



Clean, Renewable Energy and Sustainability

“Renewable Energy and Sustainable Development”

Takato OJIMI

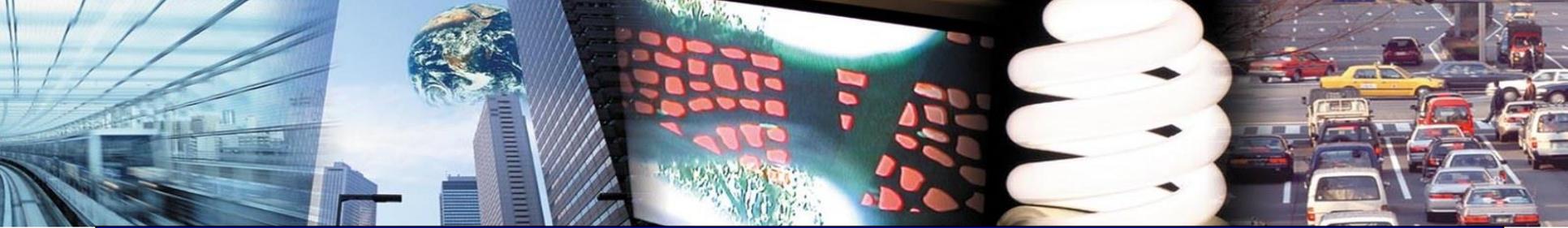
The President of APERC

Asia Pacific Conference on Clean, Renewable
and Sustainable Use of Energy

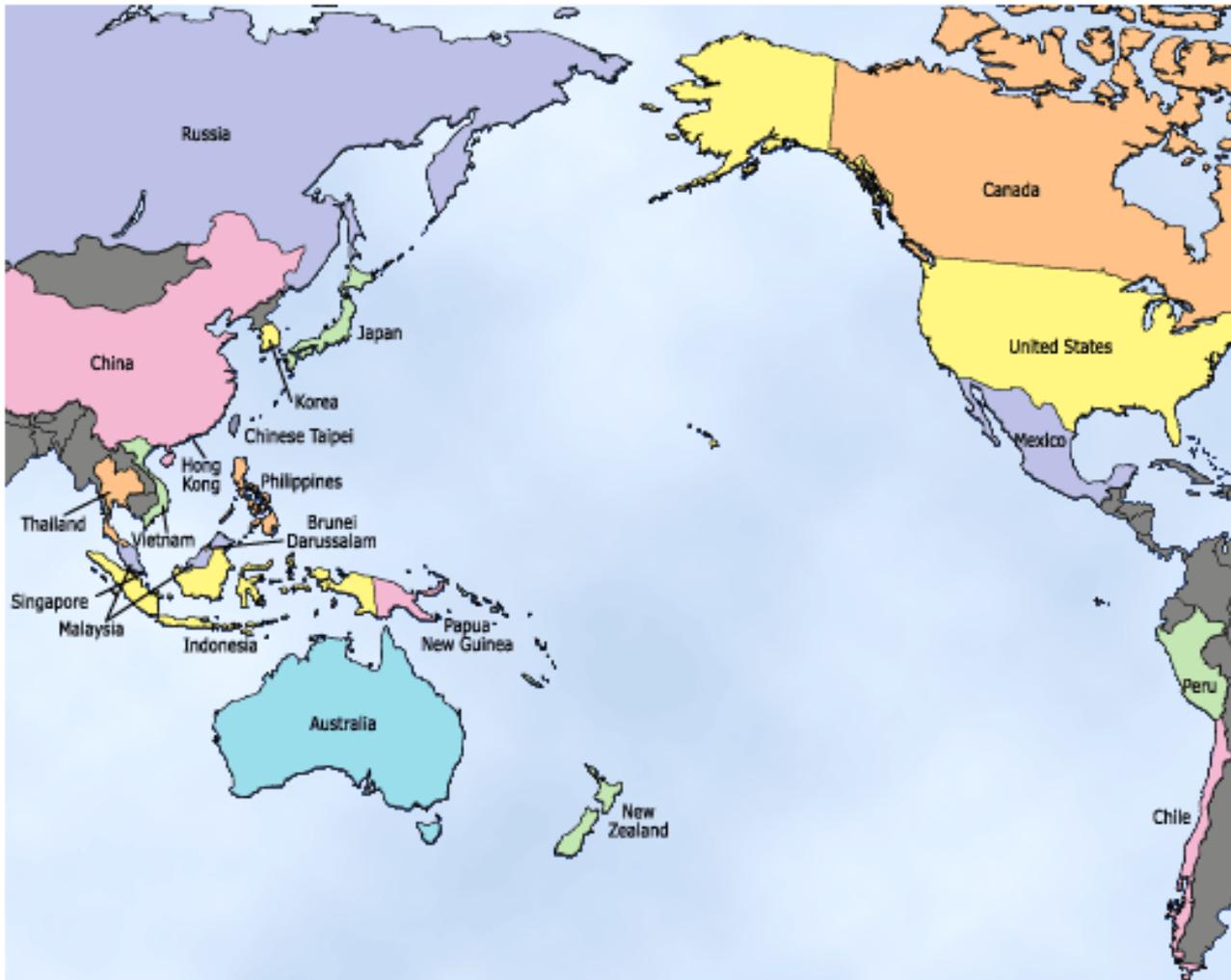
1st October 2013



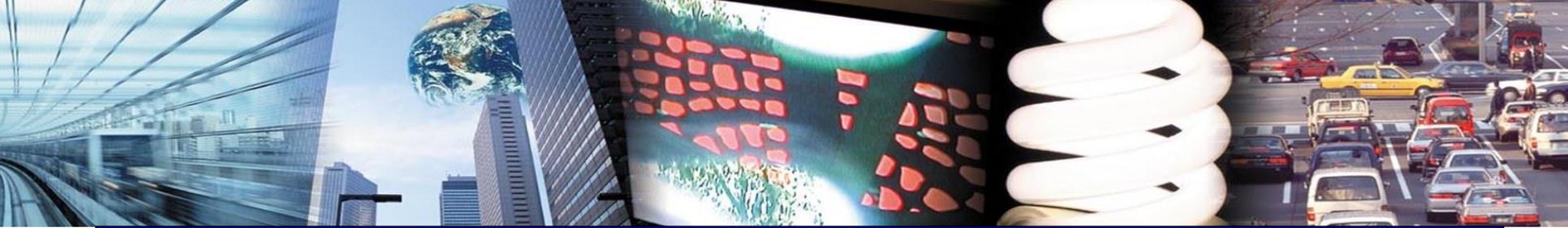
Asia-Pacific
Economic Cooperation



The 21 APEC Economies



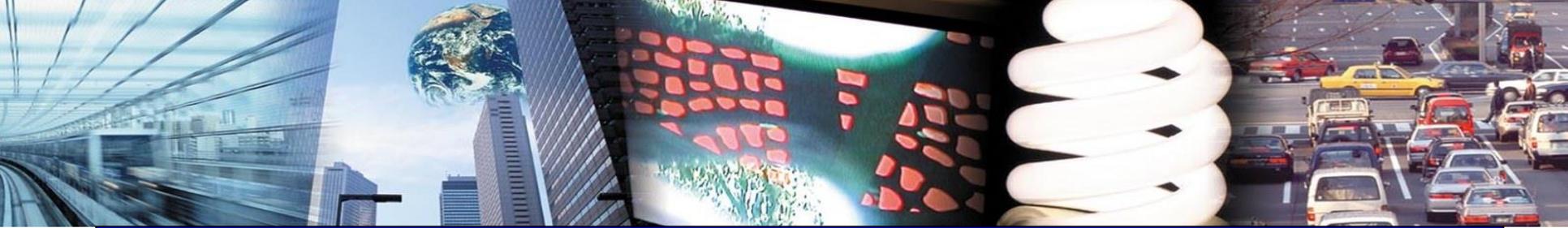
- APEC
21 Economies
- ASEAN
APEC
7 Economies
- Asia Pacific
???



Promoting Low Carbon Energy Supply – What Can We Do? –



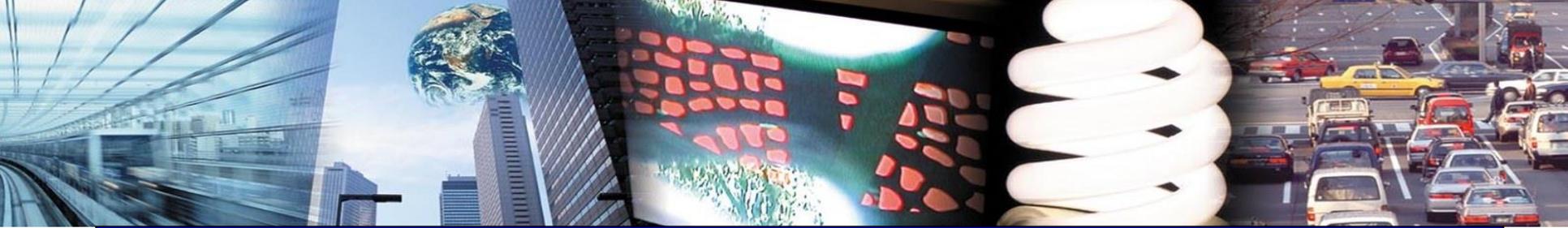
- A. Rationalize and phase out fossil fuel subsidies – to reduce fossil fuel demand ***in the short term.***
- B. Replace coal with gas – to reduce CO₂ emissions ***in the medium term.***
- C. Become a world leader in near-zero emission energy technology – to reduce CO₂ emissions ***in the long term.***



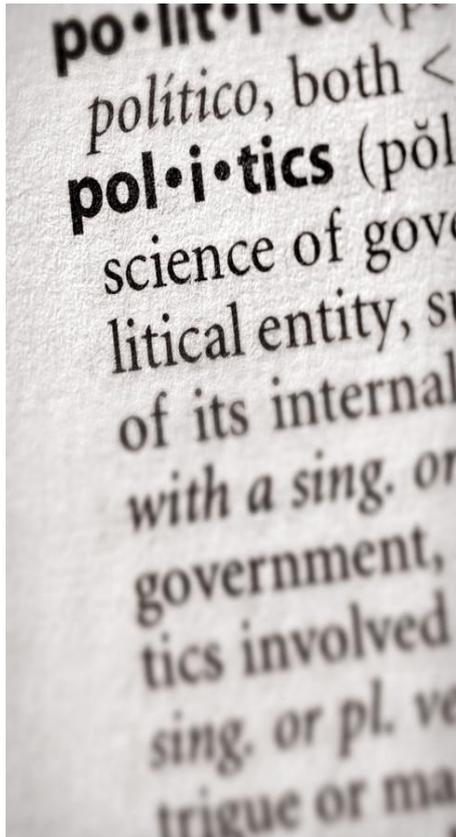
A. Fossil Fuel Subsidies – Why are they harmful? –



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.



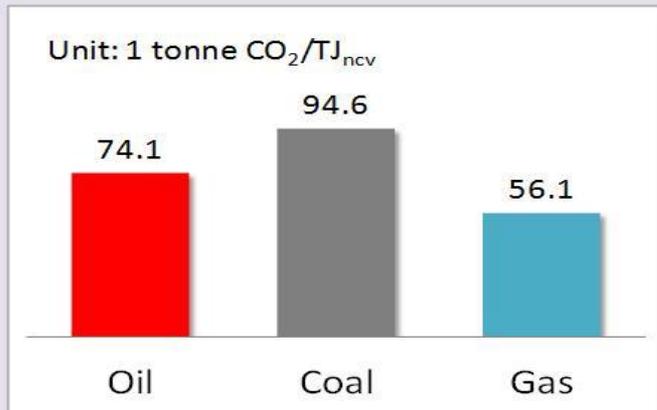
A. Fossil Fuel Subsidies – Dealing with Political Reality –



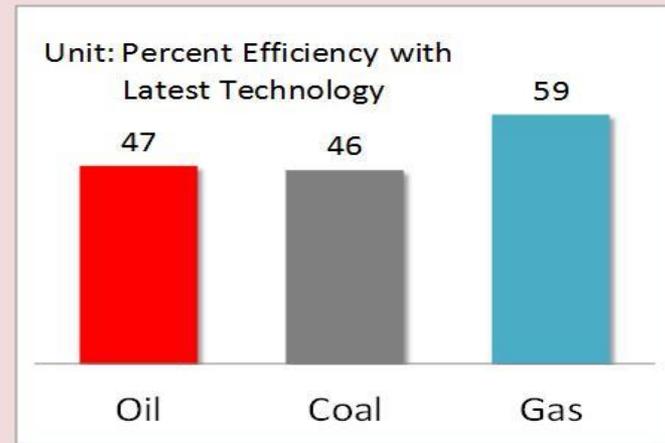
1. Educate, educate, educate....
2. Link rationalizing subsidies to popular things the government will be able to afford only if the subsidies are ended, such as:
 - Tax cuts
 - Cash payments
 - Improving the quality of specific government services
3. Make sure those who are truly in need have access



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

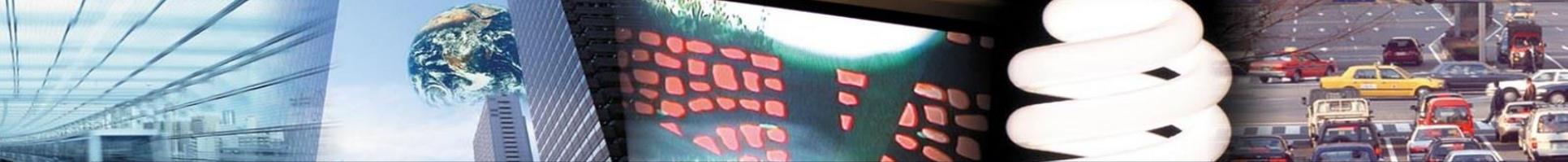


Gas combustion **produces less**
CO₂ per unit of heat



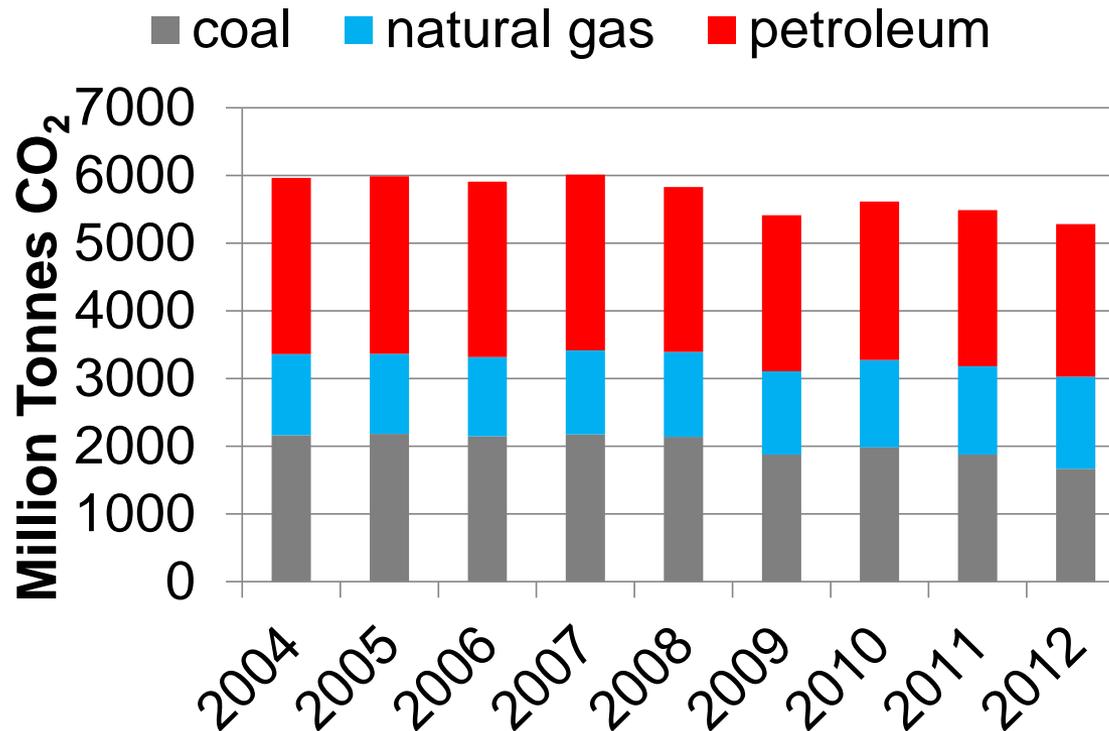
Gas power plants are **more efficient**

- 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**

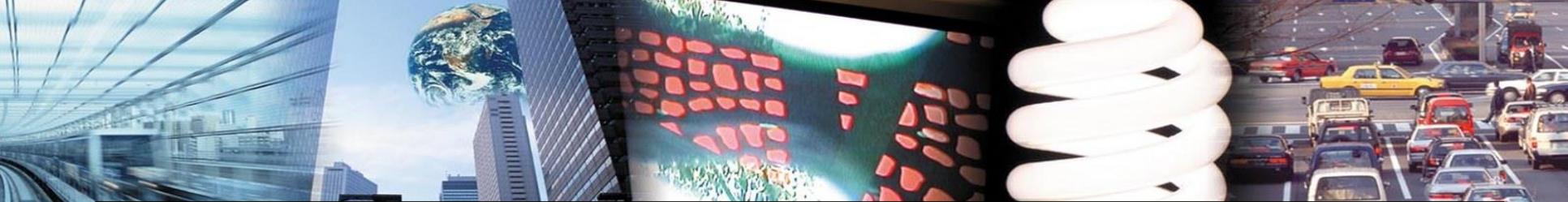


B. Replacing Coal with Gas – The Impacts –

United States CO₂ Emissions from Fossil Fuel Combustion



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

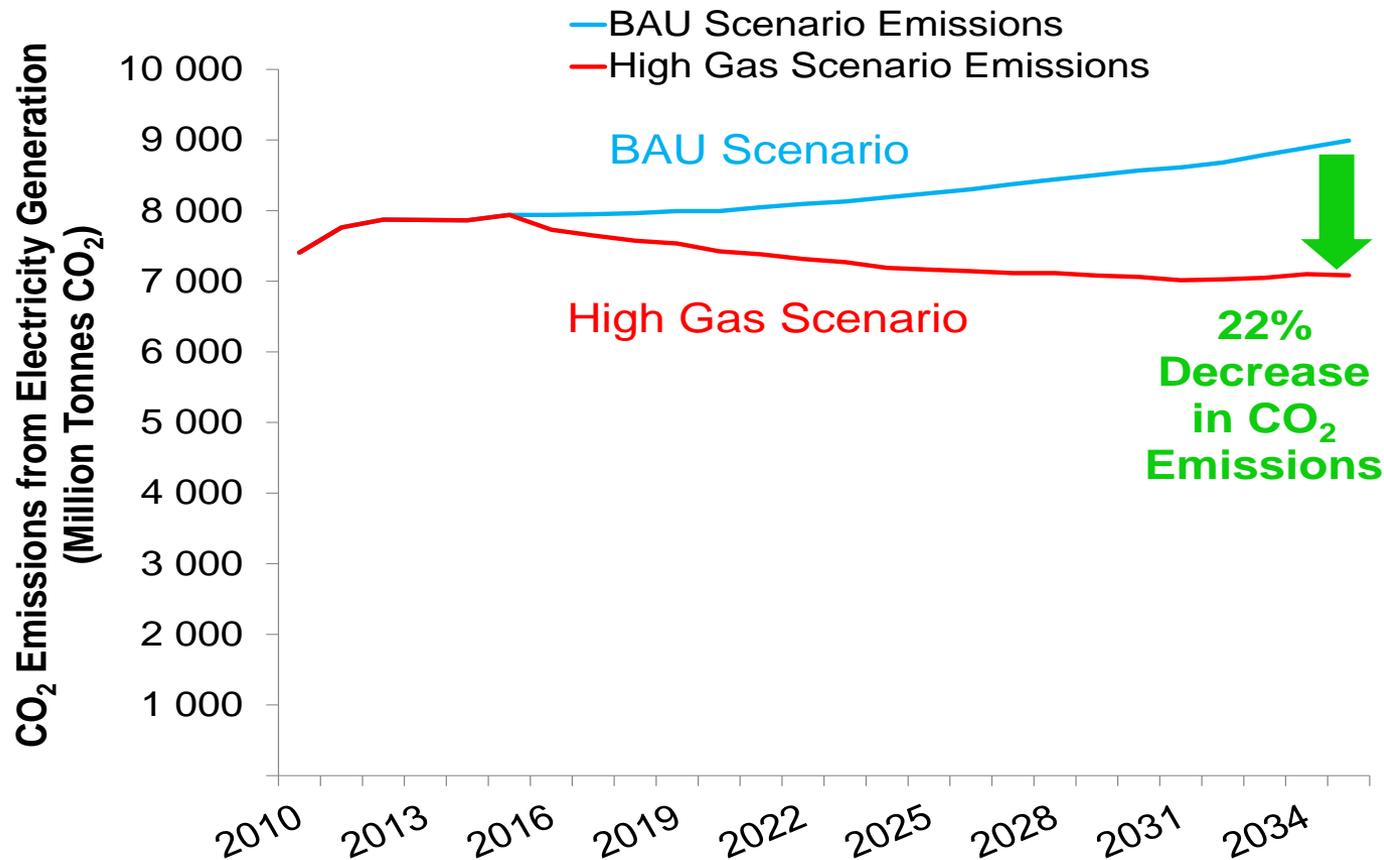


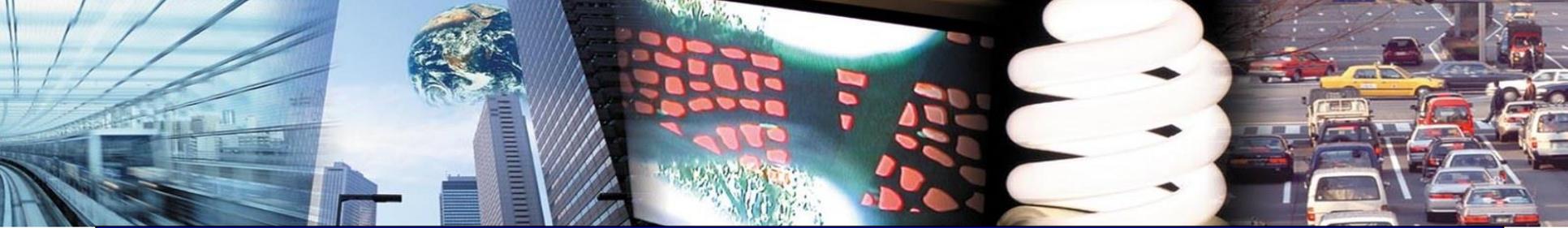
B. Replacing Coal with Gas – The Resources Worldwide –

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

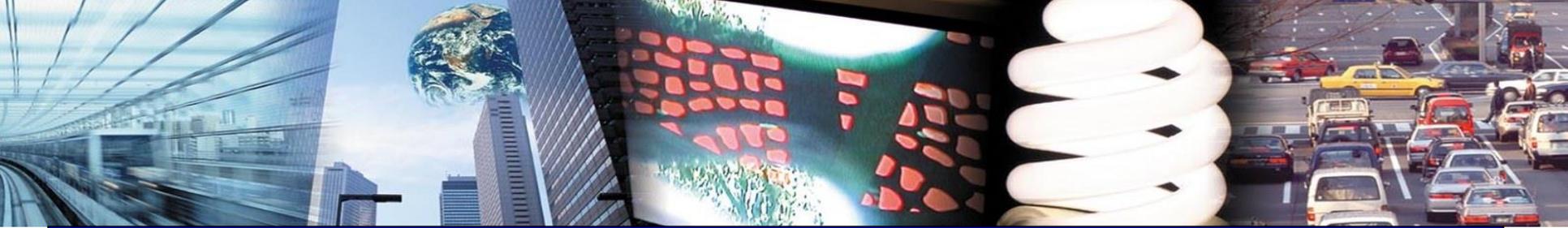




B. Replacing Coal with Gas – Some Potential Constraints? –



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

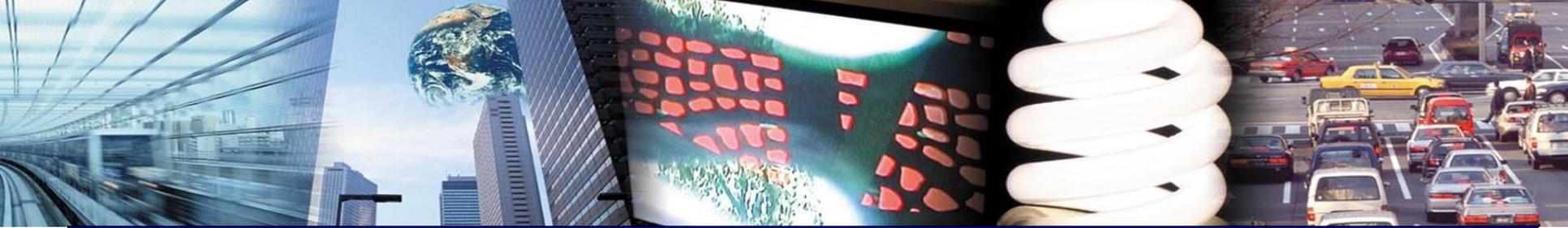


C. Become a World Leader in Near-Zero Emission Energy Technology – Endowment and Opportunity –



Asia Pacific already has the raw materials:

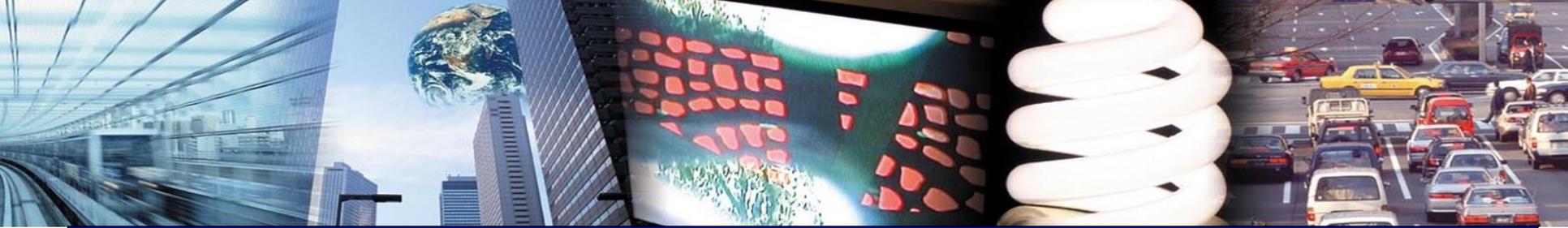
- Educated people
- Technological leadership
- Renewable resources
 - Solar PV, Geothermal, Ocean, Wind, etc.



C. Become a World Leader in Near-Zero Emission Energy Technology – From Labo into Real World –



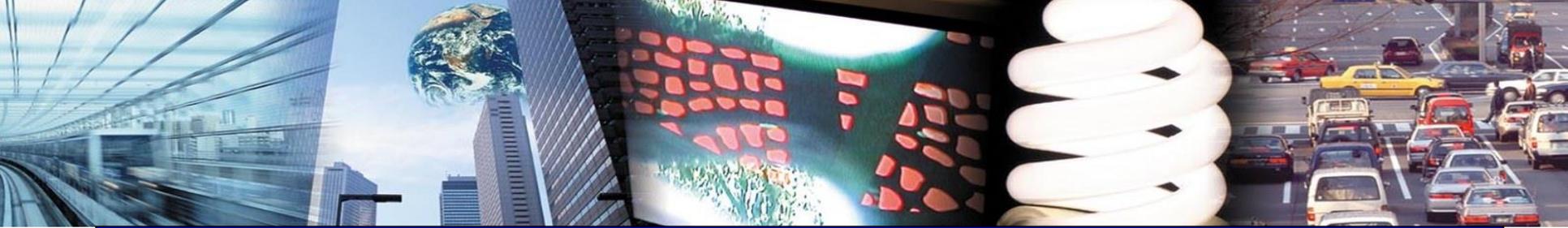
- Feed-In Tariffs (FIT)
- Renewable Portfolio Standards (RPS)
- Emission pricing
 - over the long term
 - politically difficult
 - technology leader



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 Asia Pacific 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.**



THANK YOU FOR YOUR KIND ATTENTION

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