

10A. APEC efforts on energy efficiency indicators

The 37th meeting of the APEC Expert Group on Energy Data and Analysis (EGEDA)

InterContinental Guangzhou, Haizhu District, Guangzhou, China
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Presentation Outline

Background

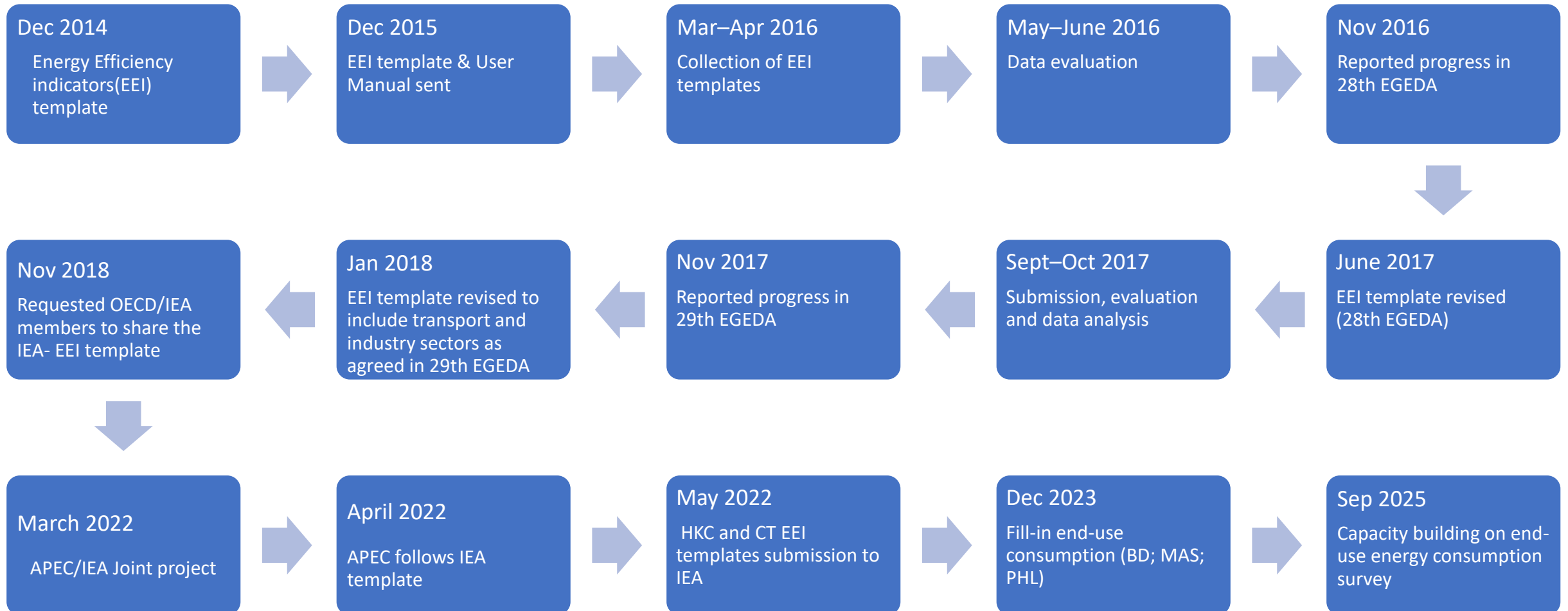
Efforts in improving energy efficiency indicators collection

Importance of energy efficiency indicators

Closing thoughts

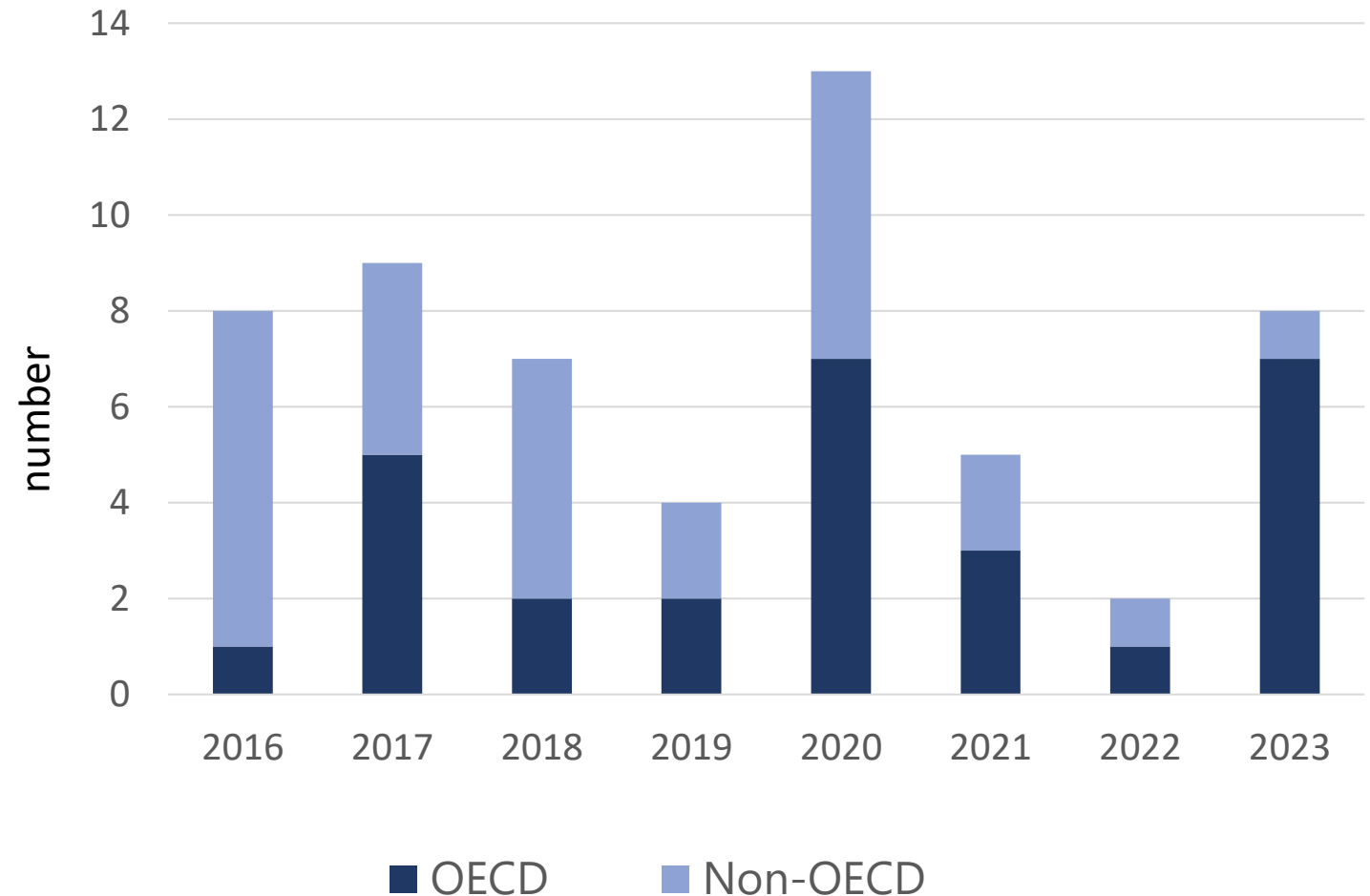
Background

Milestone



Progress of EEI Template Collection

- Seven APEC members that are also OECD members can fill the template for submission to IEA; IEA shares the templates of these economies to APERC.
- Hong Kong, China and Chinese Taipei are the non-OECD member economies that can fill the template.



Efforts in improving energy efficiency indicators collection

Collaborative efforts

□ APEC/EGEDA and IEA

- Joint APEC-IEA Workshops on end-use energy consumption (Part 1 and 2) – 2021-2022
- Energy efficiency indicators (EEI) template
 - ▶ Using IEA EEI template
 - ▶ Sharing the APEC-OECD EEI templates with APEC
 - ▶ Sharing APEC- Non-OECD EEI templates (HKC; CT; PHL) with IEA

□ Project with EE consultant

- End-use energy consumption estimation (BD; MAS; PHL)
- Statistics training resource person



Capability enhancement efforts

- ❑ Collaboration with member economies on energy efficiency projects for APEC funding:
 - Conducting energy consumption surveys.
 - Involvement of local statisticians aside from the energy statisticians.
- ❑ Ensure knowledge is sustained through the APEC Energy Statistics Workshop and EGEDA training activities
 - Conducting capability workshops on household energy consumption survey (3 Phases)
 - Expanding scope of energy statistics training

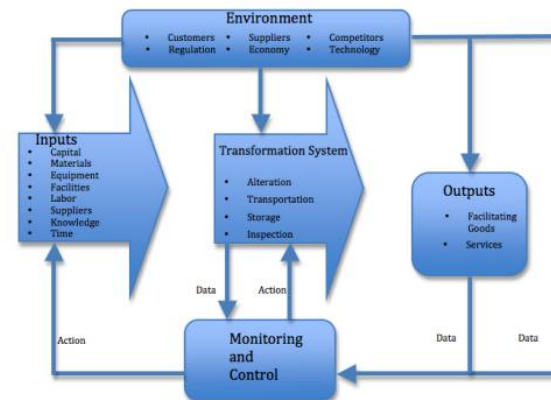


Methods used to collect data for indicators

- Administrative sources
 - Basis as often gathers many data
 - To be consulted before starting new data collection
- Surveys
 - The key: a representative sample
 - Possibly expanding existing surveys
- Metering and measuring
 - Costly but very effective for monitoring specific equipment efficiency
- Modelling
 - Complementary to surveys or stand alone

THIRTEENTH CENSUS OF THE UNITED STATES (1910-POPULATION)

State	Total Population	White	Colored	Foreign Born	Under 18	18-24	25-34	35-44	45-54	55-64	65-74	75 and over
Alabama	1,578,000	1,450,000	128,000	100,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Alaska	100,000	100,000	0	0	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500
Arizona	200,000	200,000	0	0	100,000	60,000	40,000	20,000	10,000	5,000	2,000	1,000
Arkansas	1,200,000	1,100,000	100,000	50,000	350,000	200,000	150,000	100,000	70,000	30,000	10,000	5,000
California	2,000,000	1,800,000	200,000	100,000	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
Colorado	1,000,000	1,000,000	0	0	400,000	250,000	150,000	100,000	50,000	20,000	10,000	5,000
Connecticut	1,500,000	1,500,000	0	0	400,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Delaware	200,000	200,000	0	0	100,000	60,000	40,000	20,000	10,000	5,000	2,000	1,000
District of Columbia	100,000	100,000	0	0	50,000	30,000	20,000	10,000	5,000	2,000	1,000	500
Florida	1,000,000	900,000	100,000	50,000	300,000	150,000	100,000	70,000	40,000	20,000	10,000	5,000
Georgia	1,500,000	1,300,000	200,000	100,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Idaho	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Illinois	3,000,000	2,800,000	200,000	100,000	1,000,000	600,000	400,000	300,000	200,000	100,000	40,000	20,000
Indiana	2,000,000	1,900,000	100,000	50,000	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
Iowa	1,500,000	1,500,000	0	0	500,000	300,000	200,000	150,000	100,000	50,000	20,000	10,000
Kansas	1,000,000	1,000,000	0	0	400,000	250,000	150,000	100,000	50,000	20,000	10,000	5,000
Kentucky	1,500,000	1,400,000	100,000	50,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Louisiana	1,000,000	800,000	200,000	100,000	350,000	200,000	150,000	100,000	70,000	30,000	10,000	5,000
Maine	1,000,000	1,000,000	0	0	400,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Maryland	1,000,000	1,000,000	0	0	400,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Massachusetts	1,500,000	1,500,000	0	0	400,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Michigan	2,000,000	1,900,000	100,000	50,000	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
Minnesota	1,500,000	1,500,000	0	0	500,000	300,000	200,000	150,000	100,000	50,000	20,000	10,000
Mississippi	1,000,000	800,000	200,000	100,000	350,000	200,000	150,000	100,000	70,000	30,000	10,000	5,000
Missouri	2,000,000	1,900,000	100,000	50,000	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
Montana	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Nebraska	1,000,000	1,000,000	0	0	400,000	250,000	150,000	100,000	50,000	20,000	10,000	5,000
Nevada	200,000	200,000	0	0	100,000	60,000	40,000	20,000	10,000	5,000	2,000	1,000
New Hampshire	500,000	500,000	0	0	200,000	120,000	80,000	50,000	30,000	15,000	5,000	2,000
New Jersey	2,000,000	2,000,000	0	0	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
New Mexico	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
New York	5,000,000	4,800,000	200,000	100,000	1,500,000	900,000	600,000	400,000	250,000	120,000	40,000	20,000
North Carolina	1,500,000	1,400,000	100,000	50,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
North Dakota	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Ohio	3,000,000	2,900,000	100,000	50,000	1,000,000	600,000	400,000	300,000	200,000	100,000	40,000	20,000
Oklahoma	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Oregon	500,000	500,000	0	0	250,000	150,000	100,000	50,000	25,000	10,000	5,000	2,000
Pennsylvania	5,000,000	4,900,000	100,000	50,000	1,500,000	900,000	600,000	400,000	250,000	120,000	40,000	20,000
Rhode Island	500,000	500,000	0	0	200,000	120,000	80,000	50,000	30,000	15,000	5,000	2,000
South Carolina	1,000,000	900,000	100,000	50,000	350,000	200,000	150,000	100,000	70,000	30,000	10,000	5,000
South Dakota	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Tennessee	1,500,000	1,400,000	100,000	50,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Texas	2,000,000	1,900,000	100,000	50,000	600,000	350,000	250,000	150,000	100,000	50,000	20,000	10,000
Utah	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Vermont	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Virginia	1,500,000	1,400,000	100,000	50,000	450,000	250,000	200,000	150,000	100,000	50,000	20,000	10,000
Washington	500,000	500,000	0	0	250,000	150,000	100,000	50,000	25,000	10,000	5,000	2,000
West Virginia	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000
Wisconsin	1,500,000	1,500,000	0	0	500,000	300,000	200,000	150,000	100,000	50,000	20,000	10,000
Wyoming	300,000	300,000	0	0	150,000	90,000	60,000	30,000	15,000	5,000	2,000	1,000



Importance of energy efficiency indicators

Importance of Energy Efficiency Indicators

- **Useful for evidence-based decision making down to the end-use level**

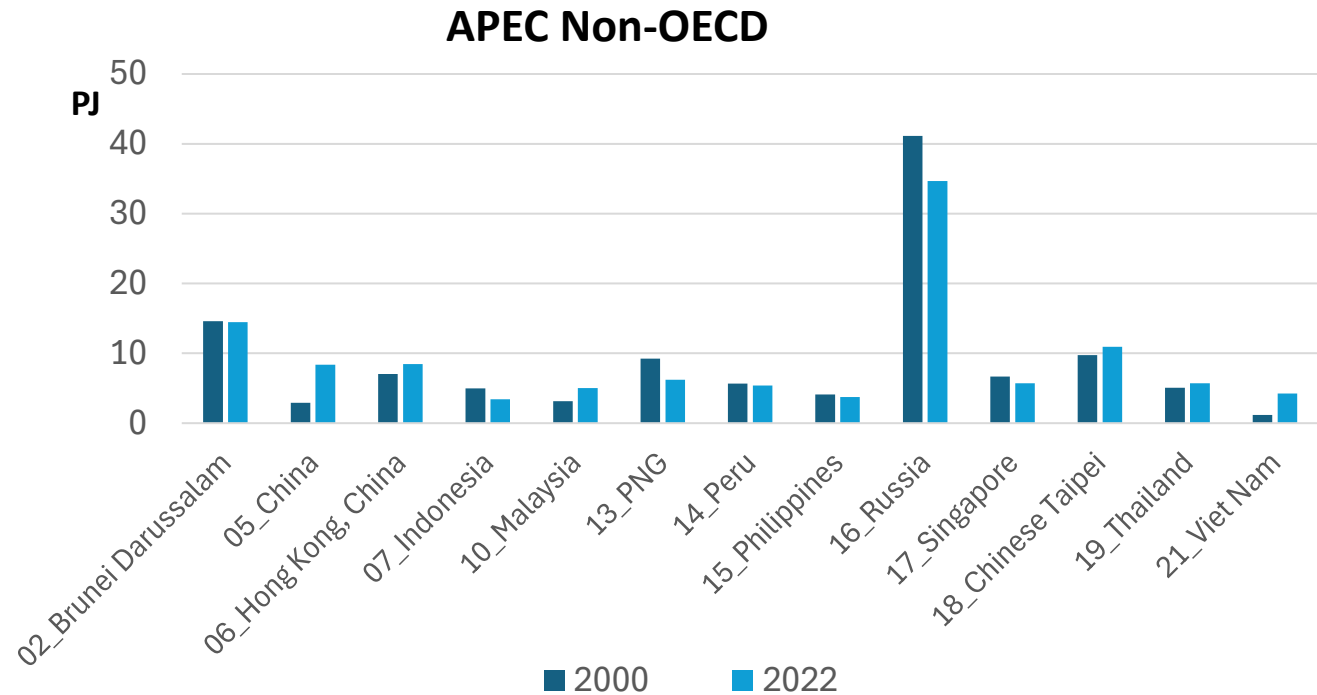
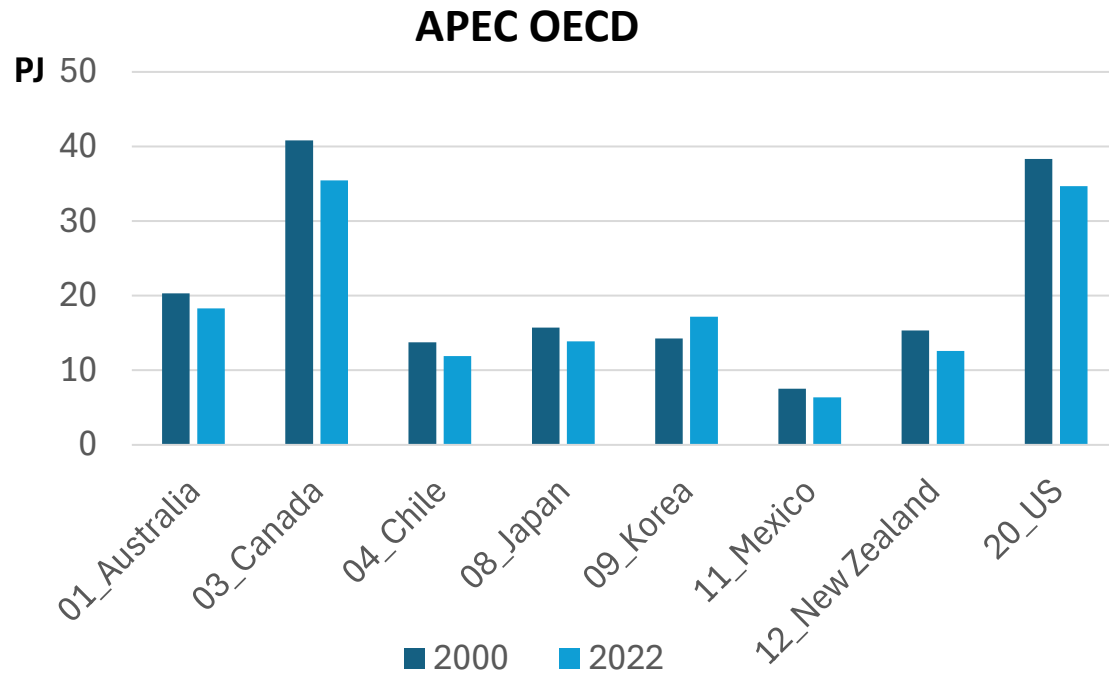
- Objective measurement — Provide a factual basis for decisions, reducing reliance on assumptions
- Cross-economy comparability — Enable benchmarking across APEC economies to identify best practices and performance gaps
- Scenario and policy modelling — Serve as inputs for forecasting future energy demand and assessing the impact of policy options

- **Monitoring and evaluation**

- Track policy effectiveness — Show whether implemented measures are delivering results
- Detect unintended outcomes — Reveal rebound effects, structural shifts, or inefficiencies that require policy adjustment
- Ensure accountability — Provide transparent metrics for reporting progress to stakeholders, international partners, and the public
- Support continuous improvement — Enable iterative refinement of policies based on real-world performance data

Residential consumption varies between members

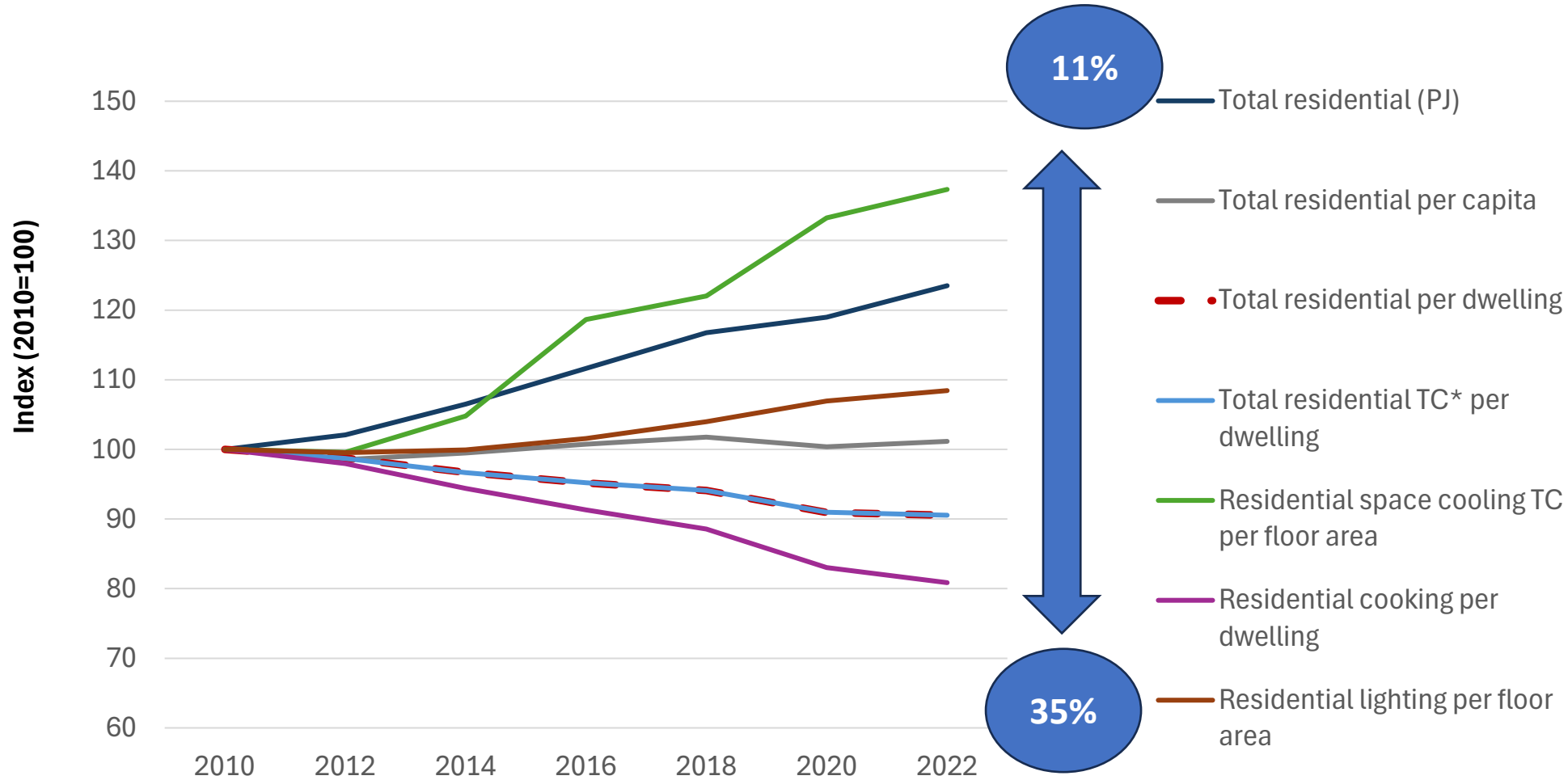
Energy consumption per capita in residential



- ❑ *Per capita consumption in residential in most APEC OECD members declined from 2000 to 2022;*
- ❑ *In contrast, energy consumption per capita in residential in most APEC Non-OECD members increased;*
- ❑ *Residential consumption is dependent on various factors, in this case, the size of the population.*

Explains basic consumption patterns

The Philippines – Households energy consumption (2010-2022)



***TC = temperature correction**
intends to remove the fluctuations in energy consumption due to fluctuations in temperature in the given year compared with the average temperature of an economy.

❖ More detailed data enables more informed decisions for better policymaking

Better data = better analysis

- Collecting end-use energy consumption is always a challenge, but there are ways to collect them.
- Cooperation within the local government is important; for example, statistics offices are the sources of Administrative data or are designated to conduct surveys. However, the energy sector is more knowledgeable about energy data.
- Analysing and collecting energy consumption data is a continuing process; hence, we do not stop to learn and explore.
 - EGEDA workshops on end-use data collection
- It is clear, more detailed data enables more informed decisions for better policymaking.

Thank you.

<https://aperc.or.jp>

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