



## **Session 4: APERC Research Activities**

### **A. APEC Energy Overview 2011 and 2012**

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**Asia-Pacific  
Economic Cooperation**



# Outline

- Project context
- Contents of the 2011 Overview
- APEC economic profile
- APEC energy profile
- Notable energy developments
- Expected Timeframe for “Overview 2012”



## Project Context

- The project was proposed at the 11<sup>th</sup> EGEDA Meeting and approved at the 19<sup>th</sup> EWG Meeting
- The 2011 edition is the 11<sup>th</sup> in the series
- It provides energy trend analysis, policy context and notable energy developments



## Contents of the 2010 Overview

### ***Introduction***

- Key data and economic profile (2009); energy reserves

### ***Energy Supply and Consumption for 2009***

- Primary energy supply
- Final energy consumption

### ***Policy Overview***

- Energy policy goals, objectives and strategies

### ***Notable Energy Developments***

- Changes to policies, regulations and programs
- Energy projects and infrastructure development





## The Need for Further Cooperation

Member economies are strongly encouraged to:

- Suggest ways to improve the Overview
- Submit information on notable energy developments to the EWG in time for the Overview
- Continue to provide updated information during the review process



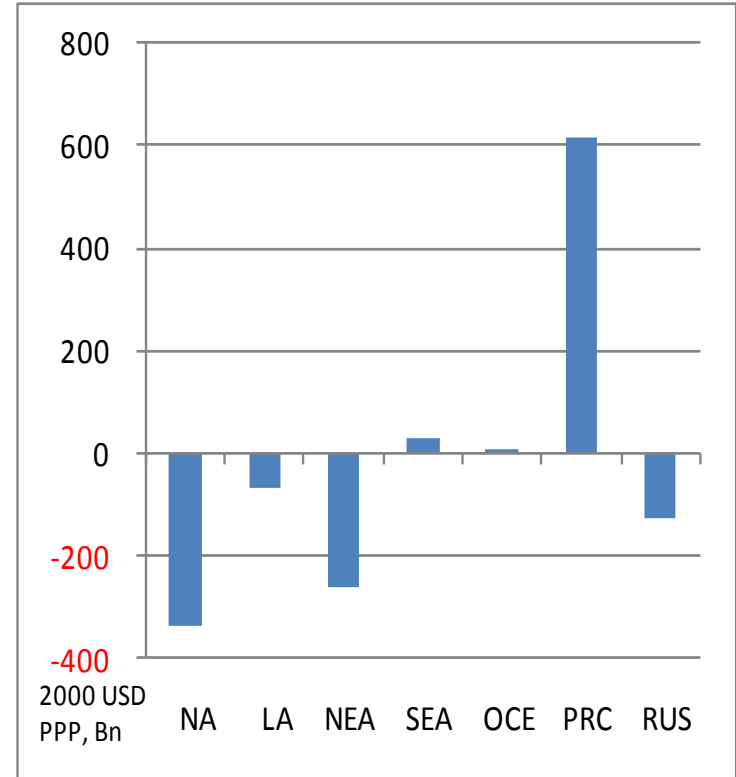
## GDP growth slowed with the global recession

### GDP by region

	2008	2009	growth
	2000 USD PPP, Billion		%
North America	12,715	12,378	-2.65
Latin America	1,488	1,421	-4.55
Northeast Asia*	5,604	5,344	-4.65
Southeast Asia	2,194	2,224	1.36
Oceania	771	781	1.29
China	6,707	7,324	9.20
Russia	1,663	1,533	-7.81
APEC	30,372	30,223	-0.49

\* In this presentation, "Northeast Asia" encompasses Japan; South Korea; Hong Kong, China; and Chinese Taipei.

### Change in GDP



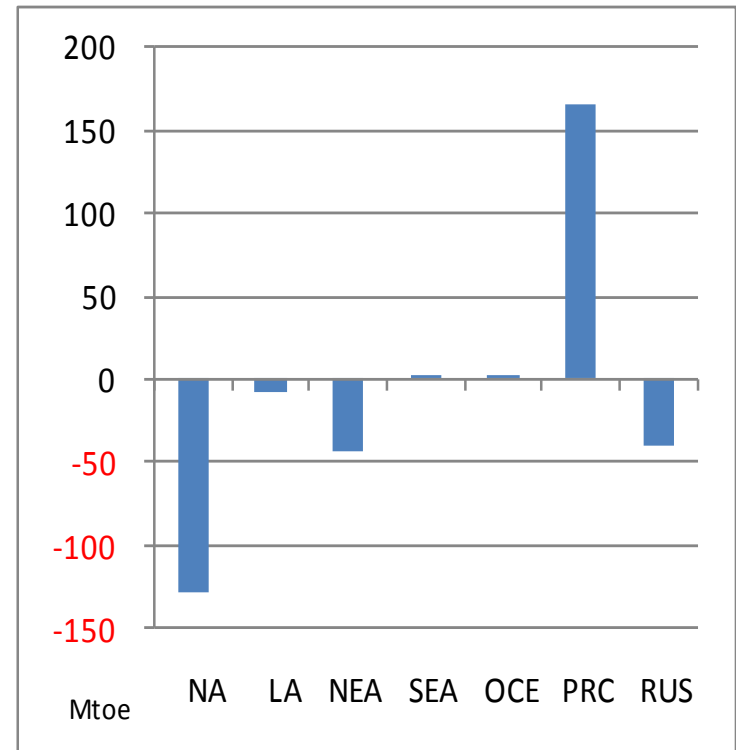


## Growth in TPES varied across APEC

### TPES by region

	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
North America	2125	2555	2,425	-5.06
Latin America	143	223	214	-3.79
Northeast Asia	584	858	815	-5.03
Southeast Asia	145	421	424	0.53
Oceania	102	146	147	1.29
China	654	1,951	2,117	8.50
Russia	877	686	646	-5.80
<b>APEC</b>	<b>4634</b>	<b>6,843</b>	<b>6,792</b>	<b>-0.74</b>

### Change in TPES



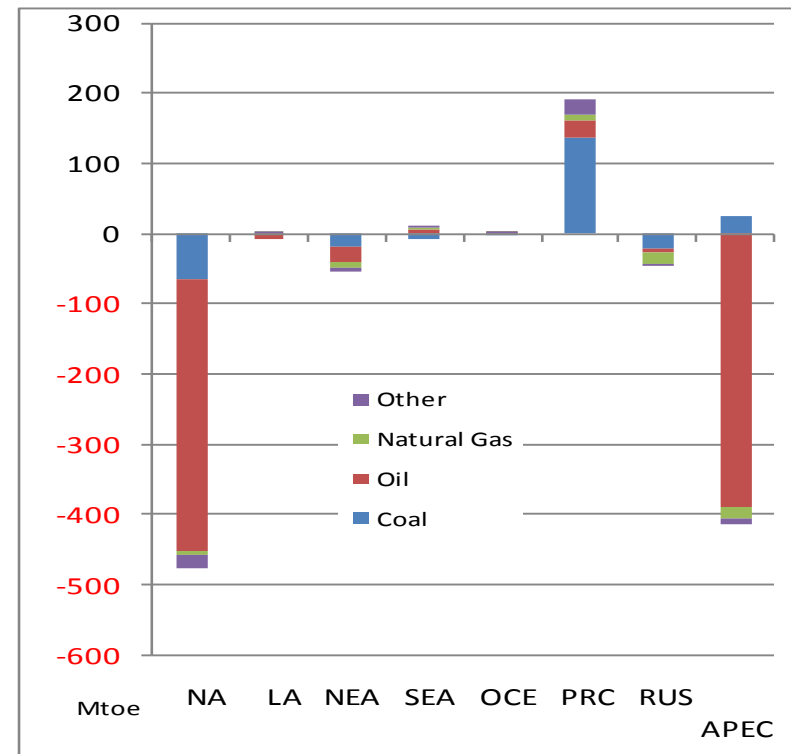


## Coal remains important to the region, but the role of gas is increasing

### TPES by energy source

	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
Coal	1,360	2,495	2,519	0.96
Oil	1,770	2,179	1,789	-17.87
Natural Gas	998	1,400	1,382	-1.26
Other	599	1,089	1,081	-0.74

### Change in TPES





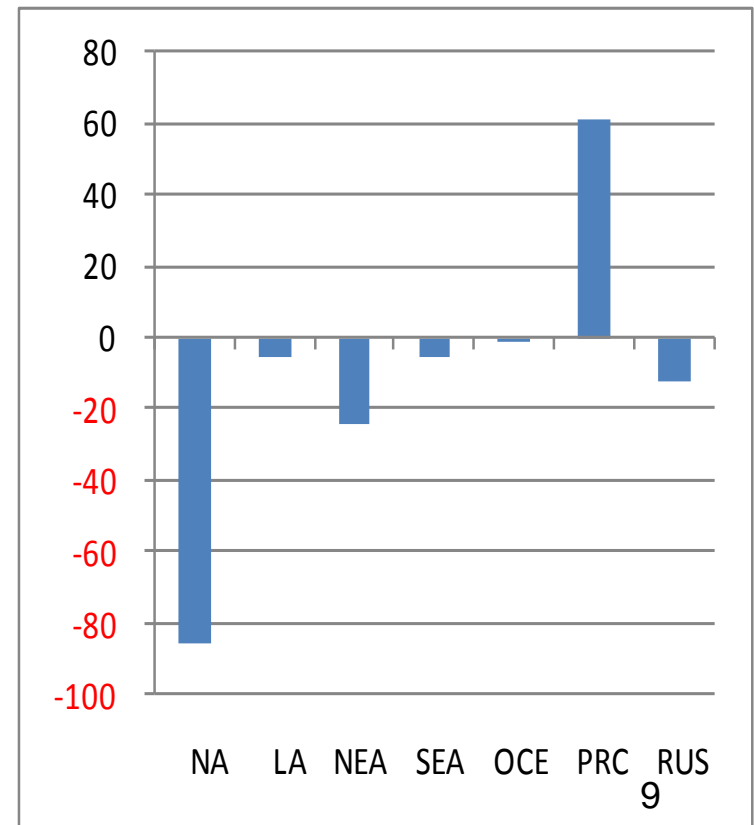


## Growth in TFEC varied across APEC

### TFEC by region

	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
North America	1,451	1,752	1,667	-4.89
Latin America	102	150	144	-3.89
Northeast Asia	406	552	528	-4.41
Southeast Asia	97	268	262	-2.19
Oceania	66	92	91	-0.89
China	490	1,219	1,280	5.00
Russia	625	436	423	2.91
<b>APEC</b>	<b>3,233</b>	<b>4,468</b>	<b>4,394</b>	<b>-1.66</b>

### Change in TFEC



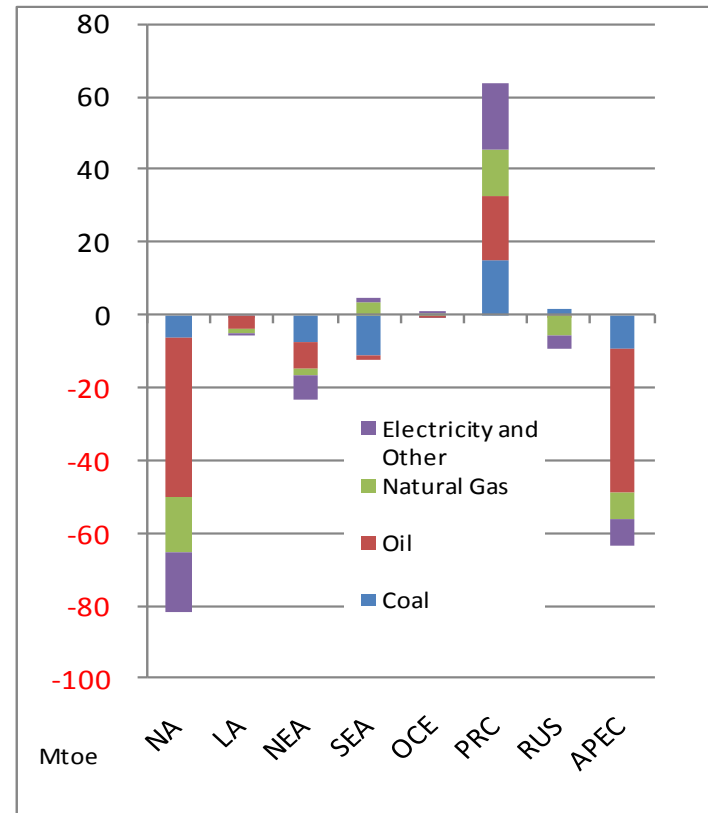


## Final energy demand for oil declined

### TFEC by energy source

	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
Coal	518	608	599	-1.51
Oil	1,385	1,923	1,884	-2.06
Natural Gas	551	746	738	-0.99
Electricity and Other	502	913	906	-0.78

### Change in TFEC





## Strong energy production growth in China and Southeast Asia

Indigenous Energy Production				
	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
North America	1928	2,117	2,085	-1.48
Latin America	210	247	236	-4.47
Northeast Asia	109	150	155	3.19
Southeast Asia	216	498	517	3.69
Oceania	175	307	316	2.81
China	706	1,917	1,897	-1.00
Russia	1,293	1,254	1,182	-5.77
<b>APEC</b>	<b>4,637</b>	<b>6,490</b>	<b>6,388</b>	<b>-1.58</b>

Net Energy Imports				
	1990	2008	2009	growth
	Mtoe			2008 - 2009 %
North America	283	491	417	-14.99
Latin America	-63	-18	-16	-10.73
Northeast Asia	492	752	698	-7.23
Southeast Asia	-51	-37	-52	41.80
Oceania	-66	-154	-160	3.95
China	-30	193	282	46.11
Russia	-413	-537	-529	-1.48
<b>APEC</b>	<b>150</b>	<b>690</b>	<b>640</b>	<b>-7.32</b>

Figures in red indicate growth in net exports



## Notable Policy Trends and Developments

The sustainable development and use of energy resources is at the forefront of energy policy in APEC:

- Energy Strategy and Policy
- Energy Efficiency and Conservation
- Environment
- Renewable Energy





# Energy Strategy and Policy

## Australia

In Dec. 2011, the updated National Energy Security Assessment (NESA) was released.

## Chile

In early 2012, the National Energy Strategy 2012-2030 was released to guide the energy sector and set its policy and objectives in the long term. Six priorities were established to accomplish this goal.

## China

In March 2011, the 12<sup>th</sup> Five-Year National Economic and Social Development Plan was released. China will rely on domestic resources, protect the environment, adjust and optimize the energy structure. The target is to increase the proportion of non-fossil fuel usage in total primary energy consumption to 11.4% in 2015 and to reduce the energy consumption per unit of GDP by 16% compared to 2010.

## New Zealand

In August 2012, the New Zealand Energy Strategy 2011-21: Developing Our Energy Potential was released to replace the 2007 New Zealand Energy Strategy. The new energy strategy focuses on four priorities: diverse resource development, environmental responsibility, the efficient use of energy and secure and affordable energy.

## Peru

Energy Policy of Peru 2010-2040 aims to meet its energy demand in a safe, sustainable, reliable and efficient way with nine objectives.

## Singapore

Five key strategies: diversify energy supplies, enhance infrastructure and systems, improve energy efficiency, strengthen the green economy and pricing energy right.



# Energy Efficiency and Conservation

## Canada

The 10<sup>th</sup> Amendment to the Energy Efficiency Regulations includes minimum energy performance standards for many appliances.

## Chile

Comparative product-labelling program: seven efficiency categories that are applied to 12 product lines.

## Hong Kong, China

Voluntary Energy Efficiency Labelling Scheme that covers 18 types of household and office appliances.

## Korea

Aims to achieve a 4.6% annual energy efficiency improvement by 2030. To phase out incandescent lamps by 2030

## Mexico

Up to mid-2011, energy efficiency projects for household appliances replacement, integral energy services and sustainable light was financed.

## New Zealand

The New Zealand Energy Efficiency and Conservation Strategy 2011-16 was released to continue to improve its energy intensity by 1.3% per year to 2016.

## Peru

The Referential Plan for the Efficient use of Energy 2009-2018 aims to reduce energy consumption by 15% from 2007 levels by 2018.

## Russia

In Jan. 2011, Federal Targeted Program on Energy Saving and Energy Efficiency Improvement to 2020 was released.

## Thailand

To increase the energy conservation target set out in the Energy Conservation Program to 20%, focusing on increasing energy savings in the industry and transport sectors.



# Environment

## Australia

The Clean Energy Act 2011 sets up a mechanism to deal with climate change by encouraging the use of clean energy, and reaffirms the government's commitment to the long-term goal of reducing Australia's net greenhouse gas emissions to 80% below 2000 level by 2050.

## Canada

To continue to support the G8 partners' goal of reducing global emissions by at least 50% by 2050, as well as the goal of developed economies reducing emissions of greenhouse gases in aggregate by 80% or more by 2050.

## China

A goal of action to reduce per-unit GDP GHGs in 2020 by 40-50% compared to that of 2005.

## Hong Kong, China

Climate Change Strategy and Action Agenda in 2010 set a target to reduce the carbon intensity level by 50%-60% by 2020 compared with 2005.

## Indonesia

The Mid-Term Development Plan 2010-2014 and the Indonesia Climate Change Trust Fund (ICCTF).

## Korea

The National Strategy for Green Growth is to build a comprehensive, long-term (2009-2050) master plan to address the challenges caused by climate change and resource depletion. The strategy consists of three main objectives and 10 policy directions.

## New Zealand

To commit to reducing GHG emissions by between 10% and 20% below 1990 levels by 2020, if there is a comprehensive global agreement and certain conditions are met.





# Renewable Energy

## Australia

In Jan. 2011, the enhanced Renewable Energy Target (RET) includes the Small-scale Renewable Energy Scheme (SRES) and the Large-scale Renewable Energy Target (LRET).

## Chile

The Law on Non-Conventional Renewable Energy requires 5% of the total production in new energy contracts to come from non-conventional sources.

## China

In the 12<sup>th</sup> Five-Year Plan (2011-15), 120 mil. kW of hydropower plants and more than 70 mil. kW of wind power plants will start construction.

## Hong Kong, China

Plans to install a total of about 100 wind turbines offshore (560 mil. kW). The wind farms are expected to meet 1-2% of the total demand for electricity by 2020.

## Malaysia

In Dec. 2011, the Feed-in Tariff (FiT) for power generated from renewable energy resources was introduced.

## New Zealand

Retains the target of 90% of electricity to be generated from renewable sources by 2025.

## Singapore

Focuses on biofuels and solar power. Electricity-generating incineration plants make use of renewable waste-to-energy. Test-bedding efforts seek to improve the performance of solar PV.

## Chinese Taipei

The target: Electricity from renewable resources will account for 8% of total electricity generation by 2025. Photovoltaic (PV), wind power and bio-energy have been promoted.





## Expected Timeframe for “Overview 2012”

- First drafts to be completed by early December 2012
- Drafts to come back from editors in mid-December 2012
- First circulation to member economies in mid-January 2013
- Comments from member economies to be received by late January 2013
- Second round of editing if necessary in early February 2013
- Receive the final comments (if any) from member economies by late February 2013
- Publish PDF-version of “Overview 2011” available on APERC’s website in March 2013



**Thank You**

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

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