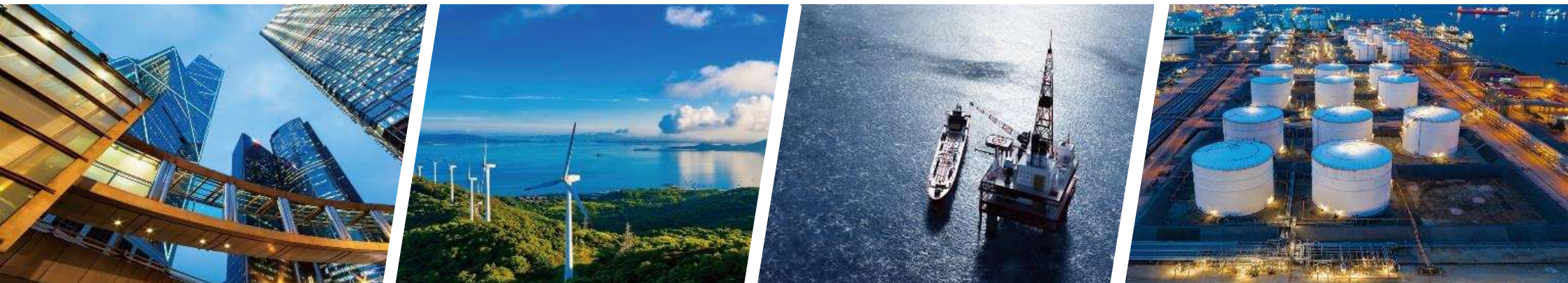


6-B APEC efforts on energy efficiency indicators

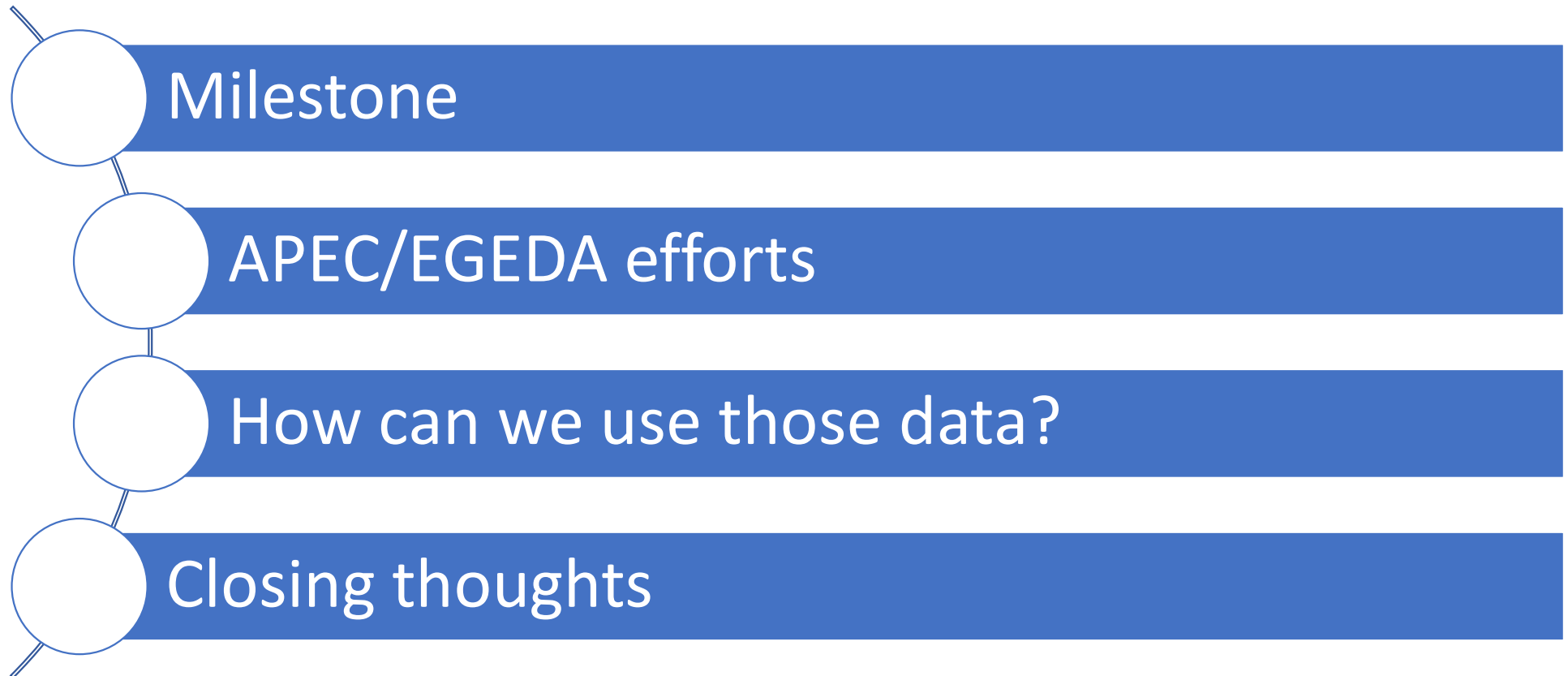
The 35th Meeting of APEC Experts Group on Energy Data and Analysis (EGEDA35)

16-19 January 2024, Hong Kong, China

Elvira Torres Gelindon, EGEDA secretariat



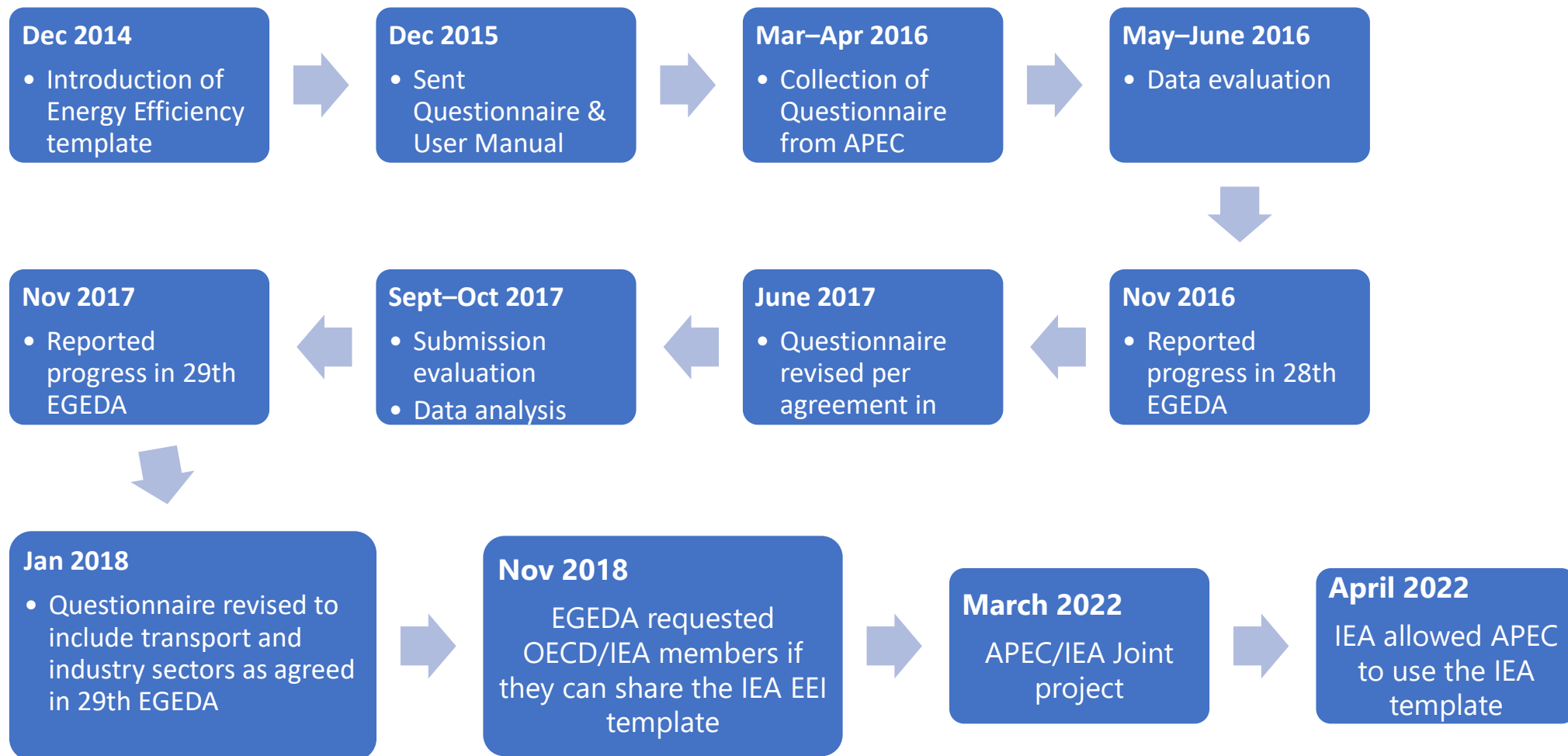
Outline



Milestone



Milestone



APEC/EGEDA efforts



2017 Revised questionnaire components

Commercial and Public Services

- Space Heating
- Space Cooling
- Lighting
- Other Building Energy Use
- Non-Building Energy Use
- Total Energy Use in Commercial Sector

Activity data

- Activity and structure indicators (population, HHs, floor area, etc)
- GDP
- Value added

Residential

- Space Heating
- Space Cooling
- Water Heating
- Cooking
- Lighting
- Refrigerators / Freezers
- Other kitchen facilities
- Laundry facilities
- Television/PC and other Home entertainment
- Other Appliances
- Total Energy Use in Residential Sector

- *To analyse energy demand and how to improve energy efficiency, detailed information for energy end-use/energy related data are important for policy makers and energy analysts*

2018 Revised questionnaire components

Transport sector (by fuel)

- Road transport
- Railways
- Domestic Aviation
- Inland waterways

Activity data

- Number of vehicles (by type, by mode, by fuel type)
- Passenger-km (Passenger)
- Vehicle-km
- Tonne-km (Freight)

- *Transport and Industry Sectors added*

Industry sector (by fuel)

- Food products and textiles
- Wood and wood products
- Paper and paper products
- Chemicals, basic pharmaceuticals, petrochemicals
- Non-metallic minerals
- Basic metals
- Fabricated metals
- Motor vehicles, trailers etc
- All Other manufacturing
- Mining and Quarrying
- Construction

Glimpses of the questionnaire



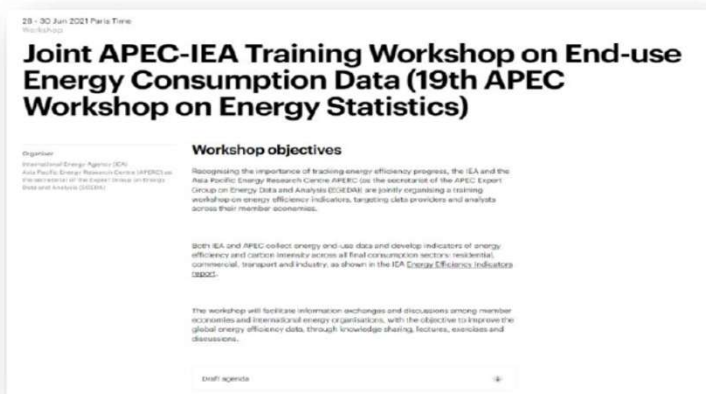
B			D	R
RESIDENTIAL			units	2003
Legend	Check all/none	Add remarks		
Space Heating				
Oil & Oil Products			PJ	352.82
Natural Gas			PJ	500.30
Coal & Coal Products			PJ	22.96
Biofuels & Waste			PJ	273.82
Heat			PJ	56.41
Electricity			PJ	140.74
Other			PJ	0
Total			PJ	1,347.06
Space Cooling				
Electricity			PJ	0.73
Other			PJ	0
Total			PJ	0.73
Water Heating				
Oil & Oil Products			PJ	44.11
Natural Gas			PJ	56.46
Coal & Coal Products			PJ	2.26
Biofuels & Waste			PJ	2.72
Heat			PJ	11.31
Electricity			PJ	62.24
Other			PJ	0
of which: solar thermal - voluntary			PJ	0
Total			PJ	179.09
Cooking				
Oil & Oil Products			PJ	31.25
Natural Gas			PJ	37.01
Coal & Coal Products			PJ	0
Biofuels & Waste			PJ	0
Heat			PJ	0
Electricity			PJ	37.56
Other			PJ	0
Total			PJ	105.81

B			D	R	S
RESIDENTIAL			units	2003	2004
Legend	Check all/none	Add remarks			
Appliances Diffusion (number of units per occupied dwelling)					
Refrigerators			unit/dw	0	0
Freezers			unit/dw	0.83	0.83
Refrigerator/Freezer Combinations			unit/dw	0.99	0.99
Dish Washers			unit/dw	0.43	0.44
Clothes Washers			unit/dw	0.95	0.92
Clothes Dryers			unit/dw	0.26	0.27
Television/Home entertainment			unit/dw	1.42	1.37
PC/Information & communication technology			unit/dw	0	0
Appliances Stock (only within occupied dwellings)					
Refrigerators			10 ⁶	0	0
Freezers			10 ⁶	20.99	21.34
Refrigerator/Freezer Combinations			10 ⁶	25.06	25.43
Dish Washers			10 ⁶	10.79	11.15
Clothes Washers			10 ⁶	24.07	23.61
Clothes Dryers			10 ⁶	6.69	6.98
Television/Home entertainment			10 ⁶	35.92	34.97
PC/Information & communication technology			10 ⁶	0	0

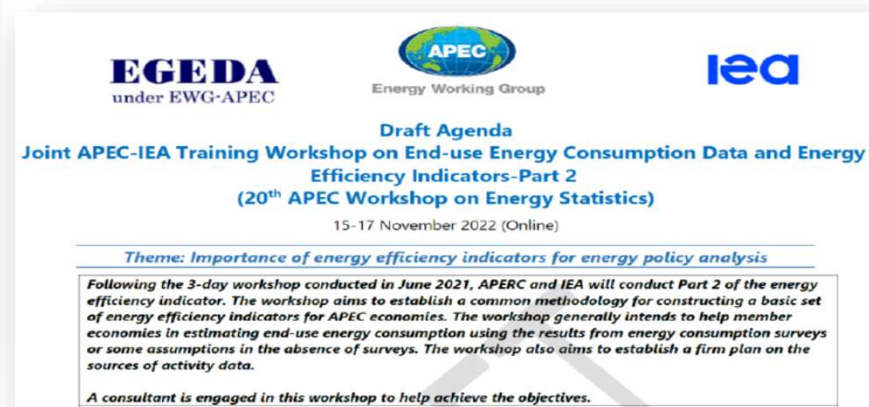
❖ *EI templates from OECD members were also shared (directly from the members and some from IEA)*

Collaboration with IEA

Joint APEC-IEA Training Workshop on End-use Energy Consumption data



First joint IEA-APEC workshop held in June 2021



Agenda for the second workshop to be held in November 2022

The objective of the workshops is to improve the collection of end-use and activity data, strengthening the capacity of economies to develop efficiency indicators

- IEA shared their methodologies in tracking sectoral energy efficiency indicators

EEl project

Objectives

- Make an assessment of current data availability, accuracy and consistency that are used for filling in IEA's templates;
- Identify gaps and missing data and propose methodology for estimation/calculation of energy efficiency indicators;
- Making use of available official national data as well as data that are available in different "open" databases managed by various international organizations.

EGEDA statistics training in 2023

- Allocated 3.5 days of training on energy efficiency indicators.
- Enhance understanding of end-use energy consumption and energy efficiency indicators.



DEVELOPING METHODOLOGIES FOR END-
USE ENERGY DATA
ESTIMATION/COLLECTION

[FINAL REPORT](#)

Prepared by ALENKA KINDERMAN LONČAREVIĆ

Date: 31.12.2022.

Way forward

- Collaboration with member economy on energy efficiency project for APEC funding:
 - Capability enhancement in conducting energy consumption survey
 - Involvement of local statisticians aside from the energy statisticians
- Ensure knowledge is sustained by APEC Energy Statistics Workshop

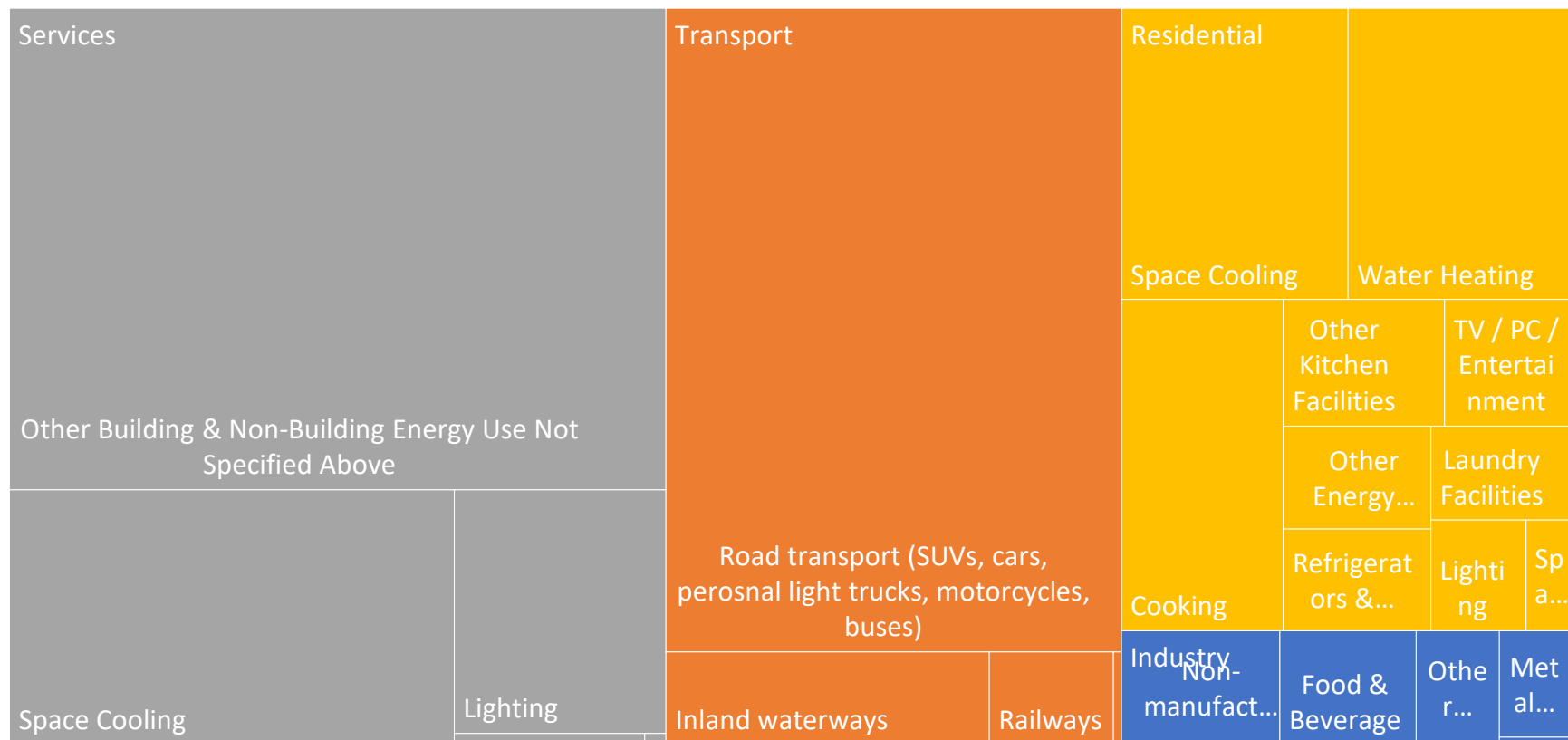


How can we use those data?



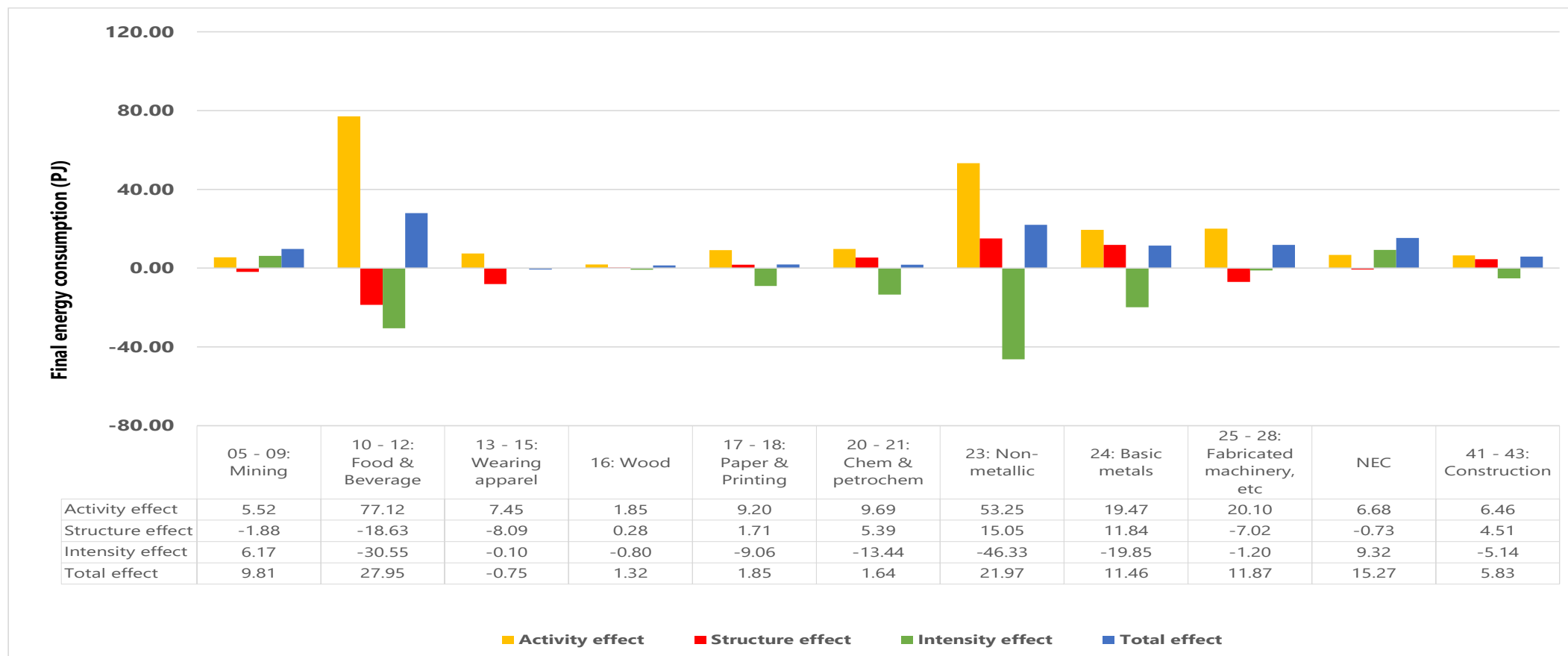
Sectoral demand data for better modeling and inform policy

Final energy consumption by end uses 2020 - Hong Kong, China



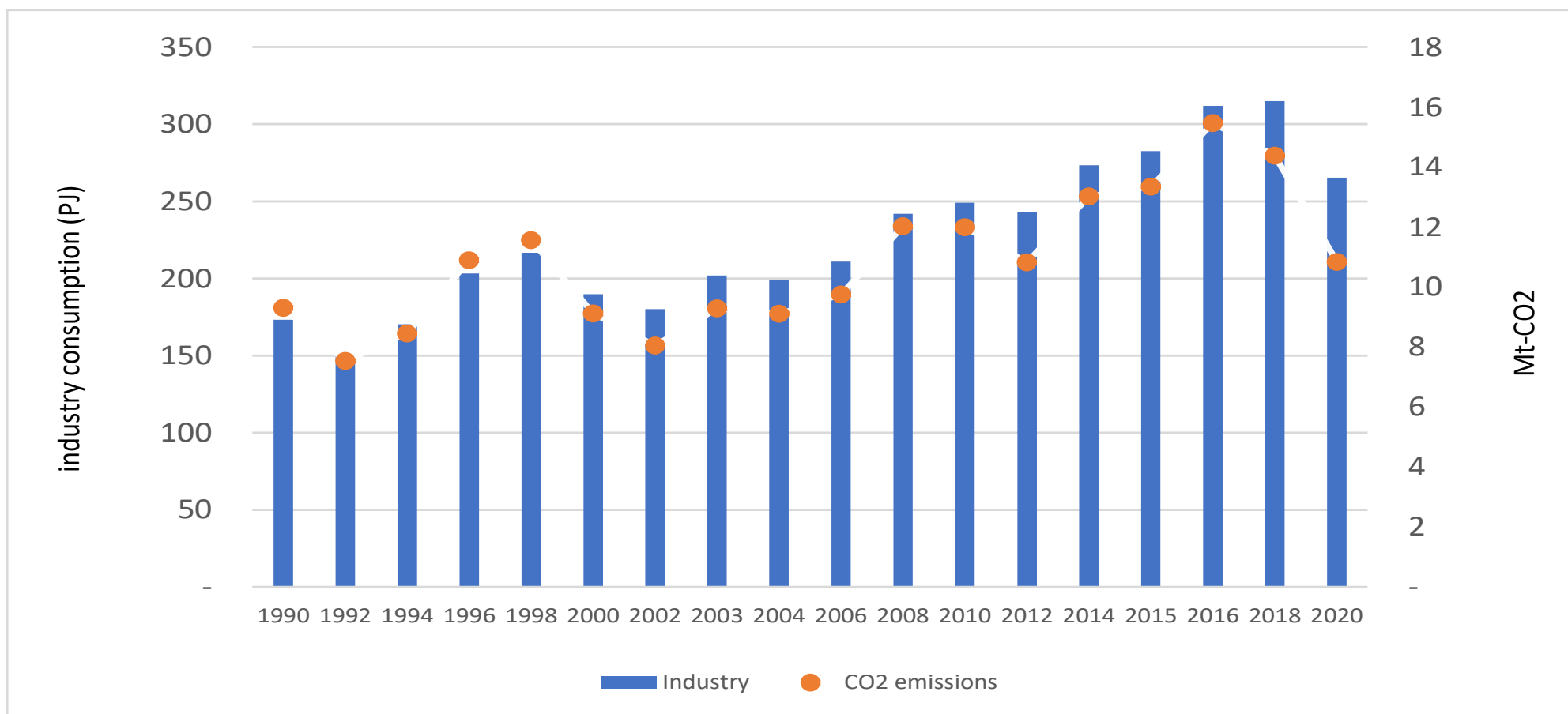
❖ Detailed data collection at the end-use level enables tracking of energy efficiency changes.

What drives the industry energy consumption?



❖ *Allows analyses on drivers of consumption*

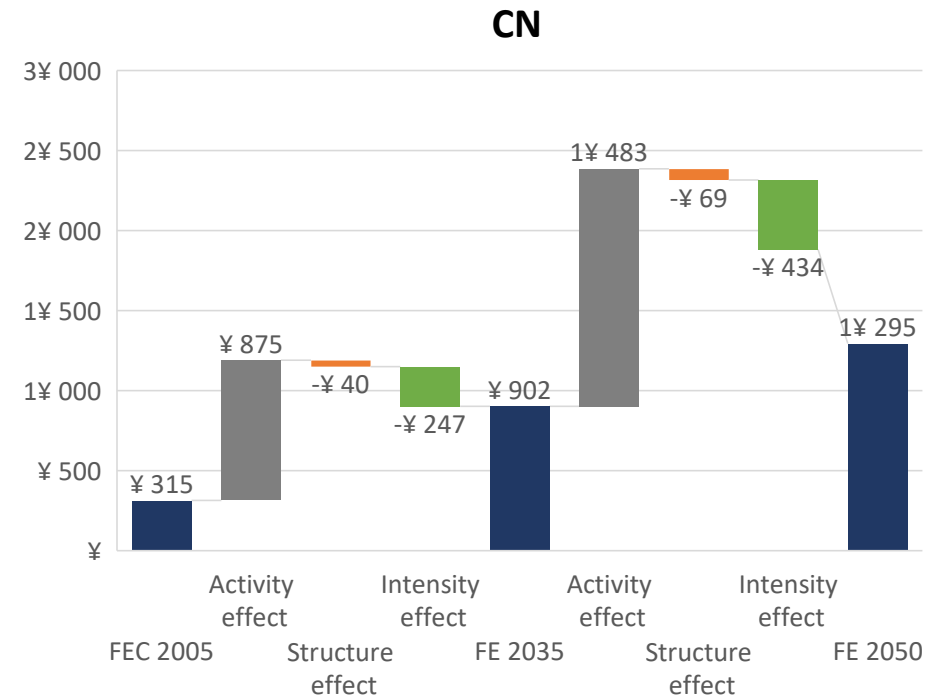
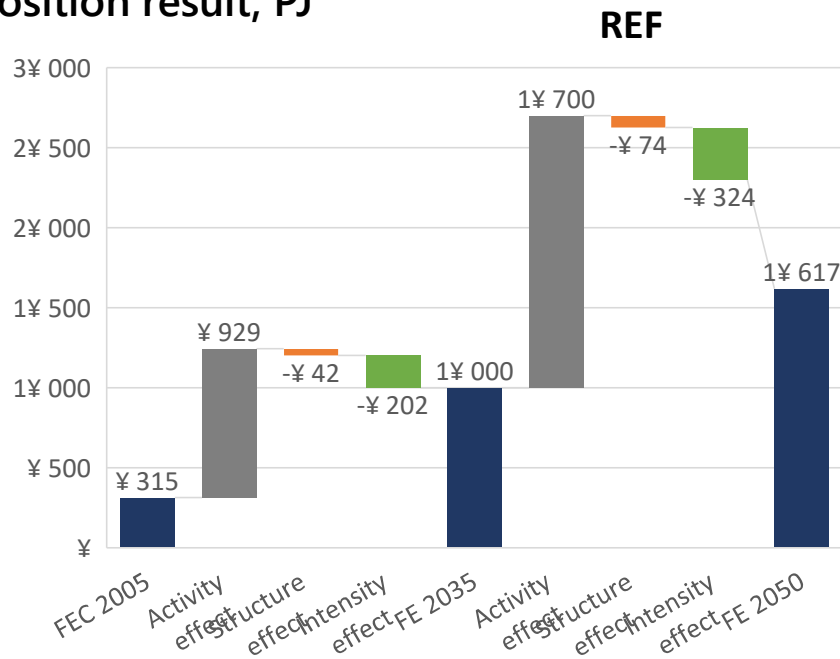
Energy consumption and CO₂ emissions



❖ *Allows for identifying the most carbon-intensive subsectors. Tracking this over time gives essential feedback on energy policies.*

Detailed sub-sectoral data provides key information for policy

Decomposition result, PJ



Source, APEC Outlook, Author's analysis

- ❖ *Intensity and structure effects contribute to the slowing down of energy consumption*
- ❖ *If the intensity effect (and structure effect) will not come into play, energy consumption will be even higher*

Closing thoughts: better data = better analysis

- Energy efficiency indicators help understand better true trends in energy consumption trends in economic activity that influence energy consumption.
- However, more useful analysis requires more detailed data.
- Members should continue to devise ways to collect detailed data; increase collaboration with local statistics and energy offices.
- Continue collaboration with members

Thank you for your kind attention.

<https://aperc.or.jp>

<https://www.egeda.ewg.apec.org>

