7.g. Progress toward energy intensity reduction goal

The 59th Meeting of APEC Energy Working Group (EWG)
26-27 August 2020

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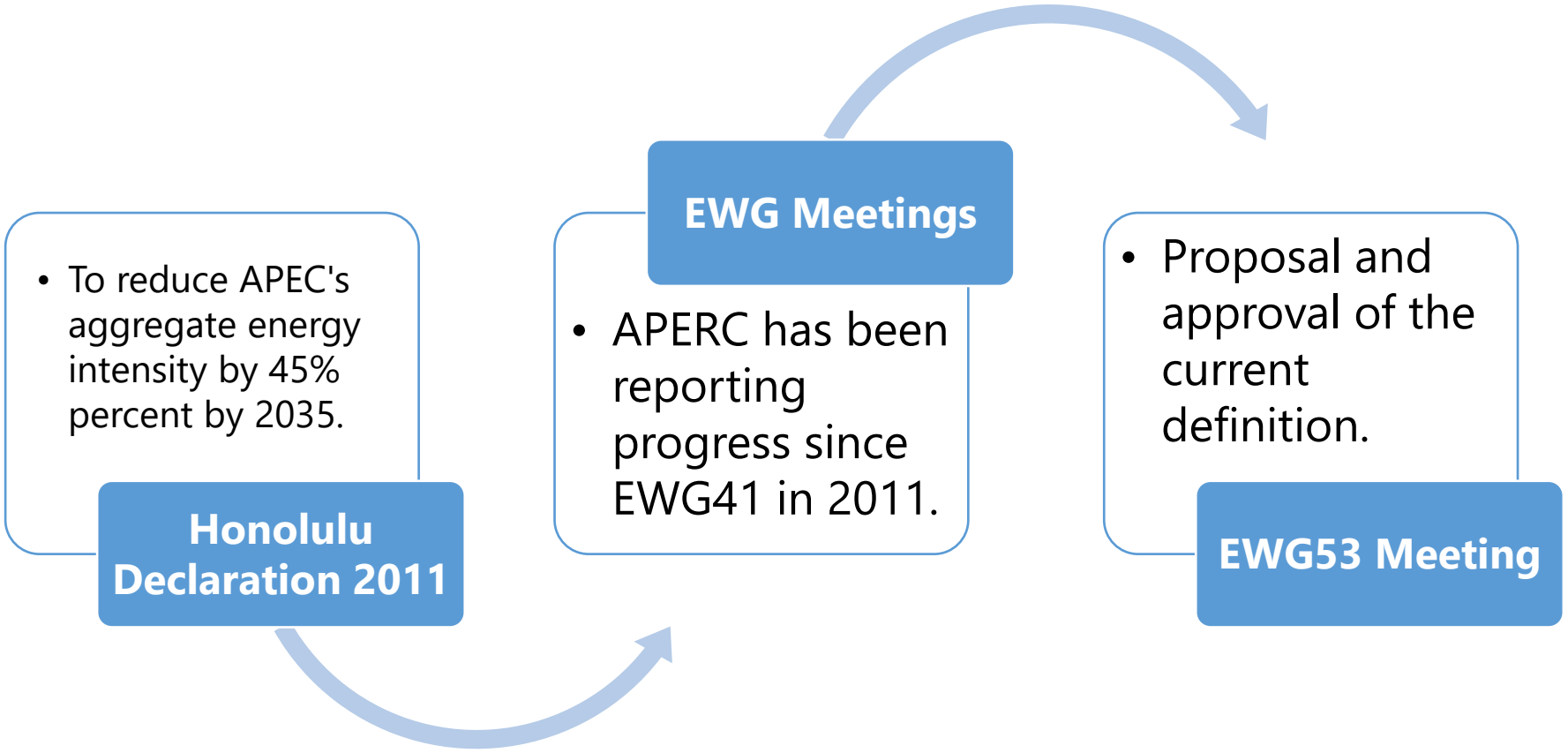
1. Progress on APEC intensity goal

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 2017…

APEC final energy intensity, 2006-17

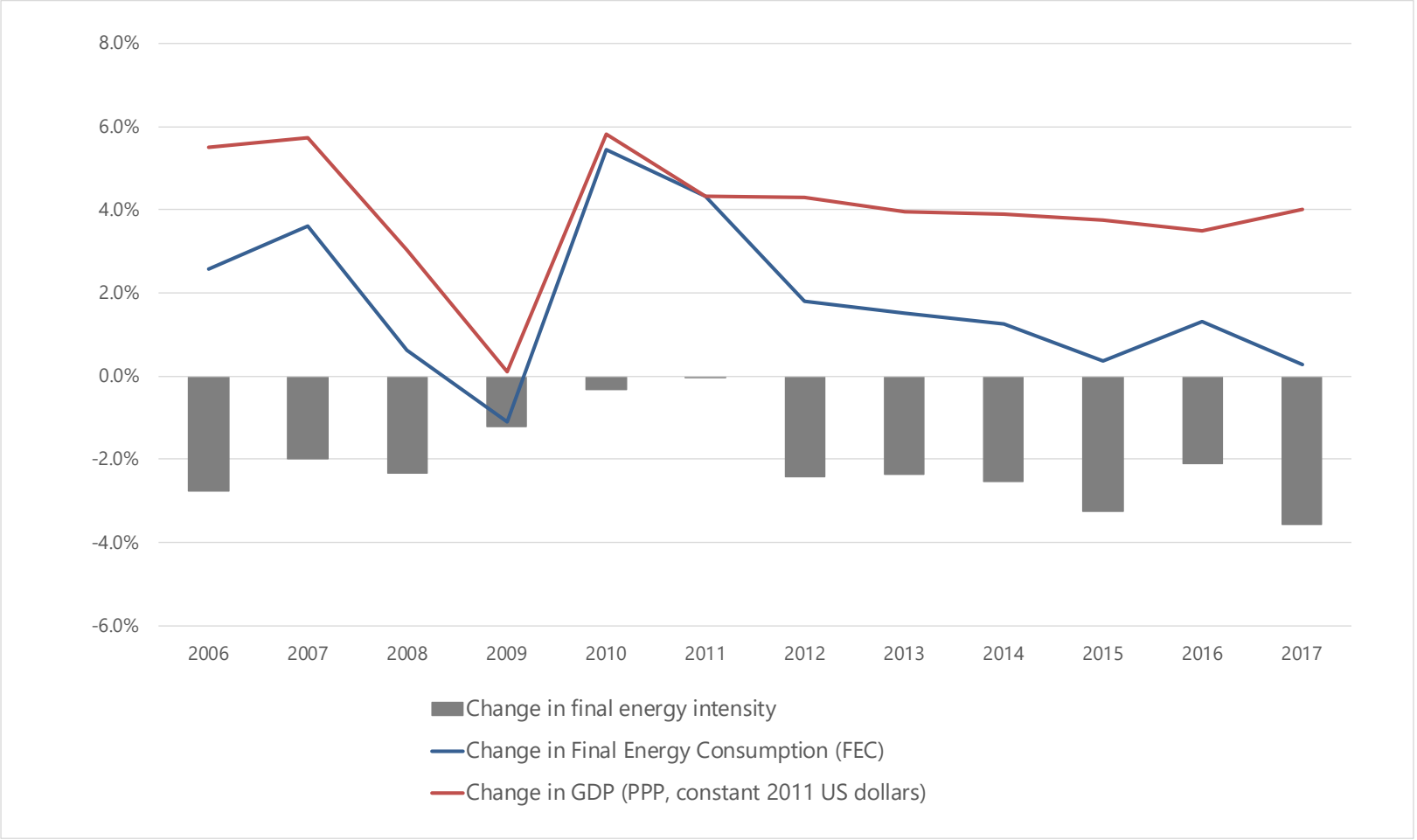
	2006	07	08	09	10	11	12	13	14	15	16	17	Trend to 2035
Change in final energy consumption	2.6%	3.6%	0.6%	-1.1%	5.5%	4.3%	1.8%	1.5%	1.3%	0.4%	1.3%	0.3%	
Change in GDP (PPP, constant 2011 US dollars)	5.5%	5.7%	3.1%	0.1%	5.8%	4.3%	4.3%	4.0%	3.9%	3.7%	3.5%	4.0%	
Change in final energy intensity	-2.8%	-2.0%	-2.4%	-1.2%	-0.3%	0.02%	-2.4%	-2.4%	-2.5%	-3.3%	-2.1%	-3.6%	**-46.8%**

Source: APEC statistics and APERC analysis.

- ***Final energy intensity has been improving reasonably consistently year-on-year, with the largest reduction in 2017 (-3.6%)***
- ***Final energy intensity fell 22.3% between 2005 and 2017.***
- ***If the current trend continues, the APEC final energy intensity goal of 45% will be met in 2035;***

GDP and energy consumption remain decoupled

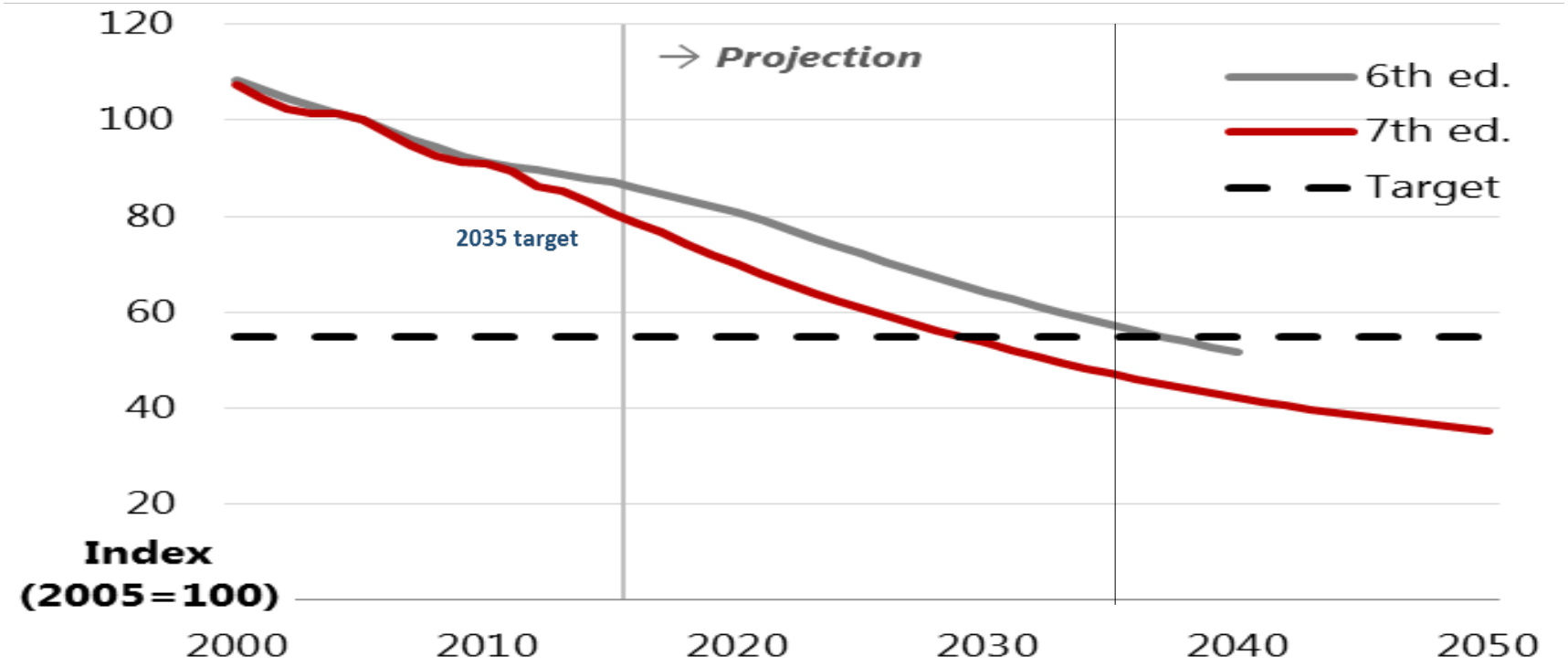
Annual changes to intensity, energy demand and GDP, 2006-17



Source: APEC statistics and APERC analysis.

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.

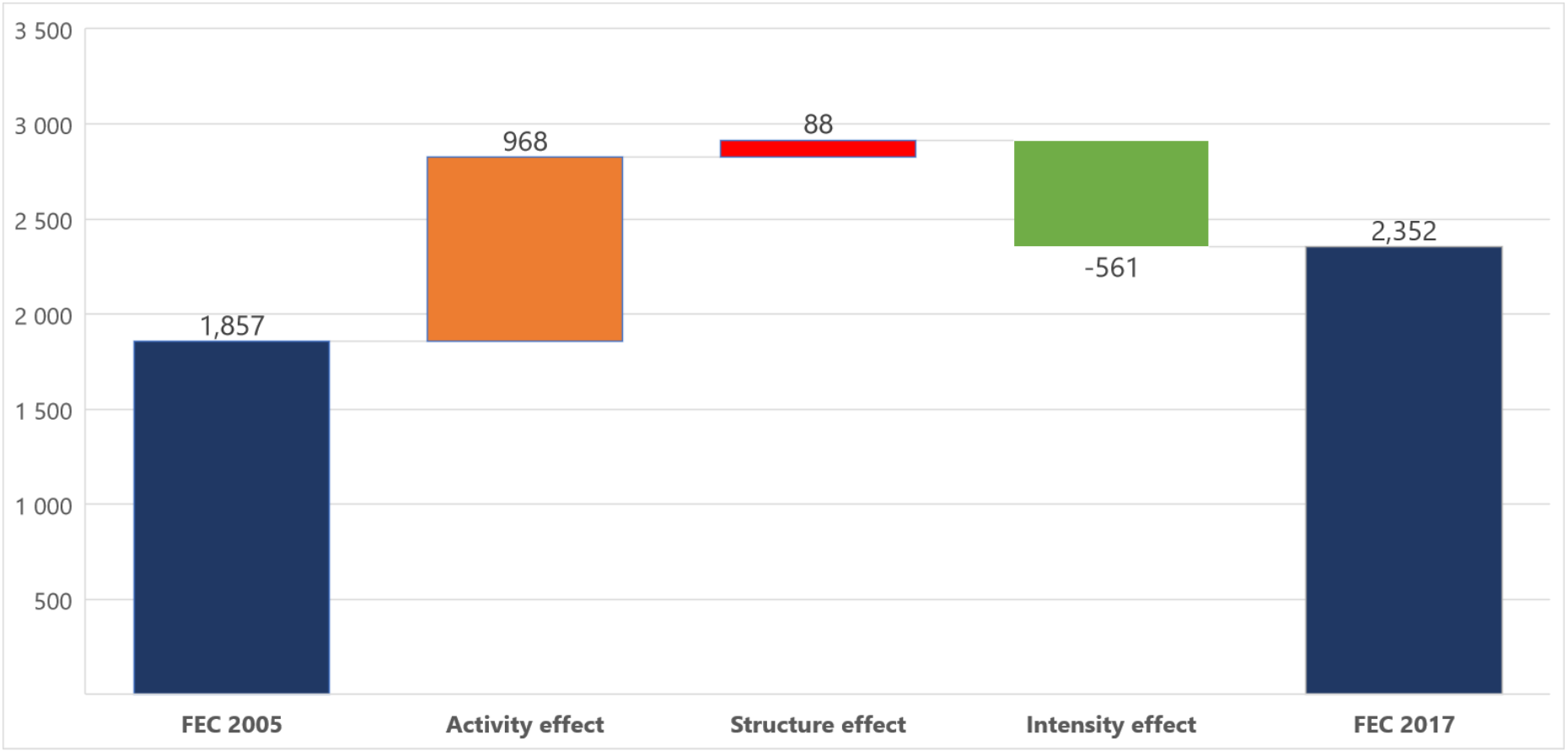
Goal was met in 2037 in the 6th edition.

2. Decomposition analysis

Decomposition analysis milestones

- At EWG57 (May 2019) presented a plan to decompose energy consumption data to analyse intensity improvement.
- At EWG58 (Oct 2019), presented the initial result of decomposing aggregate APEC energy intensity with preliminary 2017 data.
- At EWG59, present results using final APEC 2017 data as of end February 2020.

Intensity effect offsets consumption increases



Sources, FEC (APEC) and GVA (WB and DGBAS)

Energy efficiency or intensity effect played a significant role in offsetting the increases in final energy consumption brought about by the rapid growth (activity) of the APEC region.

Closing thoughts: better data = better analysis

- The intensity reduction trends look good; decoupling seems likely to continue--though perhaps we should be cautious about raising the goal, until we see the data for the next few years.
- The COVID-19 pandemic may reverse the APEC energy intensity decline, if the change in GDP falls faster than the changes in energy consumption. However, even in the 2009 Great Recession, energy consumption fell faster than GDP.
- Decomposition allows us to separate structural shifts and activity shifts from intensity shifts, giving us a better understanding of the true trends in energy consumption.
- However, more useful analysis requires more detailed data. Decomposition of aggregate intensity is already a challenge (agriculture, in particular).

Thank you for your kind attention.

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