# Developing Capacity for Long-Term Energy Policy Planning

## A Roadmap

International Energy Agency

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# Key enablers for effective long-term energy policy planning

- Political will
- Analytical capacity in relevant national institutes
- Adequate, reliable and timely data
- Relevant set of scenarios to explore strategy options
- Modelling of the energy system
- Stakeholder engagement and communication

Today's main policy questions relate to what an energy policy should look like to be robust and flexible enough to deal with the uncertainties of the future.

**Therefore, a scenario-approach relying on energy system models is essential to support decision making because modern energy system analysis provides the best chance of ensures the best decisions are made with the data available.**

The results of these analyses can help change prejudiced perceptions of energy and climate issues within governments, and guide public discussion.



# The relationship between energy planning and modelling

Long-term energy planning

Modelling



## Long-term energy planning

**Long-term energy planning is the process whereby national or regional targets, policies and investment strategies are derived from quantitative analysis of energy sector scenarios, often aided by the modelling of energy systems.**

Such planning is a central component of energy policy-making processes in many countries around the world, guiding decisions on when, where and how to invest in the energy sector.

## Modelling

**Modelling is the technical and analytical exercise of quantifying scenarios and translating the modelling results into a format that aids decision making.**

The integration of scenarios and energy models is therefore crucial for effective energy planning.

# 1. Political will

Developing scenario-building capabilities is a long-term undertaking that requires commitment and constant training. National ownership and capacity building are key principles for developing a robust strategic energy planning process.

**Therefore, political will is essential to adopt and sustain (finance) quantitative analysis as a policy tool.**

Experience has shown that a clear mandate and continuous support from the government are necessary.

## Self-assessment #1

1. **Does your country have a dedicated long-term energy strategy?**
2. **Is an assigned entity responsible for the energy planning process (including strategy drafting)?**
3. **Is quantitative analysis ('energy modelling') adopted as the standard tool for planning?**

### Action items

Raise awareness on the importance of sustainable energy planning

Increase the impact of development partner support

# 2. Analytical capacity in relevant national institutes

In this context, analytical capacity refers to the ability of policymakers and other officials to develop, understand and use scenario insights to inform policy and investment decisions.

# 3. Adequate, reliable and timely data

Possessing the right data for quantitative analysis is crucial to ensure its relevance. Countries are therefore encouraged to systematically collect energy statistics, adhering to international methodologies and standards.

**Developers and users of the scenarios are rarely the same people, therefore these capacities can be developed independently.**

For a country only establishing a scenario-based energy policy planning process, focus should be on the 'user base', i.e. strengthening their understanding of the research questions, scenario development, and the overall policy planning process steps

## Self-assessment #2

1. **Is national analytical capacity adequate to formulate scenarios?**
2. **Is national analytical capacity adequate to interpret results of the quantitative analysis (energy modelling)?**
3. **Do national experts regularly participate in training sessions and workshops?**

### Action items

Enrol individual experts in training courses and events to strengthen their analytical capacity

**It is rare that all data necessary for energy system analysis is readily available. Therefore, improving data at the national level should be seen as a continuous process paralleling energy planning.**

To support these activities, the IEA has developed guidelines to improve national energy demand data and energy efficiency indicators. A framework for strengthening statistical capacity to produce national energy data is available.

## Self-assessment #3

1. **Is a dedicated entity responsible for developing national energy statistics?**
2. **Is this entity involved in the energy planning process?**
3. **Do national energy statistics adhere to international recommendations?**
4. **Is available energy data relevant for energy planning needs?**

### Action items

Align national energy statistics collection with international methodology

Improve understanding of energy data

Strengthen national energy data collection capabilities

Tap into open-source datasets to support energy modelling

# 4. Relevant set of scenarios to explore strategy options

Investment decisions cannot be tested in the real world, as they involve large capital commitments. In addition, certain choices may have irreversible impacts e.g. on the energy system or environment.

**Scenarios have therefore become the de facto approach to depict possible outcomes of development alternatives when evaluating climate and energy policy measures.**

The Intergovernmental Panel on Climate Change (IPCC) defines a scenario as a 'coherent, internally consistent and plausible description of a possible future state of the world. It is not a forecast; rather, each scenario is one alternative image of how the future can unfold.' It also recommends creating a set of scenarios to reflect the range of uncertainty in projections.

## Self-assessment #4

1. **Is the scenario approach used in national energy planning?**
2. **Are scenarios developed mainly by national stakeholders?**
3. **Does scenario development involve all key stakeholders?**

### Action items

Study the best country practices before designing a national approach

# 5. Modelling of the energy system

Energy sector models are analytical tools used to analyse the performance and dynamics of energy systems over time.

**The primary purpose of energy modelling is to provide evidence for policymakers on the impacts of different policy options to national energy security, economic development and environmental aspects.**

## Self-assessment #5

1. **Is a permanent team dedicated to energy modelling?**
2. **Does the team interact with national energy data providers?**
3. **Does the national energy modelling community have direct connection to the energy policymakers?**

### Action items

Enable national experts to participate in training sessions on modelling

Join relevant community platforms

# 6. Stakeholder engagement and communication

A general criticism of energy system models is that their complexity renders them a 'black box' for non-modellers who lack specialised programming knowledge. The results of the modelling must also be interpreted and refined by experts to become useful inputs for policy-making.

**Once a modelling exercise has yielded robust outputs, it is important that policymakers communicate this information in a concise and transparent manner.**

## Self-assessment #6

1. **Are modelling results (including data, assumptions, etc.) publicly available?**
2. **Have the results been condensed into a communiqué that can be easily understood by non-modellers?**

### Action items

Ensure the energy planning process adheres to the best transparency practices

Scan for more information



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