

# **“LOAD, LOCK AND LAUNCH!”**

## **SECURING THE MARITIME TRANSPORTATION OF OIL AND GAS**



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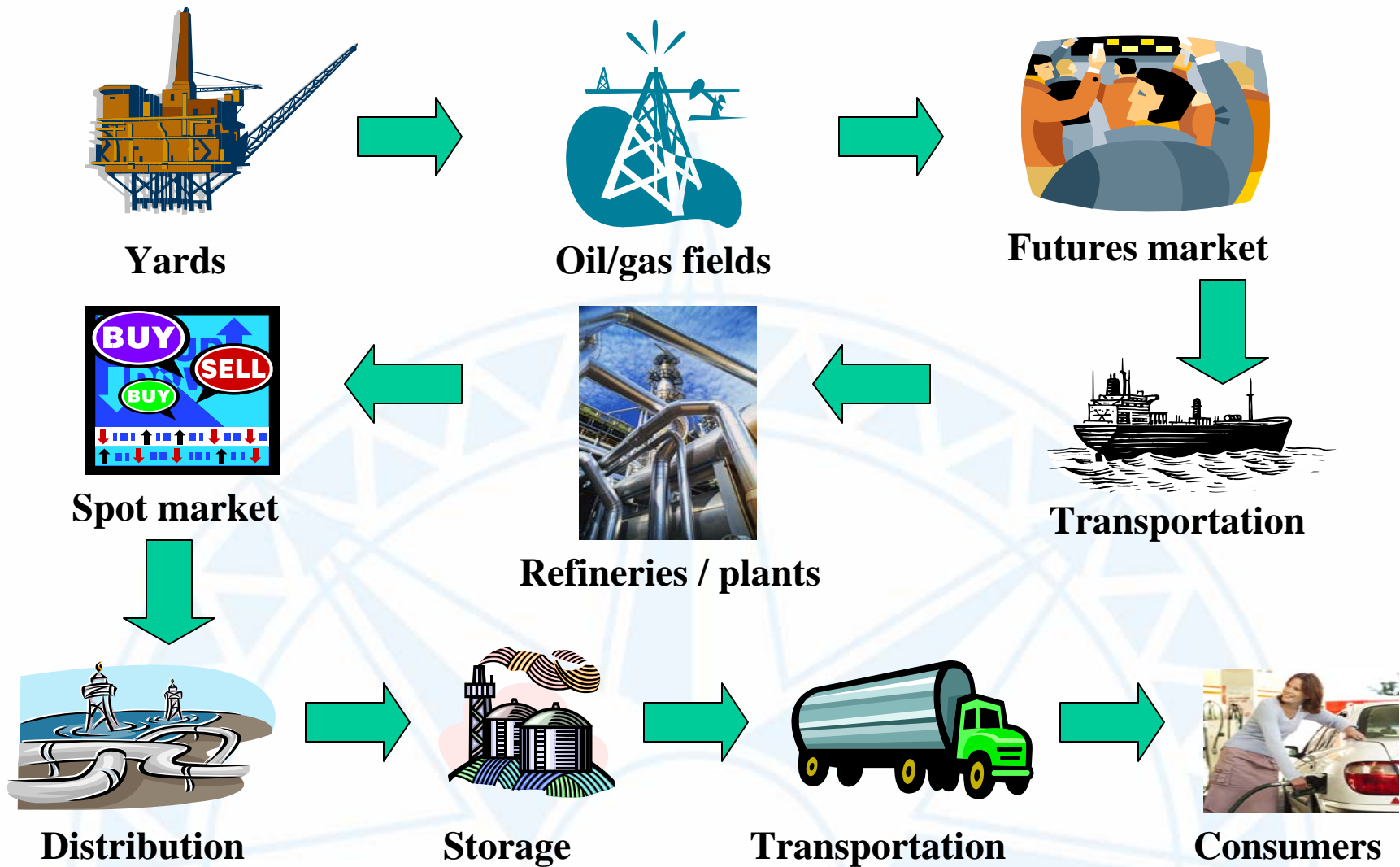
## *Presentation outline*

- The energy supply chain
- The architecture of maritime transport of oil & gas
- Threats and risks faced in seaborne transportation of oil & gas
- Safeguarding the maritime transport of oil & gas

## *The energy supply chain*

- Ensures smooth delivery of energy supply.
- Involves many parties, assets, systems, information & processes from upstream (producers) to downstream (consumers).
- Subject to geo-political influences.
- Its complexity, trans-boundary dimension and criticality renders it vulnerable to various risks.

# *The energy supply chain*



## *Components of energy supply chain*

- Yards building oil rigs / tankers
- Refineries / processing facilities
- Terminal operators
- FSO / FPSO operators
- Transportation and distribution services providers i.e shipping lines, pipelines, truckers, storage tanks, gas stations
- Energy markets (spot and futures)
- End users / consumers

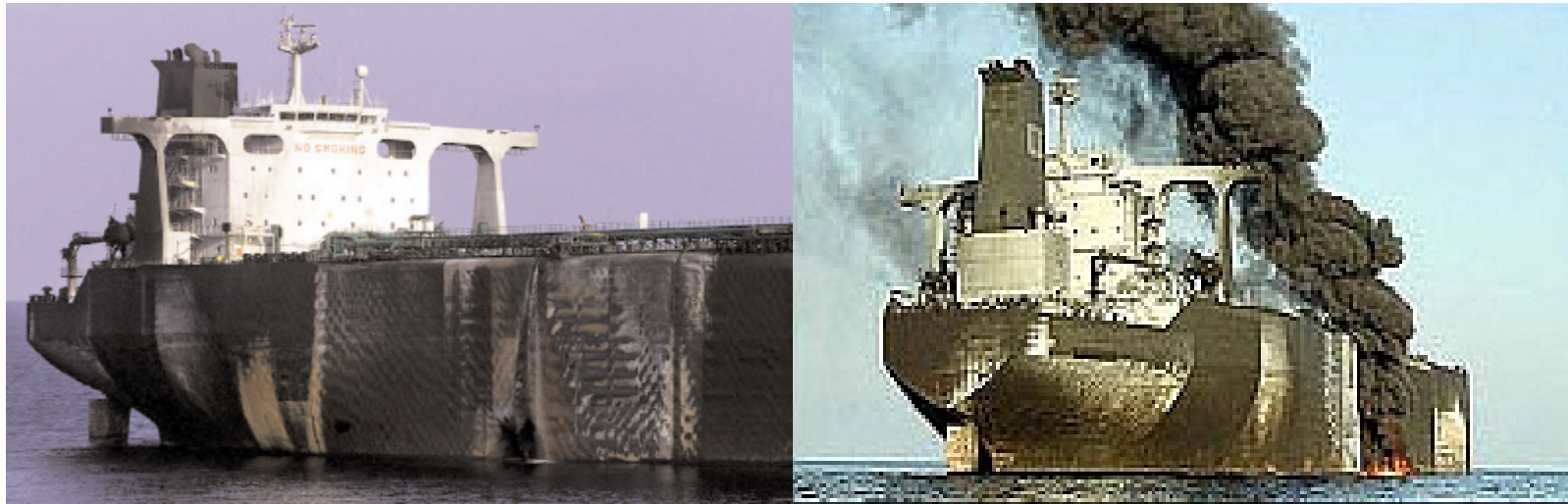
## *Maritime transport of oil & gas*

- Involves expensive assets i.e. terminals, storage tanks, tankers, FPSOs etc.
- 77% of tanker trade is in crude oil. LNG seaborne trade is 6% of world production (UNCTAD, 2007).
- Ports & ships play crucial role in interfacing with other components in the energy chain.
- Speed, efficiency and security are the pillars of maritime transportation of oil & gas.

## *Threats on energy maritime transportation*

- Terrorist attacks
- Piracy
- Sabotage
- War / conflicts / naval blockade & standoffs
- Human errors i.e. tanker collision, oil spills
- Mechanical failures / technical breakdowns
- Natural disasters i.e. hurricane

## *Terrorist attacks*



**Attack on French  
supertanker MV Limburg  
off Yemen, October 2002**



## *Natural disasters*



**Seven platforms in the Gulf of Mexico destroyed by Hurricane Ivan in 2004**



**Over 40 platforms in the Gulf of Mexico damaged by Hurricane Katrina in 2005**

## *Accidents*



**Oil tanker fire in Changsha, Hunan Province in China, December 2005**



**Petrobras P-36 oil rig sinking off Brazil, March 2001**

## *Oil spills / pollution*



***Erika oil spill off the coast of  
Brittany, France, December 1999***



***Exxon Valdez oil spill in Prince  
William Sound, Alaska, 1989***

## *Strategic role of maritime transportation in energy shipment*

- Oil & gas are transported through narrow sealanes or chokepoints.
- Navigation safety and security of key sealanes i.e. Strait of Malacca, Strait of Hormuz are crucial to global energy trade.
- More countries depend on maritime transportation to facilitate energy trade.
- Energy security = military / global security

## *Impact of security breach in the energy supply chain*

- Delay in production, transportation and distribution of energy
- Formation of bottlenecks along the energy supply chain and beyond
- Environmental damage
- Rising costs of energy, materials & goods
- Creating havoc to the global economy

## *Post-9/11 maritime security measures*

- Int'l Ship & Port Security (ISPS) Code
- Customs-Trade Partnership Against Terrorism (C-TPAT)
- 96-Hour Advance Notification of Arrival
- 24-Hour Rule
- International Port Security Program
- Regional Maritime Security Initiative
- Proliferation Security Initiative
- Secure Freight Initiative

## *Implications of maritime security measures on energy transportation*

- Security has become central to many parties along the chain.
- Better security, but speed and efficiency of supply chain have been hampered.
- Security costs passed by players along supply chain to users / consumers.
- Sharing of security costs a thorny issue.

## *Implications of security measures*

- Bottlenecks forming along maritime supply chain i.e. congestion at ports.
- 'Security as an elitist issue' : ports in developing countries not able to comply with post-9/11 security measures suffer as a result of being bypassed by ships and shippers.
- Danger of maritime security measures being dictated too much by bureaucrats.



## *Challenges in securing maritime transportation of oil & gas*

- Increasing asymmetrical, non-conventional threats to assets along the chain.
- Securing the entire length of the energy transportation chain from various threats.
- Emphasis on better coordination, cooperation, communication to create domain awareness.
- Huge resources needed to beef up security & to recruit, train and equip security personnel.

## *Balancing security and supply chain efficiency in energy transportation*

- Security measures must not blunt speed & efficiency of energy transportation too much.
- Security initiatives must be planned in consultation with all players in supply chain.
- Good intelligence needed to avoid ‘looking for needle in haystack’ approach.
- Reconcile security plans with supply chain management to ensure smooth energy flow.

## *Towards securing energy maritime transport*

- Promote public-private partnership to improve effectiveness of security measures.
- Provide resources to beef up security.
- Tailor threat perception and responses based on sound intelligence & solid info / data.
- Address root causes of threats like piracy, terrorism, sabotage to mitigate their risks.

## *Towards securing energy maritime transport*

- Enhance the efficiency of current measures before introducing new ones.
- Enhance cooperation & intelligence sharing between states and security agencies.
- Leverage use of technology.
- Focus on vulnerable points along the chain.
- Explore alternative energy routes & sources.

## *Conclusions*

- The need for speed and efficiency in energy delivery must be balanced with the need to secure the energy supply chain.
- The security of maritime transportation of oil and gas is as good as the security of the entire energy supply chain.
- Language of 'energy security' needs to be redefined to suit current realities to avoid 'hydrocarbon conflicts'.

## *Conclusions*

- Protecting maritime transportation of energy should be embedded in the larger energy security framework.
- Securing the energy chain is the collective responsibility of all players along the chain.
- Will rising operational costs result in players along the chain cutting corners on security?
- Will ‘oil diplomacy’ lead to cooperative or confrontational energy security matrix?

# *Shape up or ship out!*



# THANK YOU

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