

7.h. Progress toward APEC's renewable energy share 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

	2010	2017
Non-renewables	6,876,974	7,372,141
Coal	2,787,043	2,809,956
Oil	2,166,316	2,352,516
Gas	1,472,097	1,763,460
Other non-renewables	451,517	446,209
Traditional biomass	114,493	110,288
Modern renewable energy	353,437	531,205
Modern biomass	102,426	128,221
Hydro	153,052	209,547
Geothermal	35,499	39,889
Solar	3,743	25,378
Wind	13,989	53,648
Other renewables	44,727	74,522
Total	7,344,904	8,013,634
Modern RE share	4.81%	6.63%

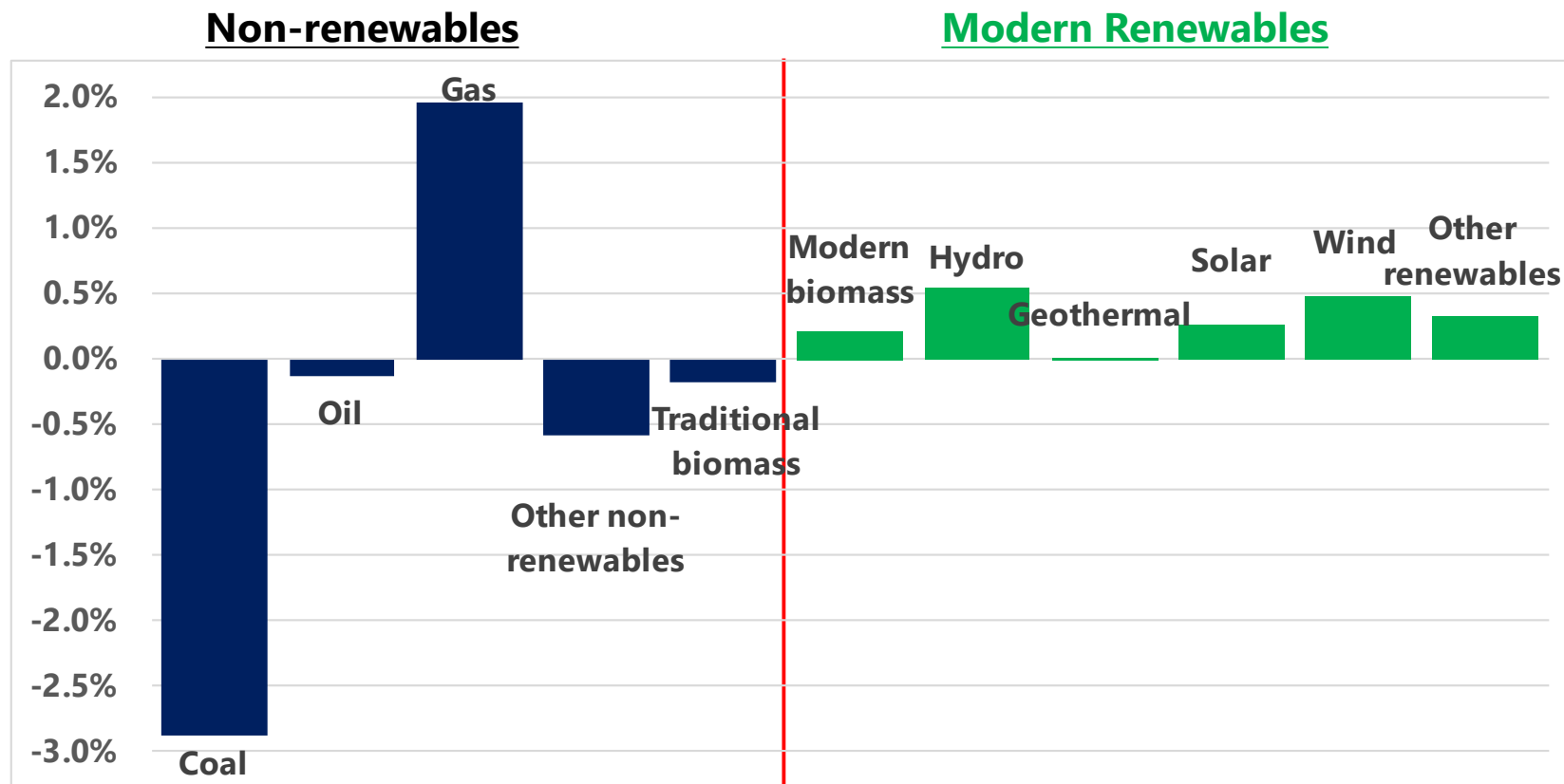
Final energy consumption

	2010	2017
Non-renewables	3,909,455	4,261,292
Coal	723,220	672,312
Oil	1,540,754	1,694,974
Gas	626,965	749,156
Electricity	826,523	925,027
Heat	186,882	212,662
Other non-renewables	5,111	7,162
Traditional biomass	114,493	110,288
Modern renewable energy	260,651	398,262
Electricity	151,273	252,541
Heat	1,526	1,260
Modern biomass	70,257	76,458
Other renewables	37,595	68,003
Total	4,284,600	4,769,842
Modern RE share	6.08%	8.35%

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

Coal and other energy lost shares to gas and renewables

Percent change in fuels in primary energy supply market share, 2010-2017



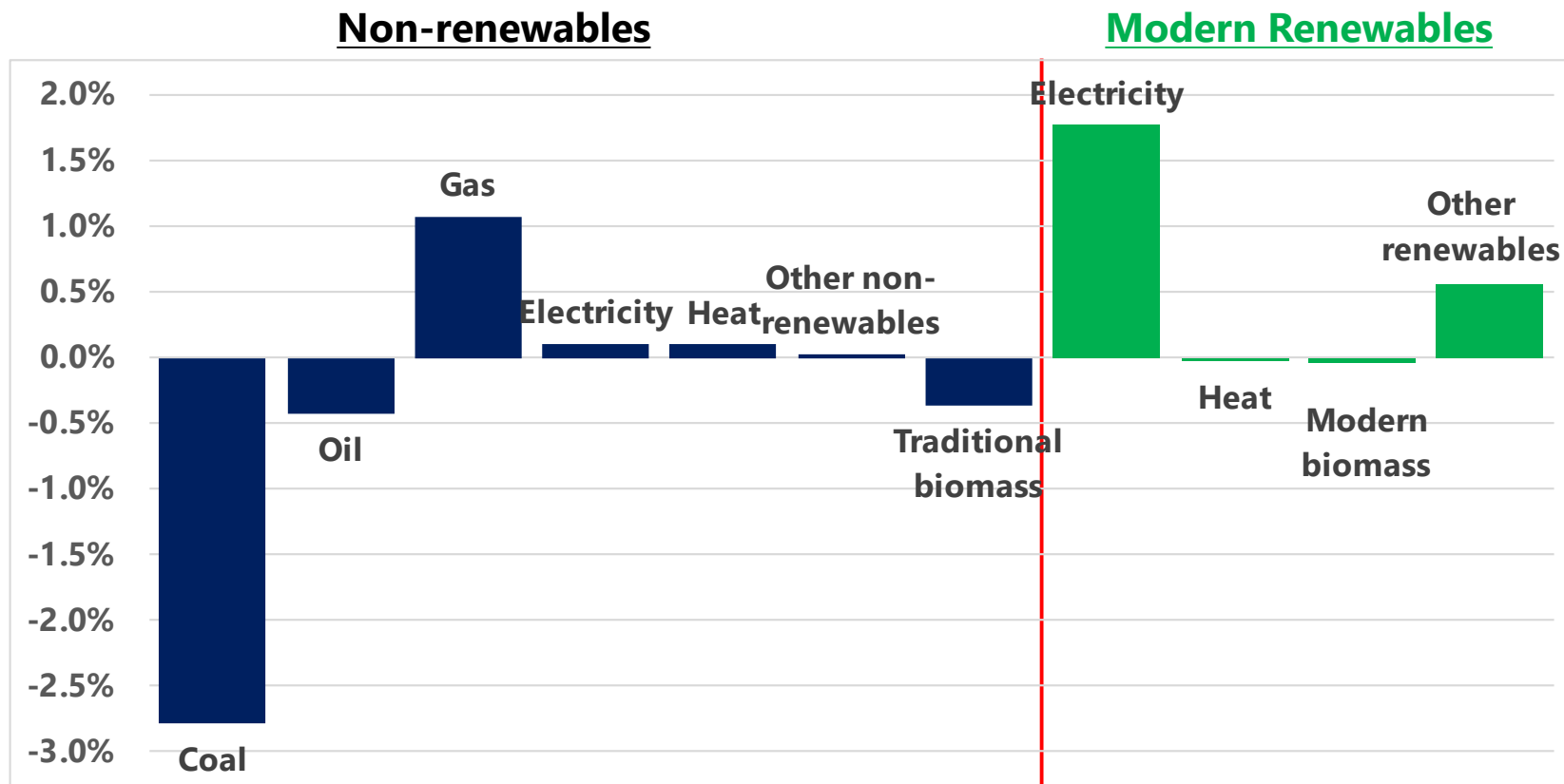
Note: Renewable energy includes electricity and heat generated from renewable energy sources

Source: APEC data

From 2010 to 2017, the renewable share increased 1.82 percentage points, 38% of the way to the goal.

Coal and oil lost shares to renewables in electricity

Percent change in fuels in final energy consumption market share, 2010-2017



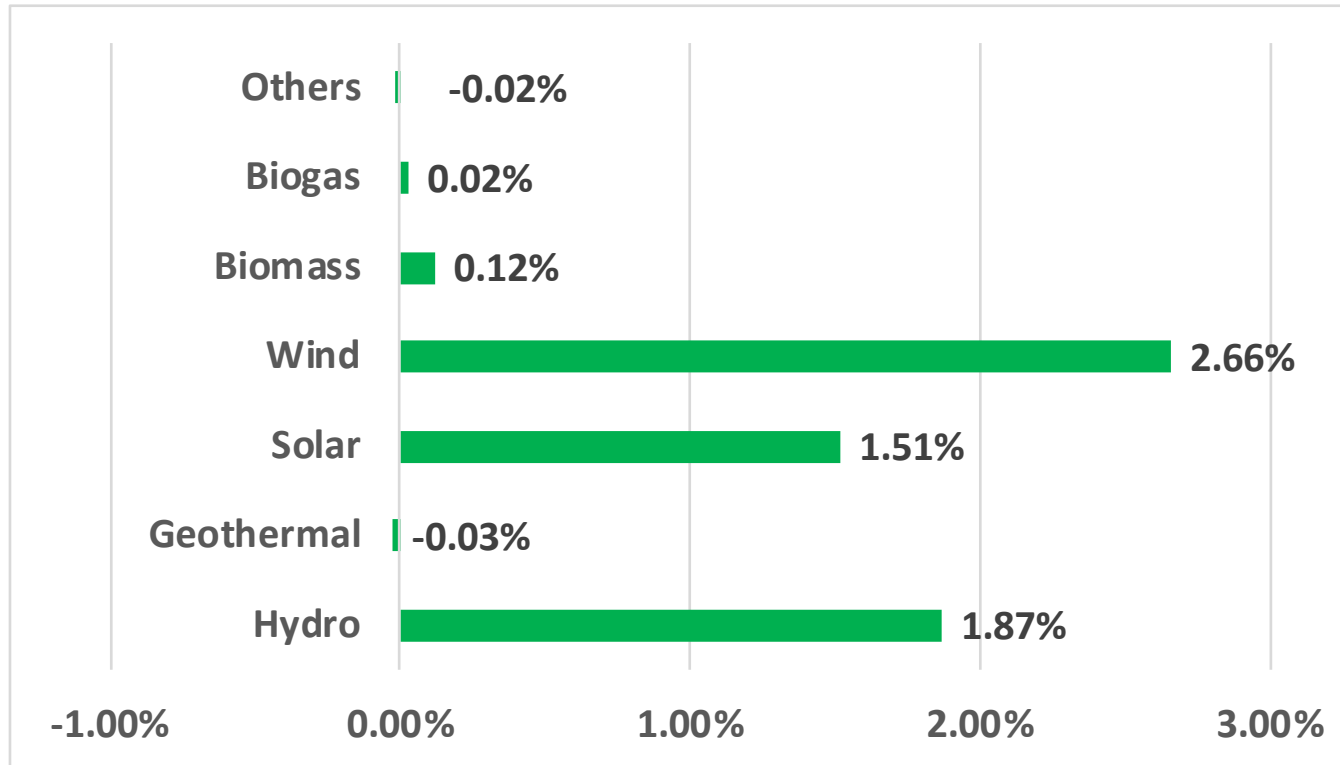
Note: Renewable energy includes electricity and heat generated from renewable energy sources

Source: APEC data.

From 2010 to 2017, the renewable share increased 2.27 percentage points, 37% of the way to the goal.

Wind and hydro lead renewables power growth

Percent change in electricity generation market share, 2010-2017

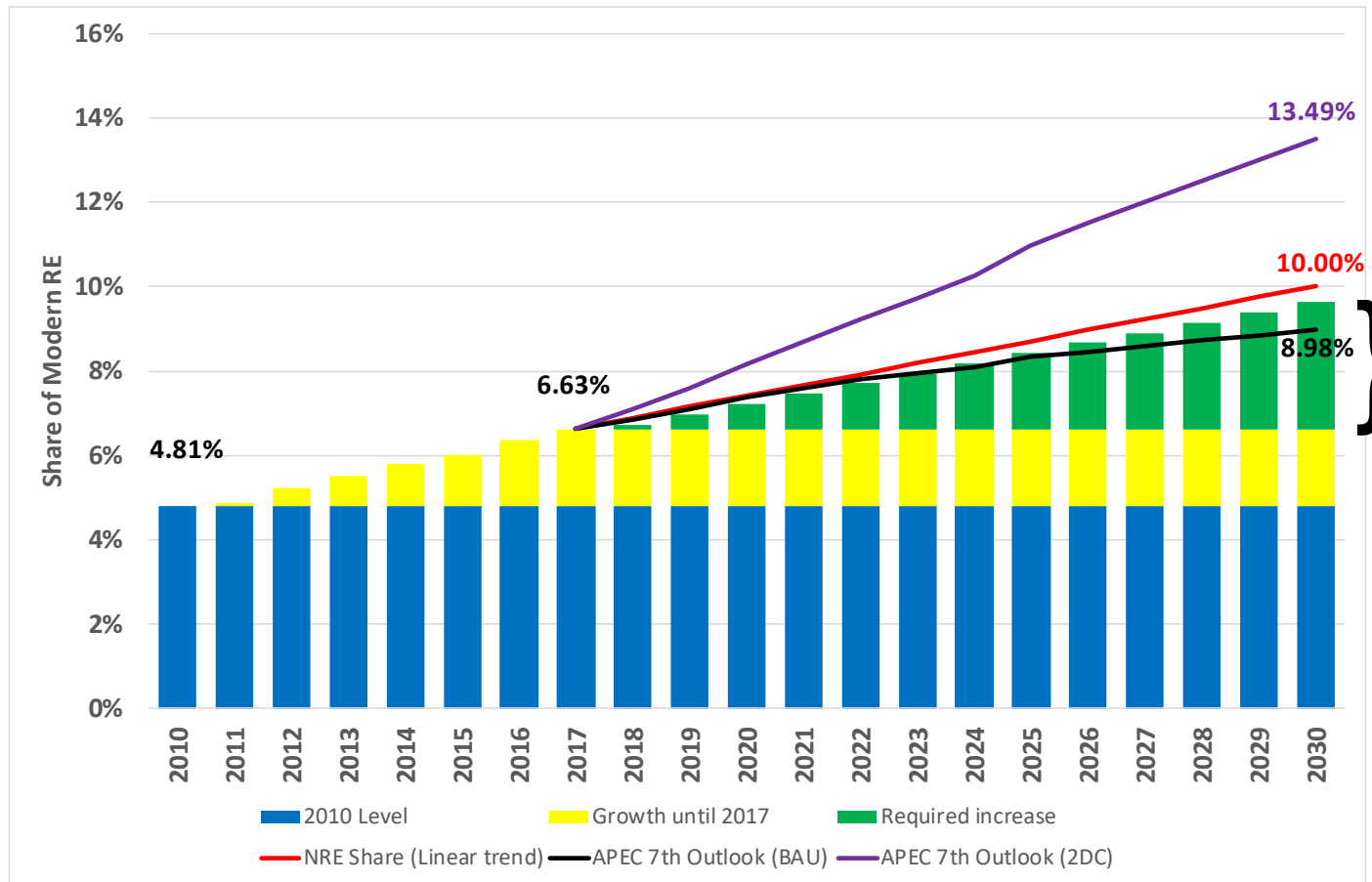


Source: APEC data.

In absolute terms, hydro generation increased 654 terawatt hours, 42% more than wind (461 terawatt hours).

Supply outlook extrapolation exceeds goal

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

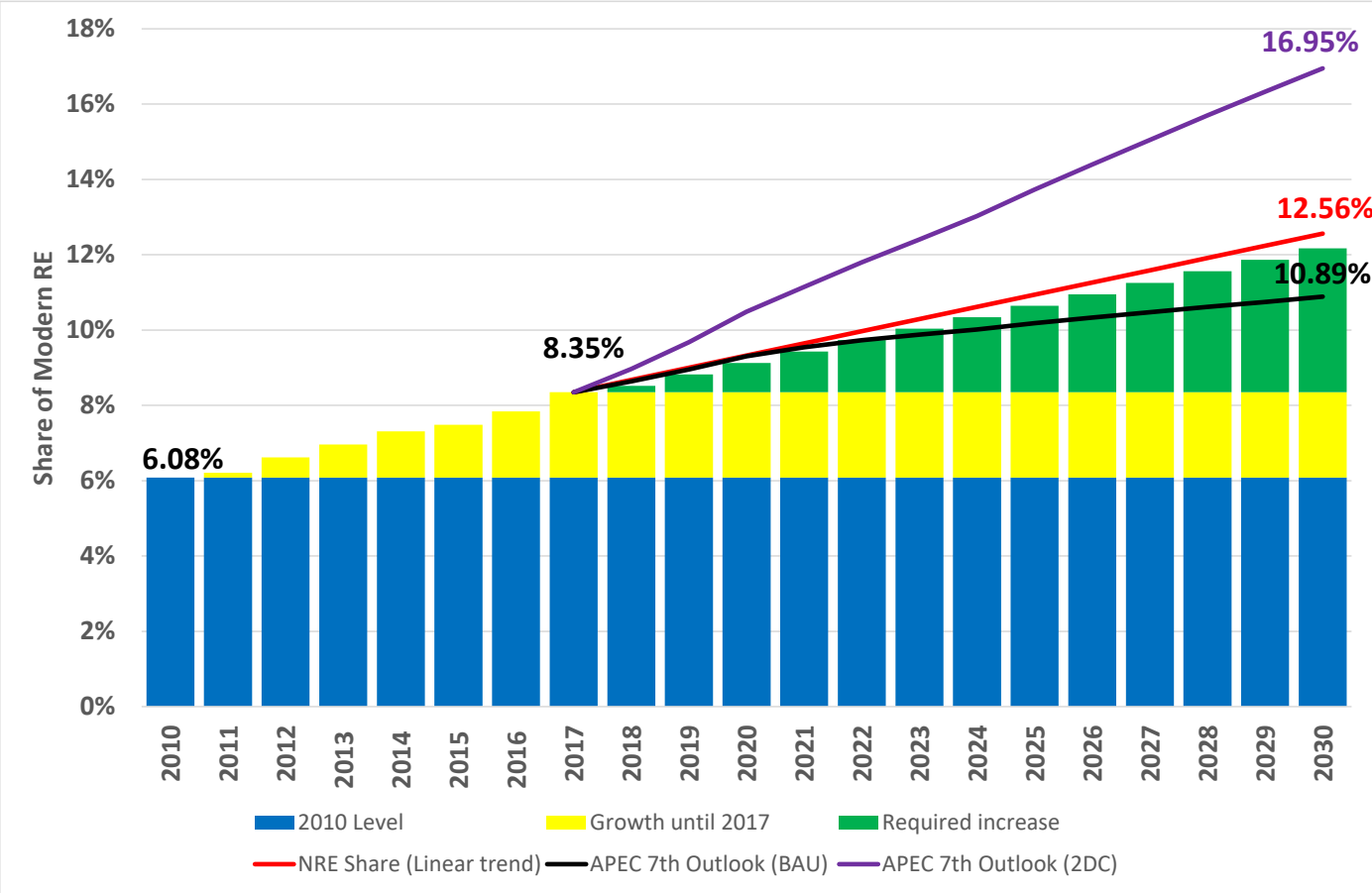


Level of RE share needed to achieve the doubling goal

Source: APEC data and APERC analysis.

Demand outlook extrapolation also exceeds 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.

Closing thoughts

- The use of modern renewables grew rapidly during 2010-2017.
 - Brought about by rapid decline in costs and favourable government policies.
- Additional efforts are necessary to address the barriers to renewable development such as:
 - Large upfront renewable costs and higher financial risk,
 - Affordability of renewables compared with coal,
 - Effect of intermittent renewables on grid stability,
 - Cost of electricity storage,
 - Policies persistently favouring fossil and nuclear energy.
- More can be done to identify economy-by-economy barriers and to formulate policy responses as part of a comprehensive road map.
- Past energy transitions have shown that vigorously increasing modern renewables, while holding non-renewables constant, might be the most likely way to increase the renewable share.



Thank you for your kind attention.

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