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Demand-side data and energy efficiency indicators: a guide to design a national roadmap

Mafalda Silva, *Senior Researcher*
INEGI - Institute of Science and Innovation in Mechanical and Industrial Engineering

MOTIVATION

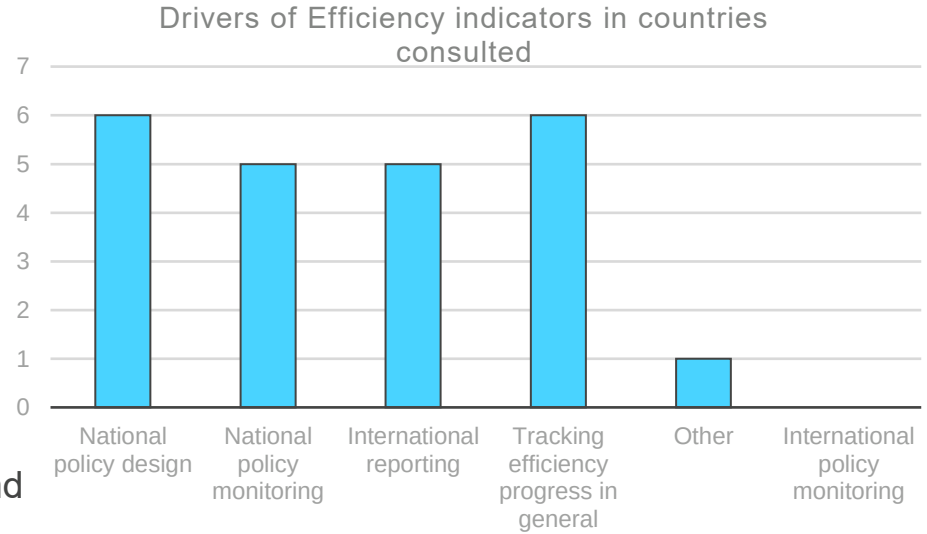
WHY A DESIGN A ROADMAP FOR THE DEVELOPMENT OF EFFICIENCY INDICATORS?

1. Important to have data and indicators

2. Past exchanges with economies evidenced that this is a not a straightforward process and there are challenges *EVERYWHERE.*

3. Developed with countries/economies for countries/economies

4. Not a prescriptive document but one helping countries/economies understanding key steps and different options/ possibilities to meet their goals.



MEANT TO BE A USEFUL RESOURCE FOR COUNTRIES/ ECONOMIES IN DIFFERENT STAGES OF THE PROCESS

A ROADMAP: WHAT FOR?

ASSESSMENT TOOL

Helping countries/economies locating their so-called “departure point”, and to identify the targets wished-for according to national interests and priorities.

A GUIDE TO THE DEVELOPMENT OF EFFICIENCY INDICATORS

Supporting professionals and decision-makers interested in developing energy efficiency indicators in their respective countries/ economies. Acknowledges there are contextual differences across geographies, such as background and existing work, resources available, and institutional capacity.

A PARTICIPATED PROCESS

ROADMAP CO-DESIGN:

- In order to test and validate the roadmap applicability in the real-world, a consultation was led with a number of partner countries

- It included:
    - the preparation of a written survey
    - interviews conducted with stakeholders from different geographies, and in different stages of this pathway to develop energy efficiency indicators

- Allowed identifying good practices and tips

- The countries/territories consulted in this project were: Australia; Brazil; Canada; Chile; Costa Rica; Hong Kong, China; Indonesia; Mexico; Thailand; United Kingdom and the United States.

WHAT'S INSIDE?

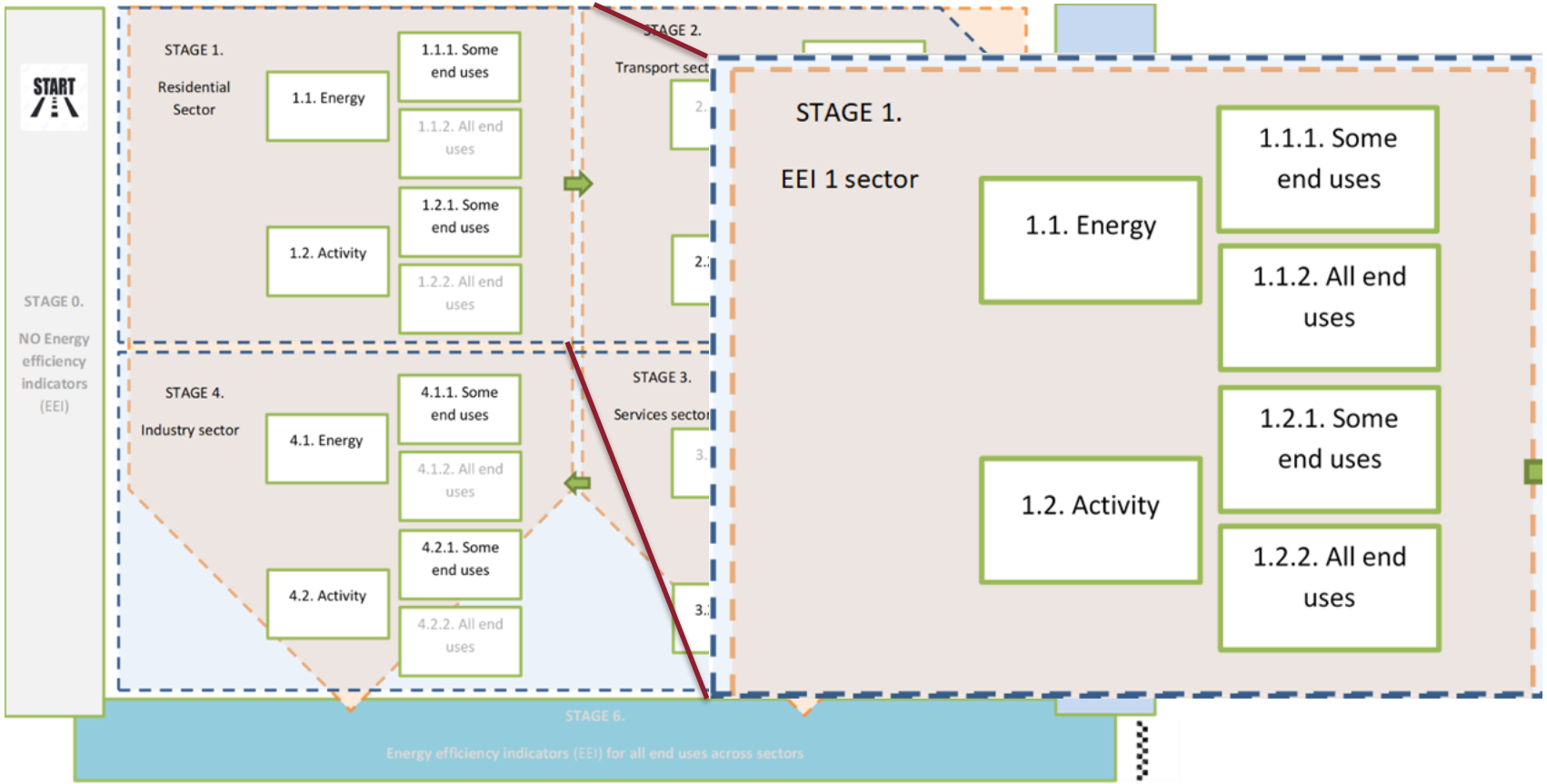
THE ROADMAP INCLUDES:

- End use data and **energy efficiency indicators** – what they are;
- The **importance** of end use data and energy efficiency indicators;
- **Enablers** for the development of efficiency indicators;
- The roadmap framework: **assessment tool** and a **guide**;
- The detailed description of **the Roadmap and its steps**
- **Good practices** and **examples** from consulted countries/territories
- The **survey circulated** and the **responses** gathered

ENABLERS FOR THE DEVELOPMENT OF ENERGY EFFICIENCY INDICATORS

- Political will and awareness
- A trusted and empowered data collection system
- Proper resource allocation
- Staff capacity and stability
- Data collection strategy
- Multilateral collaboration (both at national and international level)

Tool for assessment of the status of development of energy efficiency indicators (EEI) – application to *Statisland*



THE ROADMAP

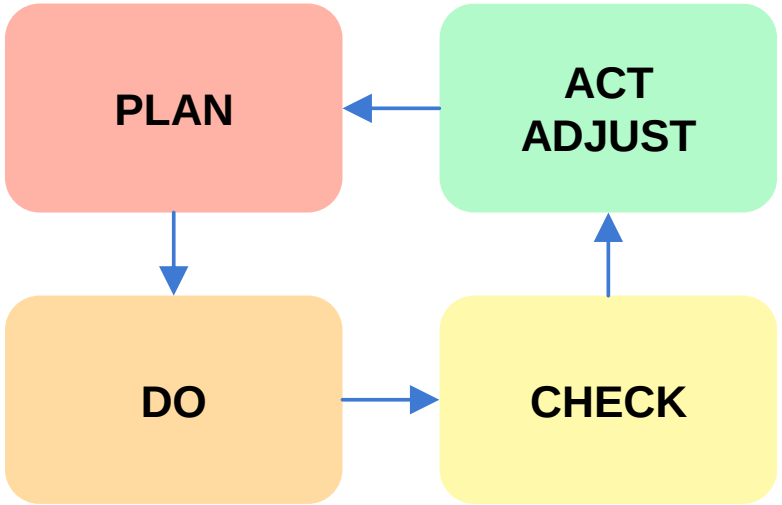
Follows a PDCA* cycle

Plan → Identification of a need or opportunity

Do → Carry out activities necessary for the change

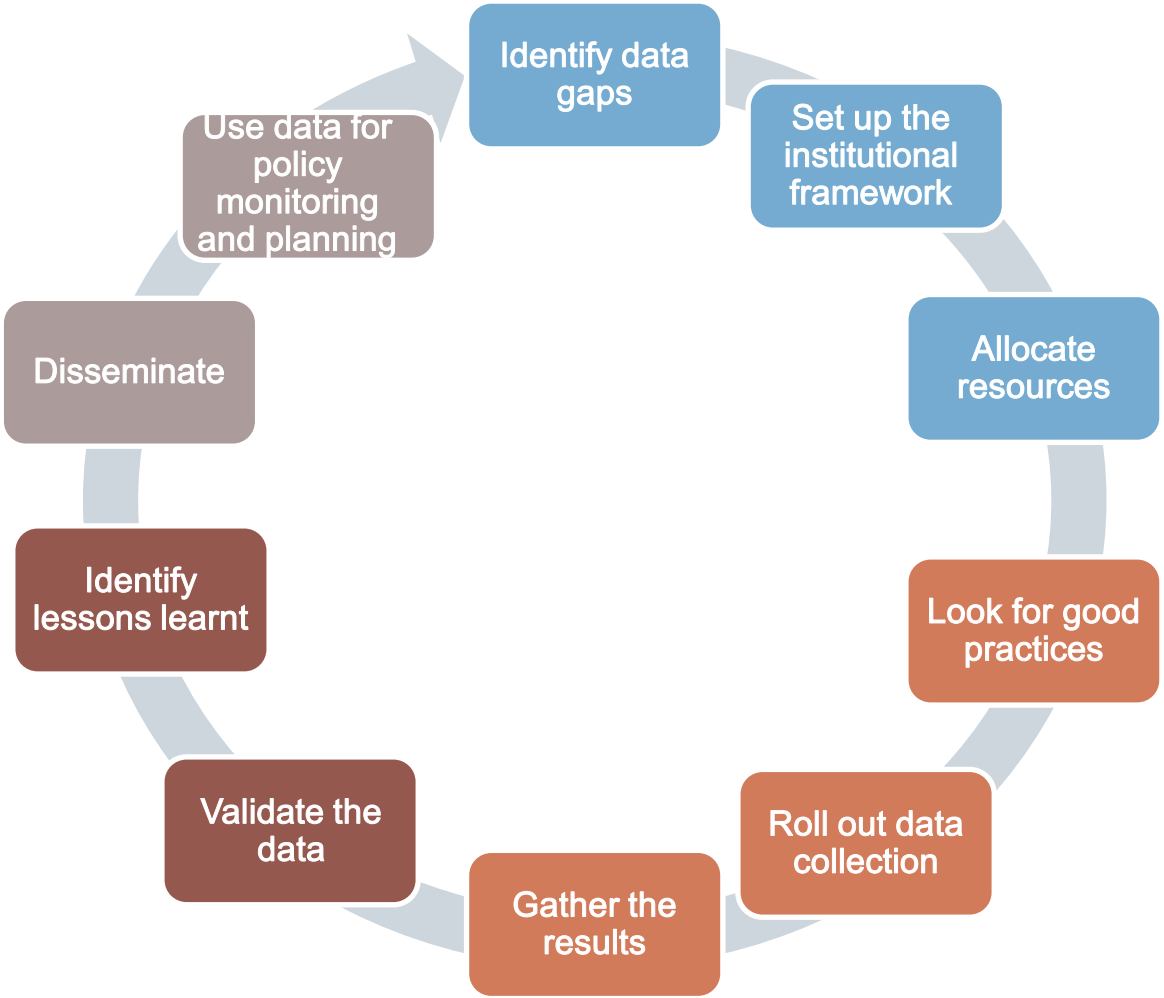
Check → Review the actions, analyze the results

Act → Take actions based on learning experience.



* *Management model for continuous improvement*

THE ROADMAP



THE ROADMAP

FOR EACH STEP OF THE WAY:

The question(s) it addresses

An explanation of what it means

Actionable tips on the trigers to pull

Good pratices from countries / economies to illustrate how others have made it work

Budget definition (including physical office, HR, IT, and data collection)

(**Linked enablers**: proper resource allocation and staff capacity and stability)

1. What resources are needed to develop the indicators required?
2. What budget is available initially and what activities can it cover?

The allocation of a proper budget is an essential step. This is not only to collect data needed, which is in itself an important share of the overall budget and it may largely determinate the choice of the data collection methods and its accuracy; but also, to the development /improvement of the national energy data management system, to hire qualified staff /train them, to acquire the necessary infrastructure and software, etc…

In principle, surveys should be as short and least-cost as possible to address data needs. It is often found that countries conduct less detailed surveys with relatively high frequency and understake more ambitious and detailed data collection (with higher budget requirements) with lower periodicity.

Defining the relevant budget in the United States

The U.S. Energy Information Administration (EIA) provides independent, impartial information to support development of U.S. energy efficiency indicators. The development of these indicators is not specifically itemized in the budget, but is instead a component within EIA's overall annual appropriation.

ILUSTRATING THE ROADMAP STEPS

Data sharing

Formalization of institutional arrangements in Canada

Natural Resources Canada (NRCan) is responsible for the production of detailed energy end use data across regions and sectors, based on aggregated energy use data from Statistics Canada (StatCan), and data from other sources. NRCan finds it useful to have formal agreements with other national counterparts to facilitate data sharing and to establish the terms for disclosure of information.

There is a departmental Memorandum of Understanding (MoU) between NRCan and StatCan first signed in 2013 and renewed in 2019, governing the collection, sharing and disclosure of data, the confidentiality and use of the information, and access to the information at the departmental level. This enables to foster trust and

Establish data sharing agreements and other institutional arrangements

(**Linked enablers**: data collection strategy and multilateral collaboration)

1. Are there other institutions already collecting data useful for efficiency indicators?
2. Is it possible to create a seamless process to simplify sharing data among these (potentially with benefits to all parties)?

Data for energy efficiency indicators is often collected by different institutions. The existence of institutional arrangements between institutions (or departments within the same institution) that collect and own data useful for other institutions may simplify, speed-up and reduce the costs of data collection. Ideally, such arrangements should be established in a formal way and at a high-level, and be implemented at operational level, complemented by informal agreements, as needed. For this, it is important that decision-makers and high-level stakeholders are aware of data needs and sources. In any case, data sharing agreements between institutions needs to account for privacy and confidentiality issues (Graef et al., 2019).

The UN IMTS compilation guide identify a number of criteria for effective institutional arrangements:

1. (a) the designation of only one responsible agency,
2. (b) clear definition of rights and responsibilities of all agencies involved, and
3. (c) the establishment of formalized working arrangements between agencies including agreements on holding inter-agency working meetings, as needed, and on the access to micro-data that those agencies collect.

ILUSTRATING THE ROADMAP STEPS

Dissemination

The "Hong Kong Energy End-use data" (HKEEUD) dissemination campaign
HKSAR Government

Disseminate the data and the results

1. Does data and indicators reach a wide number of users and different audiences?
2. Are data and indicators disseminated in a clear way and in an appropriate format?

Data is collected to serve a number of purposes, not just for the sake of being collected. As such, it is important to disseminate it into practical formats for different users, and to convey the key messages found. A good and effective data dissemination also allows to improve its quality through the queries and feedback received by the data providers from the users.

Data dissemination practices from Hong Kong, China

Hong Kong, China has been publishing the energy end-use data for over 20 years. This data is updated annually and available online with free access to the general public (data collected annually is naturally aggregated at territory-wide level in order to maintain data privacy). The free access of the energy end-use data evidences the encouragement on data transparency by the HKSAR Government.

The objectives of the data publication are two-fold: to provide an understanding to the general public on energy consumption patterns and usages from sector levels down to end-use level and to serve as a reference for the Government to formulate and evaluate energy efficiency policies.

DISCUSSION ITEMS

Does the roadmap described reflect your experience /your economy reality?

Is this a potentially useful resource in your economy? If so, why?

How can international collaboration support its application in the context of your economy?

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Mafalda Silva

mcsilva@inegi.up.pt

INSTITUTE OF SCIENCE AND INNOVATION IN
MECHANICAL AND INDUSTRIAL ENGINEERING

www.inegi.pt