



The 54<sup>th</sup> Meeting of APEC Energy Working Group (EWG)  
Wellington, New Zealand, 22-23 November, 2017

# 11.c.i. Progress toward Energy Intensity Reduction Goal

James KENDELL  
Vice President, APERC



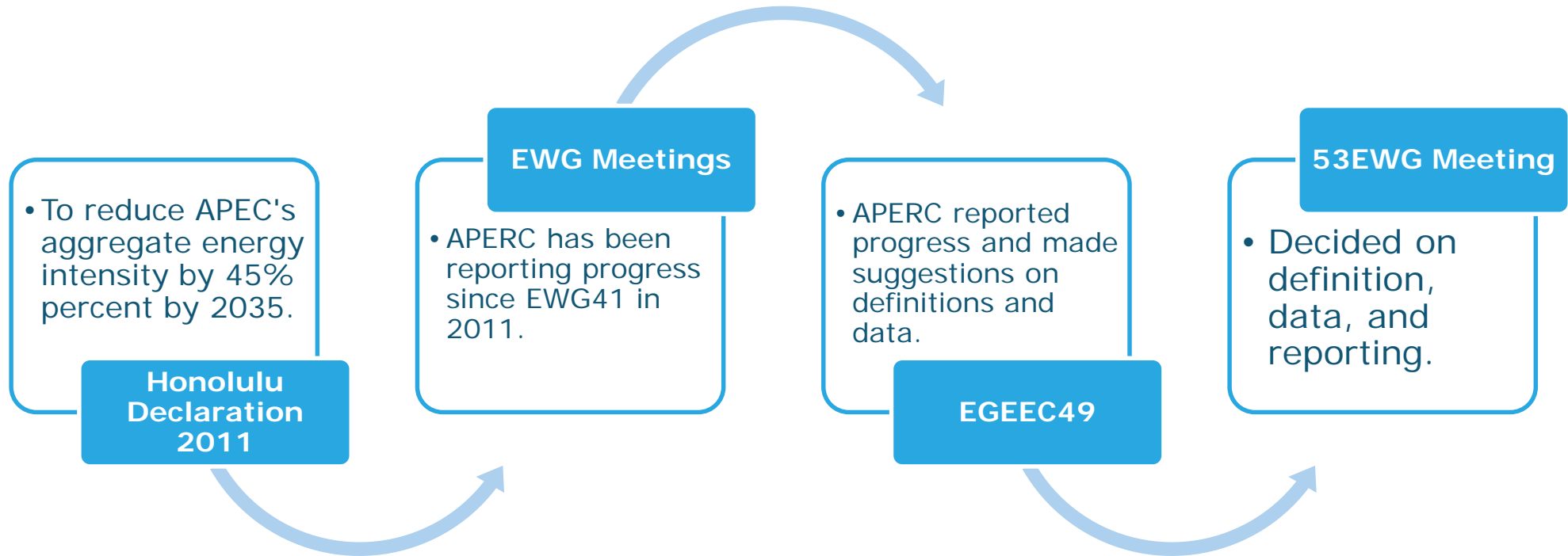


# Background



# Milestones toward defining energy intensity

## Selected Milestones



- ❑ After reporting three different energy intensity measures using IEA data, agreement was reached at EWG 53 to analyse final energy (excluding non-energy) intensity, using APEC data.
- ❑ This measure was first reported at 50<sup>th</sup> EGEEC in Moscow in October

- Energy data collected by ESTO with support from EGEDA (2015 are still preliminary).
- GDP data from the World Bank (constant 2011 USD PPP – available through 2016).
- Exceptions:
  - APERC/ESTO estimates for Papua New Guinea's (PNG) energy consumption.
  - Chinese Taipei and PNG's GDP data are estimates from the draft APEC Outlook 7<sup>th</sup> Edition.



# The Results



# What has happened to intensity since EWG53?

## APEC final energy (excluding non-energy) consumption intensity

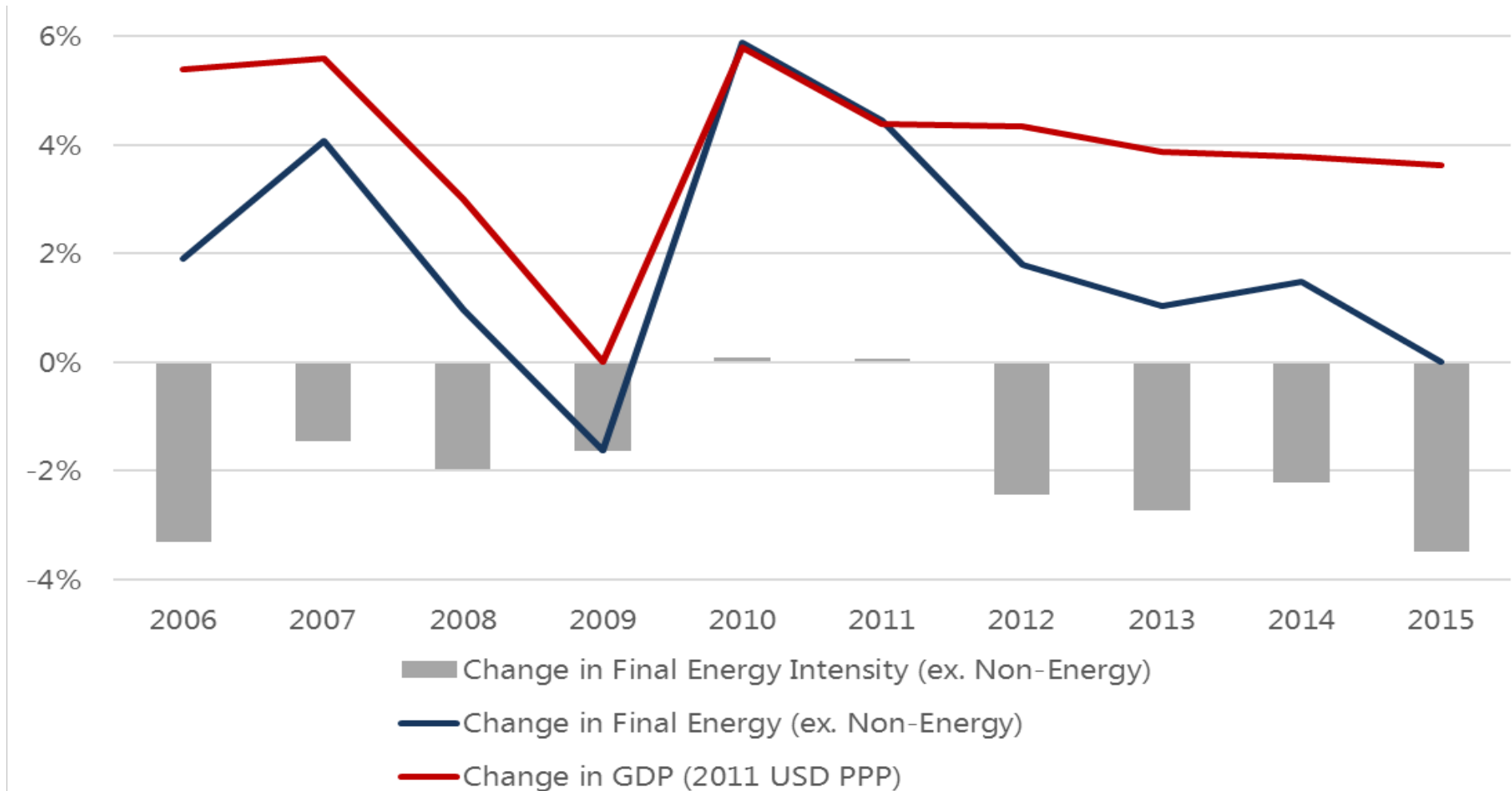
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2005-2015	Trend to 2035
<b>Change in Final Energy (ex. non-energy)</b>	1.9%	4.1%	1.0%	-1.6%	5.9%	4.5%	1.8%	1.0%	1.5%	0.0%	21.7%	
<b>Change in GDP (2011 USD PPP)</b>	5.4%	5.6%	3.0%	0.0%	5.8%	4.4%	4.3%	3.9%	3.8%	3.6%	47.6%	
<b>Change in Final Energy (ex. non-energy) Intensity</b>	-3.3%	-1.4%	-2.0%	-1.6%	0.1%	0.1%	-2.4%	-2.7%	-2.2%	-3.5%	-17.6%	<b>-44.0%</b>

Source: APERC analysis of ESTO data.

- Final energy consumption intensity (ex. non-energy) has been improving reasonably consistently with the largest reduction from 2014 to 2015.
- Final energy consumption intensity (ex. non-energy) fell 17.6% between 2005 and 2015.
- If the current trend continues, final energy consumption intensity (ex. non-energy) reduction would fall just short of the APEC goal, reaching 44% in 2035 (the APEC goal would be reached the following year).

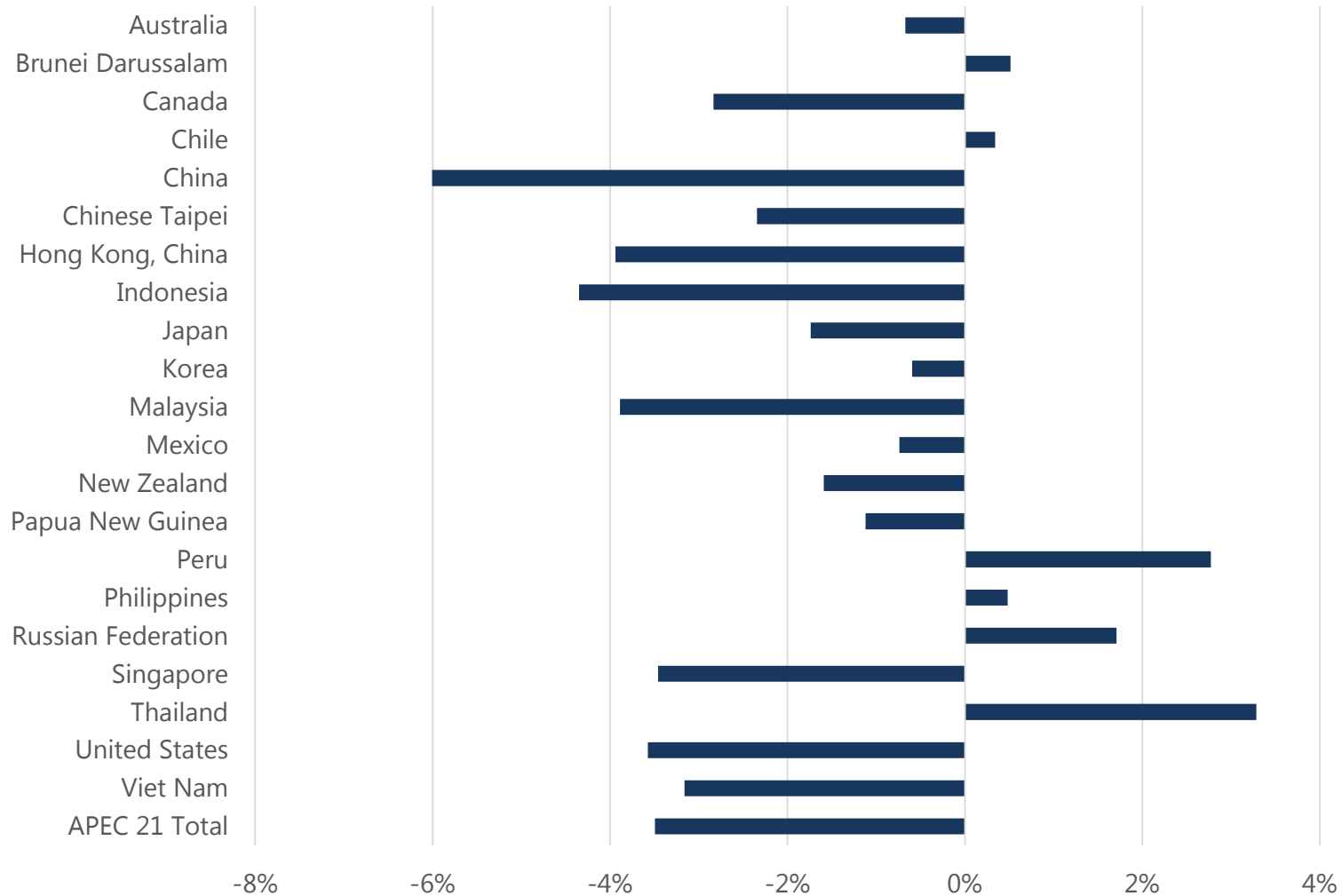
# Energy consumption has decoupled from GDP

Year-over-year changes in GDP, energy consumption, and energy intensity



# Decoupling is a challenge for some economies

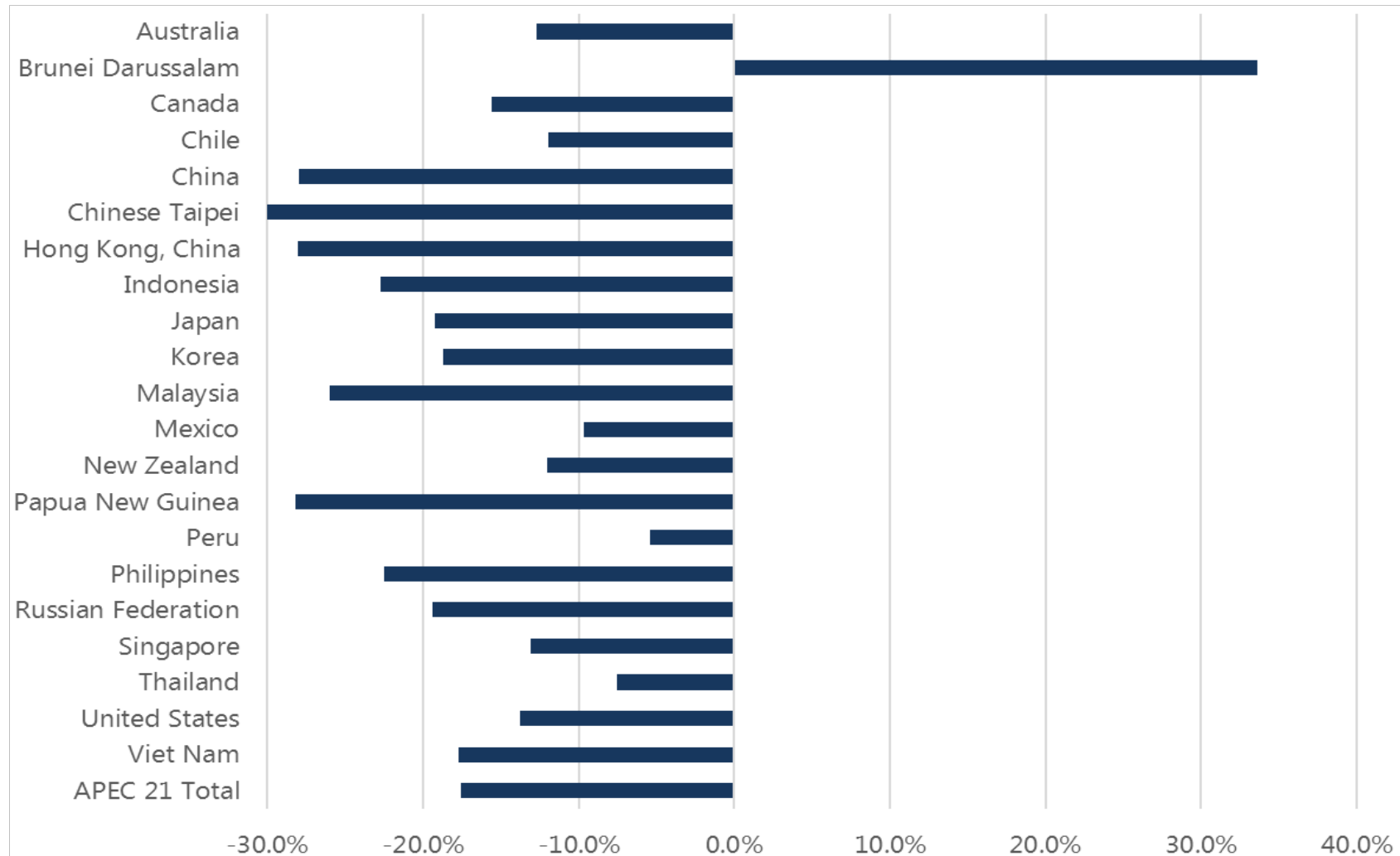
## Economy changes in energy intensity, 2014-2015





# OECD/non-OECD economies show similar decreases

## Economy changes in energy intensity, 2005-2015



# What does this tell us?

- Change in final energy consumption (excluding non-energy) in 2015 compared with the previous year is only 0.01%...
- ...and growth in GDP (PPP) has been stable for the last three years (3.9%, 3.8% and 3.6%, in 2013-14-15, respectively).
- So in 2015, GDP growth decoupled from energy consumption growth, resulting in a significant energy intensity reduction of 3.5%.

# Closing Thoughts

- Trends, which look good, are more important than year-on-year changes (will decoupling continue?).
- Energy efficiency measures are needed to tell us about the underlying causes of changes in energy intensity.
- More useful analysis requires more demand-side data, which can be a challenge (or opportunity...) for APEC members.



**Thank you for your kind attention**

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