



The 50th Meeting of the APEC Expert Group on New and Renewable Energy Technologies (EGNRET)

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Tracking the renewable doubling goal

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Renewable doubling goal milestones

EWG 47 (May 2014)	<p>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.</p> <hr/> <p>EGEDA and ESTO predecessor worked together on defining the doubling goal.</p>
EMM 11 2014 (Sept 2014)	<p>"Doubling the share of renewables in the APEC energy mix, including in power generation, from 2010 levels by 2030."</p> <hr/> <p>Energy ministers instructed the EWG through the EGNRET to develop the road map.</p>
EGNRET 49 (Oct 2017)	<p>EGNRET proposed to use "share of modern renewable energy in total final energy consumption" to track progress of the doubling goal in its roadmap. EGEDA proposed using the same measure to track history.</p>
EWG 54 (Nov 2017)	<p>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.</p> <hr/>

Renewable doubling goal calculation scorecard

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

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.

APEREC collects annual data on all energy products from the 21 member economies including the following:

- Hydroelectricity
- Geothermal heat and electricity
- Solar heat and electricity
- Wind electricity
- Biomass (fuelwood, wood wastes, agricultural waste, etc.)
- Liquid biofuels
- Biogases
- Wastes

Renewable energy in final energy consumption

Unit: ktoe **Including all biomass**

	2010	2015
Non-Renewables	4,126,149	4,502,040
Coal	733,659	774,478
Oil	1,596,319	1,719,021
Gas	629,517	692,095
Electricity	974,865	1,115,122
Heat	188,550	197,766
Other non-renewables	3,239	3,558
Renewable Energy	210,136	226,192
Biomass	180,184	184,760
Geothermal	512	749
Solar	2,871	3,372
Others	26,570	37,310
Total	4,336,285	4,728,232
RE Share	4.8%	4.8%

Excluding traditional biomass

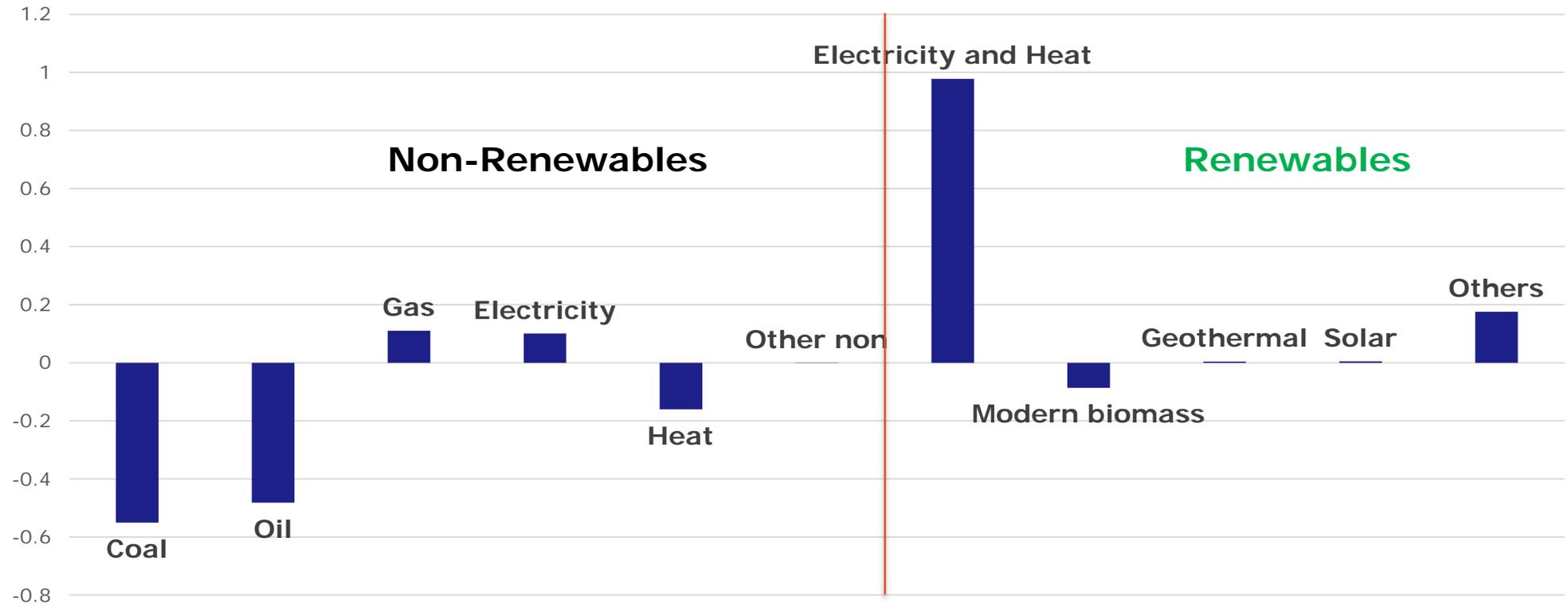
	2010	2015
Non-renewables	3,971,008	4,286,523
Coal	733,659	774,478
Oil	1,596,319	1,719,021
Gas	629,517	692,095
Electricity	821,403	901,046
Heat	186,871	196,325
Other non-renewables	3,239	3,558
Traditional Biomass	111,151	113,519
Modern Renewable Energy	254,127	328,191
Electricity and Heat	155,141	215,517
Modern Biomass	69,033	71,242
Geothermal Heat	512	749
Solar Heat	2,871	3,372
Others	26,570	37,310
Total	4,336,285	4,728,232
RE Share	5.9%	6.9%

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 lost share to electric, heat renewables

Percent Change in Fuels, 2010-2015



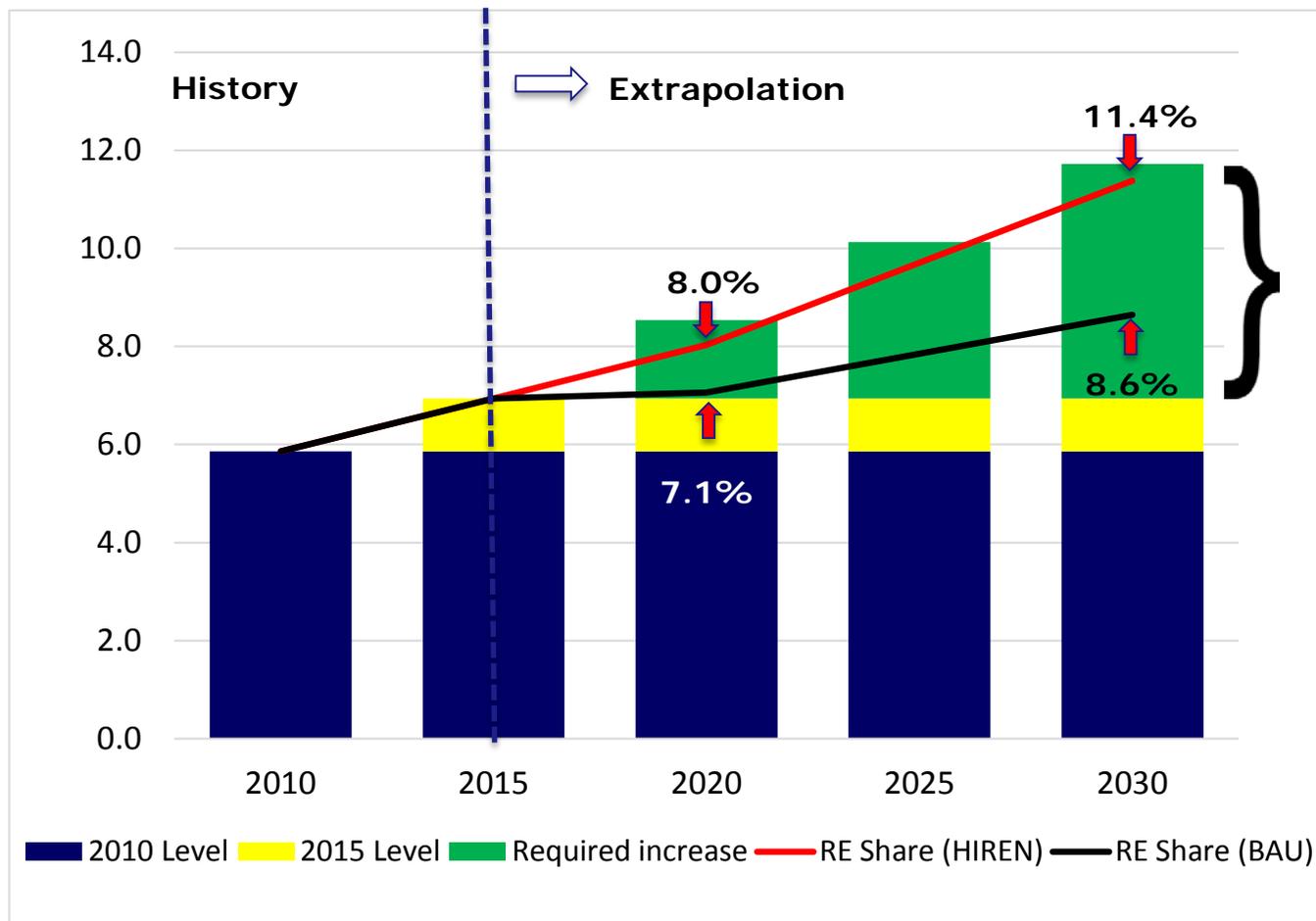
From 2010 to 2015, the renewable share increased only 1 percentage point, just 17% of the way to the goal

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

Source: APEC data.

Are we on track? (APEC outlook)

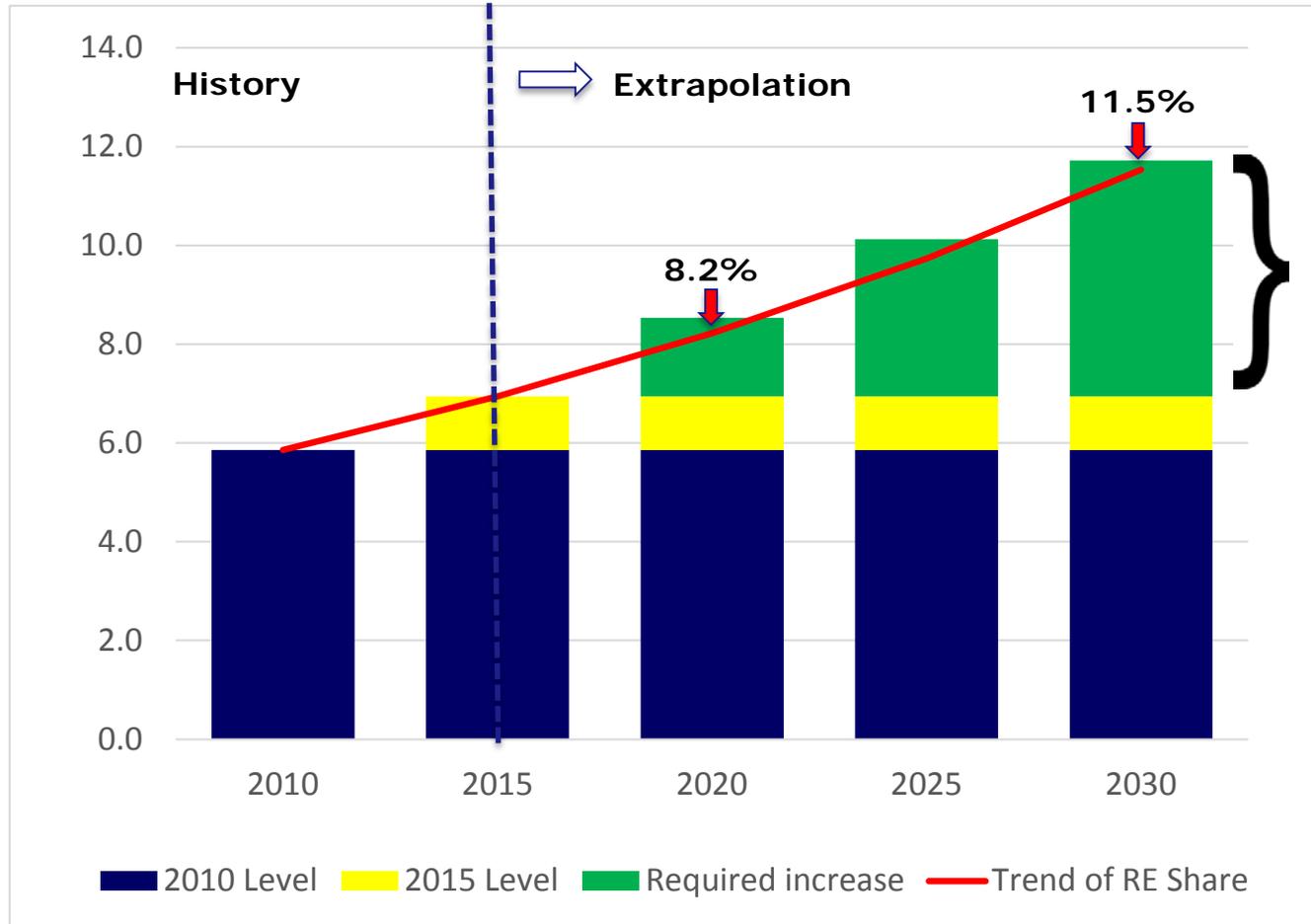
6th edition projections



Level of RE share needed to achieve the doubling goal

Are we on track? (compound growth)

Renewable energy share



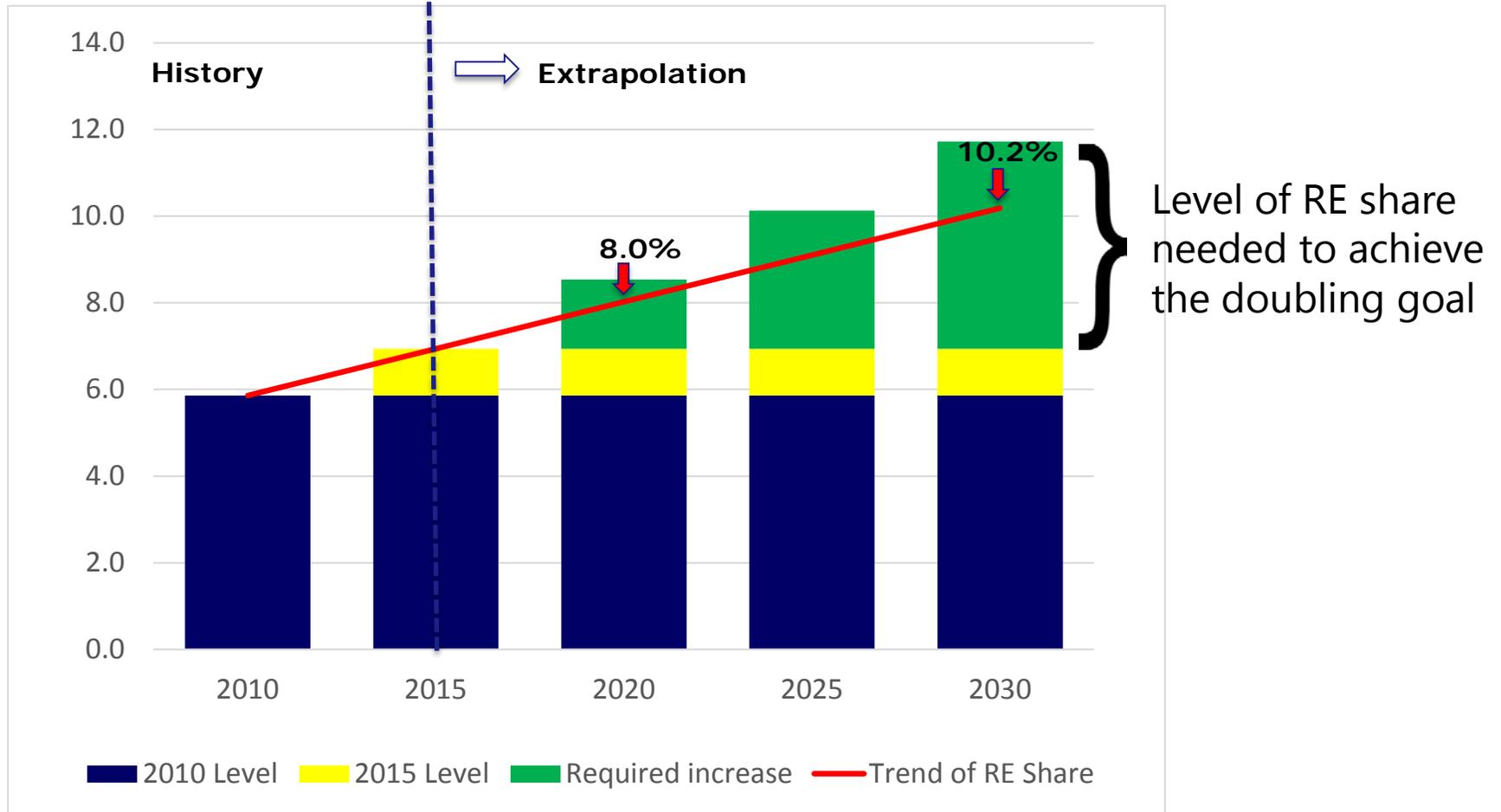
Level of RE share needed to achieve the doubling goal

Source: APEC data and APERC analysis.

- We need to sustain the rate of increase from 2010 to 2015 to achieve the goal in 2030

Are we on track? (straight line)

Renewable energy share



Source: APEC data and APERC analysis.

- **We need to do more to achieve the goal in 2030**

What might limit renewable growth?

- Effect of intermittency on grid stability
- Cost of electricity storage
- Regulations persistently favouring fossil and nuclear generation
- Persistent land use restrictions
- Slowed renewable technology development
- Breakthrough by a competing technology



Thank you for your kind attention

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