



APERC Workshop at EWG 54
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2-3. Oil and Gas Security Exercise in Australia: A Regional Capacity Building

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Presentation Outline

- Capacity Building Workshop
- Oil and Gas Supply Emergency Scenario
- Emergency Response
 - Australia*
 - Indonesia
 - Thailand
 - Philippines
- Recommendations from Experts

**Although Australia participated in the oil and gas security exercise, its emergency scenario and response measures were not included in the final report due to confidentiality policy of the Australian government.*



Background

- OGSE in Australia (A Regional Capacity Building) was held in Melbourne on 29-31 March 2017 participated in by Australia, Indonesia, Philippines and Thailand.
- Seven experts were invited – IEA, ACE, ERIA, DoEE (Australia), METI (Japan), US-DOE, and IEEJ.
- For the 1st Day, presentations were made on the following:
 - Oil and Gas Global Market (Historical Overview)
 - Supply Chain Resilience in the APEC region
 - Australia's Oil and Gas Emergency Response Framework

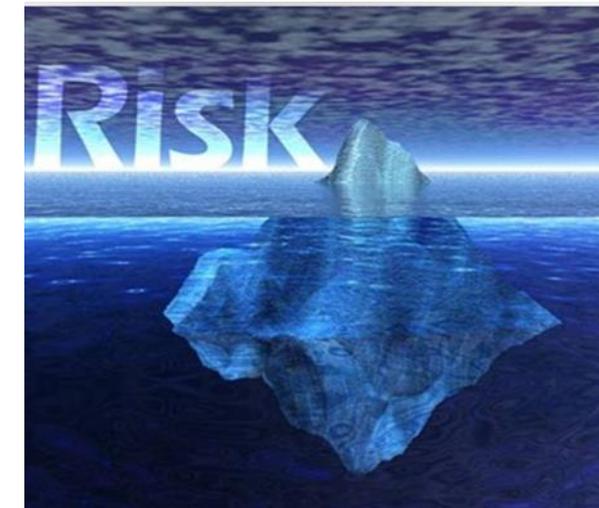




Capacity Building Workshop

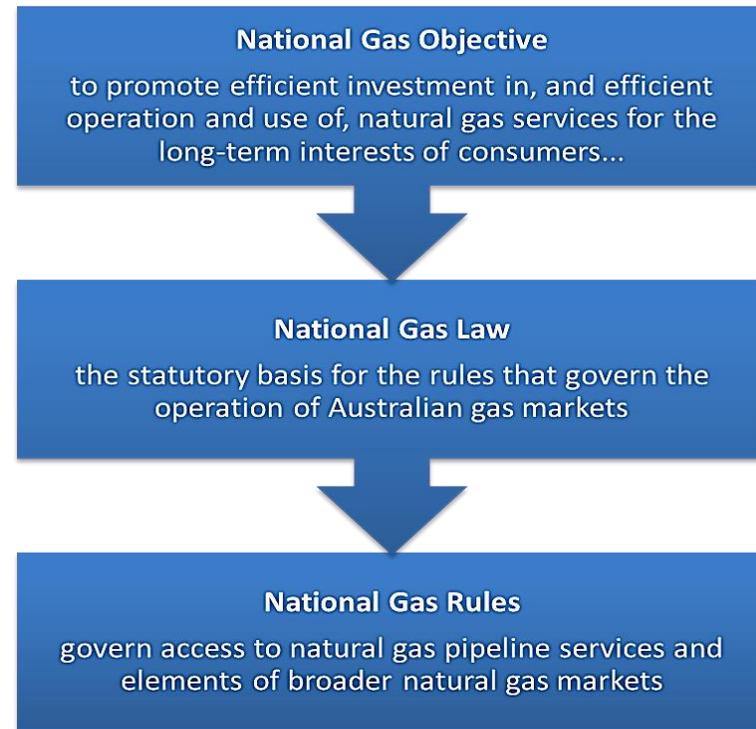
Summary of Capacity Building Workshop

- Australia's governance framework on energy policy is under the purview of the Energy Council within the Council of Australian Governments (COAG).
- Australia's energy policy objectives are anchored on an energy trilemma theme: adequacy, reliability and competitiveness.
- Open, transparent and efficient markets, and flexible approaches to managing risks are the best ways to meet regional and global security outcomes.
- Diversification of supply sources is one of the most important elements of supply security.



Summary of Capacity Building Workshop

- National Oil Supplies Emergency Committee
 - Liquid Fuel Emergency (LFE) Act of 1984
 - National Liquid Fuel Emergency Response Plan
- Gas supply security
 - Natural Gas Emergency Response Advisory Committee
 - National Gas Emergency Response Protocol
 - National Gas Forecasting Report and Gas Statement of Opportunities
 - Australian Energy Resources Assessment





Supply Emergency Exercise

Oil Scenario (Common Oil Emergency Situation)



Source: Perry-Castañeda Library Map Collection, University of Texas

The “Strait of Hormuz” has been closed due to collision of oil tankers, which prevented Middle East Crude, specifically from Saudi Arabia (KSA), United Arab Emirates (UAE), Kuwait, Qatar, Iran, and Iraq, to be transported.



Source: Ship Management International

Around **10 mbb/d shortfall**, equivalent to about 26% of global crude oil exports. The shortfall also triggered an increase in crude oil price by 100%, reaching around **USD 100 per barrel (USD/bbl)**.

Impacts of Oil Scenario

Reduction in crude oil and oil products imports. Overall supply shortage:

- Indonesia: equivalent to 19% of domestic demand.
- Philippines: equivalent to 51% of domestic demand.
- Thailand: equivalent to 30% of domestic demand.



Gas Scenario

Separate gas emergency situations for each economy:

- Indonesia: a **computer virus** paralyzed the whole gas production system.
- Philippines: A **fire** broke out in the control room of the platform, which eventually paralyzed the whole operation.
- Thailand: an unexpected **mechanical failure** happened in the gas pipeline from Myanmar.



Impact of Gas Scenario

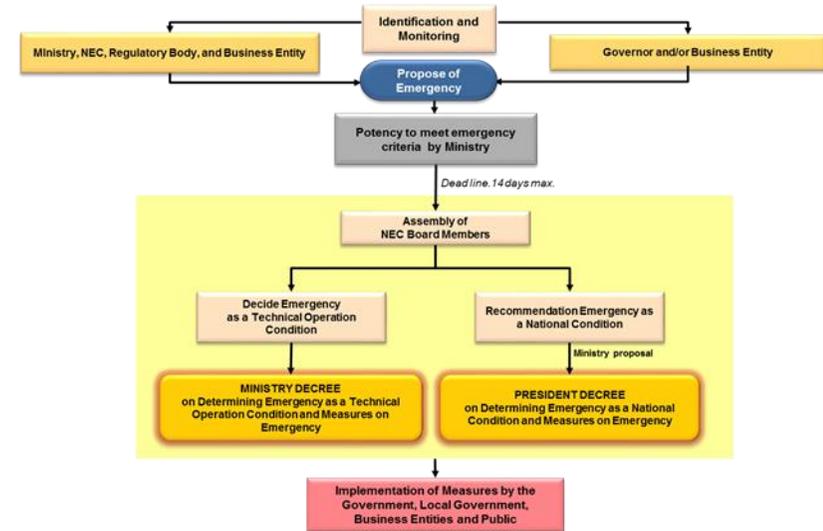
Gas supply impact for each economy:

- Indonesia: a shortfall in domestic gas production (equivalent to 43.5 Bcm)
- Philippines: lost of 23% in total power generation
- Thailand: supply shortfall of around 9.4 bcm, equivalent to 24% of domestic gas demand.



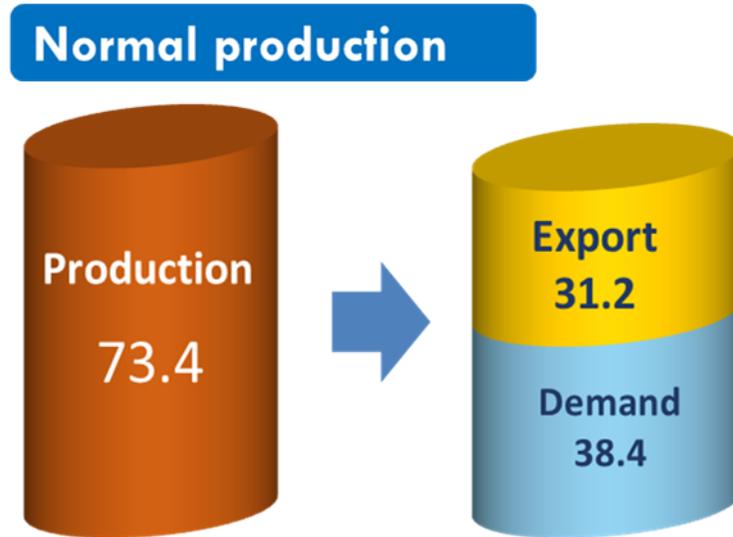
Indonesia's Oil Emergency Responses

- Convene the National Energy Council (NEC) to assess the severity of impact, and if necessary, propose the declaration of national energy crisis.
- Advise Governors and Local Governments to shorten the process of securing permit, procurement, and land clearing for implementation of emergency measures.
- Release of energy supply buffer reserves (operational stocks), increase imports and reduce exports (first right to buy).
- Source additional supply from state-owned (Pertamina) abroad with a total production of 87 kbbl/d - Algeria (60%), Iraq (30%) and Malaysia (10%).
- Implement demand restraint.



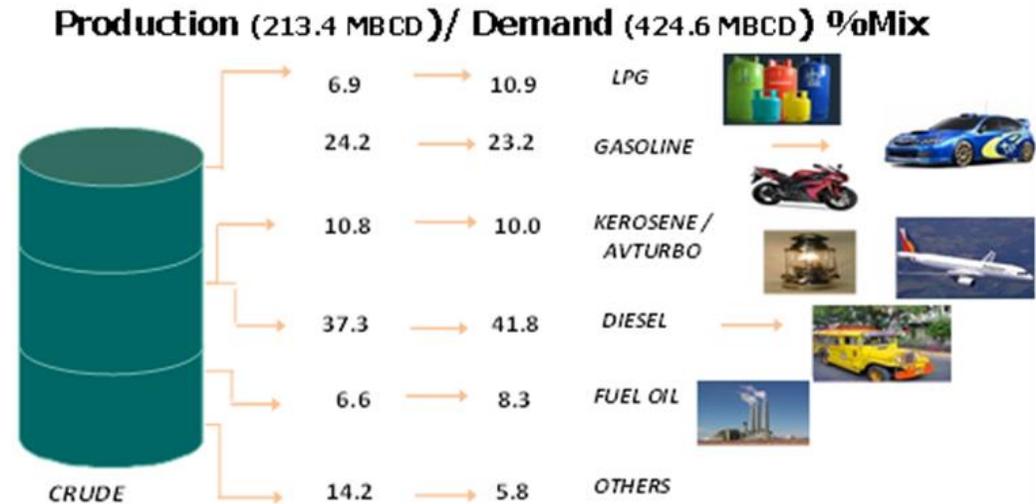
Indonesia's Gas Emergency Responses

- Use linepack stock at gas transmission system equivalent to 1-2 days consumption
- Increase imports of LPG and LNG. Currently, Indonesia has regasification unit and landed storage tank in Arun with a capacity of 500,000 m³ and a regasification capability up to 405 MMSCFD.
 - Utilize the FSRU to receive imports
- Maximize power generation from coal and hydro to offset the lost from natural gas-fired power plants.
- Prioritize gas to nobel industry



Philippines' Oil Emergency Responses

- Coordinate with the oil industry players to determine if they will be able to maintain healthy levels of inventories.
- Propose reduction of minimum inventory requirement held by oil companies.
- Advise oil companies to look for other supply sources and to increase their oil imports, if possible.
- Streamline oil import processing and documentation.
- Activate the Oil Contingency Plan (2002), specifically on rationing.
- Implement austerity measures in the use of oil products.



Philippines' Gas Emergency Responses

- Conduct inventory through National Grid Corporation of the Philippines (NGCP) by requiring all power plants to submit its respective capacity commitment to determine the dependable capacity profile.
- Switch to alternate fuels for gas-fired power plants.
- Increase plant generation from coal, geothermal and hydro
- kick off the importation of LNG to the country. The fastest source of LNG readily available will come from Malaysia, Australia and/or Russia.
- Implement demand restraint measures and energy conservation.



560 MW San Lorenzo
First Gen/ IPP



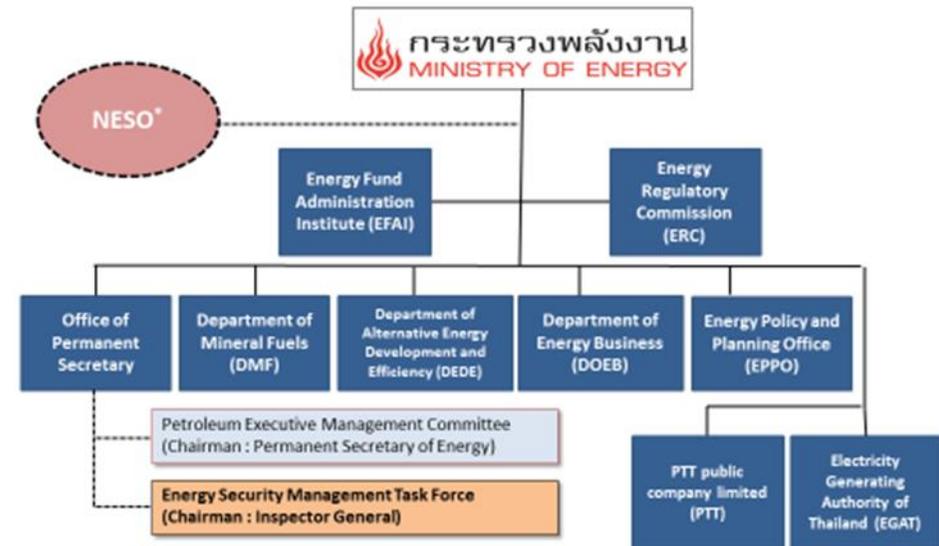
1,000 MW Sta. Rita
First Gen/ IPP



1,200 MW Ilijan Power Plant
NPC IPP(KEPCO)

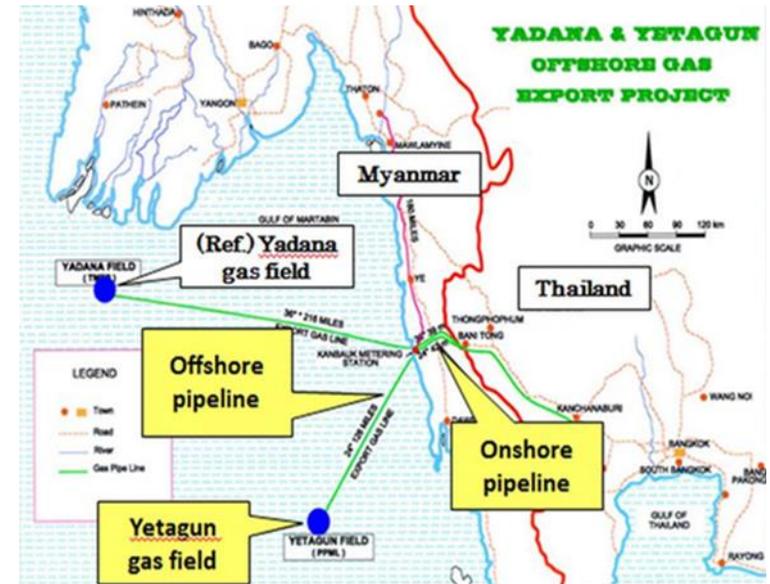
Thailand's Oil Emergency Responses

- Set up the National Emergency Strategy Organization (NESO) by the Ministry of Energy (MOEN) to manage energy emergency situation.
- Release oil stock (33 days).
- Implement pricing mechanism (via Oil Fund) to address the increase in oil price.
- Reduce export volume and thus making the refineries to run at minimum capacity.
- Allocate oil use and implement energy saving measures.



Thailand's Gas Emergency Responses

- Switch fuels to fuel oil and diesel. Most power plants in the West of Thailand maintain their own oil stocks, equivalent to 14 days. Oil delivery to power plants in the West is approximately 1 million litres per day.
- Use of linepack, equivalent to 9-12 days.
- Increase LNG imports from other sources – Malaysia, Indonesia, Australia or from traders.
- Implement demand Side Management, particularly in electricity will be applied: power saving in household and industries or load shedding.



Source: offshoreenergytoday.com

Oil

- Securing supplies from unaffected countries might not be so easy, given the magnitude of the disruption (for all).
- Reducing exports could have an impact on regional partners in the event of supply emergency (Indonesia).
- Any limit on the use of oil by the government should be the last resort of action (Philippines).
- Use of the “Oil Fund” to partially subsidize prices could become a costly policy, should the disruption last a long time. Any attempts to cap prices below market levels would likely divert needed supplies elsewhere (Thailand).

Gas

- Develop a more accurate modelling on gas infrastructure and surge capability since disruption in gas market has an impact on electricity supply.
- Use of line pack in a natural gas emergency has a positive, but limited impact.
- Any fuel switching away from gas needs to consider the impact on emissions and should consider if any waivers are needed from a legal standpoint.
- Develop better-integrated domestic and international gas markets through government policies that support market transparency and supply flexibility.

General

- Build capacities of all the agencies involved by sharing and reviewing actual fuel and gas supply-related emergency responses.
- Continue testing existing emergency policies, instruments and institutional setups, and revise them (if necessary) to reflect national, regional and global developments.
- Consider a staged response to a severe oil supply emergency, as an alternative to implementing all emergency response measures at once.
- Undertake studies on maritime oil supply routes and shipping arrangements during a liquid fuel emergency (participating economies).

Experts' Observations/Recommendations

- Regional cooperation is critical in a global event. If one economy acts in opposition of a regional partner, it could lead to a worse situation.
- Preparing comprehensive communication strategies is advisable for all economies. Economies should consider communicating with the public and industry players when implementing response measures.
- Future OGSE may consider to have a special session on communication strategy.
- Suggest continue to invite a mix of net energy importing/exporting participating economies to test and understand regional energy market dynamics, relationships, and interdependencies.



Thank you for your kind attention

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