

# Discussion: Possible New APEC Energy Goals

**35<sup>th</sup> Meeting of APEC Expert Group on Energy Data and Analysis**

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# Outline

1. Revising existing APEC energy goals
2. Decarbonizing the power sector
3. Reducing methane emissions
4. Tripling renewable energy capacity

## 2022 Discussions to Revise APEC Energy Goals

Energy intensity reduction goal										
	Base year		Target year		Change					
	Current	"New"	"New"?	Current	2035/2005	2030/2010	2035/2010	2040/2010	2045/2010	2050/2010
	2005	2010	2030	2035						
APEC Energy intensity Goal	3.774	3.458		2.076	-45%		-40%			
REF	3.774	3.458	2.254	2.025	-46%	-35%	-41%	-47%	-52%	-56%
CN	3.774	3.458	2.102	1.791	-53%	-39%	-48%	-55%	-61%	-66%
Doubling the share of modern renewables										
	Base year		Target year		Change					
	"New"?	Current	Current	"New"	2035/2005	2030/2010	2035/2010	2040/2010	2045/2010	2050/2010
	2005	2010	2030	2035						
Share of modern renewables in FED (excl. non-energy) Goal	5.2%	6.1%	12.2%	13.7%	2.63	2	2.25			
REF	5.2%	6.1%	13.5%	14.3%	2.75	2.2	2.3	2.48	2.67	2.85
CN	5.2%	6.1%	16.3%	20.2%	3.88	2.7	3.3	4.15	4.97	5.60

Source: Summary of the 2nd Meeting of the EWG Small Group to Explore Potential New Energy-related Goal(s) – 16 September 2022

# Chair's Statement - Power Sector Decarbonisation

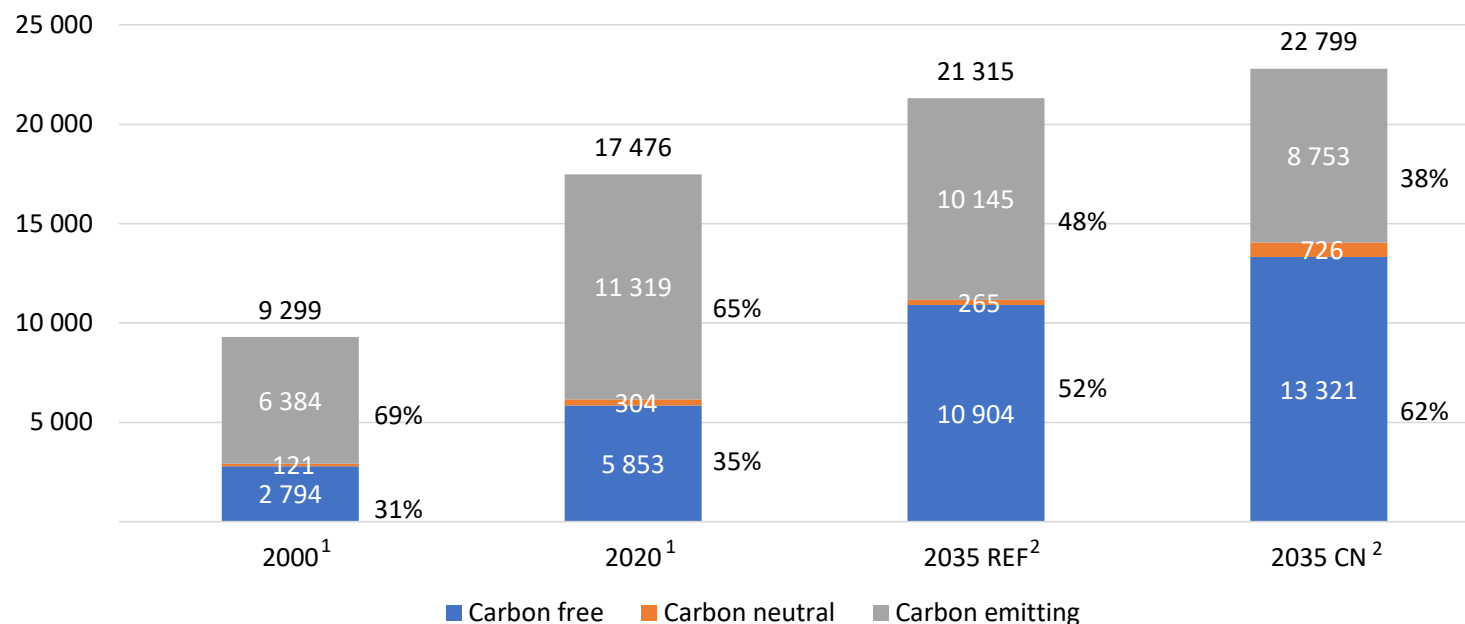
## Paragraph 8.

*Nearly all APEC economies supported the following text:* Noting that APEC is on track to meet and exceed its current goals for doubling renewable energy from 2010 levels by 2030 and reducing energy intensity 45 percent from 2005 levels by 2035, APEC economies will contribute towards a new collective aspirational goal for the power sector of approximately **70% of electricity generated by carbon free and carbon neutral sources for the APEC region by 2035** in line with different circumstances of each economy including through their existing targets or policy measures, while making every effort to exceed this goal in this time frame. In furtherance of this goal, APEC economies will work individually and collectively on a voluntary basis on integration of variable and fluctuating sources into grids and on increasing grid reliability. *[bold added]*

<https://www.apec.org/meeting-papers/sectoral-ministerial-meetings/energy/13th-apec-energy-ministerial-meeting>

# Decarbonized share of electricity generation is rising

## APEC Electricity Generation (TWh)



Source: EGEDA<sup>1</sup> and APEC Energy Demand and Supply Outlook 8<sup>th</sup> Edition<sup>2</sup>

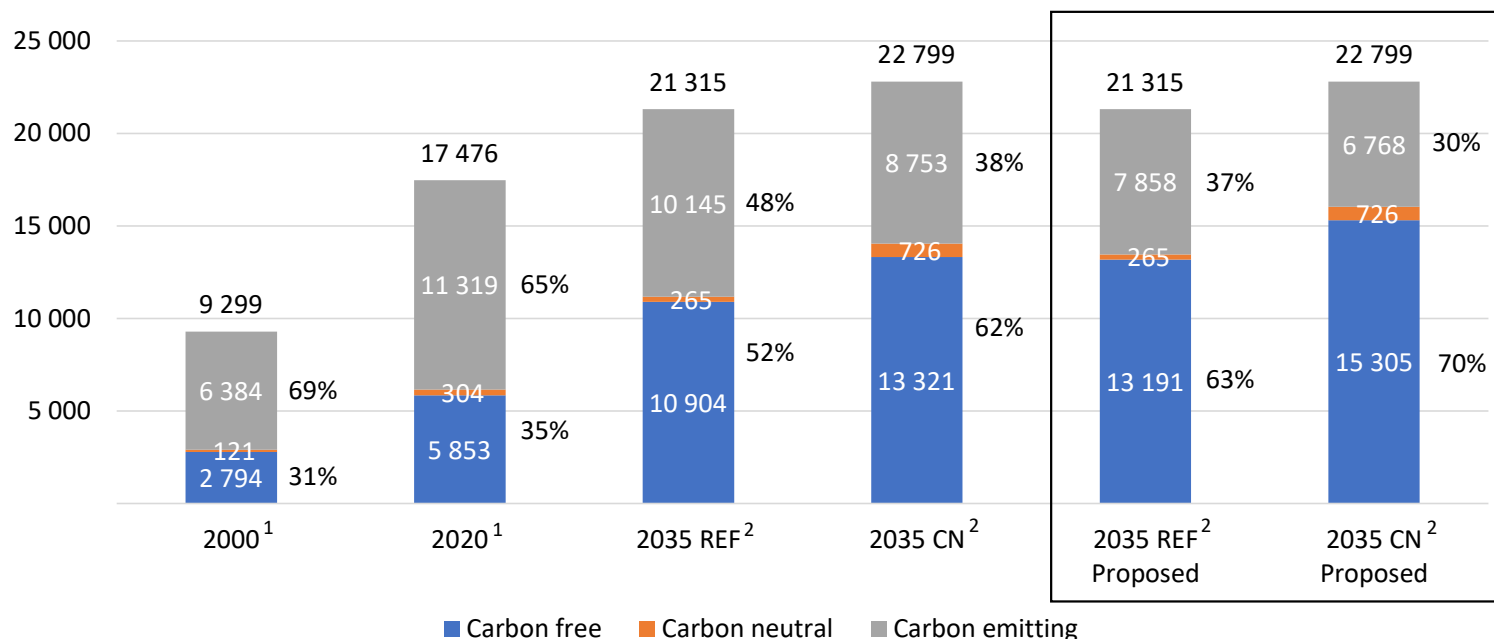
Note: 1) Carbon emitting includes coal, oil, and gas. Carbon neutral includes coal CCS, gas CCS, bioenergy, and waste. Carbon free includes nuclear, hydro, wind, solar, geothermal, and others. Total electricity generation excludes storage and imports.

2) The lower percentage numbers show the combined share of carbon free and carbon neutral.

- From 2000 to 2020, APEC 's decarbonized share rose by 4 percentage points (31% to 35%).
- From 2020 to 2035, APERC projects the decarbonized share will rise by 17 and 27 percentage points in REF and CN, respectively

# US decarbonization can have a substantial effect on APEC total

**APEC Electricity Generation Assuming US Achieves Its Decarbonized Goal (TWh)**



Source: EGEDA<sup>1</sup> and APEC Energy Demand and Supply Outlook 8<sup>th</sup> Edition<sup>2</sup>

- If the US completely decarbonizes its power sector by 2035, the total APEC decarbonized share rises by 11 and 8 percentage points in REF and CN, respectively.
- In all 2035 cases, carbon emitting generation is greater than the 2000 level despite US efforts.

# Chair's Statement Reducing Methane Emissions

## Paragraph 9.

*Nearly all APEC economies supported the following text:* In order to improve energy security and supply, APEC economies are committed to working to achieve their respective announced pledges that collectively comprise at least **a 50% reduction methane emissions in the fossil energy sector from 2020 levels by 2030**, while making every effort to work together to exceed this level in this time frame, including on efforts to minimize flaring and venting, to conduct regular leak detection and repair in the oil and gas sector, and to reduce greenhouse gas emissions in the coal sector. In this context, we note the **expansion of the work of the Expert Group on Clean Fossil Energy** to include cross-cutting issues, such as methane abatement, and efforts to turn wasteful methane emissions into useful energy sources. APEC economies call on **APEREC to develop capacities relevant to this commitment.** *[bold added]*

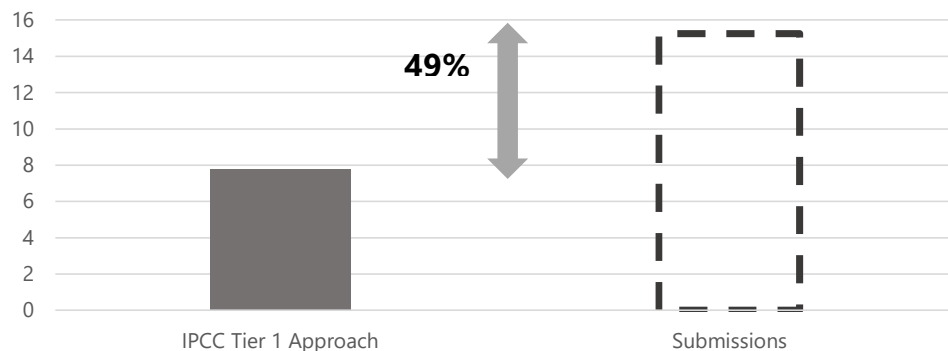
<https://www.apec.org/meeting-papers/sectoral-ministerial-meetings/energy/13th-apec-energy-ministerial-meeting>

# Issues with Tier 1 approach

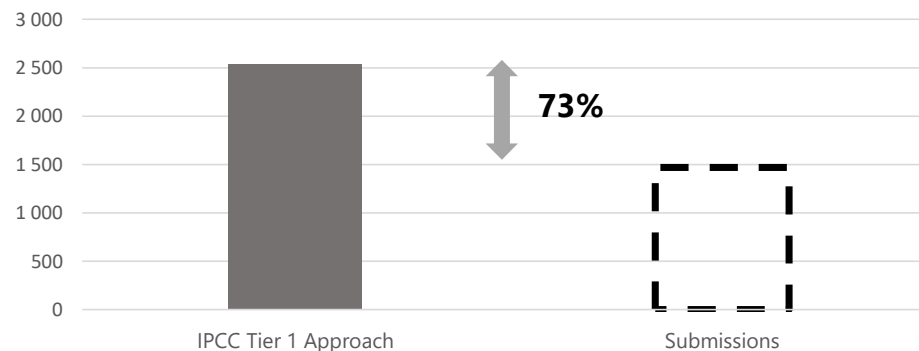
- High degree of uncertainty in emission factors.
- Reliability of emission factors for oil and gas systems depend greatly in the size of an economy's oil and gas industry.
- Fugitive emissions will be important for an oil and gas-dependent economy, and hence emission factors shall be as accurate as possible.
- Approach also does not allow for showing any real changes in emission intensities time, i.e. emissions become fixed in proportion to the production levels.
- Going into Tiers 2 and 3 requires more detailed activity data, and hence more effort and cost needed.

# Large differences between reported and Tier 1-based fugitive CH<sub>4</sub> emissions in selected member economies

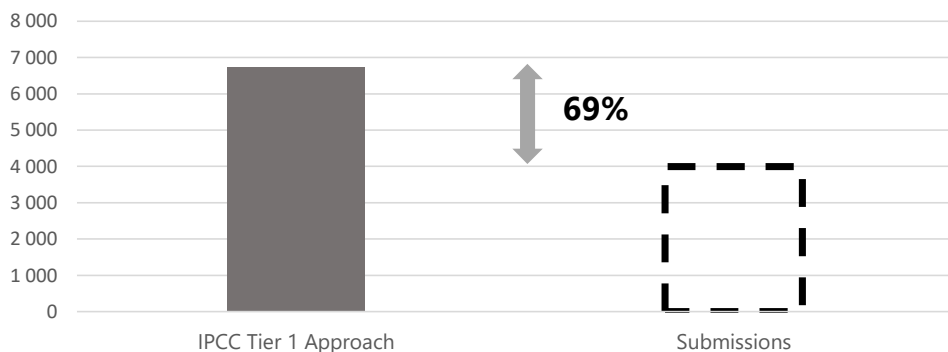
2021 - Brunei (thousand tonnes)



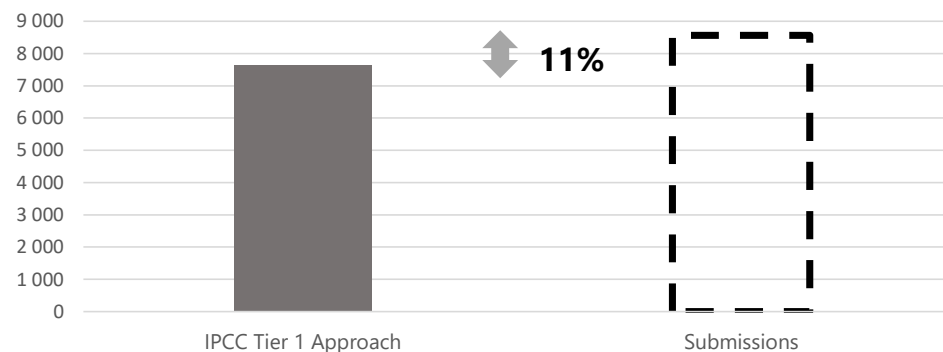
2021 - Canada (thousand tonnes)



2021 - Russia (thousand tonnes)



2021 - United States (thousand tonnes)



Source: IPCC, UNFCCC (2023)

## 2023 APEC Leaders Golden Gate Declaration

### Paragraph 8.

We will pursue and encourage efforts to **triple renewable energy capacity globally** through existing targets and policies as well as demonstrate similar ambition with respect to other zero and low emissions technologies including abatement and removal technologies in line with domestic circumstances by **2030**. To spur the transition to and investment in low and zero emissions transportation in the region through various pathways, we will pursue efforts to accelerate the transition towards low and zero emissions vehicles; sustainable aviation fuels; and low and zero emission maritime shipping and port decarbonization. *[bold added]*

<https://apec.sitefinity.cloud/meeting-papers/leaders-declarations/2023/2023-leaders-declaration>

## Measuring “Renewable Energy Capacity”

Energy Source	Data collection/issues
Hydro	ESTO will continue to collect. Exclude pumped hydro storage
Wind	ESTO will continue to collect.
Solar	ESTO will continue to collect.
Geothermal	ESTO will continue to collect.
Biomass-fired power	ESTO will collect/estimate biomass fraction for co-fired plants
Biomass consumed directly	Inclusion unclear. If included, lots of issues.

# Summary

Activity	Status / Next Steps
Revising existing APEC energy goals	On hold
Decarbonizing the power sector	ESTO will collect/report. APERC will make projections
Reducing methane emissions	ESTO will collect/estimate/report. APERC will propose capacity building activities
Tripling renewable energy capacity	APERC will clarify definitions. ESTO will request additional data with respect to biomass capacities

**Thank you.**

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

