

REGIONAL ENERGY SECURITY COOPERATION IN THE APEC REGION

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OUTLINE

- What is Energy Security
- Regional/Global Energy Situation
- Efforts in APEC/EWG
- Suggestion for Improving Regional Energy Security

What is Energy Security

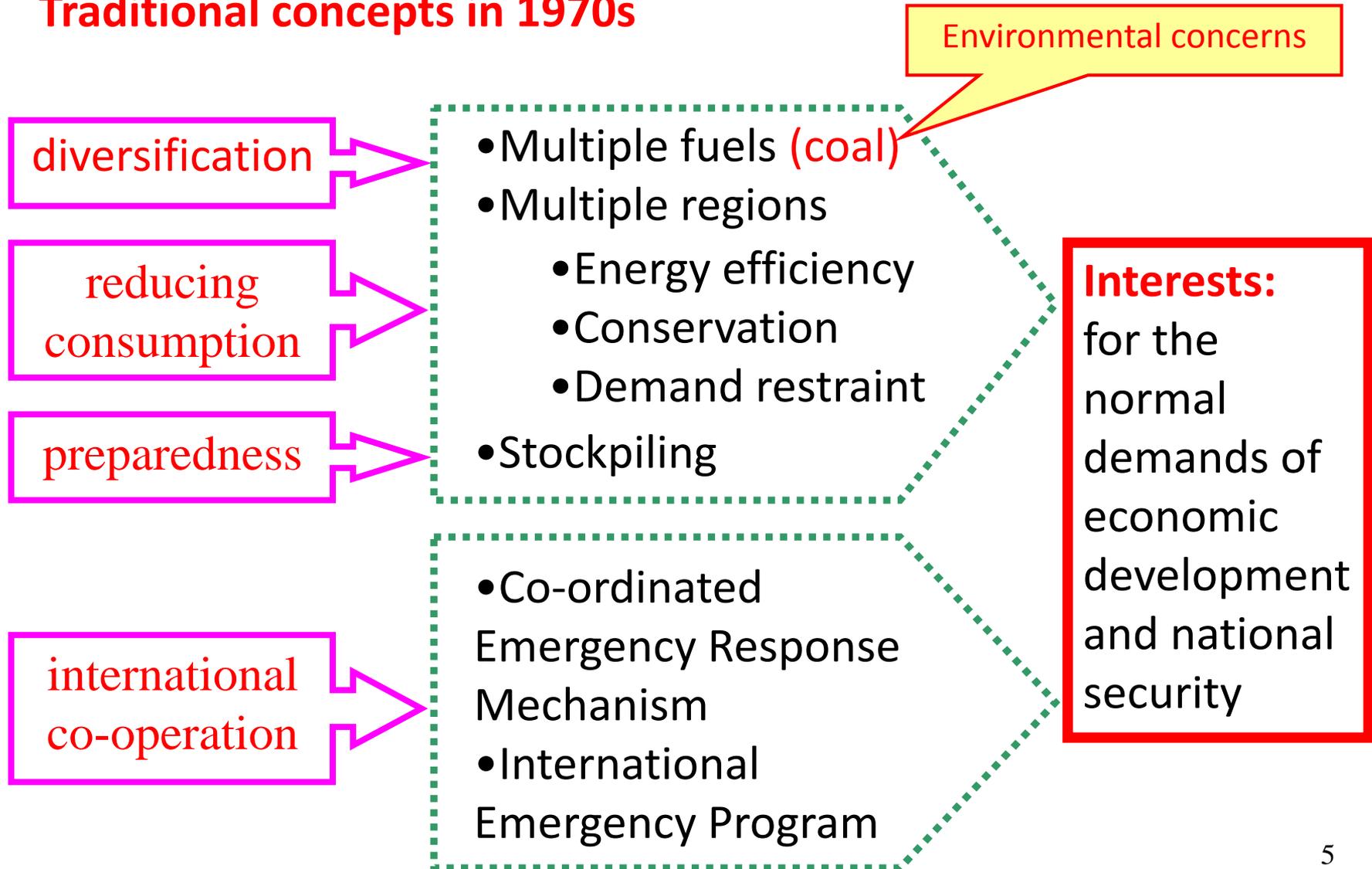
---An Evolutional Concept

Evolution on Energy Security

- Before 1973: Not a concern
- 1973 – 1986: Supply security
 - Yom Kippur War; IEA; Iranian Revolution and Iran-Iraq war; first boom of renewable energy
- 1986 – 2000: Demand security
 - Fundamental changes in oil markets; globalisation and regional integration; deregulation and competition
- 2000 – 2014: Infrastructure & Volatility
 - 911; demand surge; futures and arbitrages on volatility; concern on natural gas; another boom of RE
- 2014 – : ???

Strategy for Energy Security

Traditional concepts in 1970s



International frameworks for Energy Security

- International Energy Agency (IEA)
 - International Energy Program
 - Co-ordinated Emergency Response Mechanism
- Organization of the Petroleum Exporting Countries (OPEC)
 - Co-ordinating production volumes
 - Spare oil production capacity
- International Energy Forum (IEF)
 - Dialogues between producers and consumers
- Energy Charter Treaty
 - Investment protection
 - Energy in transit
- APEC by nature is NOT for security cooperation!!

New challenges to the traditional strategy for energy security

- Terror Attack
 - Modern energy infrastructure are very complex, and highly vulnerable → safety & resilience
- Environment
 - Coal has been the core of diversification → pollution
- Natural gas
 - Was regarded as a diversification for oil security
 - But, now a potential source of energy insecurity!
- Global competition
 - Those who avoiding security measures might enjoy advantages in fierce global competition → public goods vs. free-riders

Regional/Global Energy Situation

Top 10 Net importer in 2014

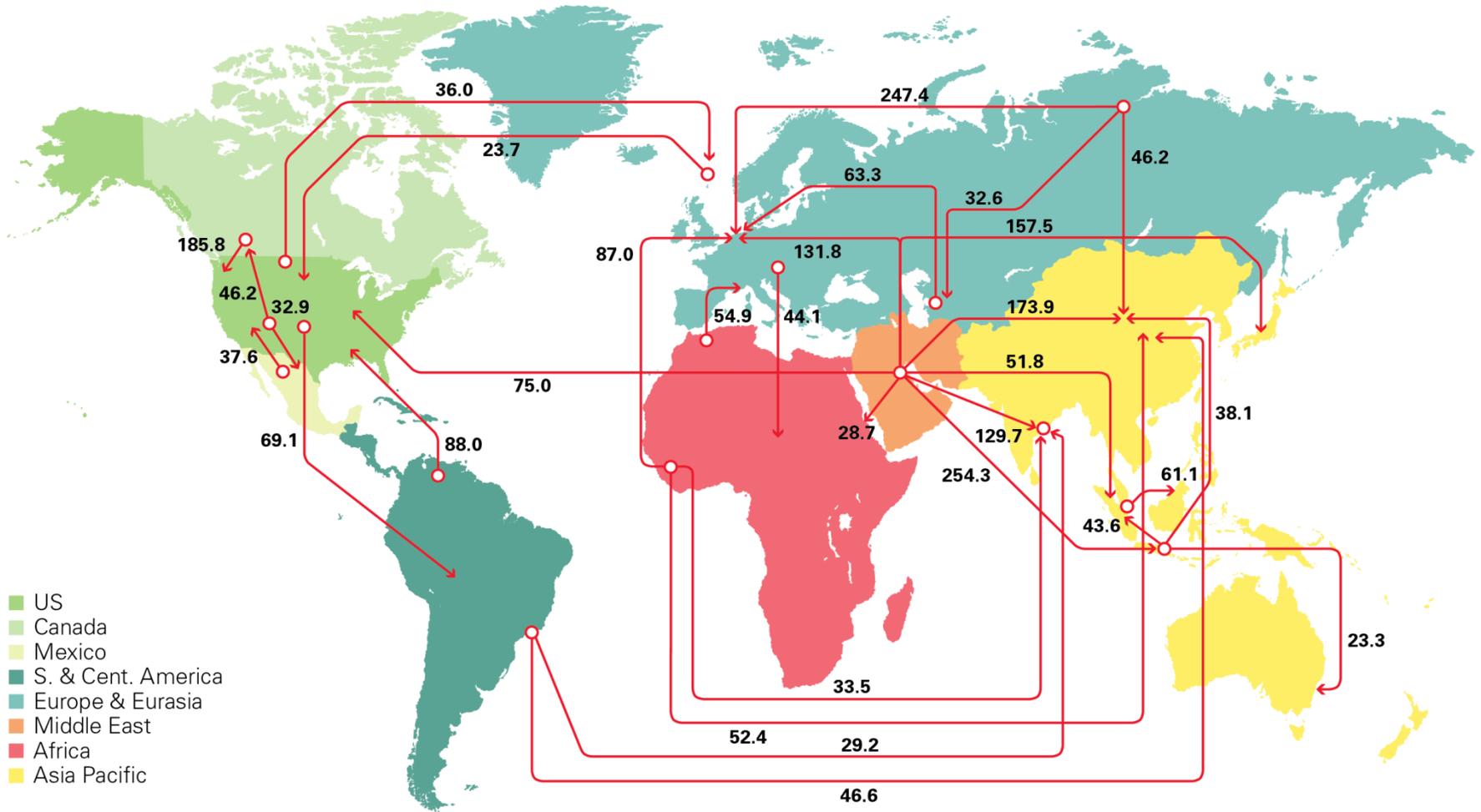
Oil	Mt	Coal	Mt	Natural gas	bcm
US	344	India	221	Japan	117
PR China	308	PR China	199	Germany	73
India	189	Japan	192	Italy	61
Japan	165	Korea	135	PR China	56
Korea	126	Chinese Taipei	66	Turkey	48
Germany	89	Germany	54	Korea	43
Spain	61	Turkey	34	France	39
Italy	59	UK	25	Mexico	37
France	54	Malaysia	24	UK	31
Netherlands	54	Thailand	23	Spain	27

Source: Key World Energy Statistics 2016, IEA

Major oil trade movements 2015

Trade flows worldwide (million tonnes)

Middle East – NE Asia nexus



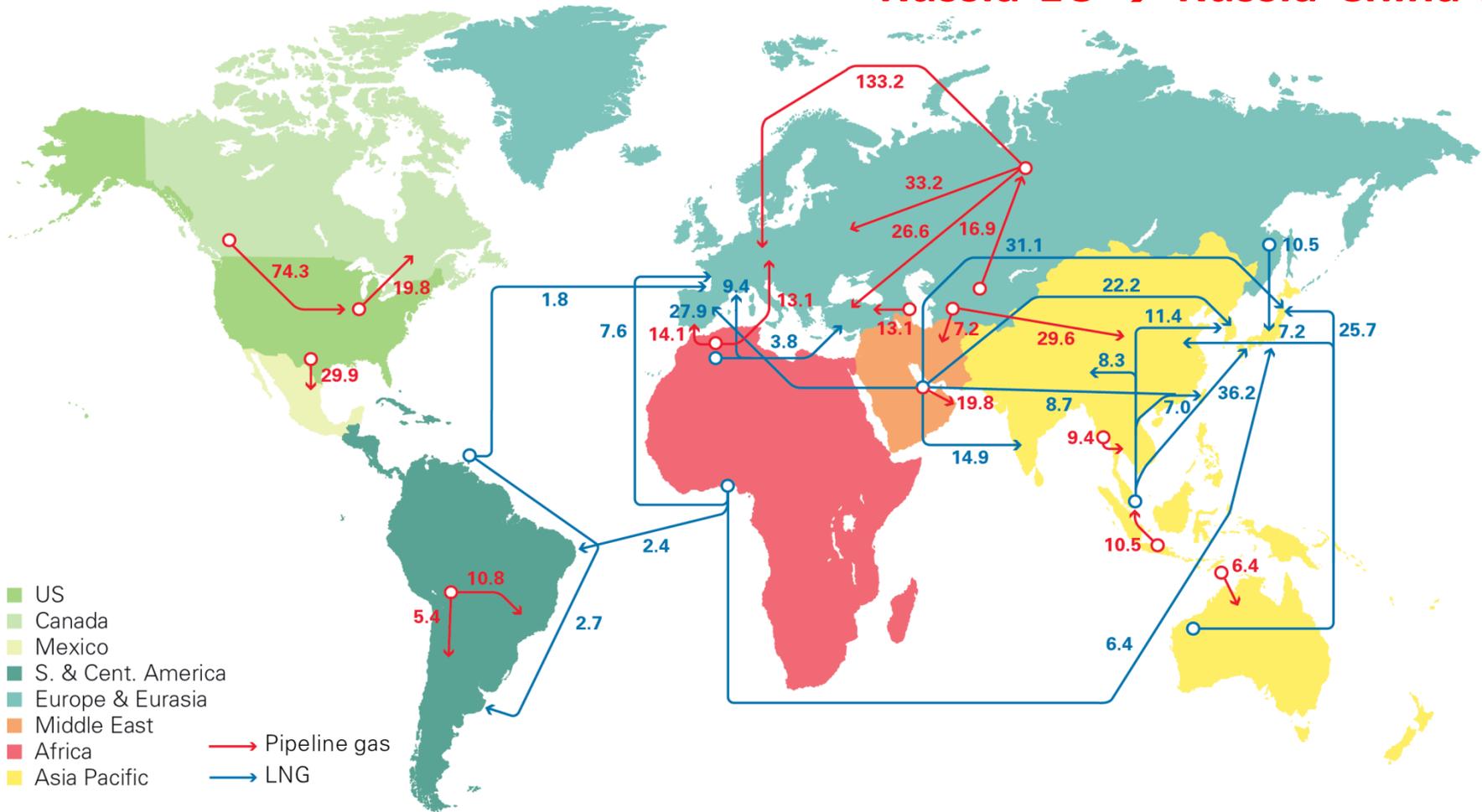
Source: BP Statistical Review of World Energy 2016

Major gas trade movements 2015

Trade flows worldwide (billion cubic metres)

N America → EU?

Russia-EU → Russia-China ?



Source: Includes data from FGE MENAgas service, GIIGNL, IHS Waterborne, PIRA Energy Group, Wood Mackenzie.

Source: BP Statistical Review of World Energy 2016

Efforts in APEC/EWG

Stages of energy focus

- Before 2000, energy security was not the focus
- After decade of low prices, oil prices were higher than 20 USD per bbl after 2000
 - Oil stockpiles and capacity building were promoted in EGCFE
- Terror attack on 11 September 2001
 - APEC Leaders endorsed an APEC Energy Security Initiative (ESI) as a means for counter-terrorism
 - EGCFE/US called an *ad hoc* Workshop in April 2002 to form the principle measures of ESI
 - APERC conducted a Sea-Lane Security Exercise in Singapore to highlight terror effects

APEC Energy Security Initiative

- Five Measures, Endorsed by EWG23, EMM5, and Leaders in 2002
 - Real-Time Energy Information Sharing
 - Joint Oil Data Initiative
 - Sea-lane Security
 - Emergence Response of Oil Supply
 - Non-oil & Longer-term Measures
- Longer-term Measures added in 2004 (CAIRNS Initiative)
 - Energy Investment; Natural Gas Trade; Energy Efficiency; Renewable Energy; Clean Fossil Energy; Hydrogen and Alternative Transportation Fuels; Methane Hydrates; Nuclear Energy; Petroleum infrastructure/Crude oil and refined products

APEC Energy Security Initiative

- March 2004, EWG in Beijing, China formed the Steering Committee of APEC ESCI and the first member's report on domestic energy security
- EMM6 in Manila endorsed 10 relevant documents for ESI
- Later in 2004 at EWG28 in Port Douglas, Australia, Japan initiated the CAIRNS Initiative, which was endorsed by the Leaders in Chile
- 2007, Leaders in Sydney Declaration emphasised the connection between energy security, sustainable development, and climate change
- 2011, Leaders in Honolulu instructed IFFS, 45% reduction of energy intensity

New elements after 2013

- Need to modernise the ESI, raised in EWG45 in 2013
- Renewable energy doubling goal in 2014
- Natural gas
 - Oil and Gas Security Initiative (Japan), including peer reviews and exercises
 - Natural Gas Trade Facilitation Initiative (Chinese Taipei)
- Energy infrastructure
 - Energy resiliency task force (US and the Philippines)
- Ongoing efforts
 - Reforming the EGCFE, to include oil and gas security
 - “APEC 2020 Energy Vision”, lead by Australia and potentially to be the most comprehensive document

Suggestion for Improving Regional Energy Security

Key understandings

- “Energy Security” means differently to different stakeholders
- Two major aspects:
 - Security of energy supply/demand
 - Safety of energy infrastructure
- Both security and safety aspects must be considered together but treated separately
- Geopolitical concern is not applicable for APEC
- APEC is a right platform to promote energy security as an international public goods

Jointly,

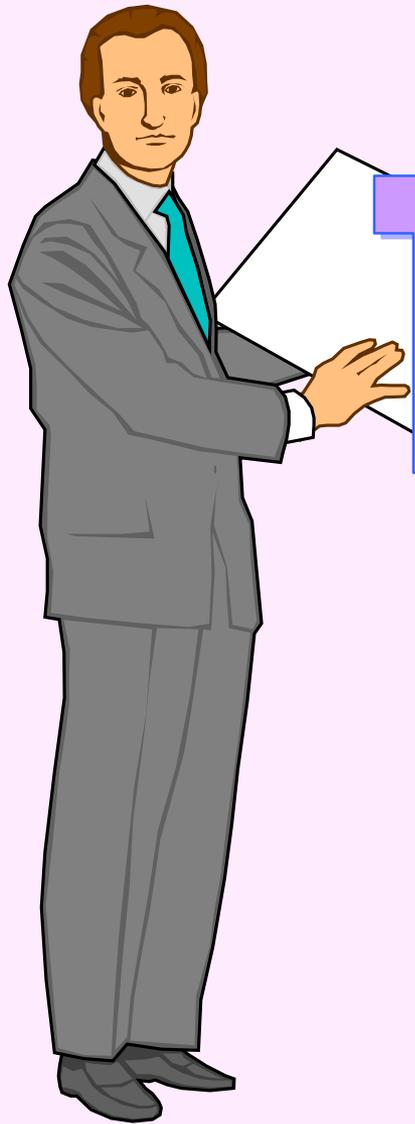
- To establish a new regional security organisation may not be feasible and effective
- To promote joint investments on the upstream oil & gas exploration and development
 - To increase supply, to remove uneasiness on resource ownership
- To promote regional trading centres of oil and gas
 - To promote flexibility and price indexing in NE Asia
- To promote information/dialogues for mutual understanding and to avoid mistake on judgement
 - APEC EWG has been a good platform

Individually,

- Each should act as a responsible stakeholder
- Member economies are advised to join, individually, the existing international security framework, such as IEA and Energy Charter Treaty
- Each member economy is advised to establish stockpiles for oil, and possibly LNG
 - Insecurity in one economy will affect others
- Each member economy is advised to improve the robustness of energy infrastructure for resiliency
 - For both terror attacks and climate impact

Outreach

- To cooperate with IEA & others on the global energy investment, supply and demand forecast
 - Infrastructures and upstream developments are huge investments
 - Mismatch with demands create business cycles
 - Good information/prediction on both future supply and demand would be beneficial to alleviate business cycles
- To seek cooperation with other international fora on interconnectivity
 - Regional power grids
 - Pipelines on gas



Thank You

