



# Promoting Greater Role of Low Carbon Energy Technologies in ASEAN

**“Renewable Energy and Sustainable Development”**

**Takato OJIMI**

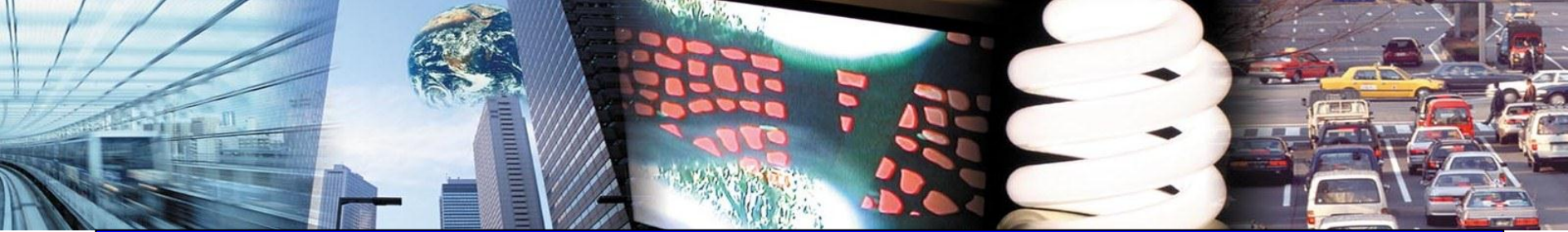
The President of APERC

ASEAN Energy Business Forum

25<sup>th</sup> September 2013



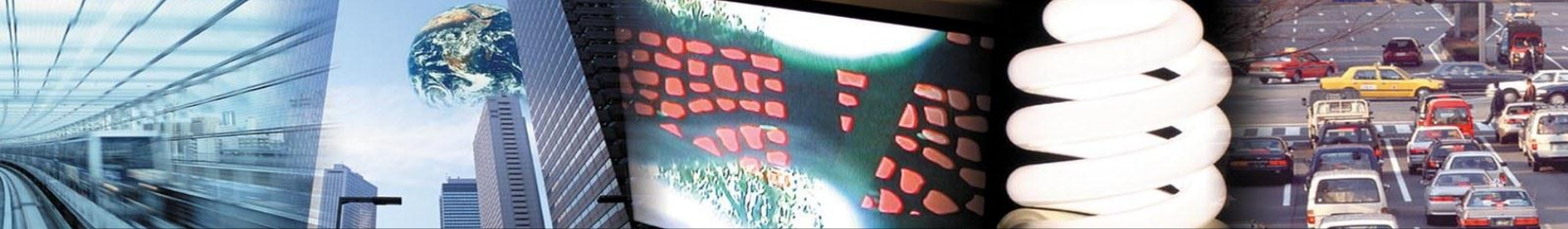
Asia-Pacific  
Economic Cooperation



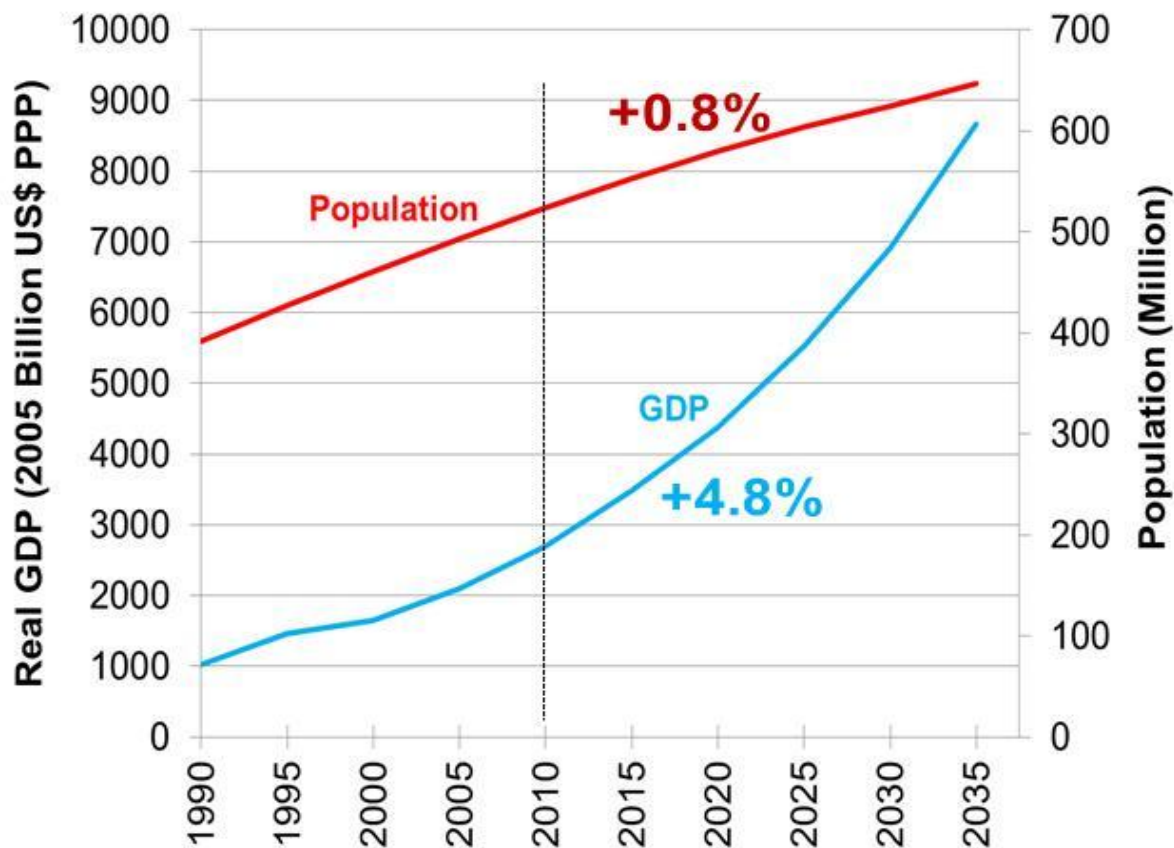
## The APEC Economies



- Southeast Asian APEC economies:
- Brunei
  - Darussalam
  - Indonesia
  - Malaysia
  - Philippines
  - Singapore
  - Thailand
  - Vietnam

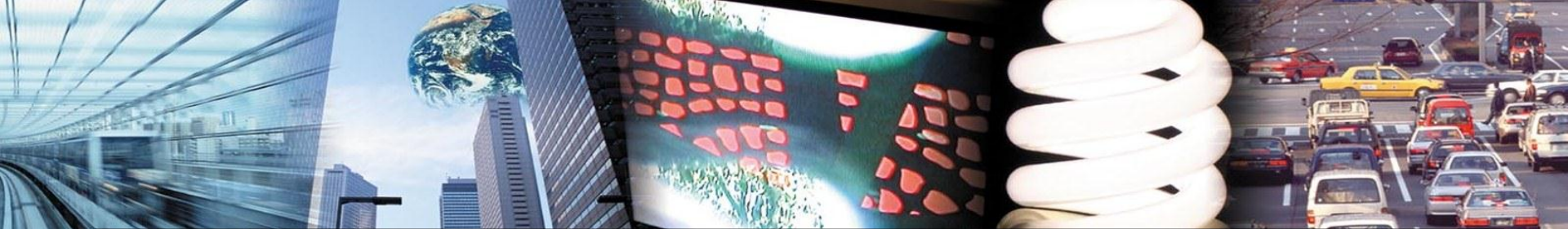


# Southeast Asia: A Region of Rapid Growth



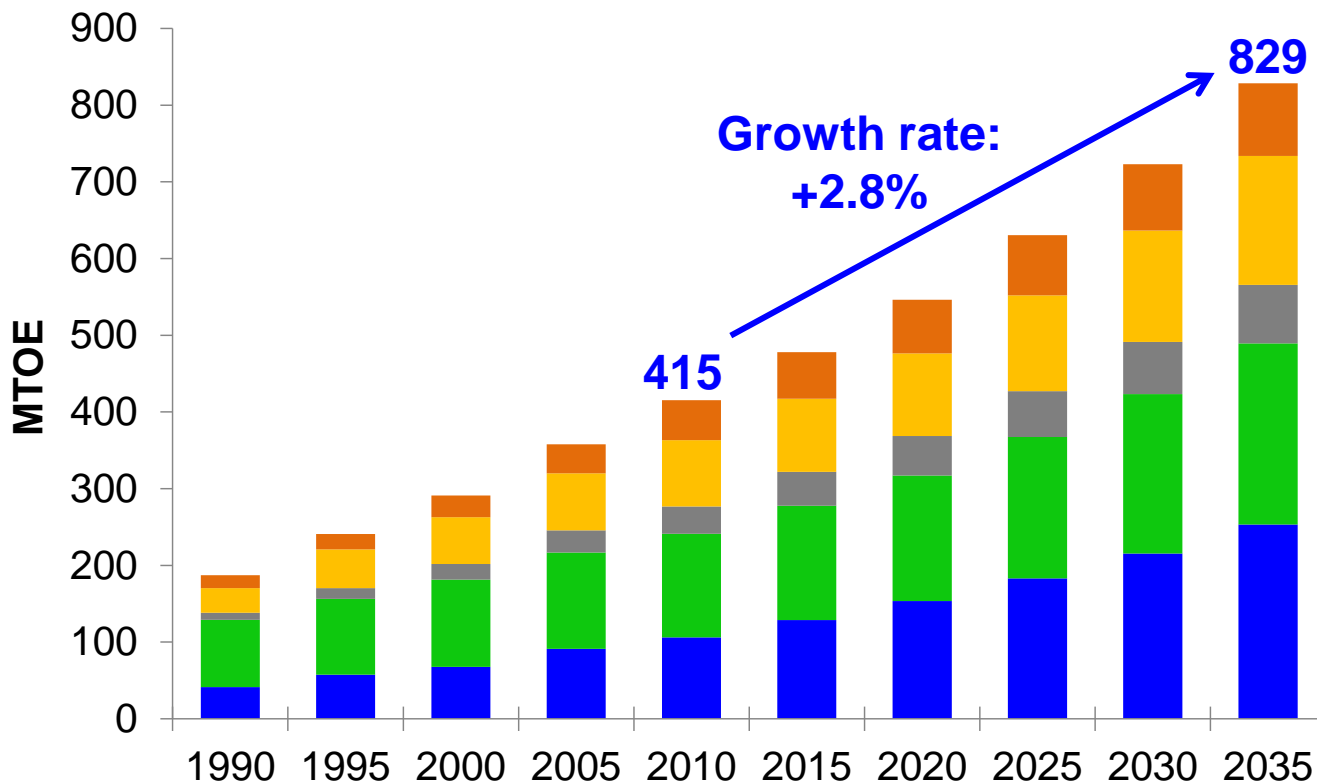
- Significant population growth
- Rapid economic growth

Source: APERC, *APEC Energy Demand and Supply Outlook 5<sup>th</sup> Edition*, 2013

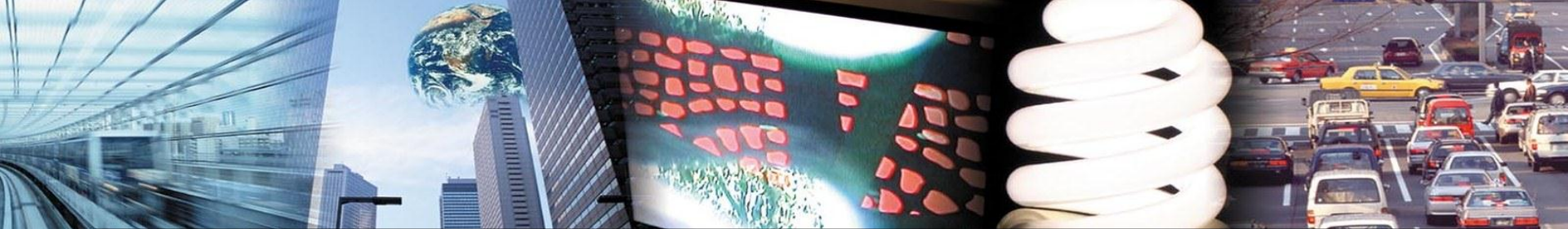


# Economic Growth Brings Southeast Asia Energy Demand Growth

■ Industry ■ Other ■ Non-Energy ■ Domestic Transport ■ International Transport

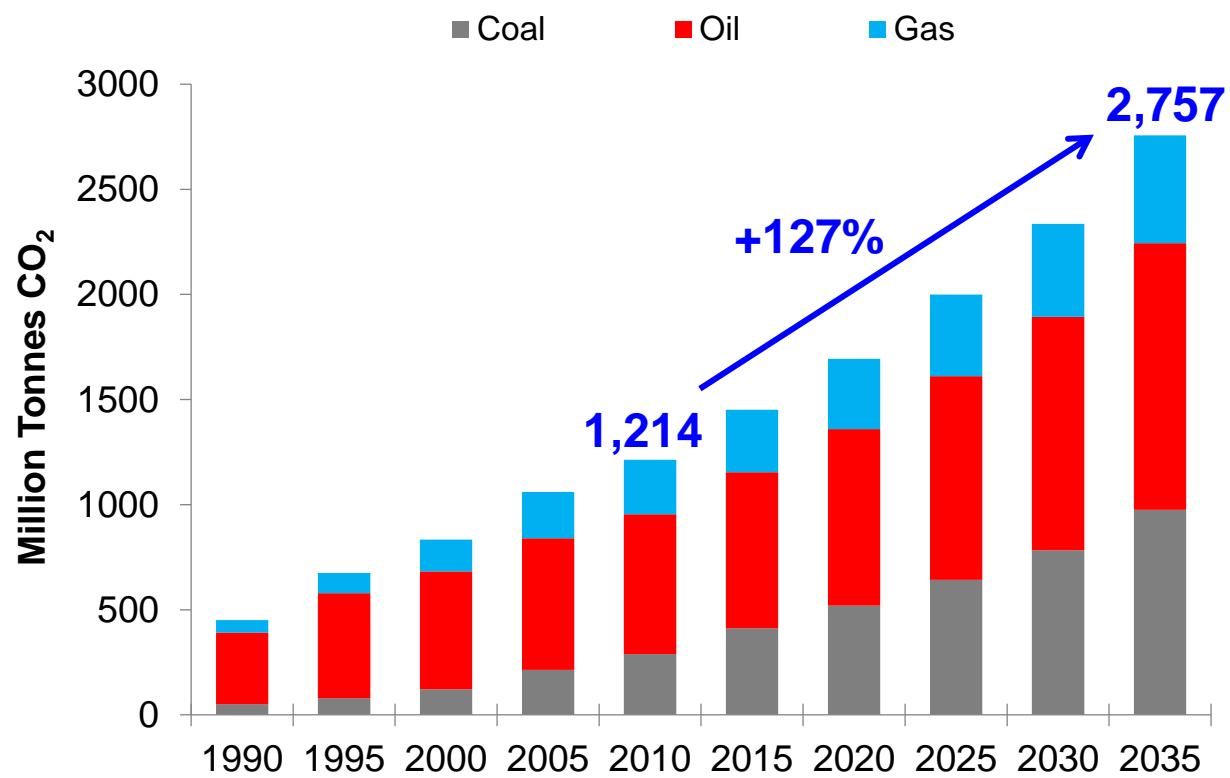


Source: APERC, *APEC Energy Demand and Supply Outlook 5<sup>th</sup> Edition*, 2013



# But Growing Energy Demand Will Bring Growing Southeast Asian CO<sub>2</sub> Emissions

## Southeast Asian CO<sub>2</sub> Emissions from Fossil Fuel Combustion



Source: APERC, *APEC Energy Demand and Supply Outlook 5<sup>th</sup> Edition*, 2013



## Promoting Low Carbon Energy Supply – What Can Southeast Asia Do?



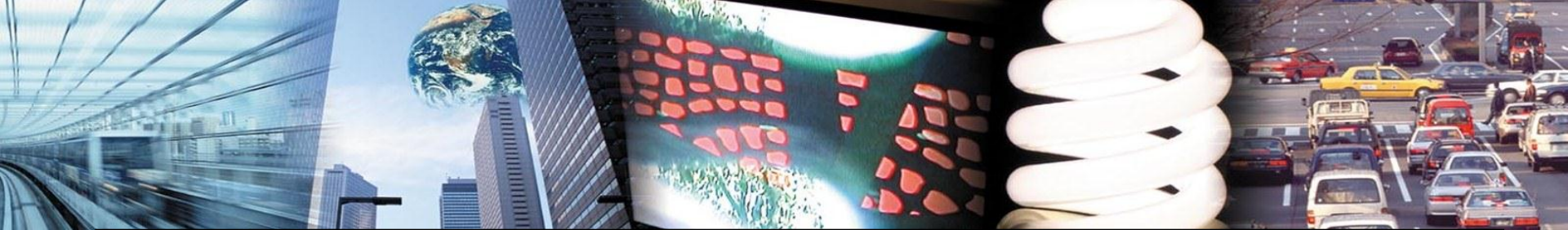
- A. Rationalize and phase out fossil fuel subsidies – to reduce fossil fuel demand *in the short term.*
- B. Replace coal with gas – to reduce CO<sub>2</sub> emissions *in the medium term.*
- C. Become a world leader in near-zero emission energy technology – to reduce CO<sub>2</sub> emissions *in the long term.*



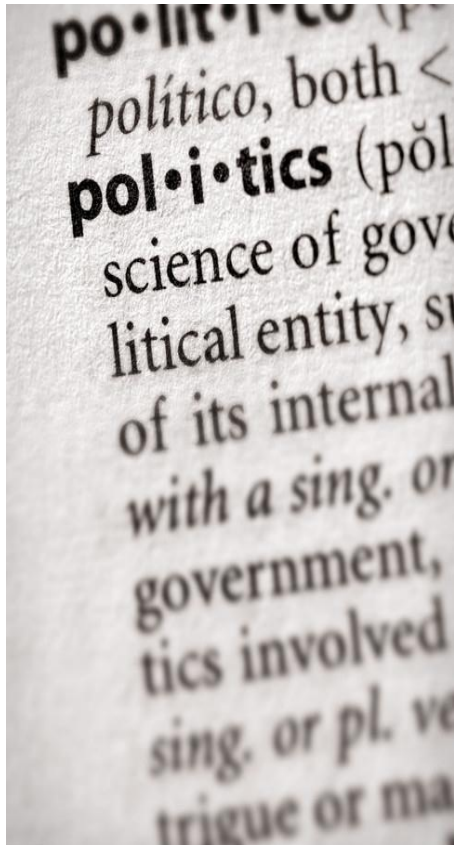
## A. Fossil Fuel Subsidies – Why are they harmful? –



1. They encourage waste.
2. They have huge costs to the economy and to government budgets.
3. They mostly help the middle class and the wealthy—little goes to help the poor.
4. They provide an incentive for smuggling and corruption.
5. They discourage investment in low-carbon energy supply.

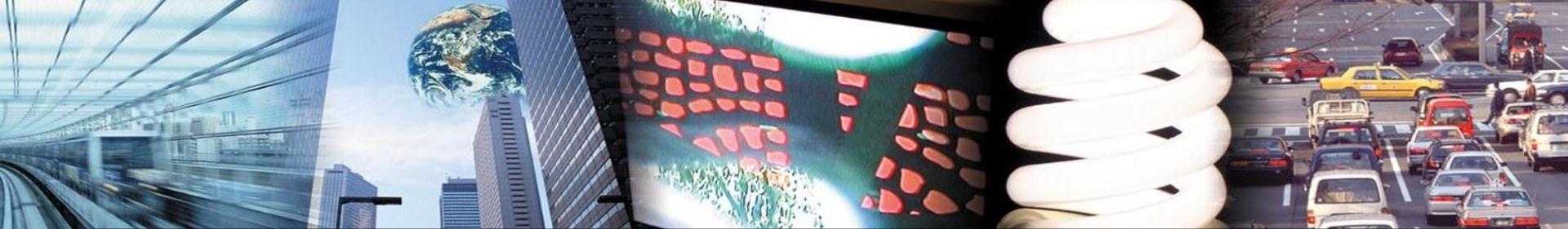


## A. Fossil Fuel Subsidies – Dealing with Political Reality –

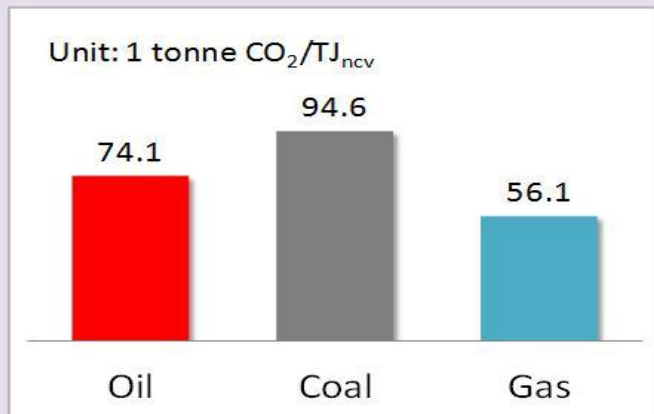


1. Educate, educate, educate....
2. Link rationalizing subsidies to popular things the government will be able to afford only if the subsidies are ended, such as:
  - Tax cuts
  - Cash payments
  - Improving the quality of specific government services
3. Make sure those who are truly in need have access

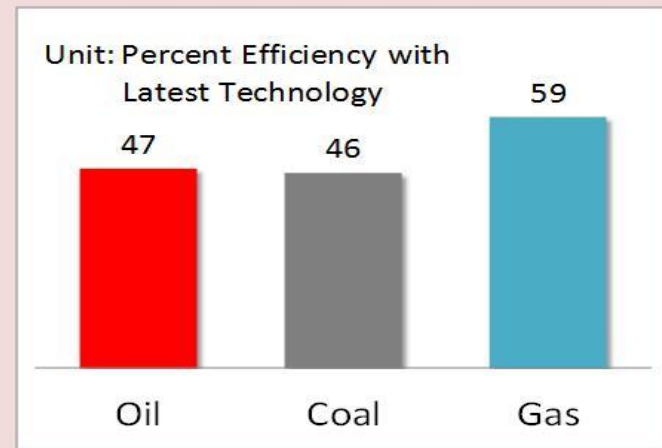




## B. Replacing Coal with Gas – What Are the Benefits? –



Gas combustion **produces less**  
**CO<sub>2</sub>** per unit of heat



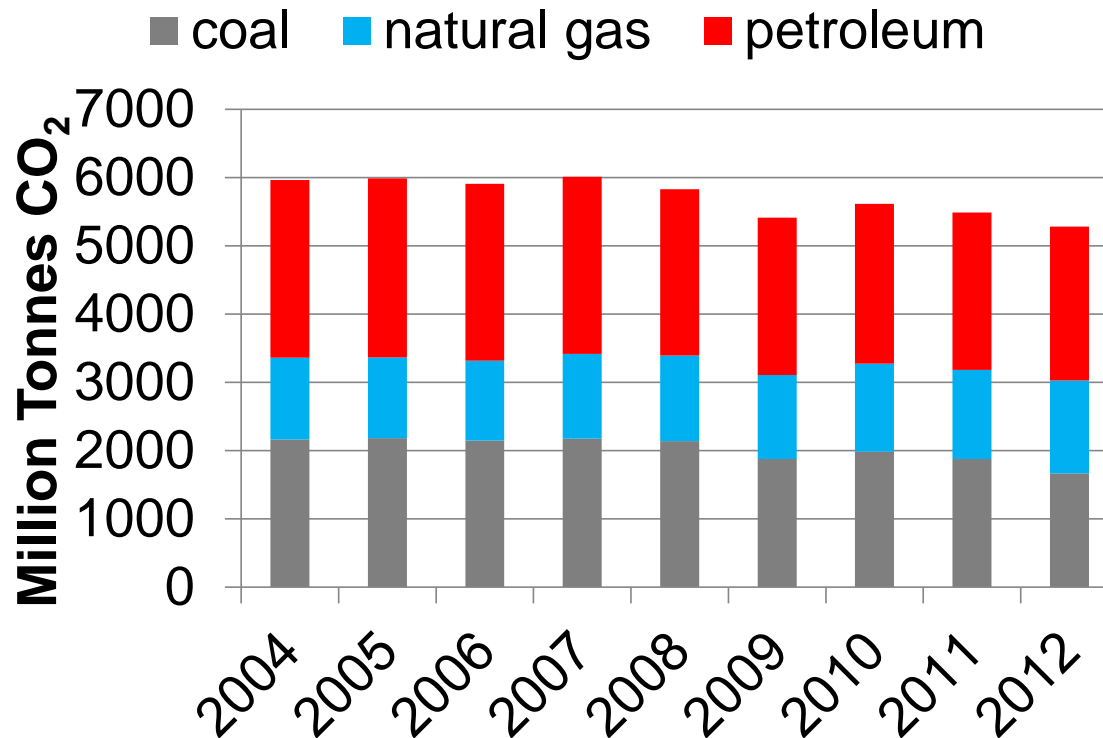
Gas power plants are **more efficient**

- When efficiently burned:
  - ✓ Gas produces much **less local air pollution** than coal
  - ✓ Gas production is typically **less damaging to land and water resources**
- Gas electricity generation can be rapidly cycled on and off,  
→ **nicely complements wind and solar generation**



## B. Replacing Coal with Gas – The Impacts –

### United States CO<sub>2</sub> Emissions from Fossil Fuel Combustion



Source: United States Energy Information Administration,  
<http://www.eia.gov/todayinenergy/detail.cfm?id=10691>



## B. Replacing Coal with Gas – The Resources Worldwide –

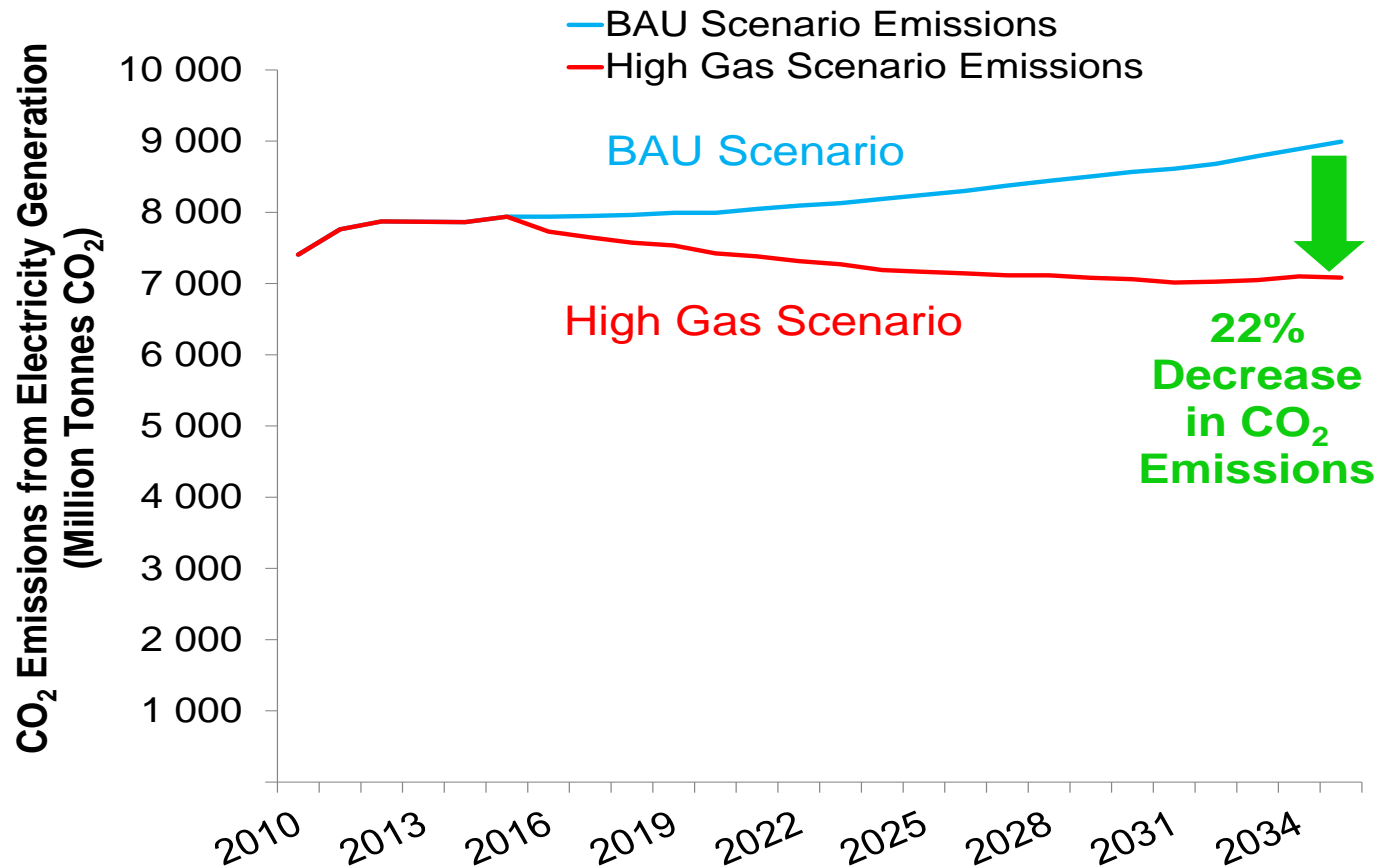
APEC Economy	Technically Recoverable Resources (MTOE)			2009 Production (MTOE)	Years of Production
	Conventional Gas	Shale Gas	Conventional+ Shale Gas		
<b>United States</b>	30750	21550	52300	515	102
<b>Canada</b>	8650	9700	18350	140	131
<b>Mexico</b>	2375	17025	19400	45	431
<b>Russia</b>	86125	N/A	86125	475	181
<b>China</b>	5225	31875	37100	73	512
<b>Australia</b>	5700	9900	15600	43	326
<b>Chile</b>	87	1600	1687	1	>1600

Sources: Conventional Gas :—MIT, The Future of Natural Gas, 2011

Shale Gas :— USEIA, World Shale Gas Resources, 2011

Production:- BP Statistical Review of World Energy 2011

## B. Replacing Coal with Gas – The APEC-Wide Impacts –

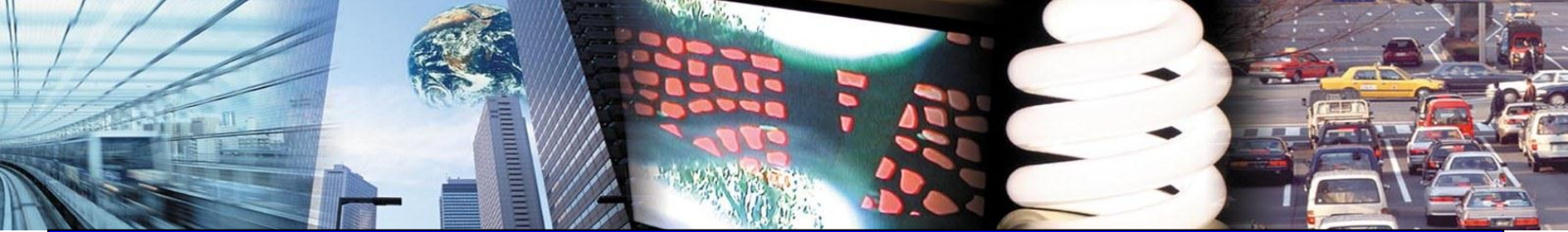




## B. Replacing Coal with Gas – Some Potential Constraints? –



1. Policies requiring a domestic price of gas below market levels
2. Policies restricting the export of gas
3. Policies granting a monopoly on gas development to certain domestic firms
4. Slow and cumbersome regulatory approvals and land access processes for gas producers

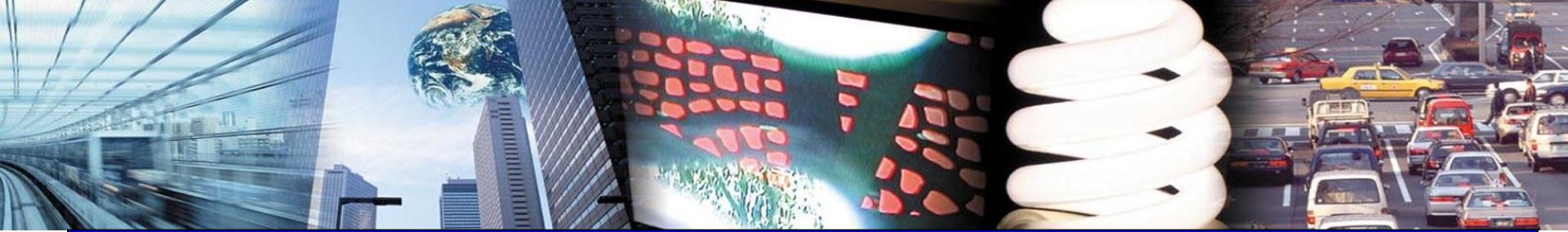


## C. Become a World Leader in Near-Zero Emission Energy Technology – Endowment and Opportunity –



Southeast Asia already has the raw materials:

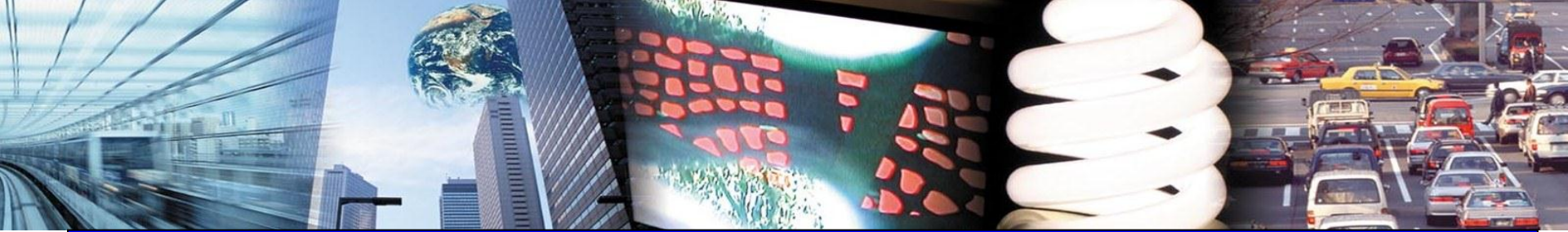
- Educated people
- Technological leadership
- Renewable resources
  - Solar PV, Geothermal, Ocean, Wind, etc.



## **C. Become a World Leader in Near-Zero Emission Energy Technology – Labo into real World –**



- Feed-In Tariffs (FIT)
- Renewable Portfolio Standards (RPS)
- Emission pricing
  - over the long term
  - politically difficult
  - technology leader

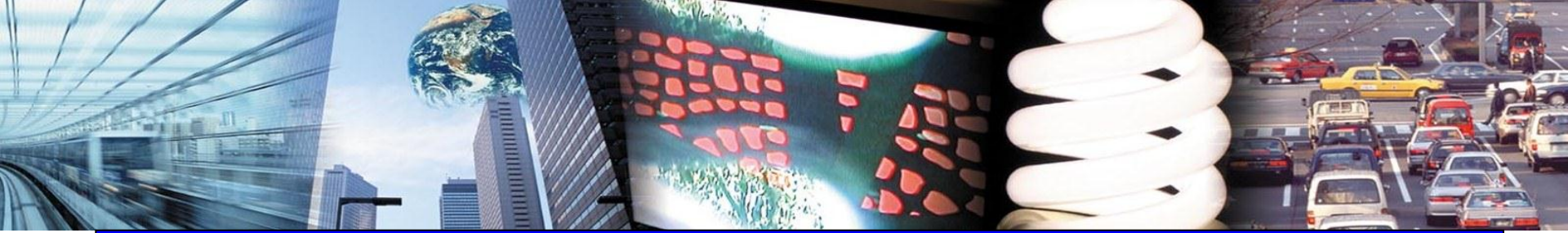


## C. Become a World Leader in Near-Zero Emission Energy Technology – Some Suggestions –



- Investment in energy technology education, research, and development
- International cooperation, such as at the APEC;
  - PRLCE (Peer Review of Low Carbon Energy Policy)
  - LCMT (Low Carbon Model Town)

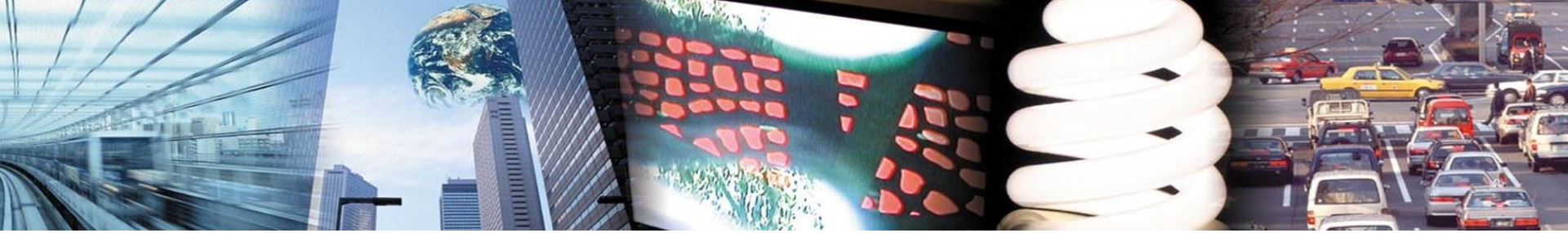




# Conclusions



- **Policies to promote low-carbon energy supply are sensible, affordable, and could make Southeast Asia a world leader in near-zero emission energy technology.**
- **Gaining political acceptance is the main challenge.**
- **But with the right efforts to educate stakeholders and the public, it can be done.**



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