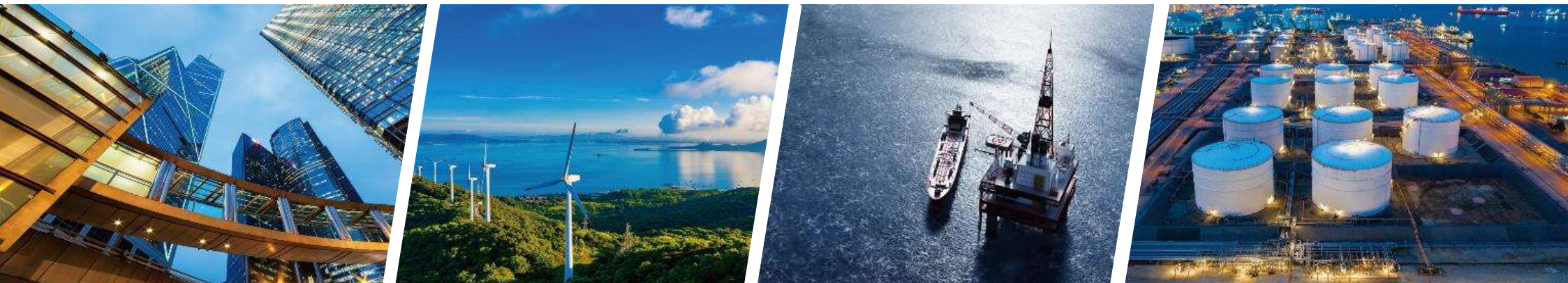


# 1a. Highlights of the 19th APEC Workshop

**Joint APEC-IEA Training Workshop on End-use Energy Consumption  
Data and Energy Efficiency Indicators-Part 2  
(20th APEC Workshop on Energy Statistics)  
15-17 November 2022 (Online)**

**Nobuhiro Sawamura, Senior Researcher, APERC/ESTO**



# Outline

- Details of the workshop
- Session 1: Importance of energy efficiency and energy efficiency indicators
- Session 2A: Sectoral energy use and energy indicators
- Session 2B : Sectoral energy use and energy indicators
- Summary
- Challenges

## Details of the workshop

- Title: 19th APEC Workshop on Energy Statistics – APEC-IEA Joint Workshop on Energy Efficiency Indicators
- Event Date: 28-30 June 2021
- Event City: Tokyo, Japan (Online)
- Attendees: 74 speakers and participants from 15 economies and 5 organisations (IEA, APERC, EGEDA, EGEEC, APSEC).
- Objective: to get a better understanding of the importance of energy efficiency indicators in energy policy making through sharing of experiences on end-use energy consumption data collection/estimation
- Rationale: Most non-OECD APEC member economies cannot fill-out the energy efficiency indicators template

# Photo (1)

**EGEDA**  
under EWG-APEC



**iea**

**19<sup>th</sup> APEC Workshop on Energy Statistics**  
**Joint APEC-IEA Training Workshop on End-use Energy Consumption Data**  
**28-30 June 2021**



# Photo (2)

**EGEDA**  
under EWG-APEC



**iea**

## 19th APEC Workshop on Energy Statistics Joint APEC-IEA Training Workshop on End-use Energy Consumption Data

28-30 June 2021





# Agenda

## Annotated Agenda

### Joint APEC-IEA Training Workshop on Energy Efficiency Indicators (19<sup>th</sup> APEC Workshop on Energy Statistics)

28-30 June 2021

*Theme: Importance of energy efficiency indicators for energy policy analysis and sharing of experiences on end-use energy consumption data collection/estimation*

*The workshop is a 3-day event led by the Energy Statistics and Training Office (ESTO) of the Asia Pacific Energy Research Centre (APERC) in collaboration with the International Energy Agency (IEA). The objective of the workshop is to improve the compilation of energy efficiency indicators in APEC by introducing collection and estimation methodologies through lectures and hands-on exercises. The workshop also aims to impart to the members the importance of energy efficiency indicators in policy making.*

*The participants are expected to actively interact and participate in the discussions. They can use freely the online features of the virtual platform, such as the chat box and hand gestures.*

**Day 1 – 28 June (Tokyo Time)**

Opening session (50 mins)

To be moderated by **Mr. Edito Barcelona** of ESTO/APERC. Day 1 starts with the registration, opening ceremonies from both Japan and IEA sides and online photo session.

15:30-16:00	Registration
16:00-16:05	Opening Remarks, <b>Dr. Irie Kazutomo</b> , APERC President
16:05-16:10	Welcome Remarks, <b>Mr. Ito Tetsurou</b> , Director, International Affairs Division, METI
16:10-16:15	Opening Remarks, <b>Dr. Nick Johnstone</b> , Chief Statistician, IEA
16:15-16:20	Online Photo Session

#### Session 1 (2 hours and 40 min): Importance of energy efficiency and energy efficiency indicators

To be moderated by **Ms. Roberta Quadrelli** of IEA. This session will set the tone of the workshop. APERC, the EGEEC chair and IEA will each deliver presentation on energy efficiency related activities, such as the energy efficiency trends and indicators, expert groups' collaboration on energy efficiency and the need for more detailed data in energy indicator analysis. Ice breaker exercises will be given to boost the participants' interest.

Everyone is encouraged to join the exercises and the Q&A.

Four economy presentations will be delivered highlighting the respective economy's experience in collecting end-use data and energy efficiency indicators; gaps and challenges and how they were able to address those challenges. The presentation will also show how the indicators have helped the economy in conducting research and in formulating energy efficiency policies.

16:20-16:35	<b>Ms. Elvira Gelindon</b> , APERC – Presentation: Tracking energy efficiency in APEC • Setting the tone of the workshop
16:35-16:50	<b>Mr. EK Chin Vy</b> - EGEEC Chair, APEC cooperation in energy efficiency
16:50-17:10	<b>Mr. Victor Garcia Tapia</b> , IEA – Presentation: Why data matters for energy efficiency policy design and monitoring
17:10-17:20	<b>Mr. Victor Garcia Tapia</b> , IEA/ <b>Mr. Edito Barcelona</b> , APERC – Icebreaker/exercise: what is the contribution of energy efficiency to intensity targets?
17:20-17:40	<b>Mr. Sawamura Nobuhiro</b> , APERC – Presentation: APEC energy data and energy balances – the need for more data
17:40-17:50	APERC presents its energy efficiency indicator template and IEA will comment/suggest
	<b>Ms. Gelindon</b> , APERC – Presentation: APEC energy efficiency indicators template
17:50-18:30	<b>Economy presentations:</b> Collection/estimation of energy and activity indicators for the energy efficiency template (4 economies, 10 minutes each) - Ms. Allison Ball (Australia) - Mr. Finbar Maunsell (New Zealand) - Mr. Jesus Tamang (The Philippines) - Ms. Vanessa Yang (Chinese Taipei)
18:30-19:00	<b>Q&amp;A and wrap-up</b>

#### Day 2 – 29 June (Tokyo Time)

##### Session 2a (3 hours): Sectoral energy use and energy indicators

To be moderated by **Ms Elvira Torres Gelindon** of ESTO/APERC. Day 2 of the workshop will cover presentation and discussion on sectoral indicators. Two sectors will be covered namely, industry and buildings (commercial and residential sectors combined). IEA will deliver the presentation on tracking efficiency in buildings while APERC on tracking energy efficiency in industry. In connection with tracking energy efficiency in the buildings sector, IEA will present its weather database.

Q&A and hands-on exercises will be given after each sectoral presentation.

Two economy presentations to discuss their respective collection/estimation of energy and activity indicators will be delivered; Hong Kong, China on buildings and the United States on industry.

All participants are encouraged to join the discussion during Q&A and wrap-up.

16:00-16:25	<b>Mr. Jungyu Park</b> , IEA- Presentation: Tracking efficiency in the residential and commercial sectors
16:25-16:40	<b>Mr. Alexandre Bizeul</b> , IEA – Presentation: The IEA weather database
16:40-17:00	<b>Hands-on exercises (to be led by Mr. Park):</b> How to calculate the indicators for the residential and commercial sectors
17:00-17:15	<b>Economy presentation:</b> Collection/estimation of energy and activity indicators in buildings - Mr. Kim Kong Mak (Hong Kong, China)
17:15-17:30	<b>Q&amp;A</b>
17:30-18:00	<b>Mr. Barcelona</b> , APERC-Presentation: Tracking efficiency in the industry sector
18:00-18:30	<b>Hands-on exercise (to be led by Mr. Barcelona and Mr. Garcia):</b> How to calculate the indicators for the industry sector
18:30-18:45	<b>Economy presentation:</b> Collection/estimation of energy and activity indicators in the industry sector - Dr. Ian Mead (US)

#### Day 3 – 30 June

##### Session 2b (2 hours and 15 min): Sectoral energy use and energy indicators

To be moderated by **Ms. Roberta Quadrelli** of IEA. Day 3 of the workshop will have two parts; 1<sup>st</sup> part is the continuation of sectoral discussion; transport sector. IEA will deliver a presentation on tracking energy efficiency in the transport sector and an economy presentation on collection/estimation of energy and activity indicators in the transport sector of Japan. IEA will also present its online tools to support economy (country) support.

Q&A follows, and everyone is expected to join the discussion.

This part also includes an open discussion on development of action plan to track impacts of energy efficiency.

16:00-16:30	<b>Mr. Thomas Elghozi</b> , IEA- Presentation: Tracking efficiency in the transport sector
16:30-17:00	<b>Hands-on exercise (to be led by Mr. Elghozi):</b> How to calculate the indicators for the transport sector
17:00-17:15	<b>Economy presentation:</b> Collection/estimation of energy and activity indicators in the transport sector - <b>Dr. Ryo Eto</b> (Japan)
17:15-17:30	<b>Q&amp;A</b>
17:30-17:45	<b>Mr. Park and Mr. Matthieu Prin</b> , IEA – Online tools to support country work
17:45-18:15	Open discussion on development of action plan to track impacts of energy efficiency – What to do and how to get it done?

##### Session 3 (45 min): Summary and way forward

The 2<sup>nd</sup> and last part of the workshop is to be jointly moderated by **EGEDA Vice-Chair** and **Ms. Roberta Quadrelli** of IEA. This session gives a summary of the 3-day workshop. This session to be lead by the EGEDA Vice-chair and IEA, also serves as opportunity for a roundtable discussion. An economy representative is expected to give their respective thoughts on the following :

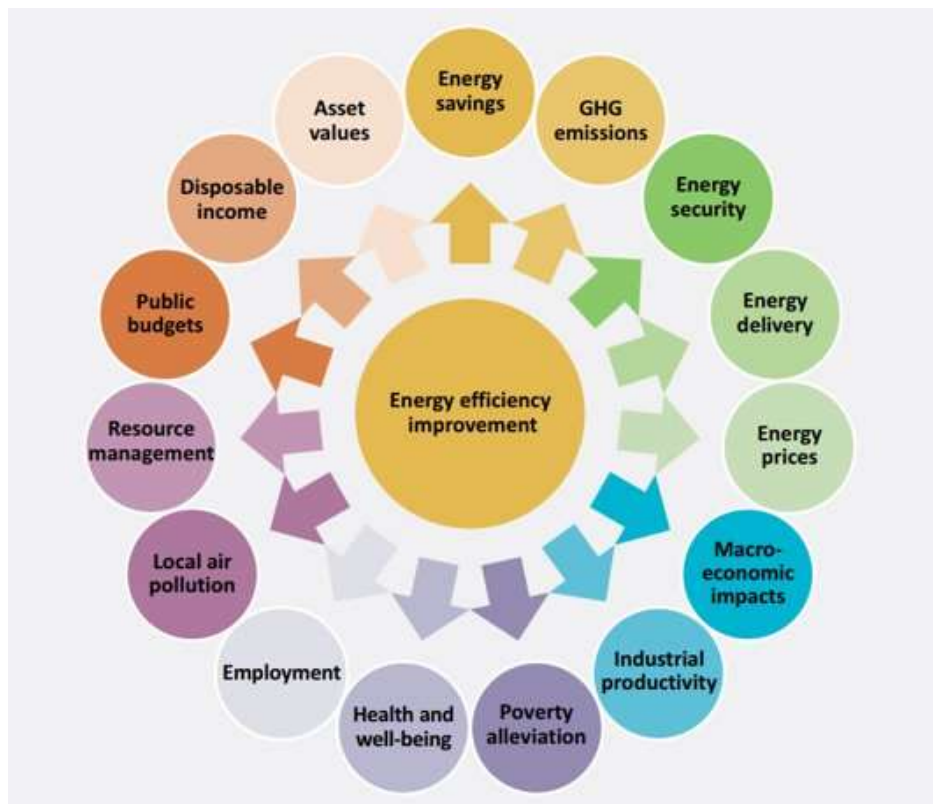
- How would the workshop improve the capacity of participants' economies in filling-in the EEI template?
- How could participants encourage their respective governments to improve data collection for a more accurate evaluation of government's EE programs?

Closing remarks and wrap-up will be delivered both by APERC and IEA.

18:50-18:55	<b>Wrap-up and Closing remarks, Ms. Roberta Quadrelli, IEA</b>
18:55-19:00	<b>Wrap-up and Closing remarks, Mr. Lukas Hou, EGEDA Vice-Chair</b>
19:00	<b>End of workshop</b>

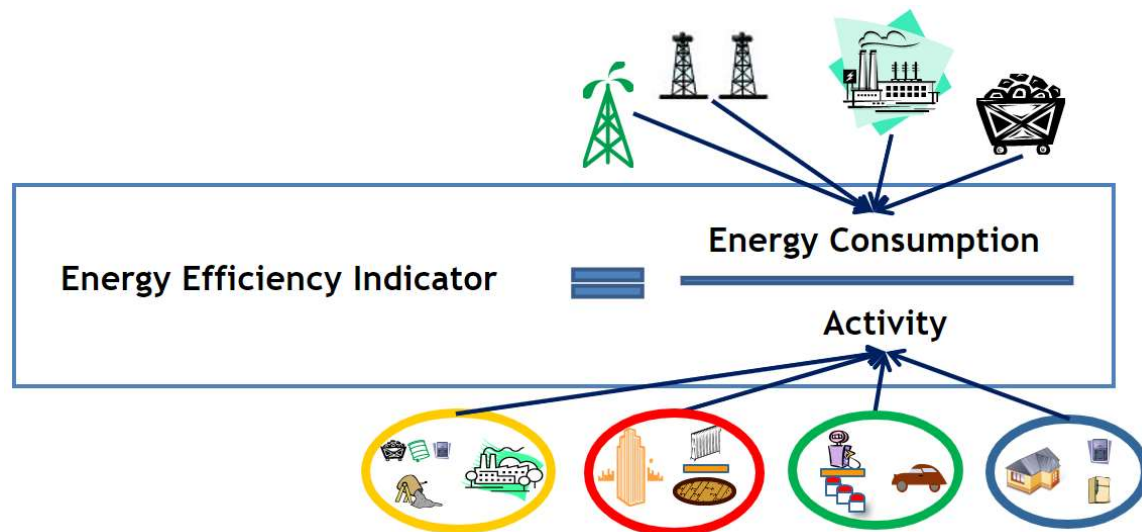
# Session 1: Importance of energy efficiency and energy efficiency indicators

Multiple benefits :Environmental, economic and social benefits from energy efficiency



Source: IEA (2014), *Capturing the multiple benefits of energy efficiency*, All rights reserved.

Energy Efficiency indicators link energy to activity across end-uses



Source: Víctor García Tapia "Why data matters for energy efficiency policy design and monitoring", IEA, 2021

Economy presentation: Australia; New Zealand; the Philippines; Chinese Taipei



# Session 2A: Sectoral energy use and energy indicators

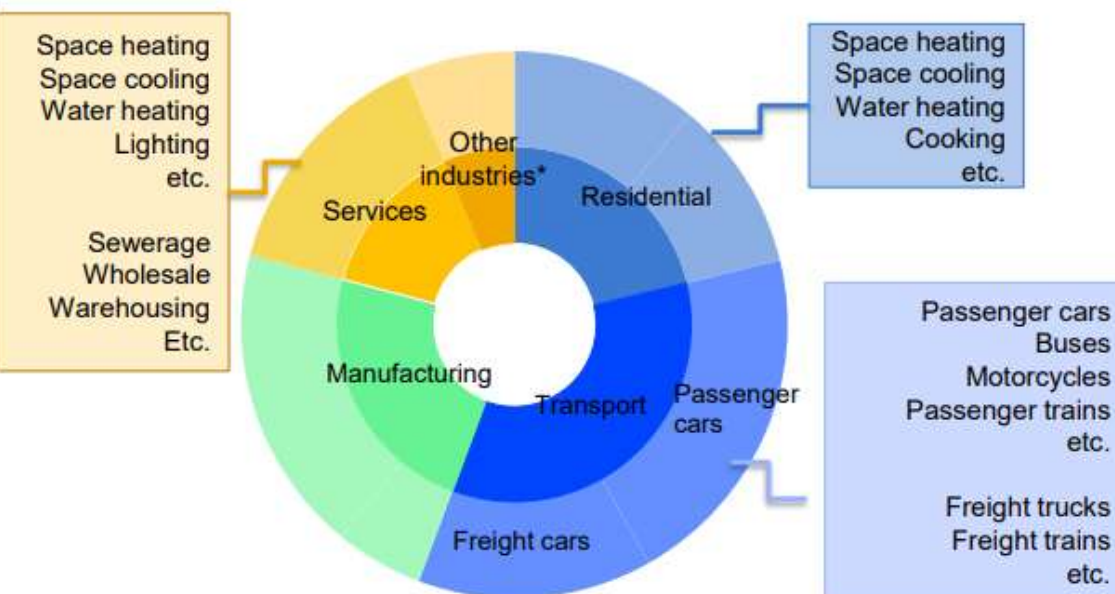
End use consumption data (residential, transport, manufacturing, services, other industries)

Hands on exercises

**Q1.** For each end use, choose the most relevant activity data from the list among those available to calculate energy intensities.

	Activity data chosen
Total sectoral consumption	
Space heating	
Space cooling	
Water heating	
Cooking	
Lighting	
Total appliances	

- Population (million)
- Total number of dwellings (million)
- Occupied dwellings (million)
- Residential floor area (occupied, million sqm)



Source: JunGyu PARK "Tracking efficiency in the residential and commercial sector", IEA, 2021

Source: JunGyu PARK "How to calculate the indicators for the residential sector", IEA, 2021

Economy presentation: The United States

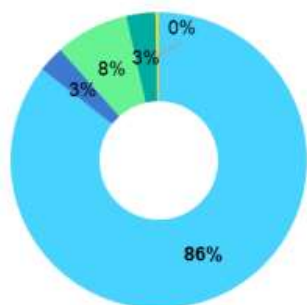


# Session 2B : Sectoral energy use and energy indicators

Energy consumption in transport sector  
in APEC economies in 2019

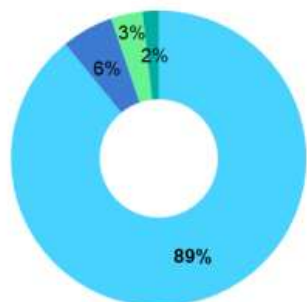
Hands on exercises

By mode



■ Road ■ Rail ■ Domestic aviation ■ Domestic navigation ■ Other

By fuel



■ Oil products ■ Natural gas ■ Biofuels and waste ■ Electricity

Source: IEA Energy Balances, 2021

**Q1.** Calculate vkm, pkm, and energy consumption of passenger cars, using the following data on passenger cars.

Activity data	2017	2018	2019
Vehicle stocks in use (billions)	0.02	0.02	0.02
Average distance travelled per vehicle (km)	12143	13485	14697
Average fuel efficiency per vehicle (MJ/km)	2.34	2.31	2.29
Average occupancy per vehicle (passenger)	1.42	1.37	1.29

Name	Prefix	Decimal	10 <sup>n</sup>
Quadrillion	Peta	1 000 000 000 000 000	10 <sup>15</sup>
Billion	Giga	1 000 000 000	10 <sup>9</sup>
Million	Mega	1 000 000	10 <sup>6</sup>

Activity data (billions km)	2017	2018	2019
Vehicle-kilometres (vkm)			
Passenger cars			
Passenger-kilometres (pkm)			
Passenger cars			

Energy consumption data (PJ)	2017	2018	2019
Passenger transport			
Passenger cars			

Vehicle-kilometres (vkm)	= stocks * average distance travelled
Passenger-kilometres (pkm)	= vkm * occupancy = (stocks * average distance travelled) * occupancy
Energy consumption	= vkm * avg. fuel efficiency = (stocks * average distance travelled) * avg. fuel effi.

Source: Thomas ELGHOZI "How to calculate the indicators for the transport sector", IEA, 2021

Economy presentation: Japan

## Summary

- Detailed end-use energy data are crucial for setting policy targets and monitoring impacts
- The current EGEDA data are not enough for energy efficiency analysis
- Improved energy intensity does not always mean improved efficiency; it could be due to changes in the economic structure
- Activity data needed in the analysis could be available; EGEDA focal points may need to look deeper
- Data collection methods differ among economies; sharing of experiences should continue

# Challenges

- The 19<sup>th</sup> workshop was able to identify gaps and challenges in the collection of energy efficiency indicators
- Among the APEC/Non-IEA, only few members can collect EEI data. These are those economies that conduct end-use energy consumption surveys regularly, however, there were also members who conducted end-use consumption surveys but were not able to reflect the disaggregation by end-use consumption in the template
- During the 19th APEC Statistics Workshop, a need for consultancy services was identified to assist the members in the estimation of data, in particular end-use consumption data and in some cases activity data.



## What do we expect the consultant to do?

- 1) Data gap assessment: The consultant will assess the current end-use energy consumption data of APEC/Non-IEA members as enumerated in Annex I, and identify the data needed to be collected.
- 2) A methodology/model in estimating end-use energy consumption data with documentation: The consultant can make use of the survey results from member economies that conducted the survey but was not able to reflect the disaggregation by end-used consumption. The consultant will design a generic model (in Microsoft Excel) applicable for all APEC/non-IEA members
- 3) Presentations and lectures during the 20th APEC Statistics Workshop Part II

# Thank you for your kind attention

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

<https://aperc.or.jp/>

