

# Keppel Offshore & Marine Technology Centre

# Operating Conditions

- Oil reserves are limited with an imbalance between demand and supply.
- E&P is moving into deeper waters and the Arctic frontier where some of the largest untapped oil & gas reserves exist
- Innovations in technology will be crucial in opening up new regions for future development

*Keppel O&M is focused on  
technology innovation to provide  
viable and cost effective  
solutions for our customers.*



# A Culture of Innovation

- Sustained R&D efforts have produced consistent results:
  - 20 jackups and 4 semis of proprietary designs have been delivered to date
  - Proprietary technologies have engendered S\$15 billion worth of contracts, including those under construction

# Proprietary Designs: *Industry Workhorses*

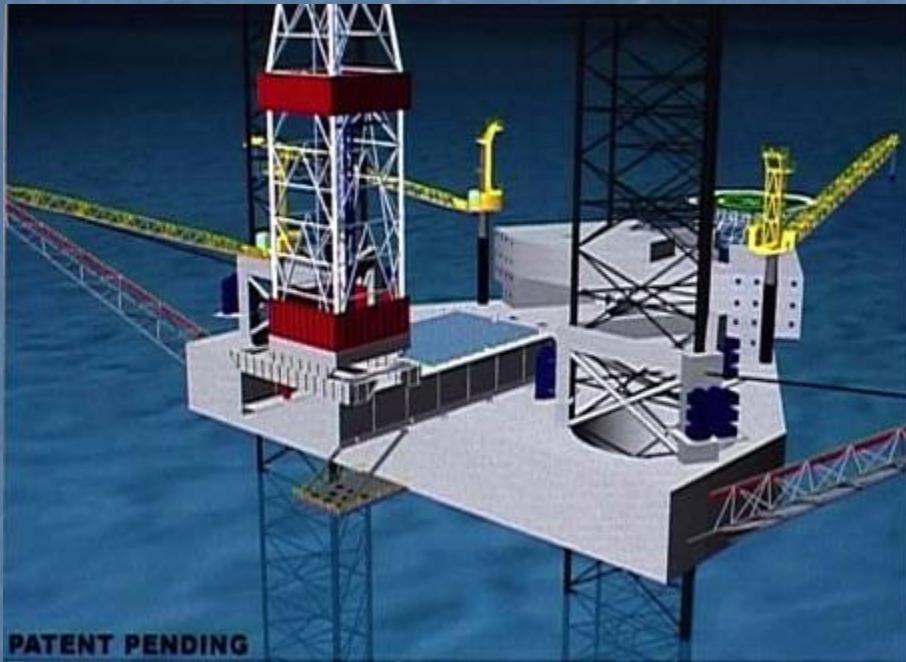


## *KFELS B & Super B Classes* by OTD

- Industry's workhorse
- Water depth:  
350 feet
- Drilling capabilities:  
30,000 feet
- 17 units are currently in  
operation



# Proprietary Designs: *Industry Workhorses*



## ***KFELS N Class*** by OTD

- Catered for harsh environments in the North Sea
- Water depth: 400 feet
- Drilling capabilities: 35,000 feet
- Withstands wave heights of up to 90 feet
- 3 orders received since end 2006.

# Proprietary Designs:

*Purpose built semisubmersibles*

## *SSDT™ & DSS Series by DTG*

- Catered for deepwater & harsh environments
  - Good motion and stability characteristics
  - Proven designs with very successful operating history
  - Construction friendly design
  - System design and equipment arrangements with an eye for maintainability
- 
- Modifiable into floating hotels to accommodate 400 & 500 pax
  - 7 units have been delivered



# Proprietary Designs: *Specialised Vessels*

Ice-class



## *Ice-class AHTS & Ice-breaker designs by MTD*

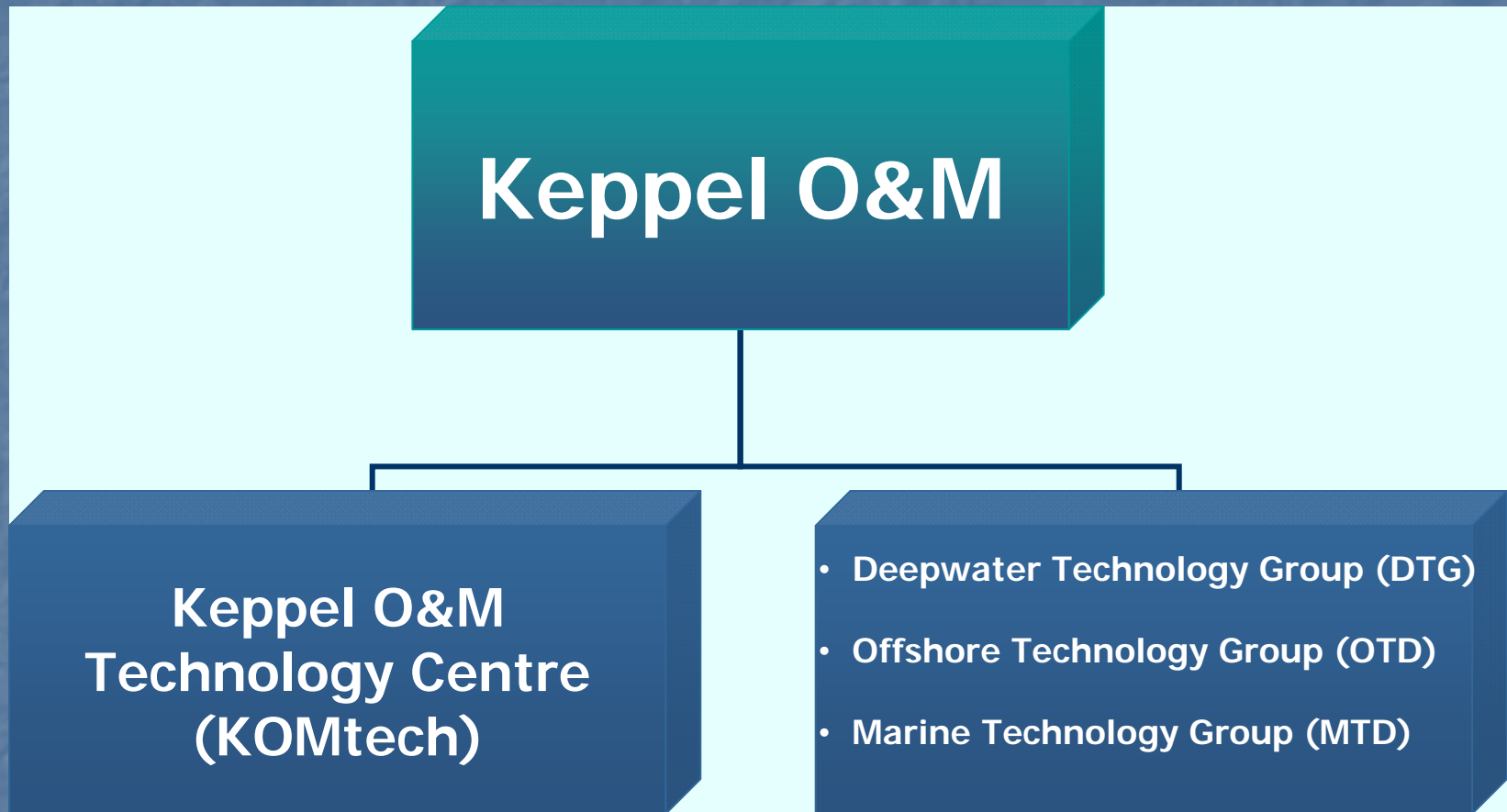
- Catered for operations in the Arctic
- Designed with bows capable of breaking ice up to 1.7 m thick
- 5 units under construction for Russia's LUKOIL

Ice-breaker





# Technology Framework



*KOMtech will give Keppel O&M a long term competitive edge.*

# KOMtech's Role

KOMtech is an extension of our commitment towards R&D, and strengthens our current initiatives.

- KOMtech will:
  - Spearhead Keppel O&M's technology schemes
  - Work in synergy with OTD, DTG & MTD
  - Assume the conceptual design aspect of activities undertaken by OTD and MTD
  - Work with industry partners to develop solutions





# KOMtech's R&D Scope

- Rig & vessel design
- Shipyard process improvement
- Critical equipment and subsea & subsurface equipment
- Miniaturisation of process topsides
- Environmental – E.g. Reduction of Sulphur & CO<sup>2</sup>
- Materials – E.g. Use of “sandwich plate systems”
- Technology foresight & knowledge building

# KOMtech's Resources

- Seed money of S\$150 million over first 5 years
- Strong support from the Economic Development Board



# KOMtech's Resources

- Talent Resources:
  - KOMtech is headed by Mr Charles Foo, Keppel O&M's Managing Director (Special Projects)
  - Current pool of 30 highly competent professionals to be increased to about 100
  - Prominent researchers and leading industry specialists will be engaged as Fellows to provide in-depth knowledge in specific fields

Thank you