



The 55th Meeting of APEC Energy Working Group (EWG)
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11.d.i Progress toward Renewable Energy Doubling Goal

James Kendall

Vice President, APERC



Renewable doubling goal milestones

EWG 47 (May 2014)	US proposed the APEC aspirational goal of doubling the share renewable energy by 2030 and noted that it interacted with APEC's aspirational energy intensity goal. <hr/> EGEDA and ESTO predecessor worked together on defining the doubling goal.
EMM 11 2014 (Sept 2014)	"Doubling the share of renewables in the APEC energy mix, including in power generation, from 2010 levels by 2030."
EWG 54 (Nov 2017)	To calculate the goal 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.

Renewable doubling goal calculation scorecard

Question	Options	EWG54 decision
Renewables	Definition	IRENA recommended
Biomass	All v. modern	Traditional excluded
Hydro	All v. small	All, per IRENA
Geothermal	In v. out	In, per IRENA
Measurement point	Supply v. demand	Both
Data	IEA v. APEC	APEC

Source: Key conclusions of EWG54

Users of traditional biomass:

- ❖ **Residential.** Wood pellets in the residential sector are a modern source, but no data are available.
- ❖ **Commercial.** Much of the biomass use in this sector is for cooking.
- ❖ **Agricultural and nonspecified.** Much of this biomass is used for crop drying.

EGNRET50 recommendations

- Recommended focusing on demand side calculations to mirror the UN Sustainable Development Goal #7
- Recommended calculation of individual economy progress
- Did not object to adding commercial and agricultural biomass to traditional

Renewable energy supply and consumption

Primary Energy Supply

Unit: ktoe

	2010	2015
Non-renewables	6,897,371	7,306,455
Coal	2,771,874	2,895,653
Oil	2,176,950	2,298,595
Gas	1,489,055	1,684,013
Other non-renewables	459,492	428,194
Traditional Biomass	110,407	112,615
Modern Renewable Energy	357,224	466,082
Modern Biomass	100,910	116,932
Hydro	153,422	190,692
Geothermal	35,782	38,210
Solar	3,754	11,853
Wind	13,983	37,814
Others	49,374	70,581
Total	7,365,002	7,885,152
Modern RE Share	4.85%	5.91%

Final Energy Consumption

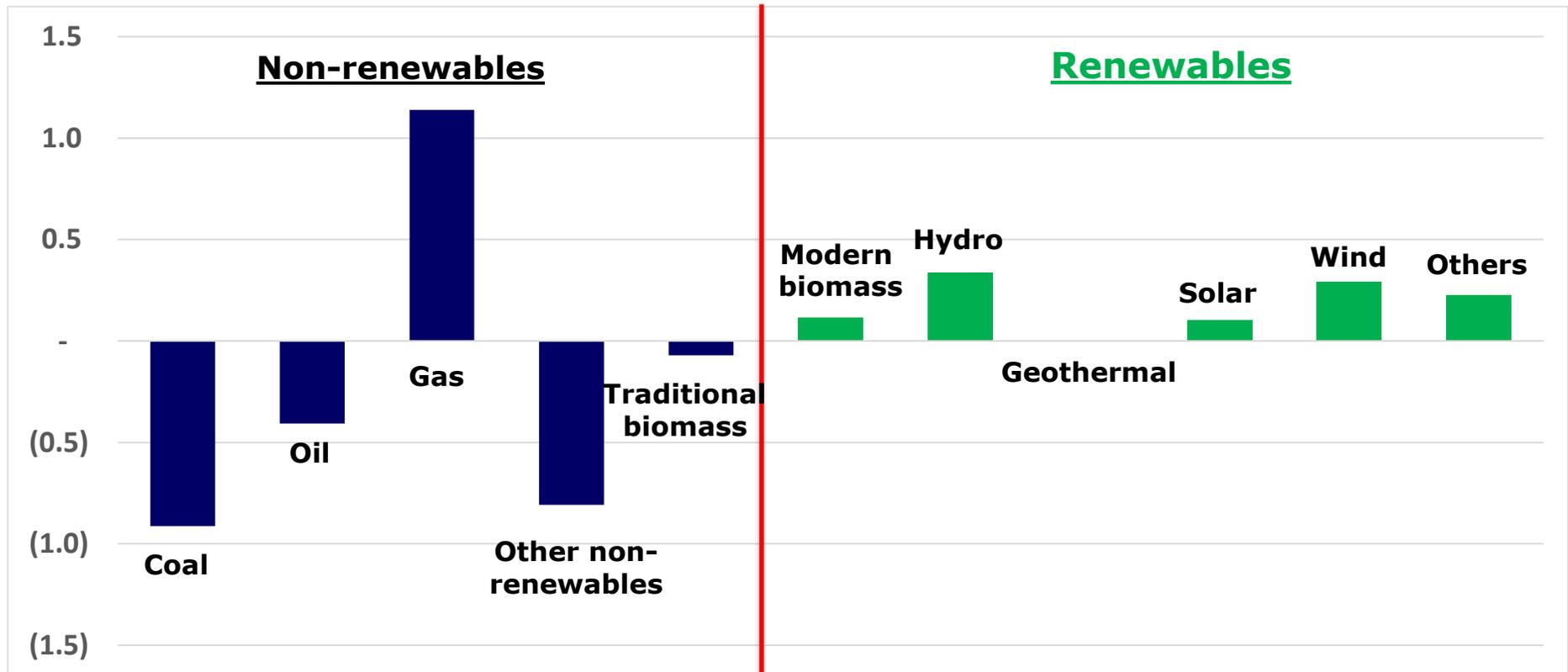
	2010	2015
Non-renewables	3,971,008	4,286,523
Coal	733,659	774,478
Oil	1,596,319	1,719,021
Gas	629,517	692,095
Electricity	821,403	901,046
Heat	186,871	196,325
Other non-renewables	3,239	3,558
Traditional Biomass	110,407	112,615
Modern Renewable Energy	254,871	329,095
Electricity	153,462	214,076
Heat	1,680	1,441
Modern Biomass	68,965	71,035
Others	30,764	42,543
Total	4,336,286	4,728,232
Modern RE Share	5.88%	6.96%

Note: Consumption of electricity and heat from renewables is calculated from the share of total electricity and heat production. China, Malaysia and Papua New Guinea have no data on traditional biomass.

Source: APEC data.

Coal and oil gas lost shares to gas and renewables

Percent Change in Fuels (primary energy supply), 2010-2015



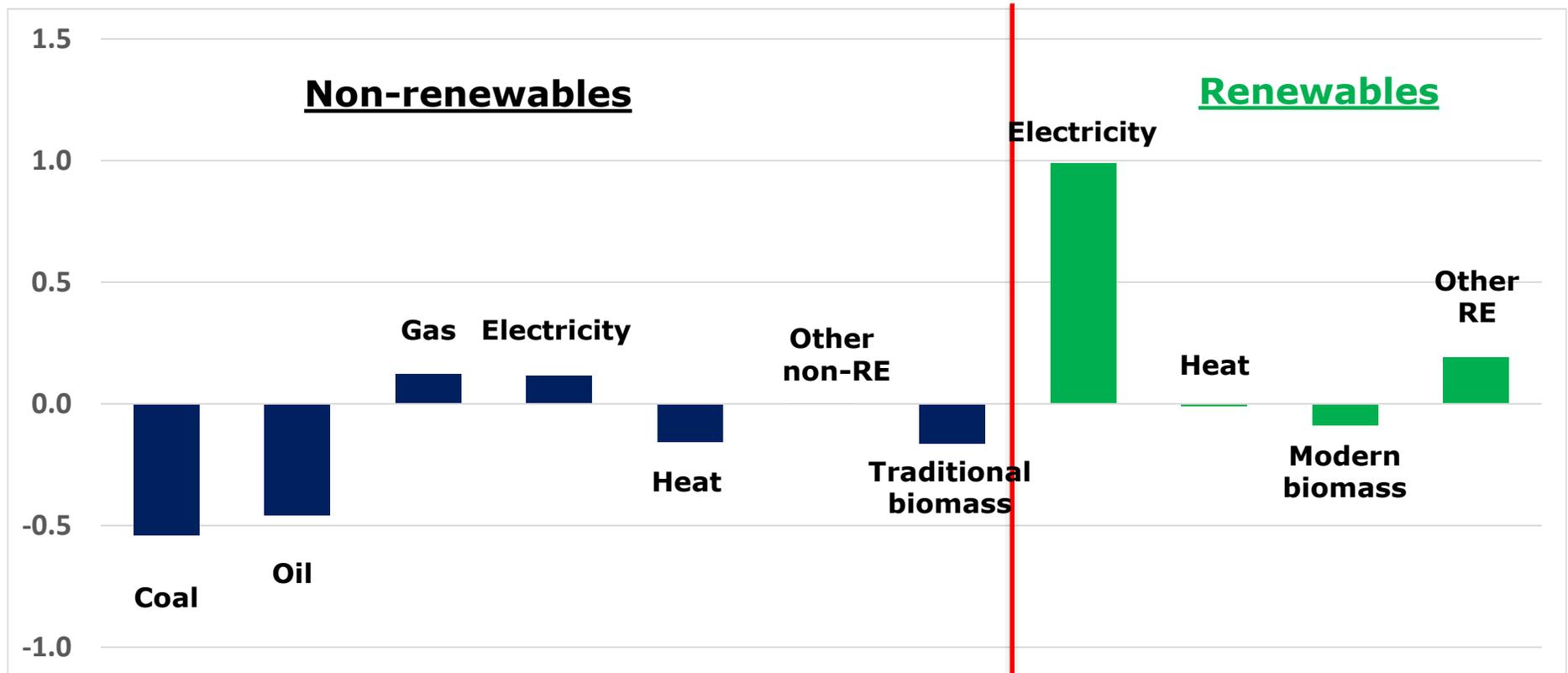
From 2010 to 2015, the renewable share increased only 1.06 percentage point, just 21.9% of the way to the goal

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

Source: APEC data.

Coal and oil lost share to renewables in electricity

Percent Change in Fuels (final energy consumption), 2010-2015

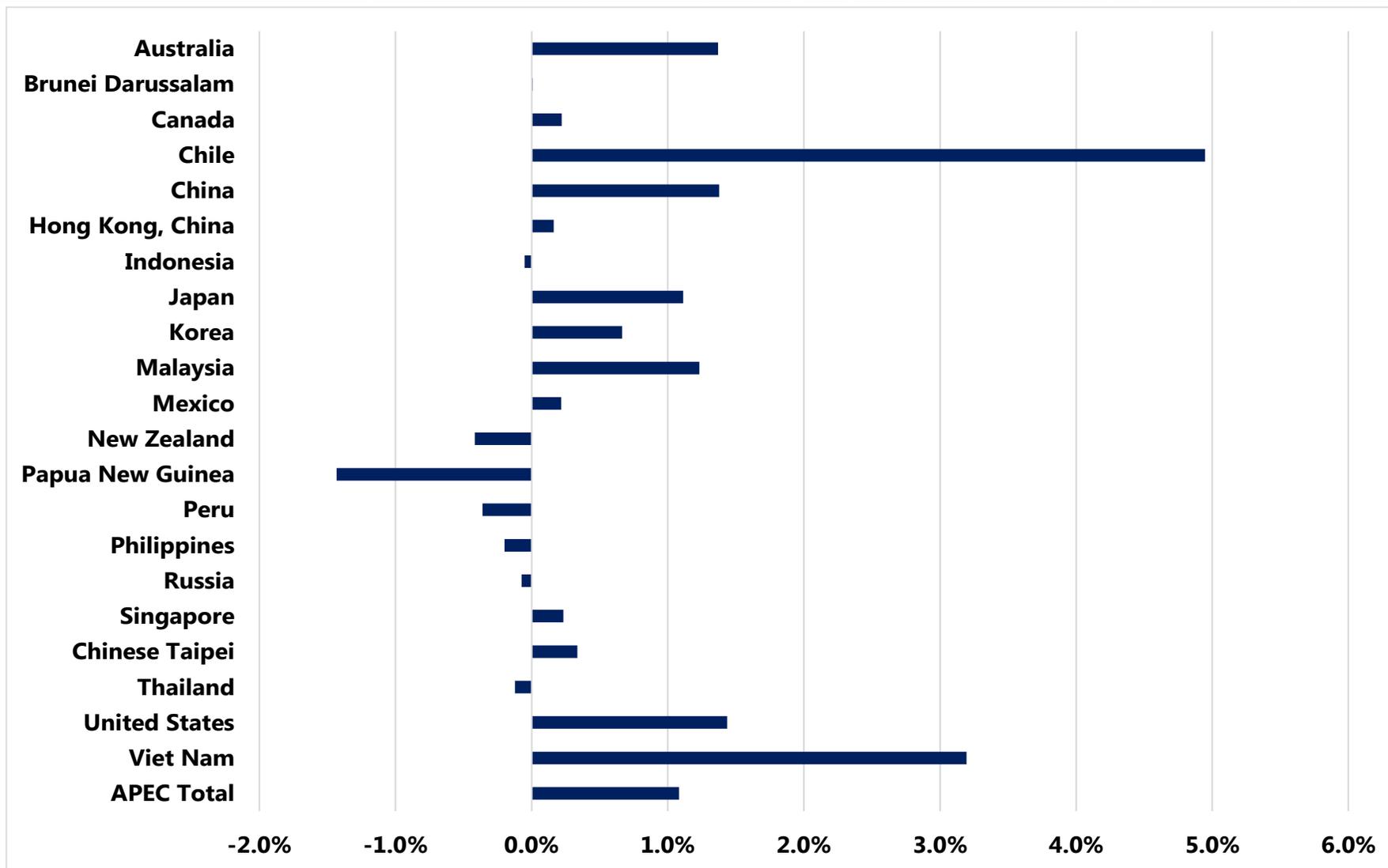


From 2010 to 2015, the renewable share increased only 1.08 percentage point, just 18.4% of the way to the goal

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

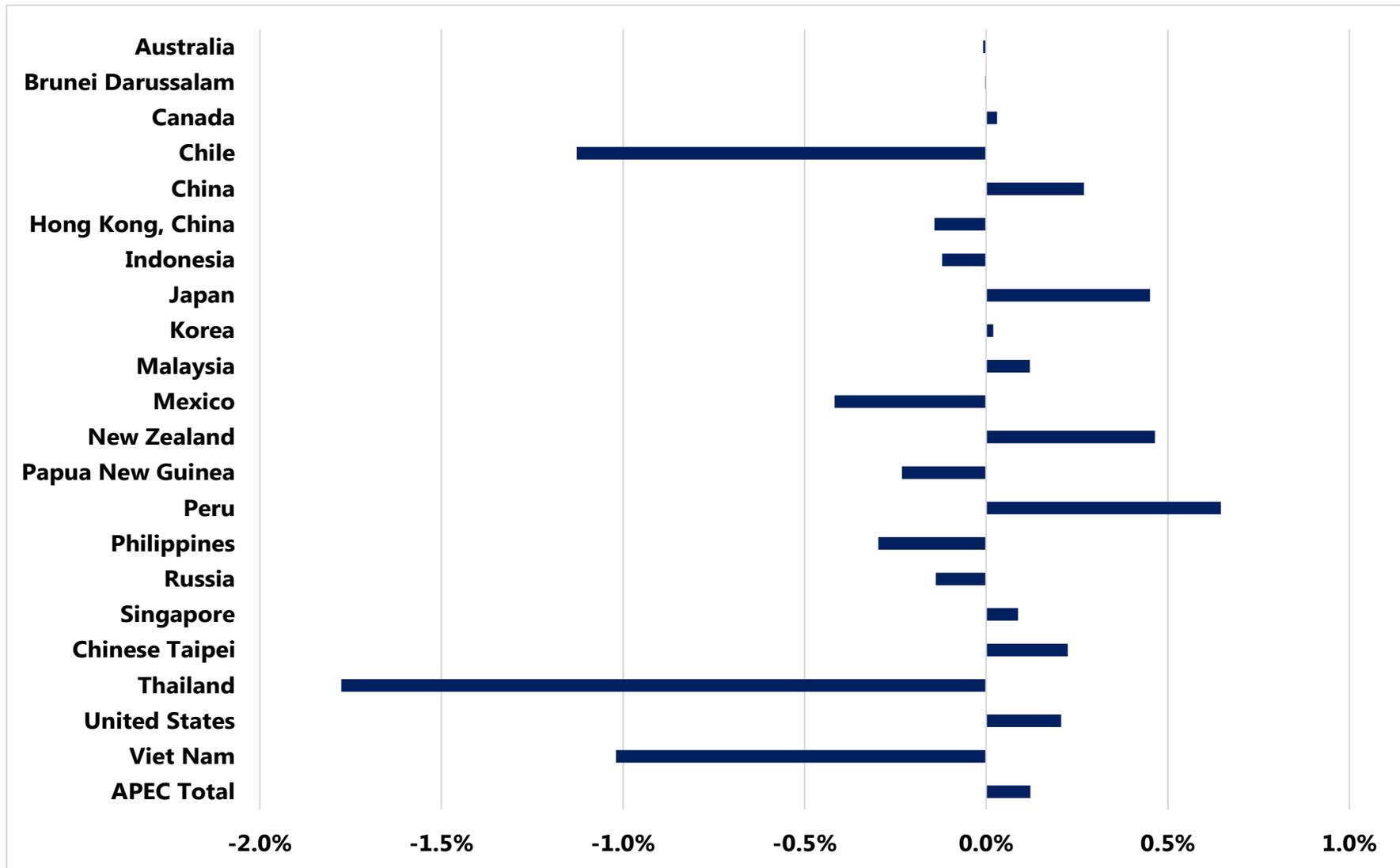
Source: APEC data.

Change in modern RE share per economy, 2010-2015



Source: APEC data.

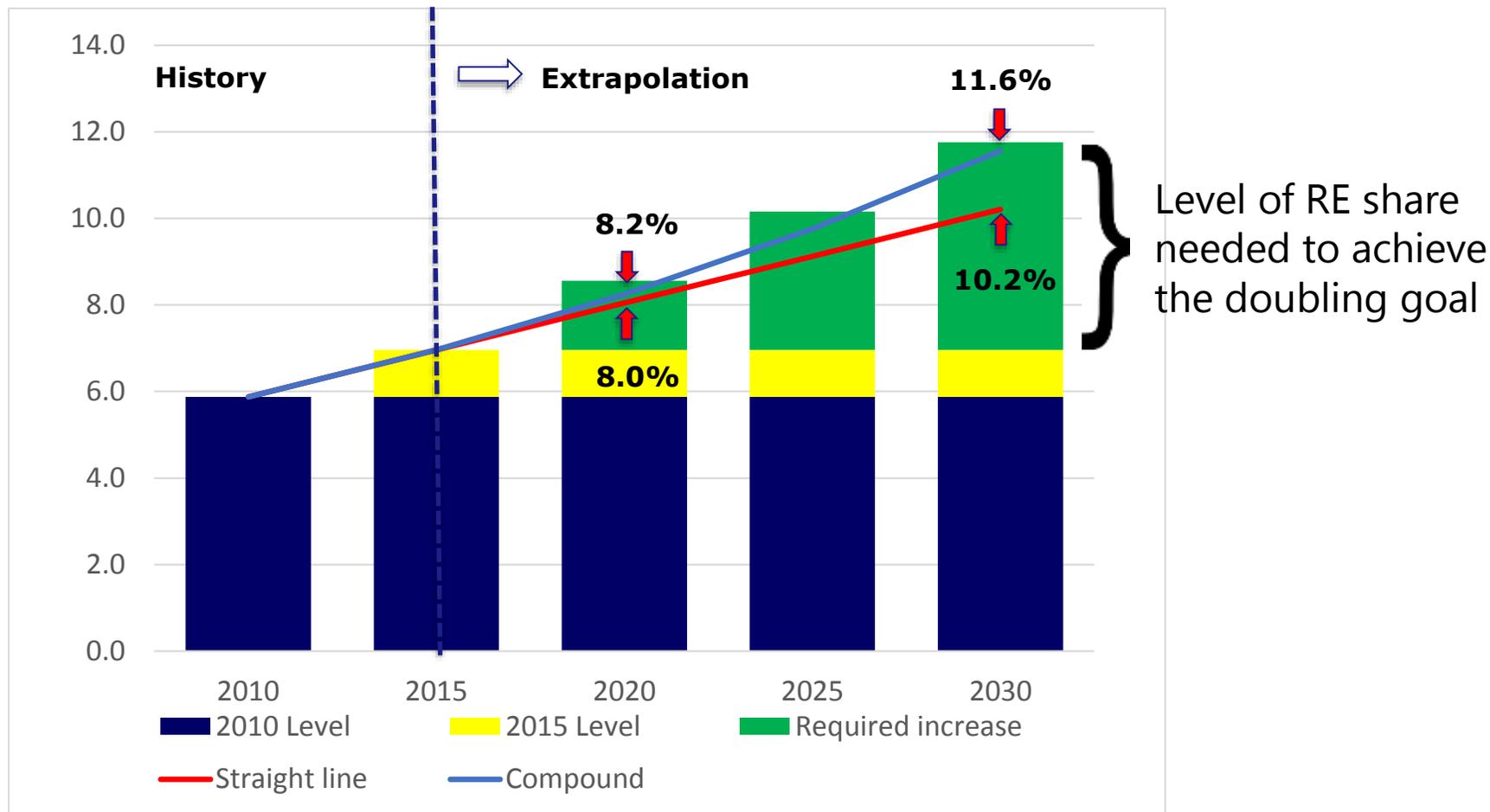
Change in modern RE share per economy, 2014-2015



Source: APEC data.

Are we on track? (straight line and compound growth)

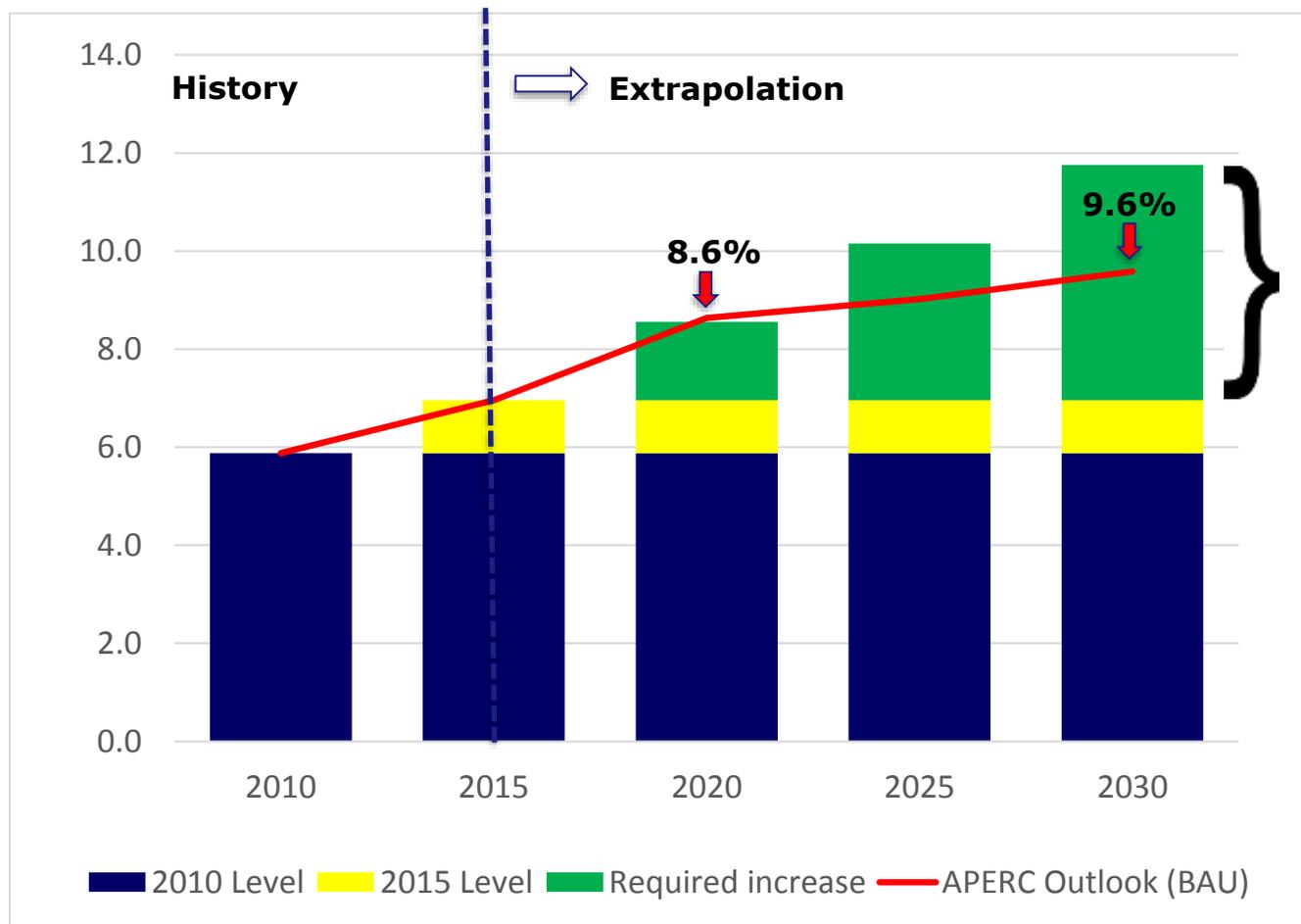
Renewable energy share



Source: APEC data.

Are we on track? (APEC outlook)

7th edition projections



Source: APEC statistics and APERC analysis.

Closing thoughts

- Much was achieved during 2010-2015 in the use modern renewables
 - Brought about by rapid decline in cost of technologies and favourable government policies such as feed-in-tariffs, etc.
- APERC modelling shows that business-as-usual is not promising
- Additional efforts are necessary especially in addressing the barriers to renewable development such as:
 - Effect of intermittency in grid stability
 - Cost of electricity storage
 - Regulations persistently favouring fossil and nuclear energy
- Monitoring of demand-side renewable shares should continue



Thank you for your kind attention

<http://aperc.ieej.or.jp/>