



The 50th Meeting of APEC Energy Working Group (EWG)
Hawaii, The United States, 16-17 December, 2015

7.e. Monitoring APEC Energy Intensity Goal

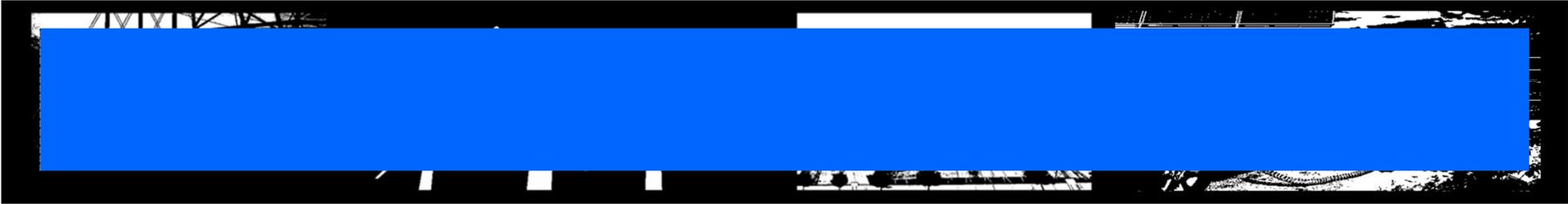
Cecilia Tam
Deputy Vice President, APERC

Measurement

- **Three measures of Energy Intensity are considered (only numerator varies)**
 - **Primary Energy**
 - **Final Energy**
 - **Final Energy less non-energy use**
- **GDP is used as the denominator in all calculations**

Data Sources

- **This update is based on statistics from IEA which is available through 2013 (2014 data are estimates);**
- **GDP data from WB – data available to 2014**
- **Exceptions:**
 - **Papua New Guinea's energy data comes from APEC under coordination of ESTO**
 - **Chinese Taipei's GDP data is estimated by APERC**



The Results

What happened to the Primary Energy Intensity up to 2013?

	2006	2007	2008	2009	2010	2011	2012	2013	2005-2013	Trend to 2035
Change in Primary Energy	2.7%	2.7%	0.1%	-0.3%	5.7%	4.5%	1.2%	2.2%	20.2%	
Change in GDP (2011 US \$PPP)	5.4%	5.6%	3.0%	0.0%	5.8%	4.3%	4.4%	4.0%	37.4%	
Change in Primary Energy Intensity	-2.6%	-2.8%	-2.9%	-0.3%	-0.1%	0.2%	-3.1%	-1.7%	-12.6%	-39.6%

Note : Data from IEA, energy intensity calculation by APERC

- **Yearly intensity improvement in Primary energy was on average 1.7 % since 2006;**
- **Primary intensity improvement in 2013 is lower than 2012**

... Final Energy Intensity up to 2013?

	2006	2007	2008	2009	2010	2011	2012	2013	2005-2013	Trend to 2035
Change in Final Energy (FE)	2.3%	2.9%	-0.4%	-1.2%	5.3%	6.0%	0.2%	3.3%	19.6%	
Change in GDP (2011 US \$PPP)	5.4%	5.6%	3.0%	0.0%	5.8%	4.3%	4.4%	4.0%	37.4%	
Change in Final Energy Intensity	-2.9%	-2.6%	-3.4%	-1.2%	-0.5%	1.6%	-4.0%	-0.7%	-13.0%	-40.6%

Note : Data from IEA, energy intensity calculation by APERC

- **Yearly intensity improvement in Primary energy was on average 1.7 % since 2006;**
- **Final energy intensity reduction in 2013 slowed compared to 2012, but better than 2011**

...and Final Energy Intensity excluding Non-energy use up to 2013?

	2006	2007	2008	2009	2010	2011	2012	2013	2005-2013	Trend to 2035
Change in Final Energy excluding Non Energy	2.4%	2.9%	0.0%	-1.6%	5.1%	2.2%	0.9%	3.5%	17.7%	
Change in GDP (2011 US \$PPP)	5.4%	5.6%	3.0%	0.0%	5.8%	4.3%	4.4%	4.0%	37.4%	
Change in Final Energy excluding Non Energy Intensity	-3.7%	-2.1%	-7.4%	2.6%	1.7%	0.5%	-5.7%	2.1%	-11.9%	-37.8%

Note : Data from IEA, energy intensity calculation by APERC

- **Final energy excluding non energy intensity reduction shows much higher year on year variations with 2013, 2011-2009 showing increase in final energy intensity**

How Do These Results Compare with Last Year's Progress Report

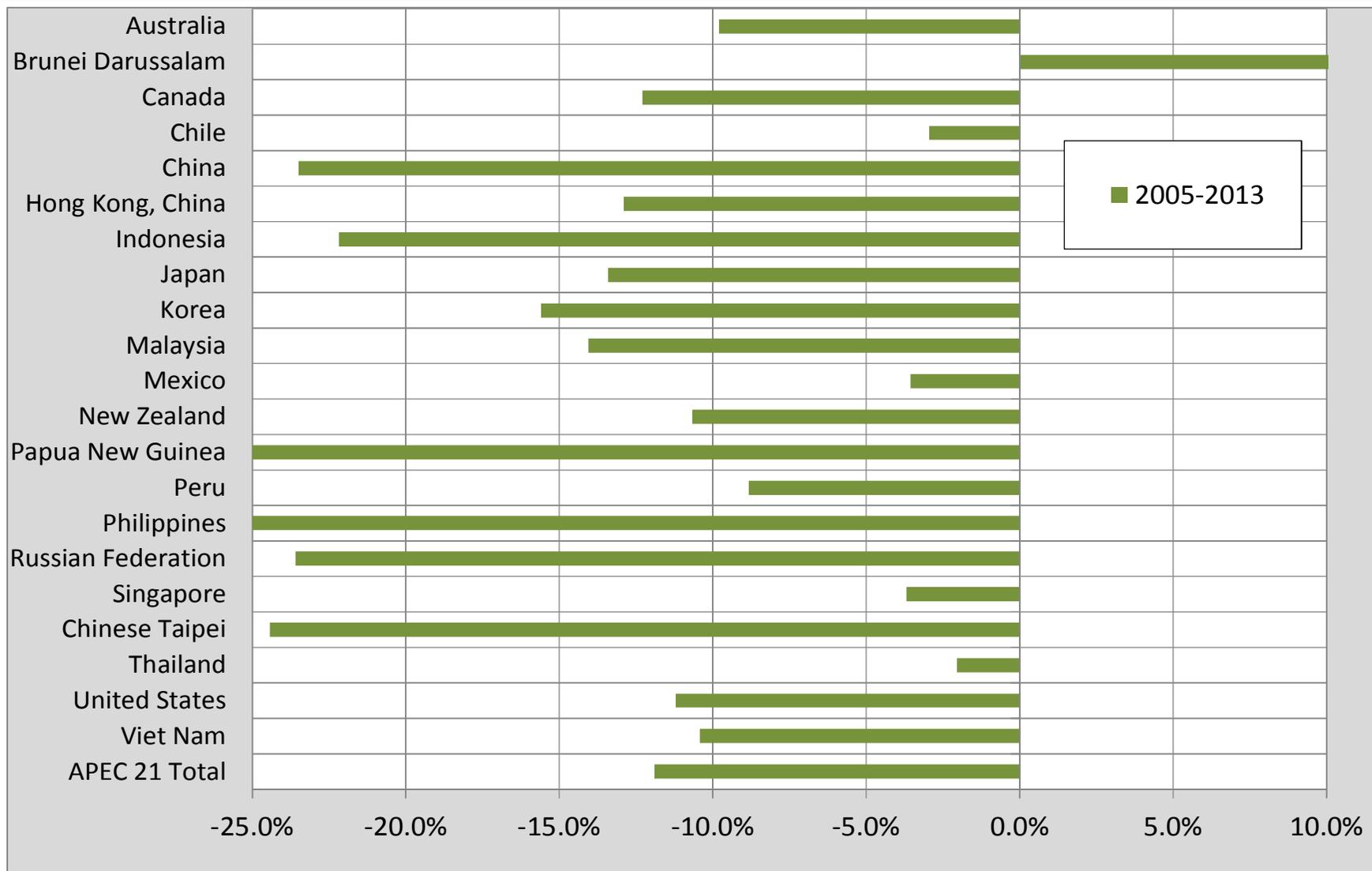
	2005-2013 (Latest)	2005-2012 (EWG 48)
Primary Energy Intensity	-12.6%	-10.8%
Final Energy Intensity	-13.0%	-14.4%
Final Energy Intensity (excluding non-energy)	-11.9%	-12.3%

	Trend to 2035 (Latest)	Trend to 2035 (EWG 48)
Primary Energy Intensity	-39.6%	-38.8%
Final Energy Intensity	-40.6%	-48.7%
Final Energy Intensity (excluding non-energy)	-37.8%	-43.0%

What can we tell from the numbers?

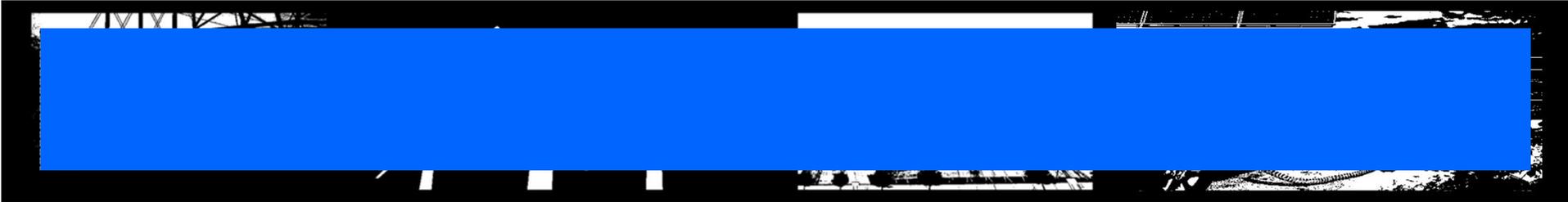
- **Energy intensity reduction since 2005 is improving; with 2013's final energy intensity reduction lower than 2012's;**
- **Based on current trends, APEC appears to fall short of the 45% reduction goal and does not reach this level until 2040 in final energy terms; 2041 in primary energy and 2043 final excluding non-energy**
- **Additional end use data needed to better understand year-to-year changes**

Economy Level Results Show a Mix Picture – Final Energy Excluding Non Energy



Closing Thoughts

- **Caution against pessimism/optimism arising from year-to-year changes in progress measurements**
- **Additional data and analysis needed**
- **Energy intensity is not a measure of energy efficiency**
 - **Challenge/opportunity for EGEDA**
 - **Need to develop APEC energy efficiency indicators to better understand trends, year-to-year changes and opportunities for greater efficiency improvements**
- **APEC-aggregate aspirational goal**
 - **Discourage “league tables”/“standings”**



Thank You

**APERC looks forward to cooperating
with you in the future**

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