Asia-Pacific Economic Cooperation

APERC Asia Pacific Energy Research Centre

EGEDA secretariat update

Joint meeting of APEC Expert Group on Energy Data and Analysis (EGEDA) and Expert Group on Energy Efficiency and Conservation (EGEE&C) Hosted by Hong Kong, China; 19-20 November 2020

Edito BARCELONA, ESTO/APERC

Outline

1. Activities of the EGEDA secretariat
2. Report on energy data collection
3. Tracking the APEC energy goals
4. Way forward

EGEDA activities

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Energy data collection

- Monthly oil and gas supply and demand (JODI)
- Quarterly energy supply data
- Annual
  - Energy supply and demand
  - Energy prices
  - CO_2 emissions from energy combustion
  - Energy efficiency indicators template
  - Socio-economic data
  - Energy-related activity data

Other activities (1)

- Maintenance of the APEC energy database and EGEDA website
  - Monthly, quarterly and annual data processing and uploading to the APEC energy database
  - Publication of annual energy data
  - Keeping the EGEDA website up-to-date
- Implementation of EGEDA training program on energy statistics
- Holding of annual EGEDA meeting and workshop

Other activities (2)

- Participation in international technical working groups on energy statistics
  - Joint organisations data initiative inter-secretariat working group meetings (**JODI ISWG**) and JODI training workshops
  - IEA's energy statistics development group (**ESDG**) meetings
  - International energy statistics working group (**InterEnerStat**)
  - IRENA and UNSD training workshops (occasional)

Other activities (3)

- Research on district cooling in APEC
- Tracks the APEC energy goals and prepares report to EWG and other APEC fora
  - Energy intensity reduction

    "Reduce APEC's energy intensity by 45% by 2035 from 2005 levels"
  - Renewable energy doubling goal

    "Double the share of renewables in the APEC energy mix, including power generation, from 2010 levels by 2030 "

Report on energy data collection

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Report on energy data collection

- The secretariat has been collecting data as follows:
  - Annual energy supply and demand data: since 1991
    - One APEC economy still not able to submit this data; the secretariat has to estimate its energy balance table
    - For the 2018 data, PRC is not yet able to submit
  - Quarterly energy supply data: since 1994
    - Five economies don't submit
  - Energy prices: six economies submitted 2018 data
    - Can IEA members submit to EGEDA the prices data they submit to IEA?
  - Energy efficiency indicators template: seven economies
    - Can IEA members submit to EGEDA the templates they submit to IEA?

Tracking the APEC energy intensity reduction goal

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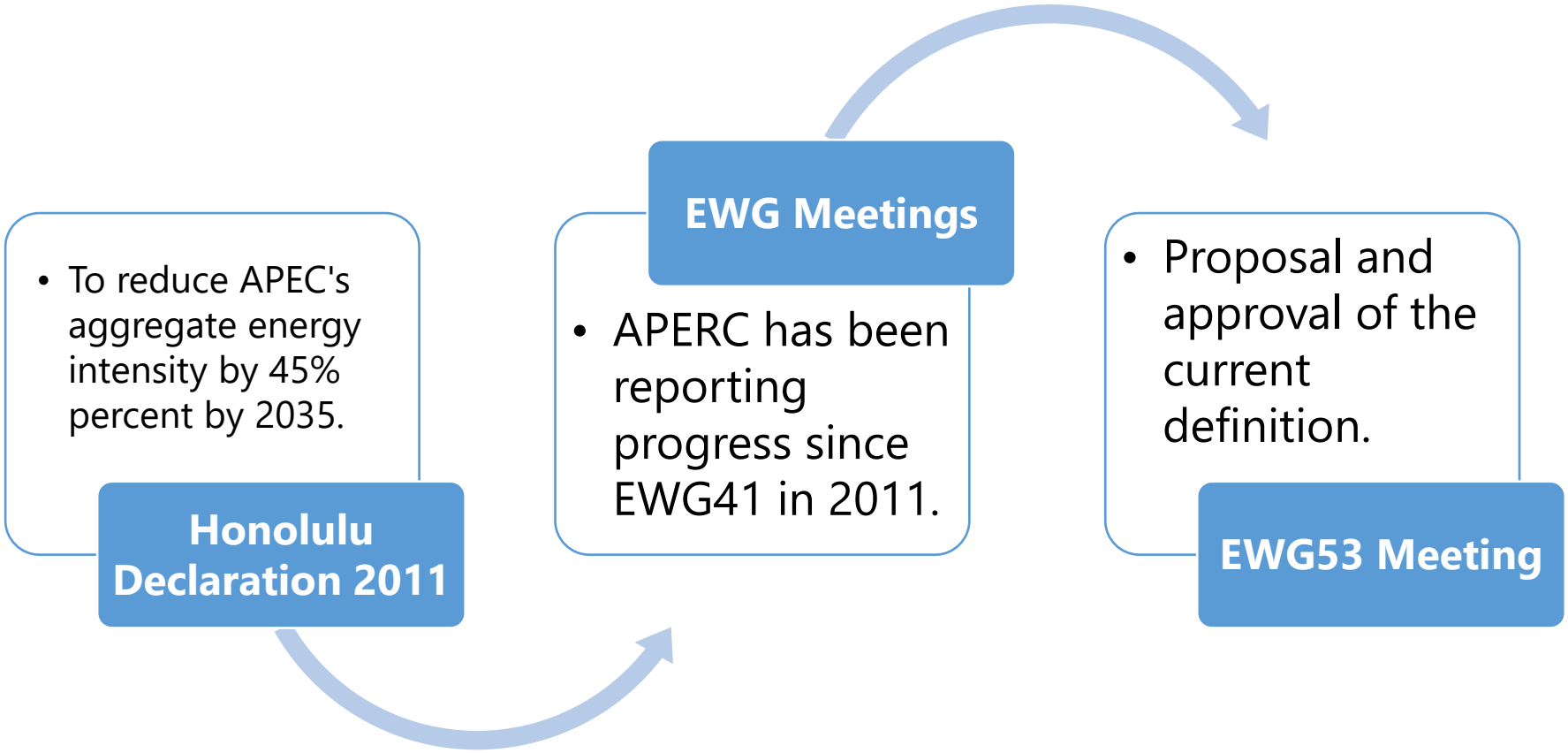
APEC energy intensity indicator milestones



- Agreement was reached at EWG53 to analyse final energy consumption intensity (excluding non-energy), using APEC data.

Energy intensity continued to decline in 2018…

APEC final energy intensity, 2006-18

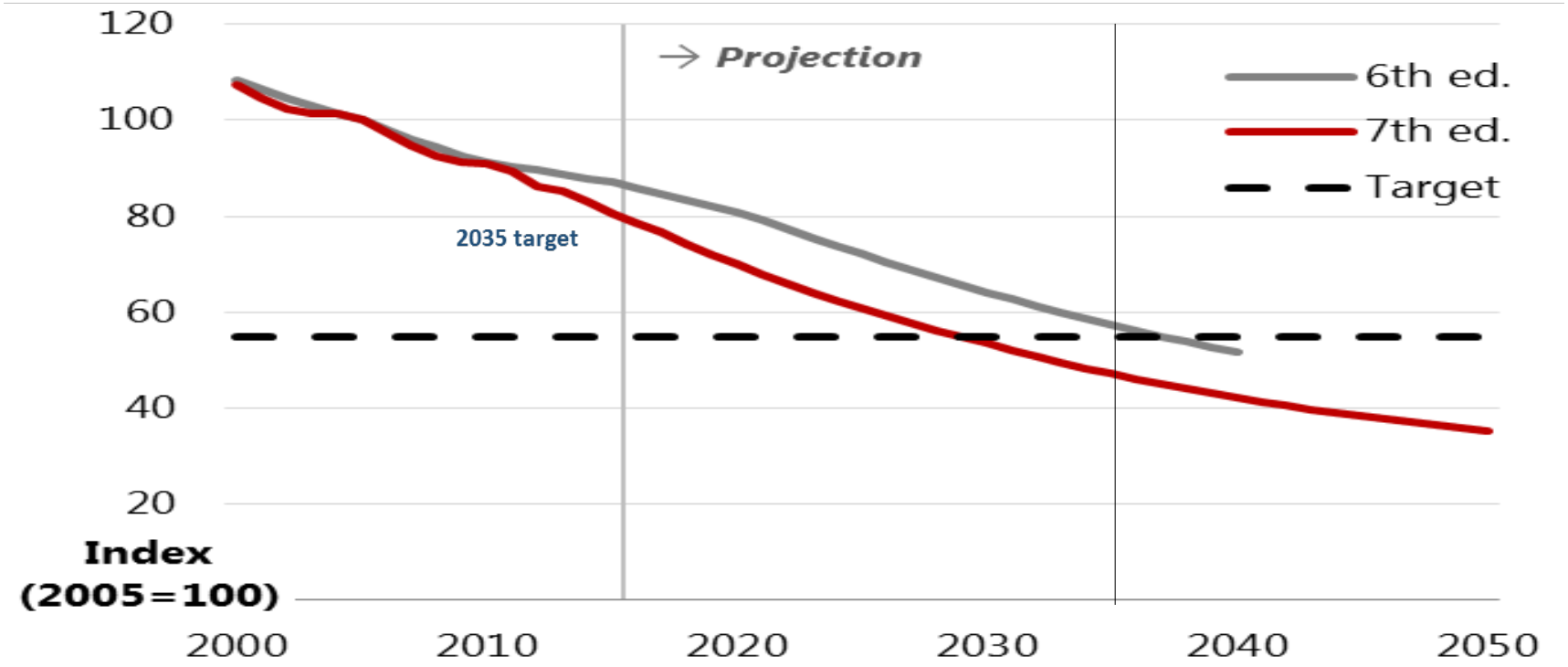
	2006	07	08	09	10	11	12	13	14	15	16	17	18	Trend to 2035
Change in final energy consumption	2.5%	2.9%	0.7%	-1.3%	5.5%	4.3%	1.9%	1.4%	1.4%	0.2%	1.2%	0.3%	1.8%	
Change in GDP (PPP, constant 2017 US dollars)	5.4%	5.5%	2.9%	-0.2%	5.7%	4.2%	4.2%	3.8%	3.8%	3.6%	3.4%	4.1%	4.1%	
Change in final energy intensity	-2.7%	-2.5%	-2.2%	-1.1%	-0.1%	0.09%	-2.3%	-2.3%	-2.3%	-3.4%	-2.1%	-3.6%	-2.2%	**-46.4%**

Sources: APEC statistics, WB, DGBAS (CT) and APERC analysis.

- ***Final energy intensity has been improving reasonably consistently year-on-year, with 2.2% reduction in 2018***
- ***Final energy intensity fell 23.7% between 2005 and 2018.***
- ***If the current trend continues, the APEC final energy intensity goal of 45% will be met in 2035;***

Intensity goal is met in 2029 in Outlook 7th edition

APEC business-as-usual energy intensity by edition, 2000-2050



Source: IEA statistics 2017 and APERC analysis.

Goal was met in 2037 in the 6th edition.

Tracking the APEC renewables doubling goal

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Renewable share doubling goal milestones

1. **EWG 47 (May 2014)** - US proposed the APEC aspirational goal of doubling the share of renewable energy by 2030 and noted that it interacted with APEC's aspirational energy intensity goal.
2. **EMM 11 (Sep 2014)** - "Doubling the share of renewables in the APEC energy mix, including in power generation, from 2010 levels by 2030."
3. **EWG 54 (Nov 2017)** - EWG decided that traditional biomass will not be counted; IRENA's definition of renewable energy is recommended; APEC data should be used for monitoring progress; and the goal should be monitored on both the supply and demand side.

Renewable energy supply and consumption

Primary energy supply, PJ

	2010	2018	% change
Non-renewables	**287,524**	**311,028**	**8.2%**
Coal	116,655	113,078	-3.1%
Oil	90,579	98,671	8.9%
Gas	61,372	79,630	29.7%
Other non-renewables	18,917	19,649	3.9%
Traditional biomass	**3,551**	**3,090**	**-13.0%**
Modern renewable energy	**14,989**	**23,445**	**56.4%**
Modern biomass	4,491	5,808	29.3%
Hydro	6,396	8,898	39.1%
Geothermal	1,486	1,757	18.2%
Solar	157	1,501	857.3%
Wind	586	2,611	345.9%
Other renewables	1,873	2,869	53.2%
Total	**306,064**	**337,562**	**10.3%**
Modern RE share	**4.9%**	**6.9%**	**41.8%**

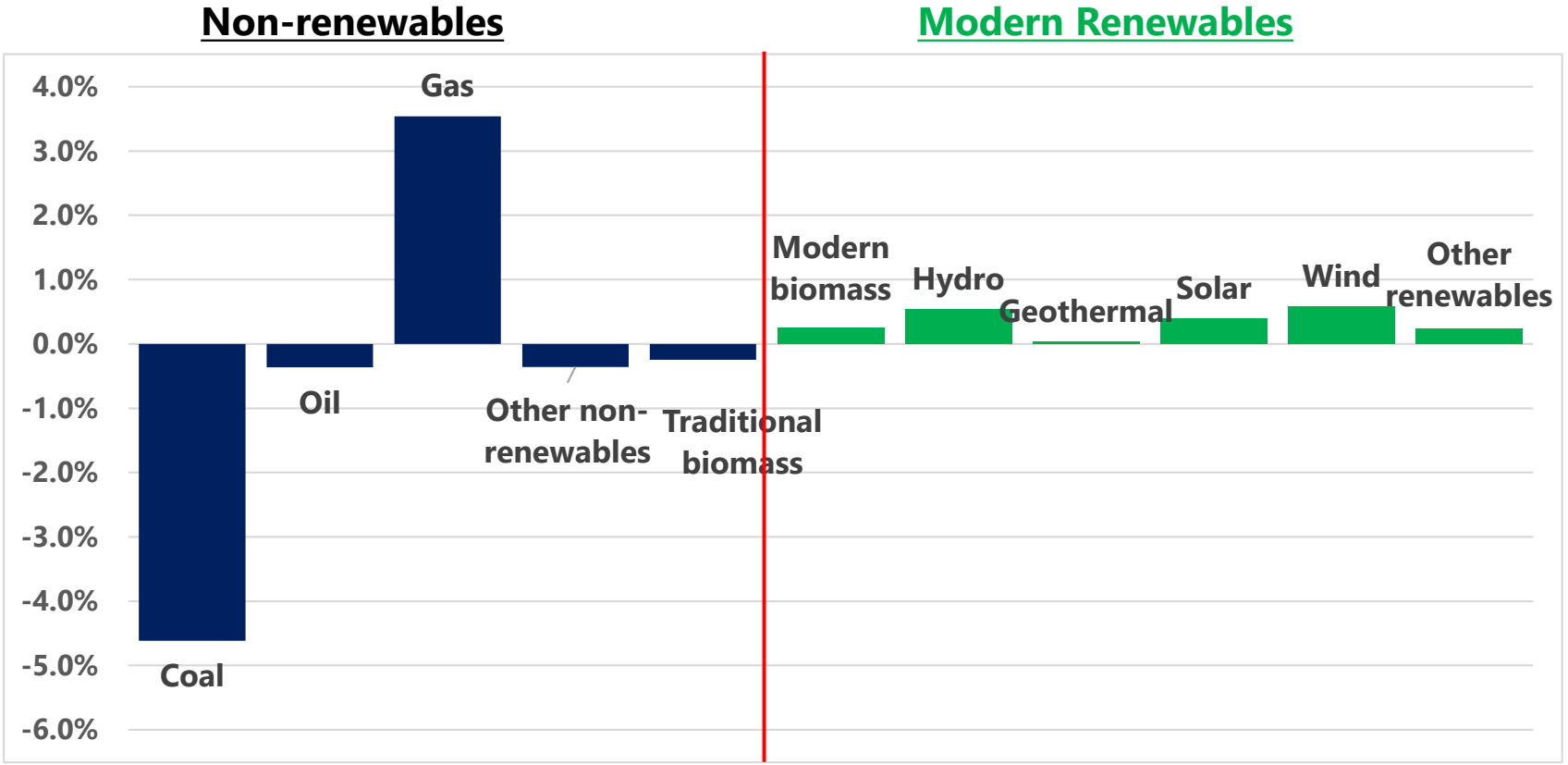
Final energy consumption, PJ

	2010	2018	% change
Non-renewables	**164,161**	**181,159**	**10.4%**
Coal	30,243	25,905	-14.3%
Oil	65,128	71,216	9.3%
Gas	26,184	34,326	31.1%
Electricity	34,553	40,037	15.9%
Heat	7,839	9,373	19.6%
Other non-renewables	215	303	40.8%
Traditional biomass	**3,551**	**3,090**	**-13.0%**
Modern renewable energy	**10,739**	**17,547**	**63.4%**
Electricity	6,243	11,584	85.6%
Heat	61	62	0.9%
Modern biomass	2,862	3,276	14.5%
Other renewables	1,574	2,625	66.8%
Total	**178,452**	**201,796**	**13.1%**
Modern RE share	**6.0%**	**8.7%**	**44.5%**

Note: Consumption of electricity and heat from renewables is calculated from the share of total electricity and heat production.
Data of China for 2018 are estimated based on preliminary information.
Source: APEC data.

Coal and other energy lost shares to gas and renewables

Percent change in fuels in primary energy supply market share, 2010-2018



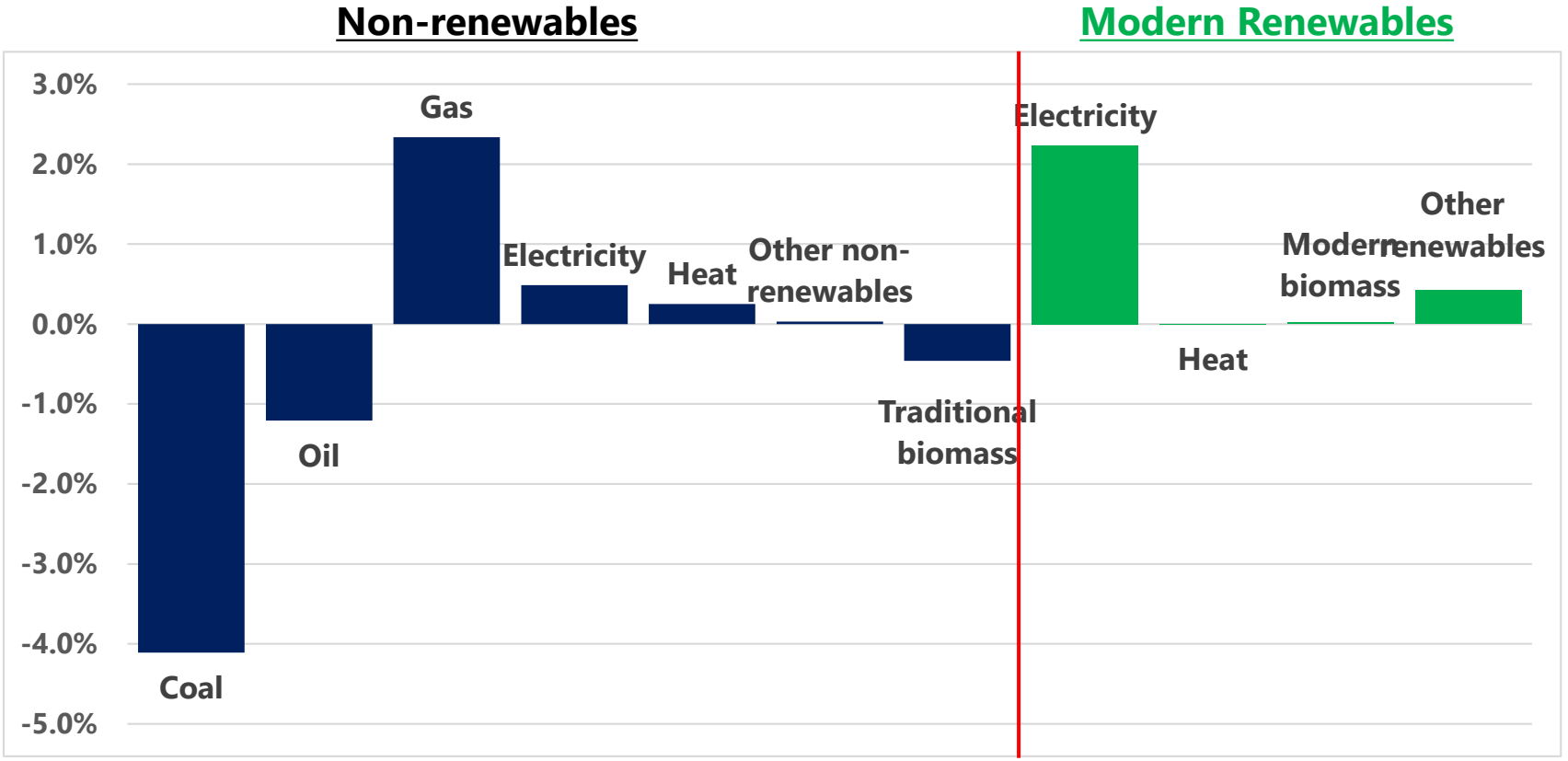
Note: Renewable energy includes electricity and heat generated from renewable energy sources

Source: APEC data

From 2010 to 2018, the renewable share increased 2.0 percentage points, 42% of the way to the goal.

Coal and oil lost shares to electricity from renewables

Percent change in fuels in final energy consumption market share, 2010-2018



Note: Renewable energy includes electricity and heat generated from renewable energy sources

Source: APEC data.

From 2010 to 2018, the renewable share increased 2.7 percentage points, 44% of the way to the goal.

Renewable energy supply and consumption

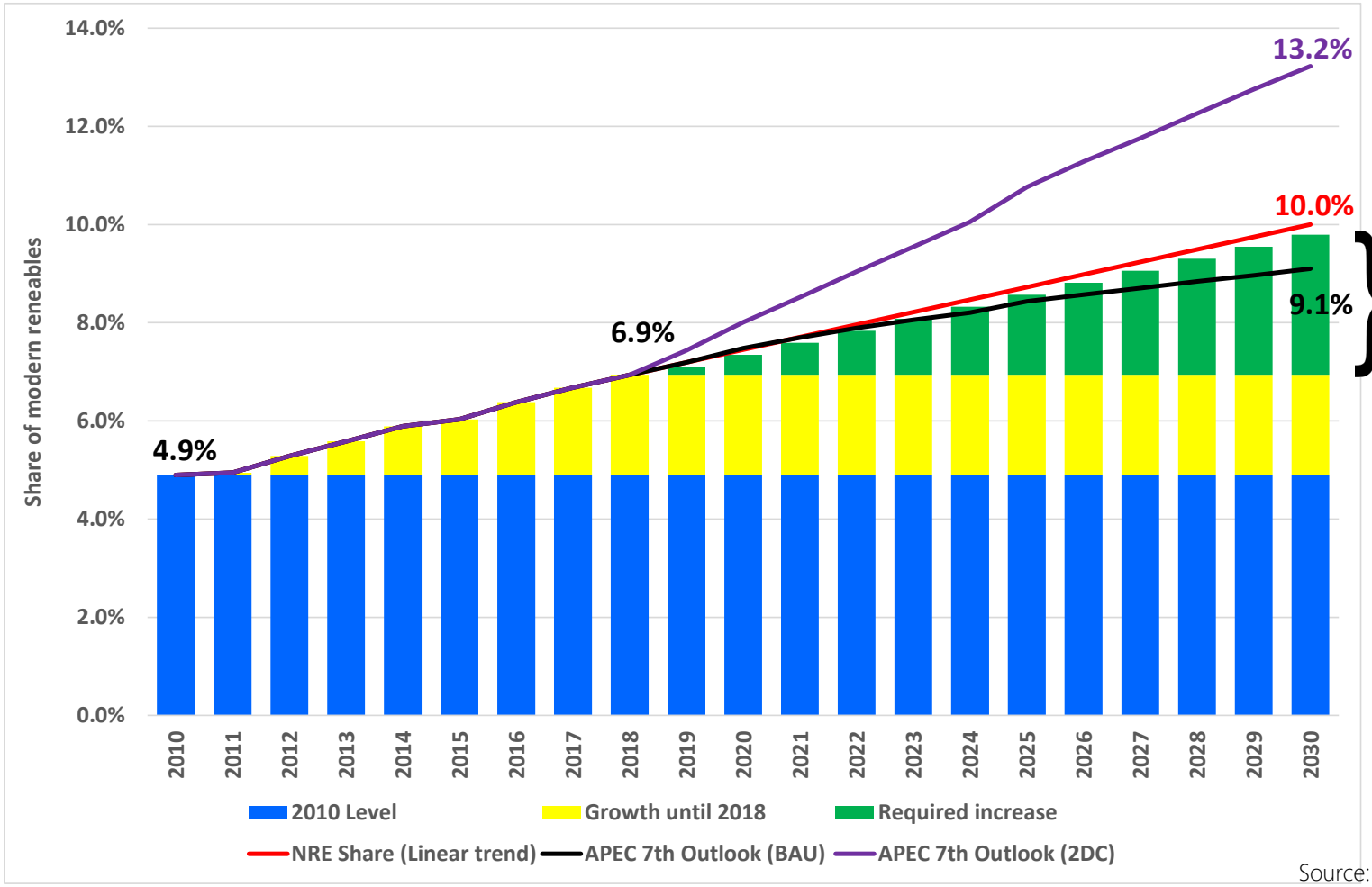
Electricity Generation, TWh

	2010	2018	% change
Non-renewables	**11,377**	**13,059**	**14.8%**
Coal	6,572	7,463	13.6%
Oil	330	210	-36.5%
Gas	2,711	3,624	33.7%
Nuclear	1,658	1,681	1.4%
Other non-renewables	106	81	-23.4%
Modern renewable energy	**2,103**	**3,824**	**81.9%**
Modern biomass	73	165	126.8%
Hydro	1,780	2,475	39.1%
Geothermal	53	60	13.7%
Solar	9	366	3966.3%
Wind	163	725	345.8%
Other renewables	26	34	29.6%
Total	**13,480**	**16,884**	**25.3%**
Modern RE share	**15.6%**	**22.7%**	**45.2%**

Even in electricity generation, for just 40% of the time to 2030, APEC has already increased renewable energy share by 45%

Supply outlook BAU extrapolation fails to meet the goal

Renewable energy share in total primary energy supply, 2010-2030

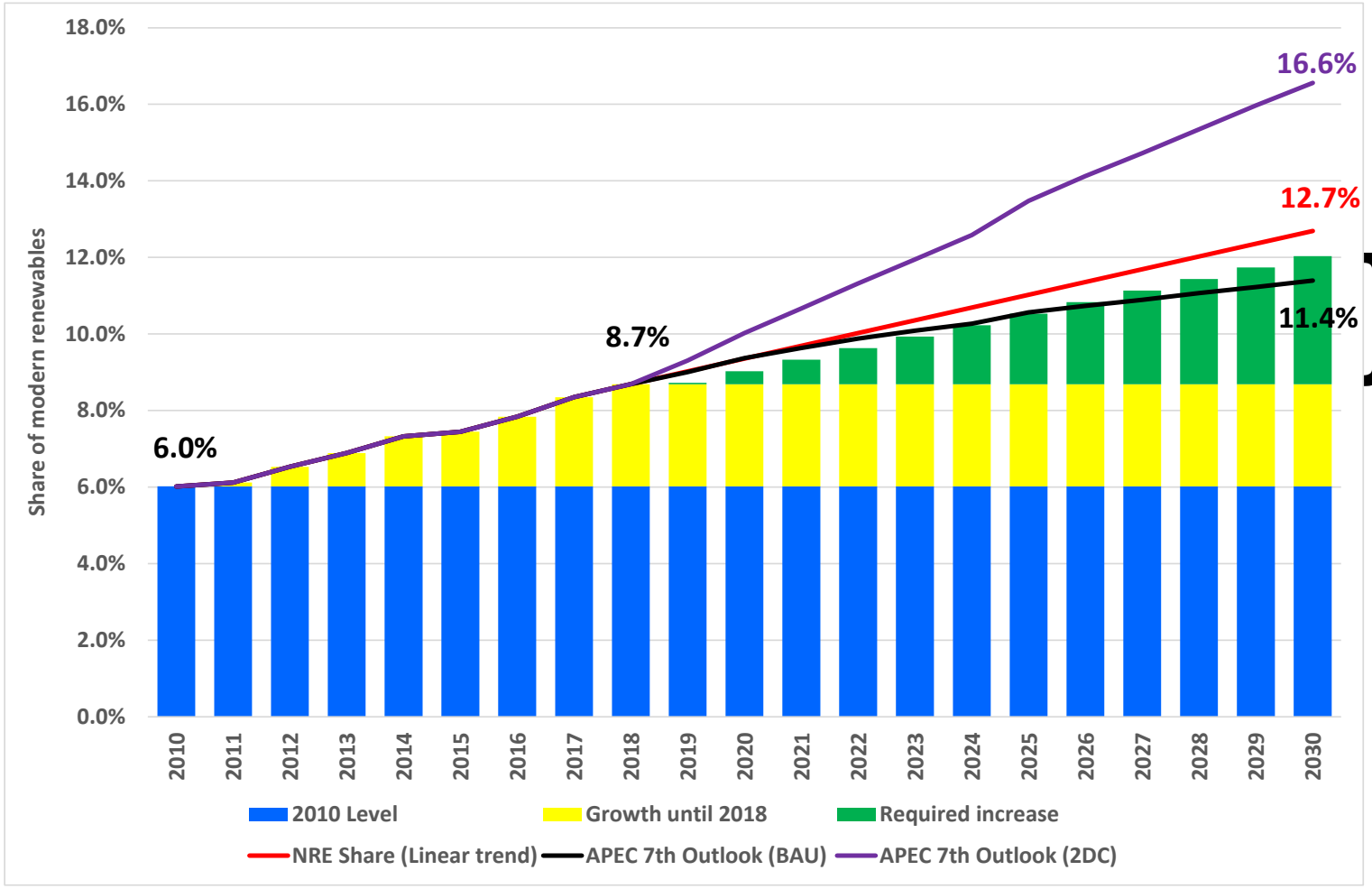


Level of RE share needed to achieve the doubling goal

Source: APEC data and APERC analysis.

Demand outlook BAU extrapolation also fails to meet the goal

Renewable energy share in total final energy demand, 2010-2030



Level of RE share needed to achieve the doubling goal

Source: APEC data and APERC analysis.

Way forward

- The secretariat hopes to receive the 2018 data of China before EWG60 for reporting more accurate tracking of the APEC goals
- Continue to promote the inclusion of “new” energy products like hydrogen and district cooling in energy statistics
- Give more focus on renewable energy statistics and end-use energy consumption data in EGEDA training courses
- 18th APEC workshop on energy statistics in December 2020 will focus on renewable energy measurement and estimation
- 19th workshop in the second half of 2021 will focus on collecting and estimating end-use energy consumption data

Thank you for your kind attention

https://aperc.ieej.or.jp/

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