



APEC Expert Group on Energy Data and Analysis 2013

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Monitoring APEC's Energy Intensity Goals: Data and Analysis Issues

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Asia-Pacific
Economic Cooperation

Background

- Two international energy databases are publicly available covering the APEC economies:
 - the “APEC Energy Statistics” coordinated by Institute for Energy Economics Japan / Energy Data and Modelling Center (EDMC) under the supervision of EGEDA; and
 - The “IEA Energy Statistics” coordinated by the Energy Statistics Division, International Energy Agency (IEA) under the supervision of the IEA’s Governing Board
- In principle, APERC would prefer to use the APEC Energy Statistics, but because of past experiences with data inconsistencies, APERC currently uses mainly data from the IEA Energy Statistics in its work

Recent Developments

- In August 2013, APERC met with representatives from EDMC to discuss the obstacles to greater use of the APEC Energy Statistics by APERC
 - EDMC representatives were of the view that at least some of the problems with the APEC Energy Statistics stem from problems with the quality of the data they receive from APEC member economies
- An outcome of this meeting was a commitment by APERC to include in this year's report on progress toward APEC's energy intensity improvement goal to the APEC Energy Working Group (EWG) calculations using *both* IEA and APEC statistics

Annual Progress Report on APEC's Energy Intensity Goal

- APEC has adopted a goal to reduce the energy intensity of the APEC economies by 45% between 2005 and 2035
- APERC assists the APEC Energy Working Group by compiling an annual report on APEC's progress toward this goal
 - APERC has historically used IEA statistics in this report
 - However, some EWG members questioned why APERC does this, since statistics are provided directly to IEA by only the 6 APEC economies that are members of IEA

Goals of Using Both IEA and APEC Statistics in the Progress Report

- By compiling the progress report using both IEA and APEC statistics, APERC's and EDMC's goals were:
 - To facilitate a comparison of the impacts of using IEA vs. APEC statistics in measuring progress toward a high-profile APEC goal
 - To respond to the objections of some EWG members to the use of IEA data
 - To highlight to APEC member economies the need to work with EDMC to improve the quality of the APEC Energy Statistics
- The 2011 APEC database does not include data for Vietnam, so IEA data was used for Vietnam in the results using APEC data

This Year's Progress: the High Level View

- This presentation will not go through the full progress report, which will be presented at the EWG 46 meeting in Da Nang next week
- However, at a high-level, the preliminary results are as follows:

APEC-Wide Energy Intensity Improvement 2005-2011

	Primary Energy Intensity	Final Energy Intensity	Final Energy – Non-Energy Intensity
Based on IEA data	-7.1%	-9.4%	-9.5%
Based on APEC data	-5.8%	-7.2%	-7.3%

Observations on APEC's Energy Intensity Progress

- To stay on track toward the 30-year 45% goal, APEC should have achieved an 11.3% reduction in energy intensity in the first six years:

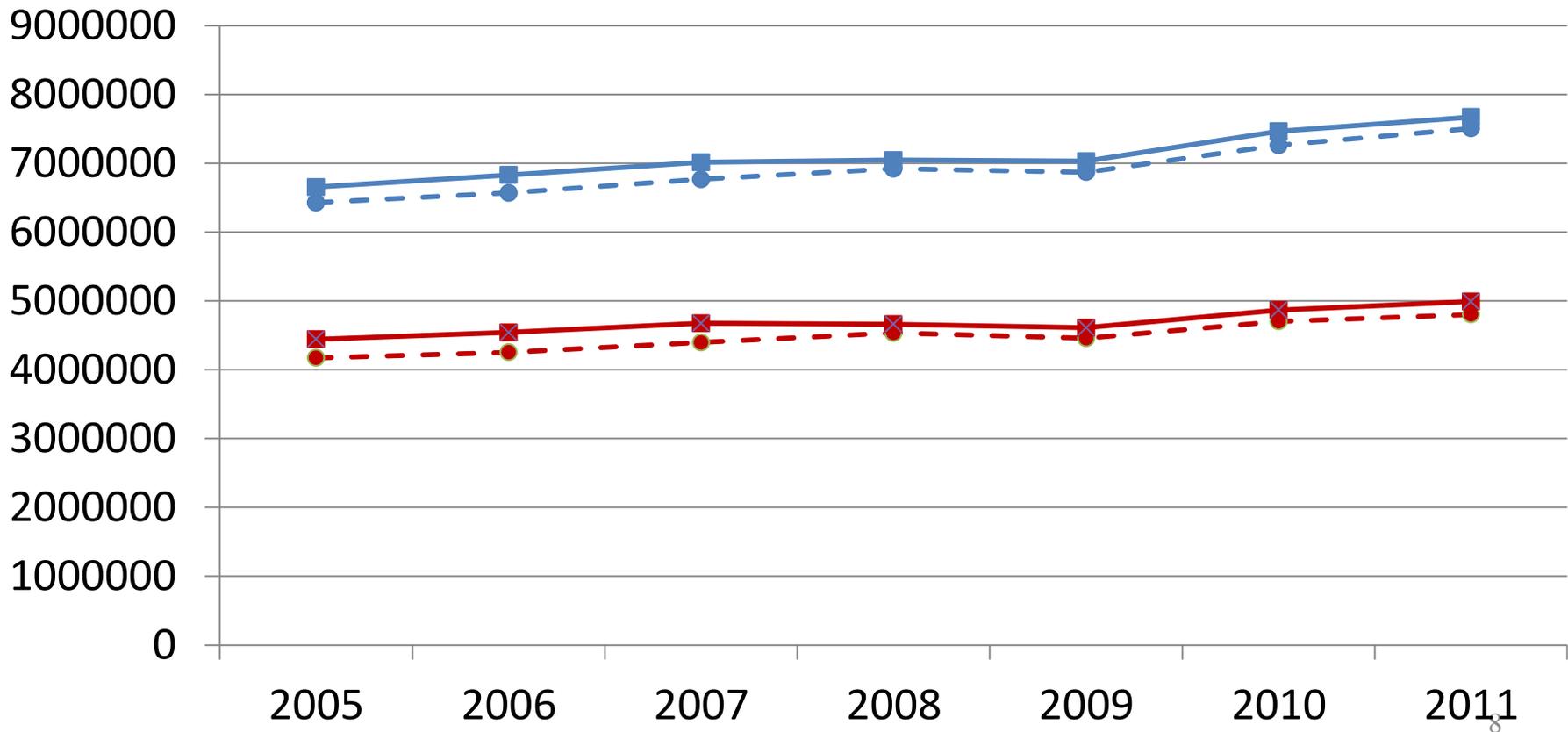
$$(1.000 - .450)^{(6/30)} - 1.000 = .113$$

- APEC data shows APEC making considerably less progress toward the goal than the IEA data
- Who should we believe?

Underlying Data Comparison

Data Source Comparison - Total APEC

- Primary Energy - APEC
- Final Energy - APEC
- Primary Energy - IEA
- Final Energy - IEA



Observations on Total APEC Data Differences

- Demand data differs between IEA and APEC by only a few percent
- However, the improvement in energy intensity that we are trying to track is also only a few percent
- So a few percentage points difference in demand data can mean big differences in energy intensity improvement!

One Source of Difference: China

- China accounts for roughly one-third of APEC's energy demand, and has ambitious goals to reduce their energy intensity
- So what happens in China is of critical importance to meeting APEC's energy intensity target

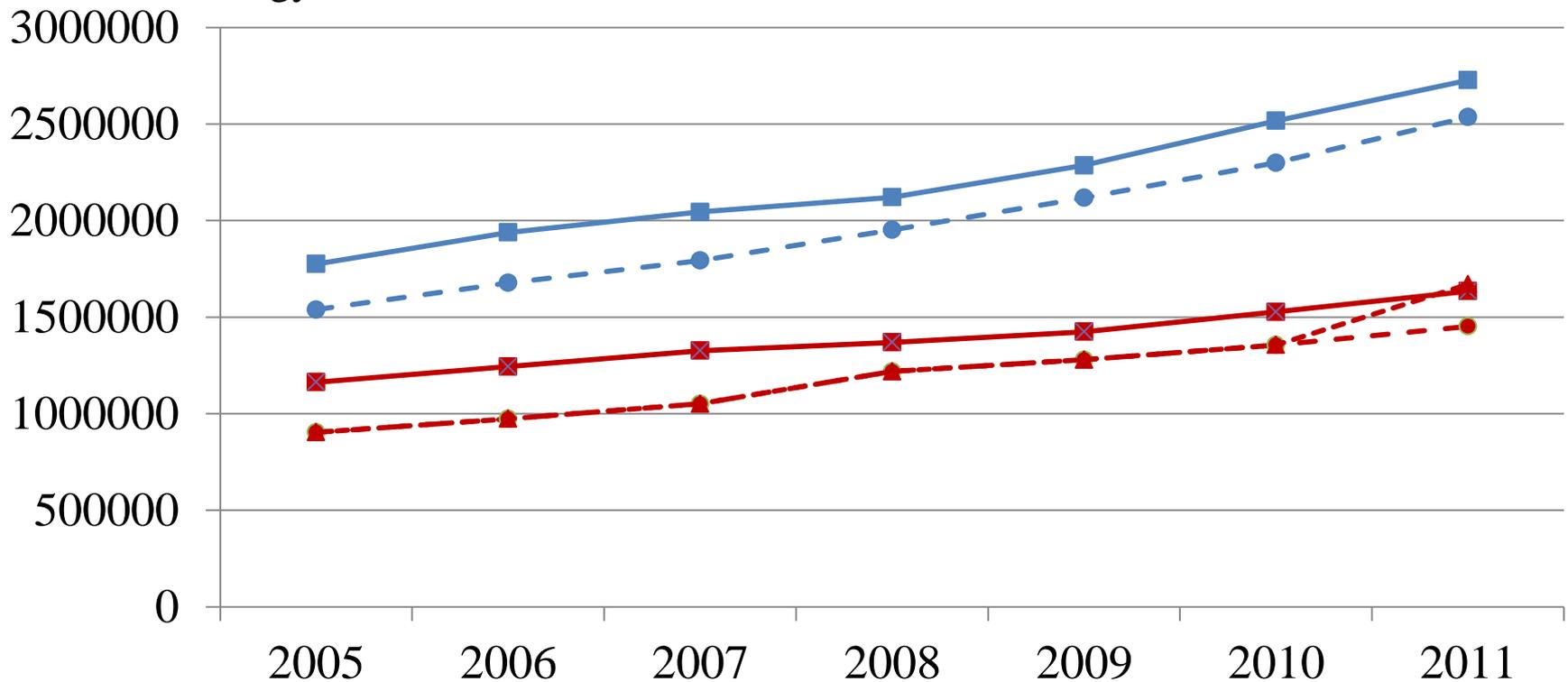
China's Energy Intensity Improvement 2005-2011

	Primary Energy Intensity	Final Energy Intensity	Final Energy – Non-Energy Intensity
Based on IEA data	-17.4%	-24.4%	-24.5%
Based on APEC data	-11.4%	-13.5%	-13.5%

China Energy Demand Comparison

Data Source Comparison - China

- Primary Energy - APEC
- Primary Energy - IEA
- Final Energy - APEC as of 4 Nov 2013
- Final Energy - IEA
- ▲— Final Energy - APEC as of 18 Oct 2013

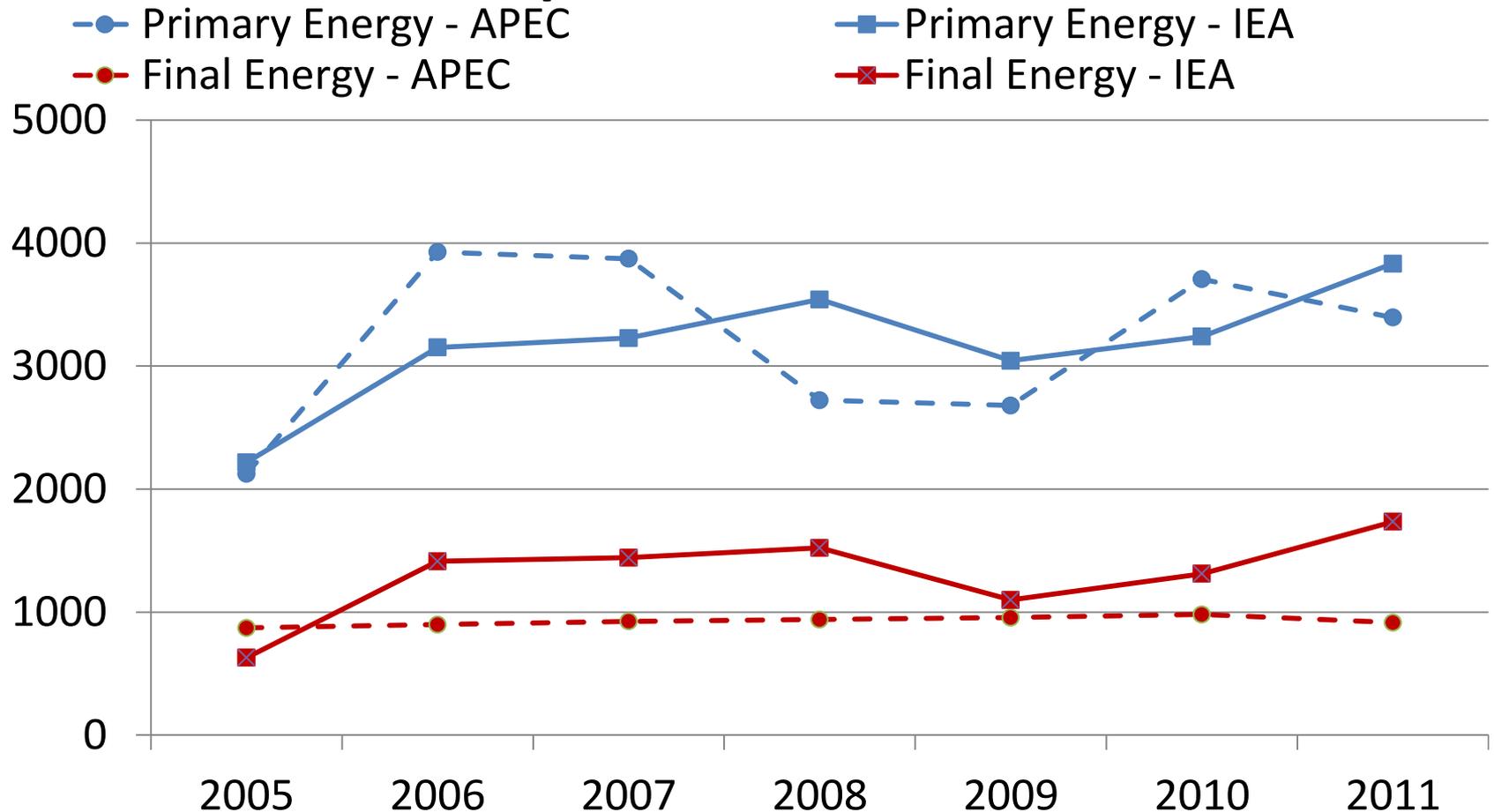


Observations on China Data Differences

- Demand data differences between IEA and APEC are large and obvious
- APERC has not yet attempted to further investigate the sources of the differences
- It is interesting to note that China's final energy demand data for 2011 was revised in the APEC database in late October, 2011; without this revision, China would have shown only a 0.5% improvement in 2005-2011 final energy intensity and APEC as a whole would have shown only a 2.7% improvement in 2005-2011 final energy intensity
- China is not alone in having significant demand data differences, as the following slides illustrate

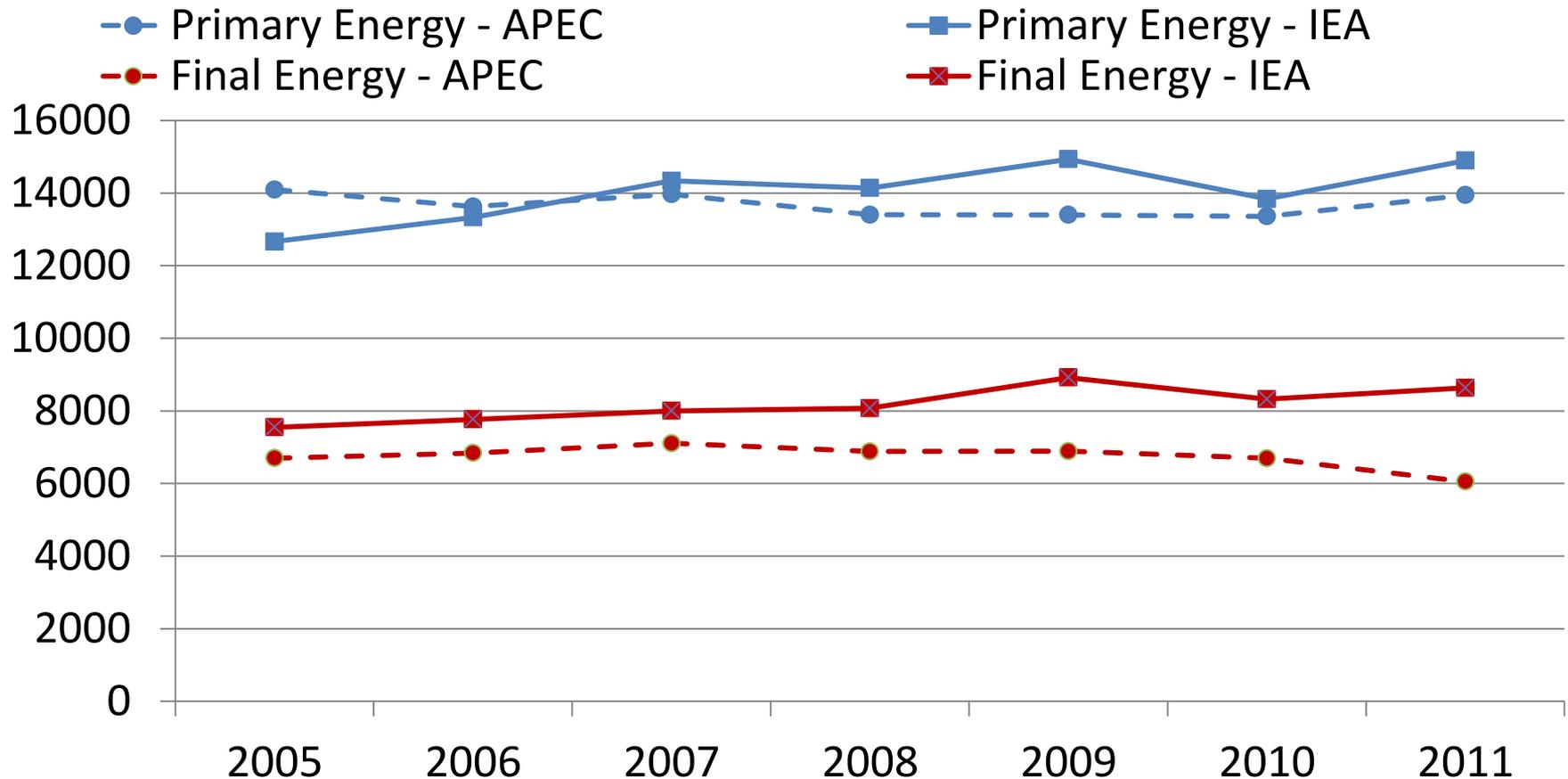
Brunei Darussalam

Data Source Comparison - Brunei Darussalam



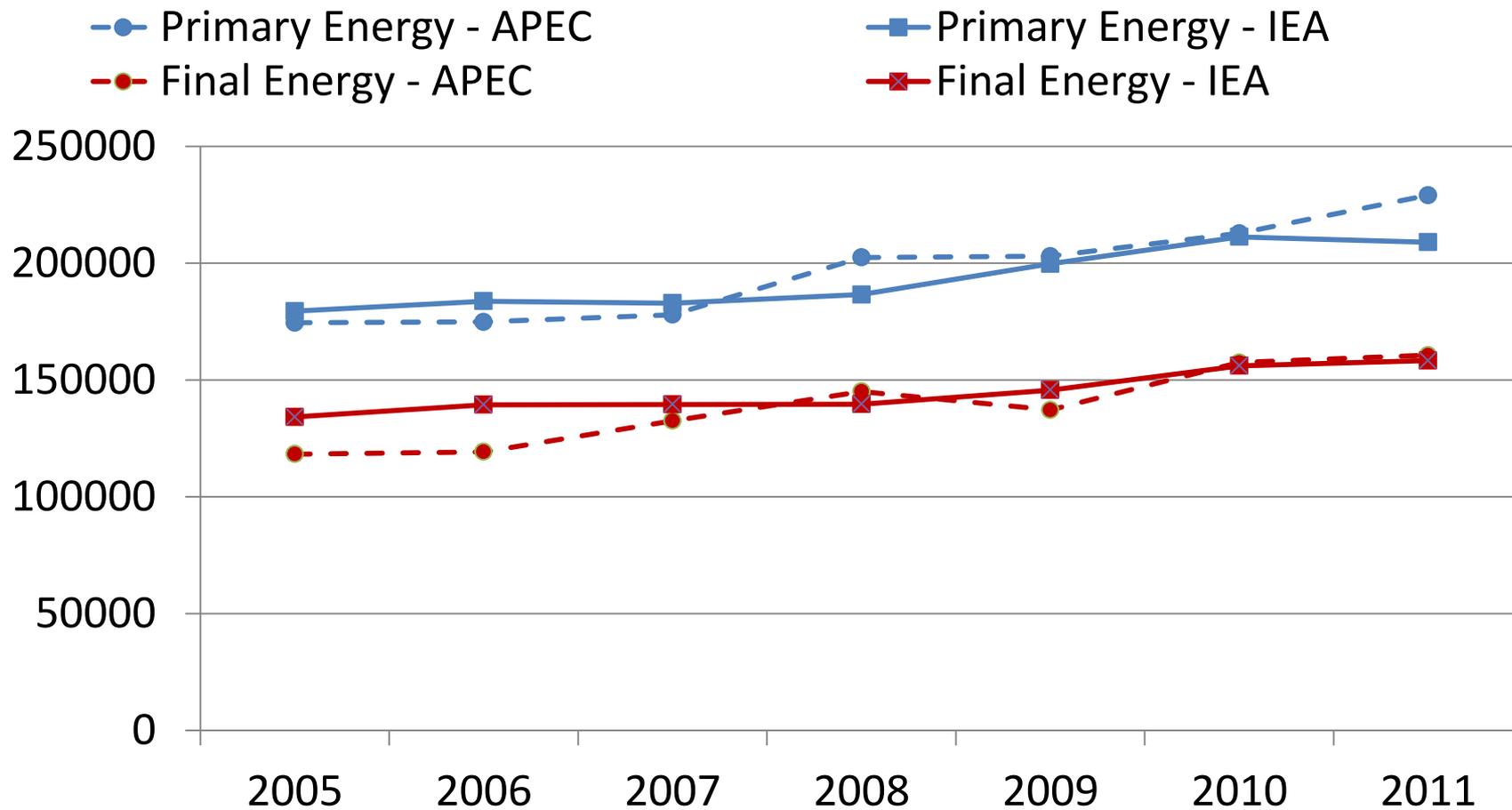
Hong Kong, China

Data Source Comparison - Hong Kong, China



Indonesia

Data Source Comparison - Indonesia



Japan

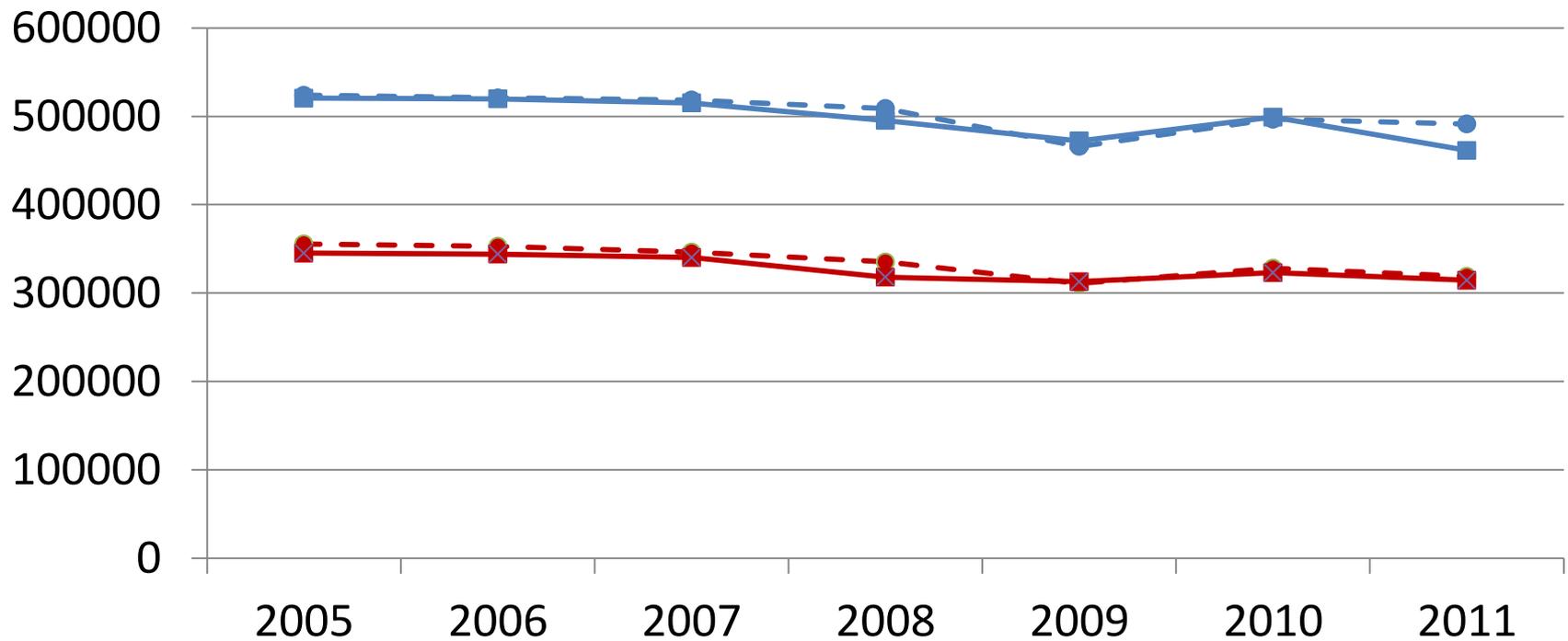
Data Source Comparison - Japan

—●— Primary Energy - APEC

—■— Primary Energy - IEA

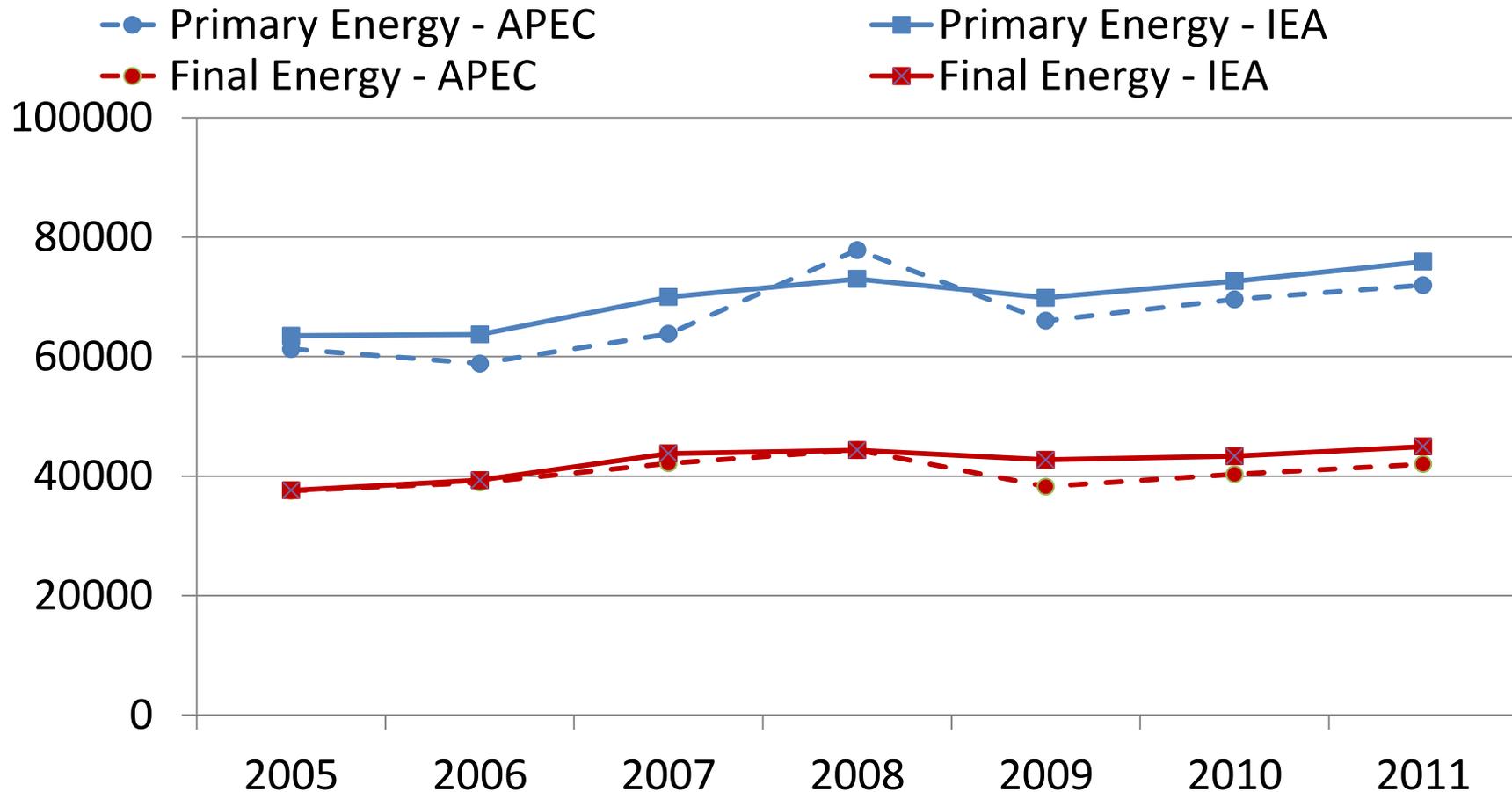
—●— Final Energy - APEC

—×— Final Energy - IEA



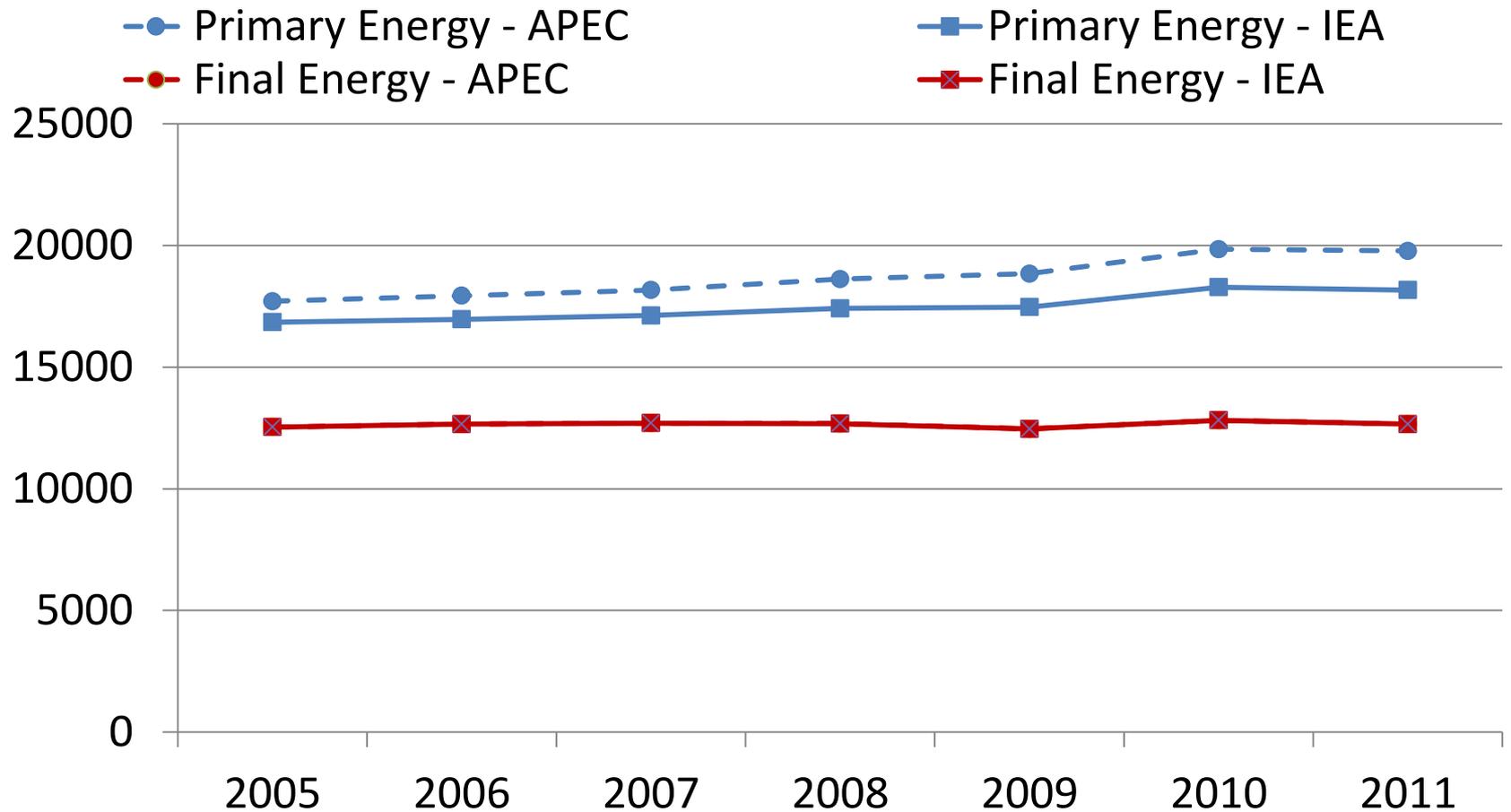
Malaysia

Data Source Comparison - Malaysia



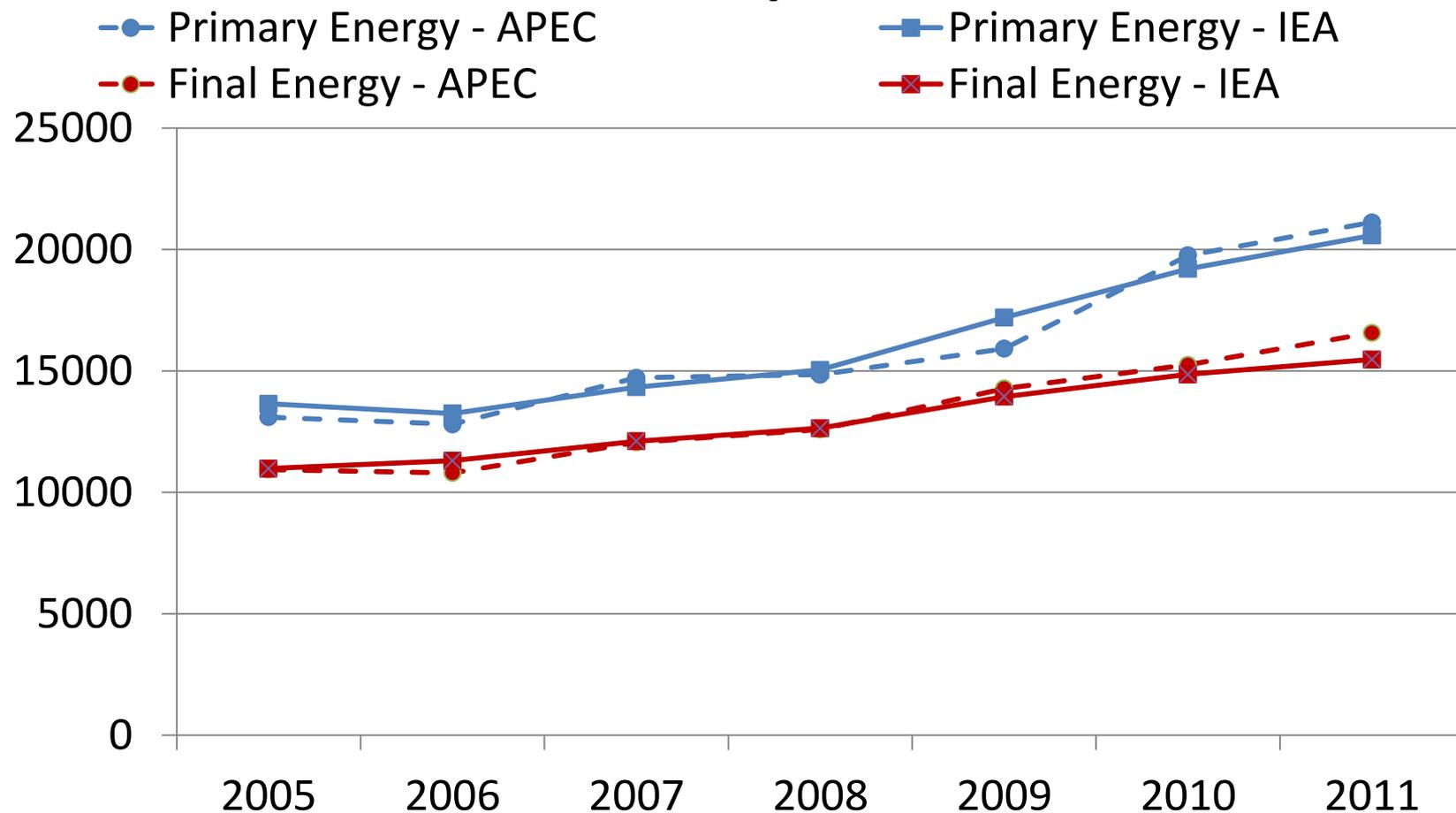
New Zealand

Data Source Comparison - New Zealand



Peru

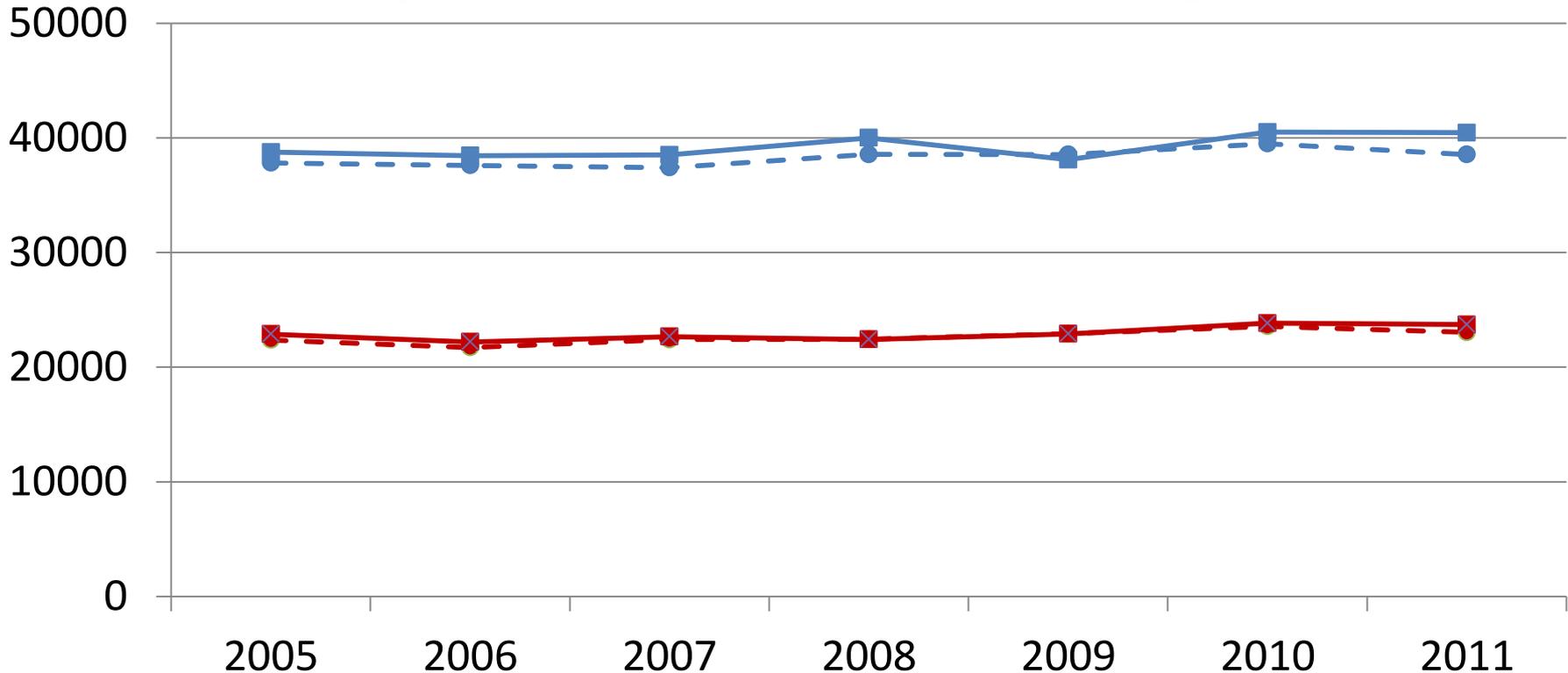
Data Source Comparison - Peru



Philippines

Data Source Comparison - Philippines

- Primary Energy - APEC
- Final Energy - APEC
- Primary Energy - IEA
- Final Energy - IEA

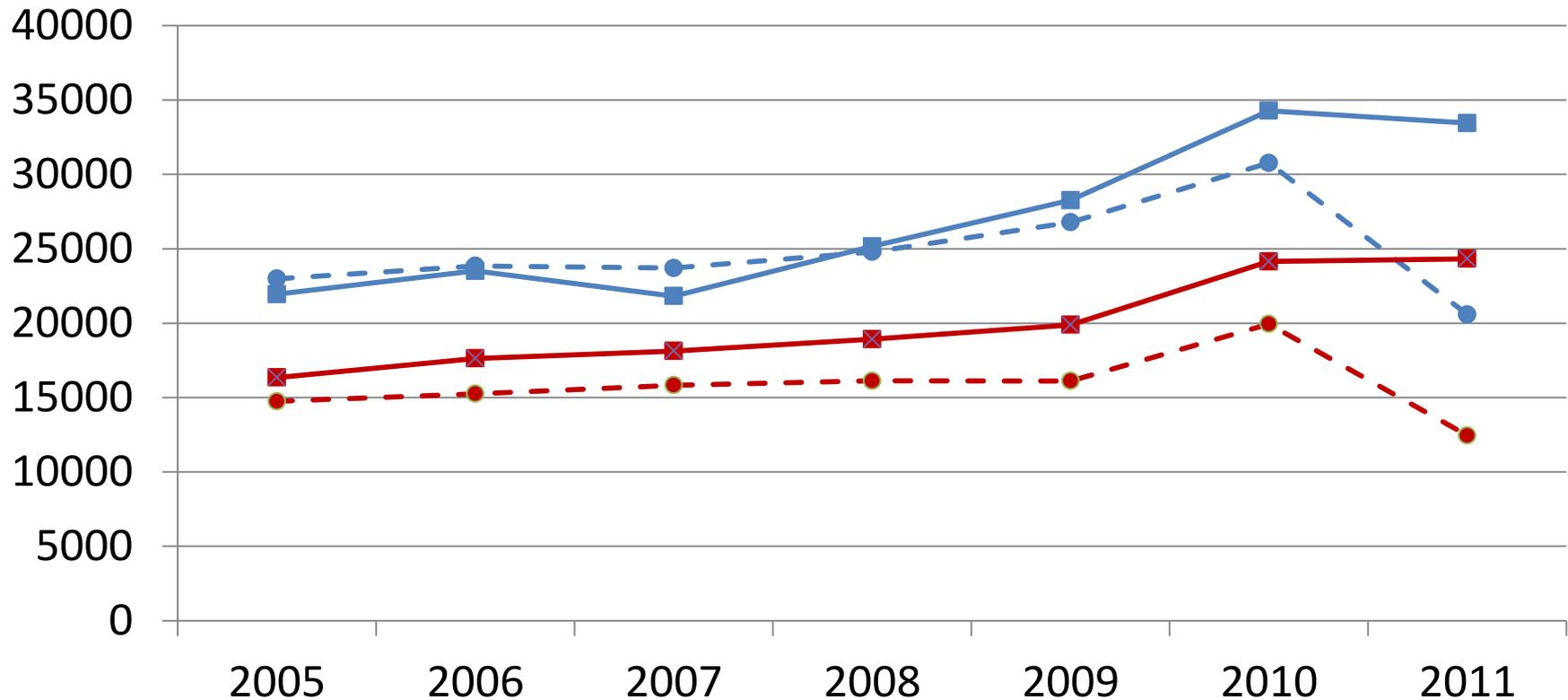


Singapore

Data Source Comparison - Singapore

● Primary Energy - APEC
● Final Energy - APEC

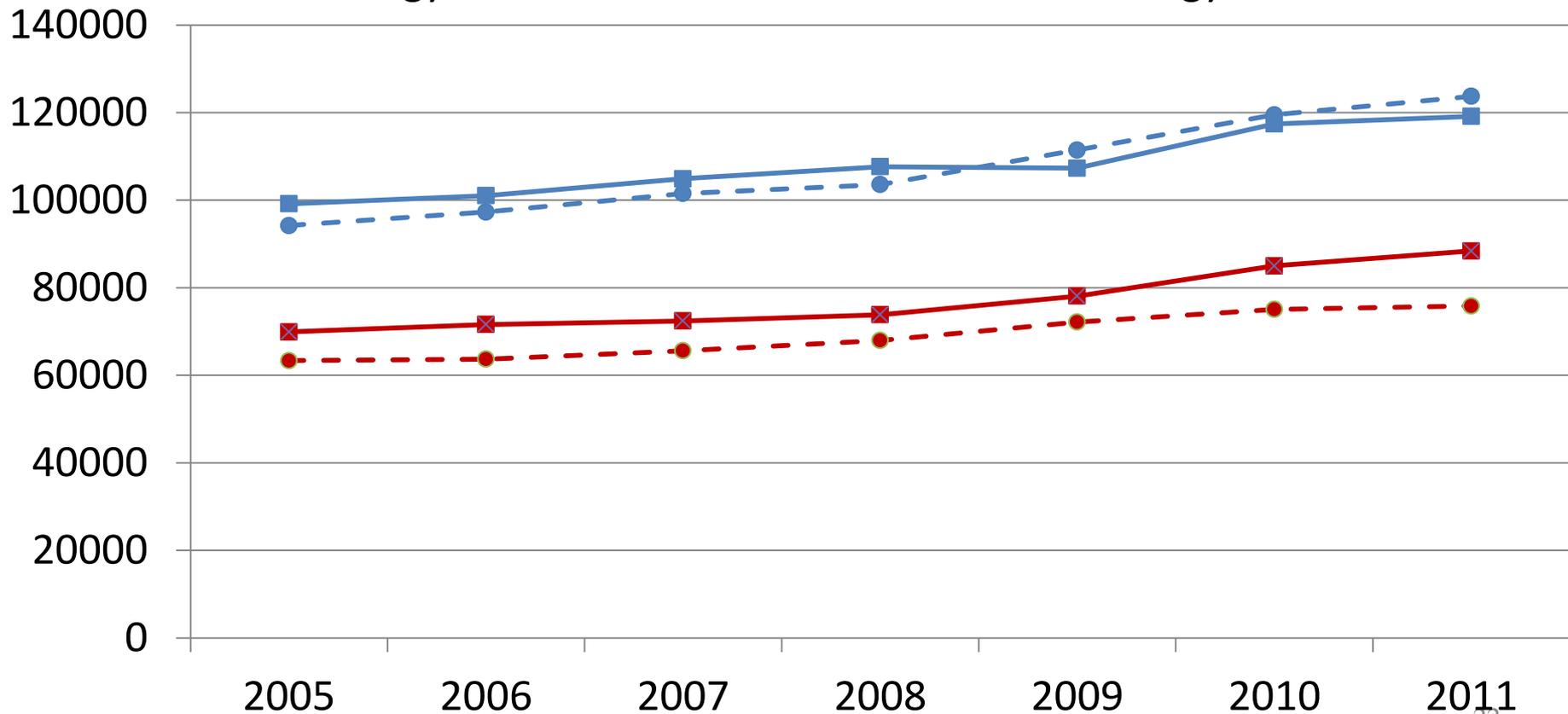
■ Primary Energy - IEA
■ Final Energy - IEA



Thailand

Data Source Comparison - Thailand

- Primary Energy - APEC
- Final Energy - APEC
- Primary Energy - IEA
- Final Energy - IEA



Concluding Thoughts

- For policymakers, it is a rather confusing situation to have two international energy databases that can give conflicting answers to basic questions such as how well APEC is progressing on its energy intensity goal
- It may be appropriate for EDMC and IEA to work together to understand the sources of the differences in their data
- Goal should be to:
 - Correct any errors in the data
 - Harmonize assumptions or, if harmonized assumptions cannot be agreed-upon, then
 - Document how the assumptions differ so data users can understand why the data differs



Thank You

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

