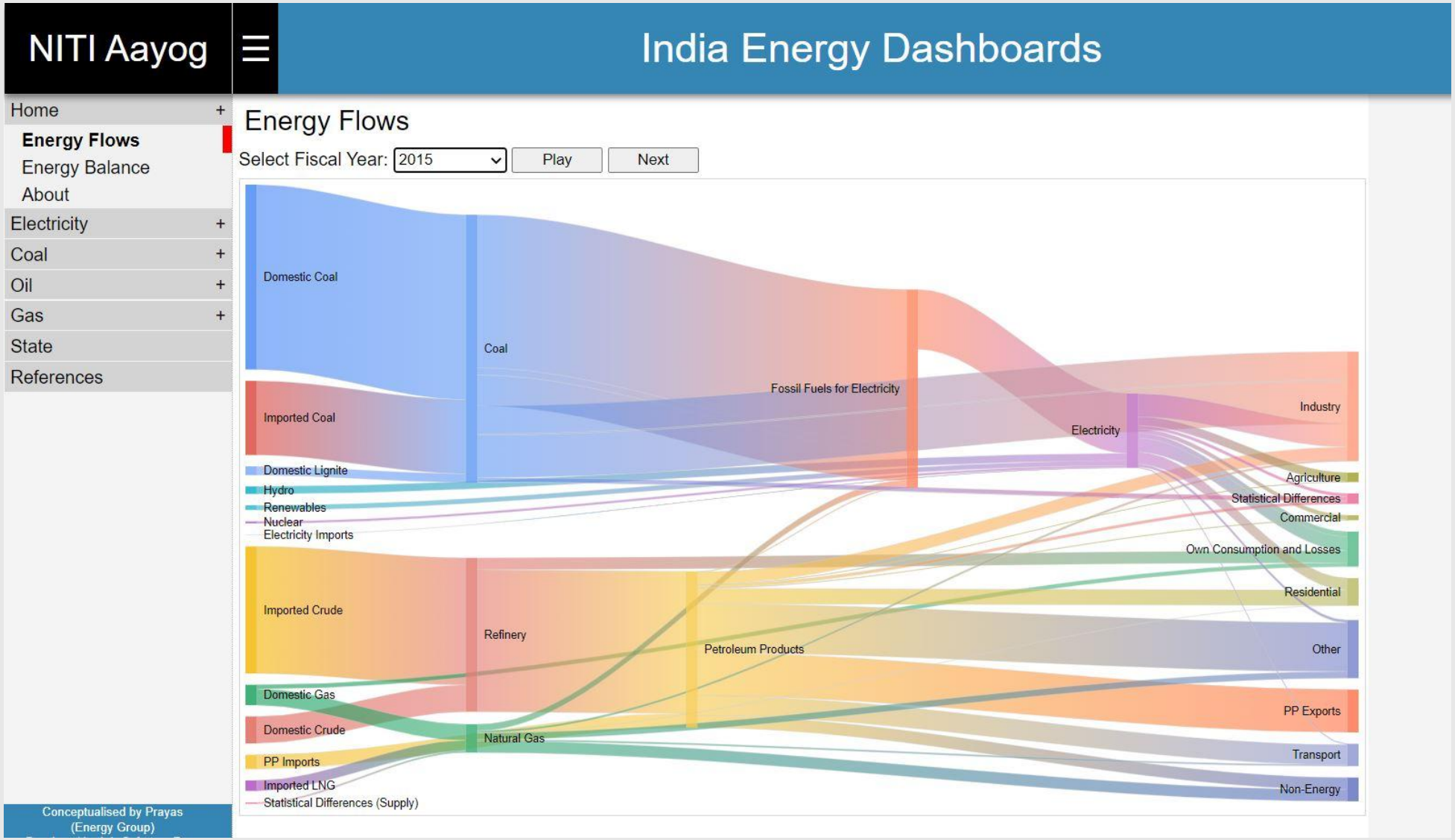
GIS-BASED ENERGY MAP OF INDIA

NITI Aayog has developed **INDIA ENERGY DASHBOARDS** (**support from Prays Energy Group, Pune)**

- **Objective** – to make official energy data, available from multiple data agencies, accessible at one place through an intuitive interface
  - *If all forms of energy are maintained at one place, it can be used by researchers, policymakers, business strategy formulators and performance evaluation of energy sector programs and agencies*

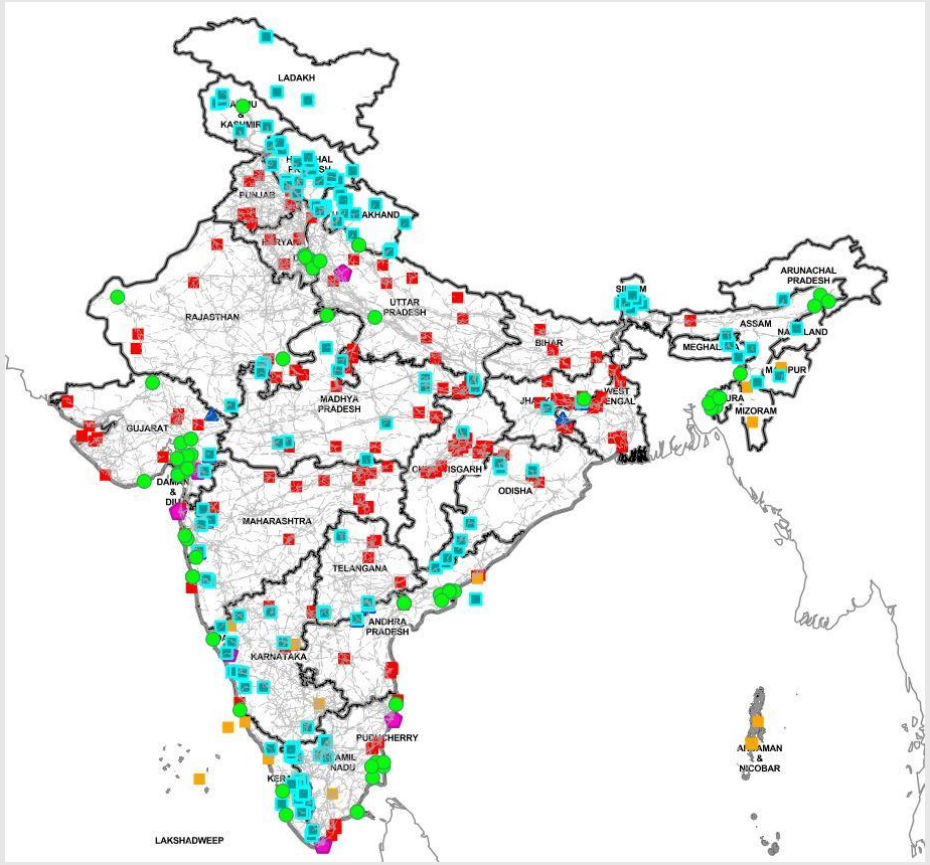
- Version 1.0 launched in May 2017. Link: http://niti.gov.in/edm/ (the enhanced version of the dashboard will be launched soon)
- Version 2.0 is under progress
  - API linked dashboard
  - Should also include demand side data

Snapshot of the Dashboard

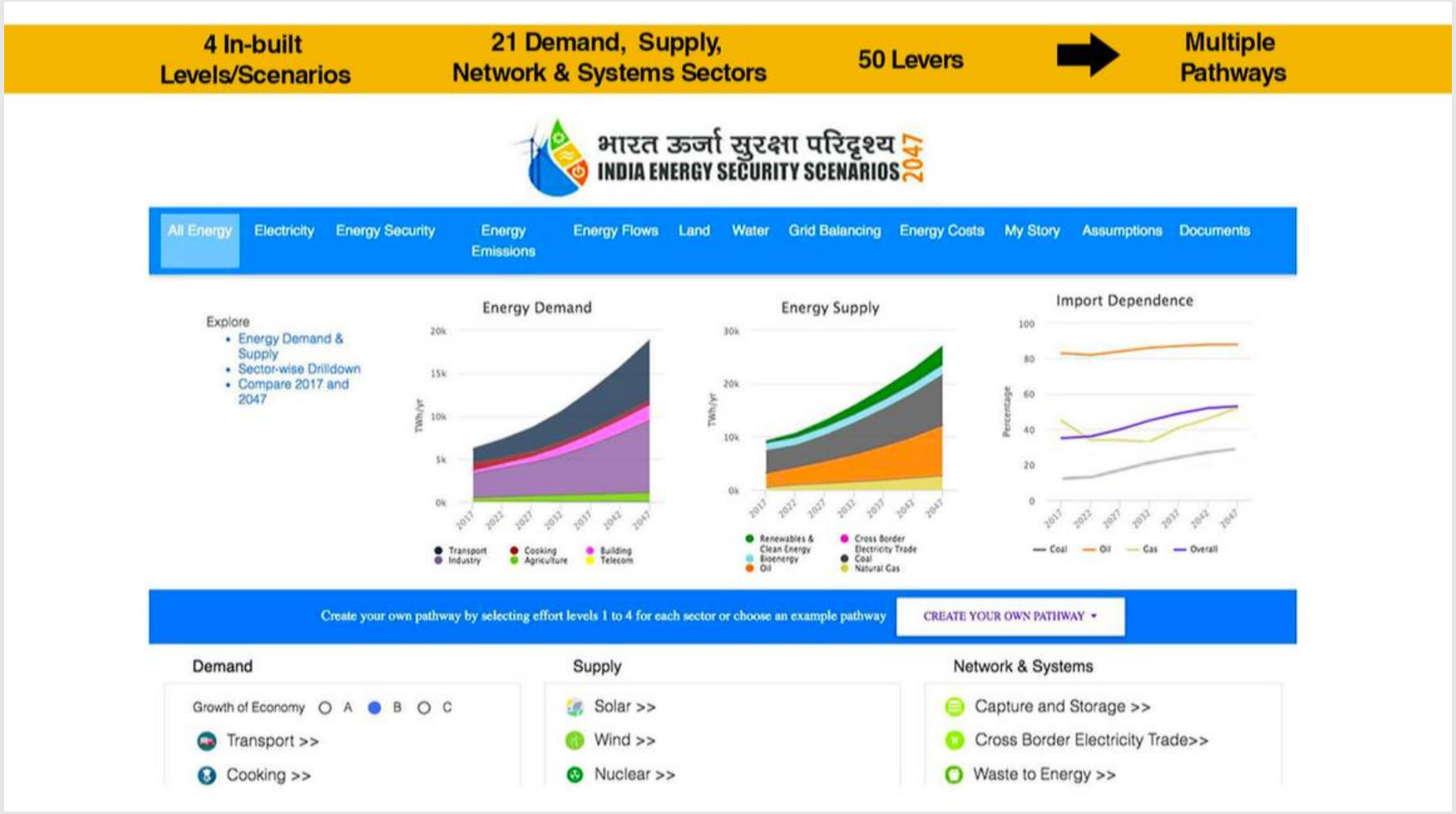


GIS-BASED ENERGY MAP OF INDIA is being developed in collaboration with Indian Space Research Organisation (ISRO)

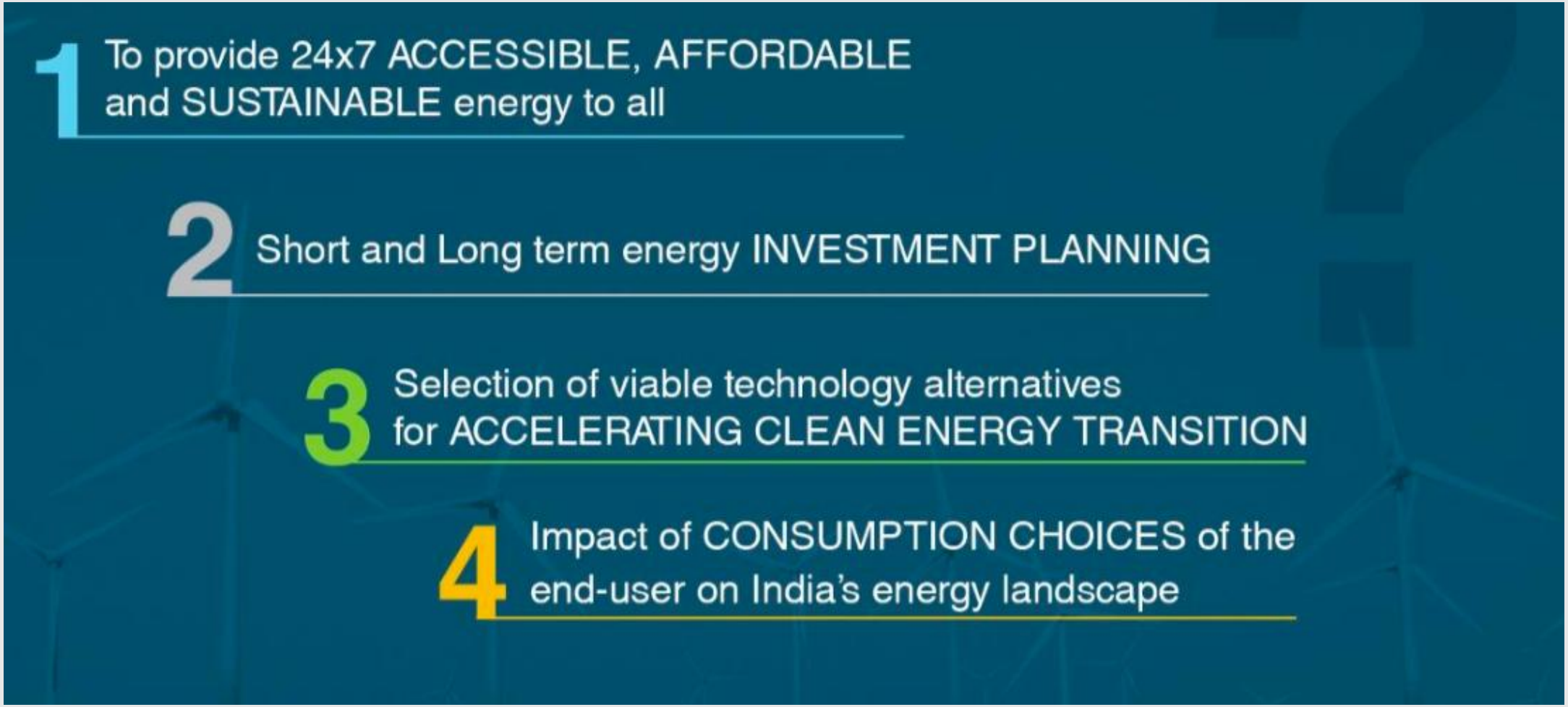
- **Objective** – Policy formulation and encouraging private sector participation in energy sector
- Provides **visualisation of static and dynamic data** of energy sector in India
- **Phase I** of the tool, accessible only to restricted people, will be launched soon
- **Phase II** of the portal may go public in the upcoming years



India Energy Security Scenarios (IESS 2047), an interactive tool to explore various energy supply and demand scenarios of the country is developed and maintained by NITI Aayog



India Energy Security Scenarios (IESS 2047) helps in guiding sustainable and inclusive policy making



Combining the various choices of supply and demand, a user can develop his/her own pathway upto 2047

and observe the implications of the chosen pathway on

Energy Data Management- overall objective

Establish common core principles for EDM for all organizations involved in EDM.

- Standardized definitions,
- Classification of data
- Data quality /standards.

Enhance coordination between statistical agencies

(The decentralized nature of Indian EDM implies that coordination is critical to ensure a consistent EDM system.)

- Maximize the use of existing data,
- Improve data quality
- An **institutional mechanism** to reconcile data from different sources

Prioritize data improvements.

Data on energy consumption and non-commercial energy sources is currently inadequate. Collecting such data needs to be prioritized

Energy Data Management- overall objective

Adopt technology to increase efficiency in data collection.

- common formats for similar data
- automate data collection to ensure accuracy and completeness.

Improve data dissemination

- better data integration,
- uniform dissemination standards,
- customer-oriented data formats
- use of modern technology.

Continuous training and strategic staff planning

- to maximize effectiveness of staff at central and state levels.
- Adequate staffing and financial support

Thank you