



الشركة الكويتية لنفط الخليج (ك.م.ك.)
KUWAIT GULF OIL COMPANY (K.S.C)

GOING OFFSHORE:

A Risk Management Perspective

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Choose Life, Choose
Safety
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INTRODUCTION:

I. INCREASE OFFSHORE

II. OFFSHORE v ONSHORE

III. RISKS

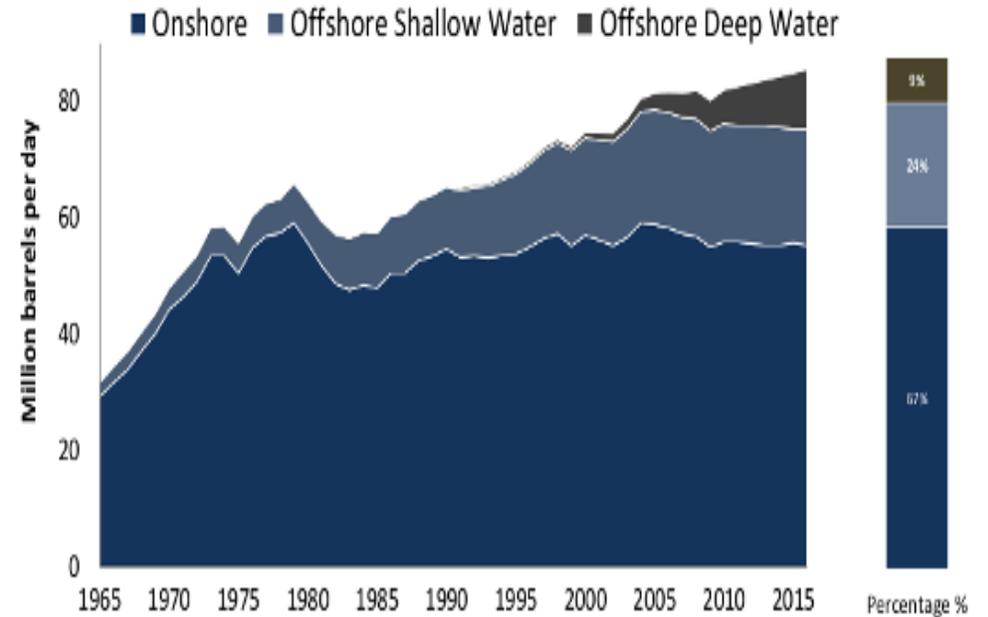
IV. MITIGATIVE ACTIONS



I. INTRODUCTION:

- About 30% of the world's oil production is currently drawn from offshore.
- Offshore activity continues to grow, even problematic times, spurred by
 - Confidence in robust oil prices, coupled with
 - Industry-developed cost efficiencies.
- This discussion briefly addresses:
 - The gradual offshore upturn;
 - Differences between key Offshore and Onshore activities
 - Inherent risks with offshore activities; and,
 - Mitigative actions available

Onshore vs. Offshore Oil Production



Sources: Infield Systems, BP



I. INTRODUCTION, Cont:

OFFSHORE ACTIVITIES:

- Take place in the waters of more than half the nations on earth.
- No longer confined to primitive, shore-bound wooden wharves, activity now flows from modern steel or concrete structures, which are, in many cases, floatable and movable.
- Offshore rigs are being drilled and operated in waters over 2,200 meters deep, at upwards of 300 kilometers from shore.

Offshore Construction – Historical Development



1900-1910 – onshore oil exploration extending into shallow water, Louisiana



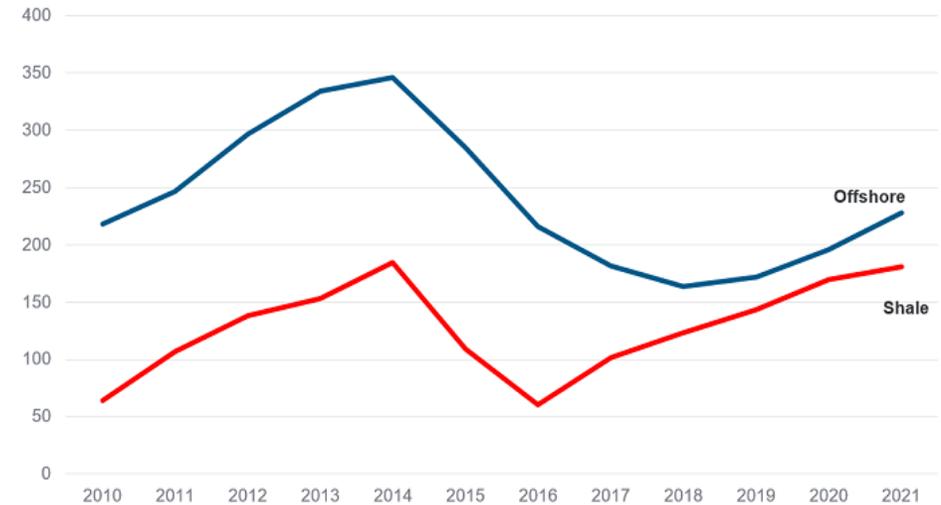
1953 - 'Mr. Charlie' offshore semisubmersible drilling unit and accommodation platform



I. INCREASE OFFSHORE:

- **Market downturn** Forced companies to:
 - Operate smarter,
 - Look for savings,
 - Improve operations
- **Solutions:**
 - Technologies,
 - Change development plans
 - Fewer wells/more phases,
 - Utilization of existing infrastructure,
 - Collaboration & standardization
 - Negotiation for lower rates and service costs.

Upstream investments by type
USD billion



Source: Rystad Energy DCube

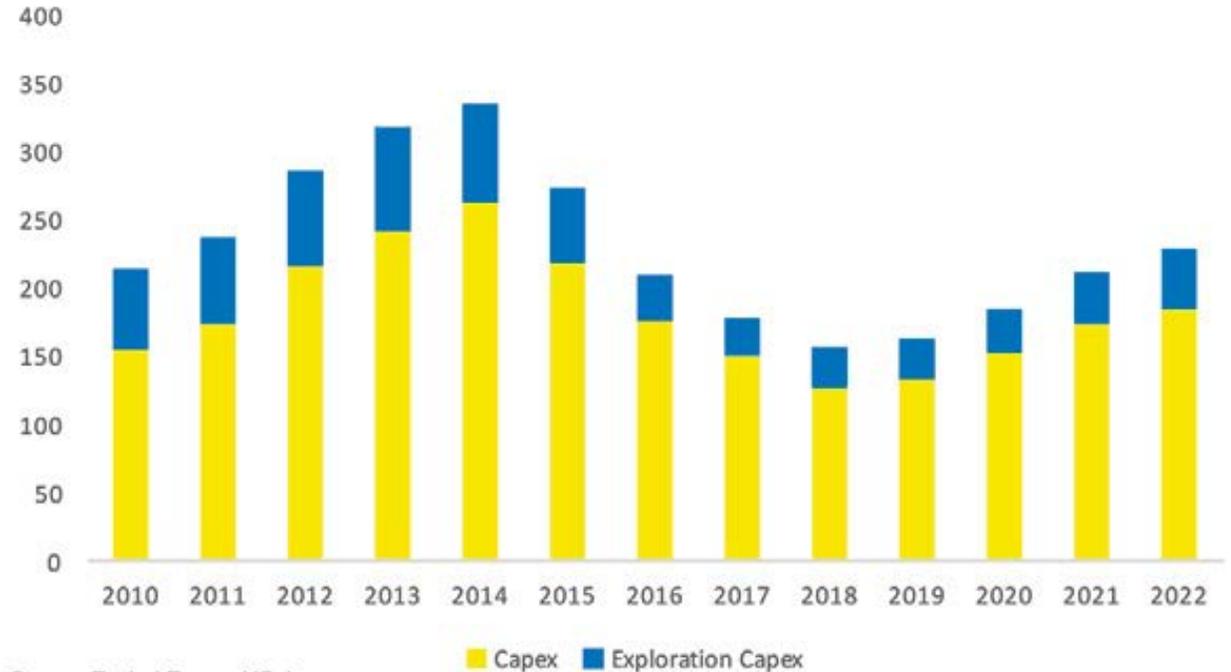
“The steady offshore recovery is expected to continue despite today’s continued market uncertainty [fluctuating oil price]...”¹



I. INCREASE OFFSHORE, Cont:

Offshore activity is expected to increase as new projects are being sanctioned and activity levels are approaching 80% of their historical highs. This suggests that the offshore upturn seen throughout 2018 is set to continue. With a recent rise in final investment decisions on offshore oil and gas projects globally, this is set to have a positive impact on global offshore investments throughout 2019 ²

Figure 1. Global offshore investments (US\$ billion).



Source: Rystad Energy UCube

More than 85% of the projects that we expect to be sanctioned in 2019 will generate returns greater than 10% even at current oil prices. ³



I. INCREASE OFFSHORE, Cont:

LOWER COSTING DRIVING THE MARKET:

Development costs: As much as 30% reduction since 2014. ⁴

Operating Costs: Several major oil producing companies such as ExxonMobil, Shell, ConocoPhillips, and Chevron have succeeded in bringing the breakeven prices from around high level of USD 80 per barrel to about or less than USD 40 per barrel between 2014 and 2016, in different regions. The decline in breakeven cost is mainly due to the improvement in enhanced ultimate recovery, lower drilling and completion cost and structural changes. ⁵



II. OFFSHORE v ONSHORE

OFFSHORE CHALLENGES V. ONSHORE:

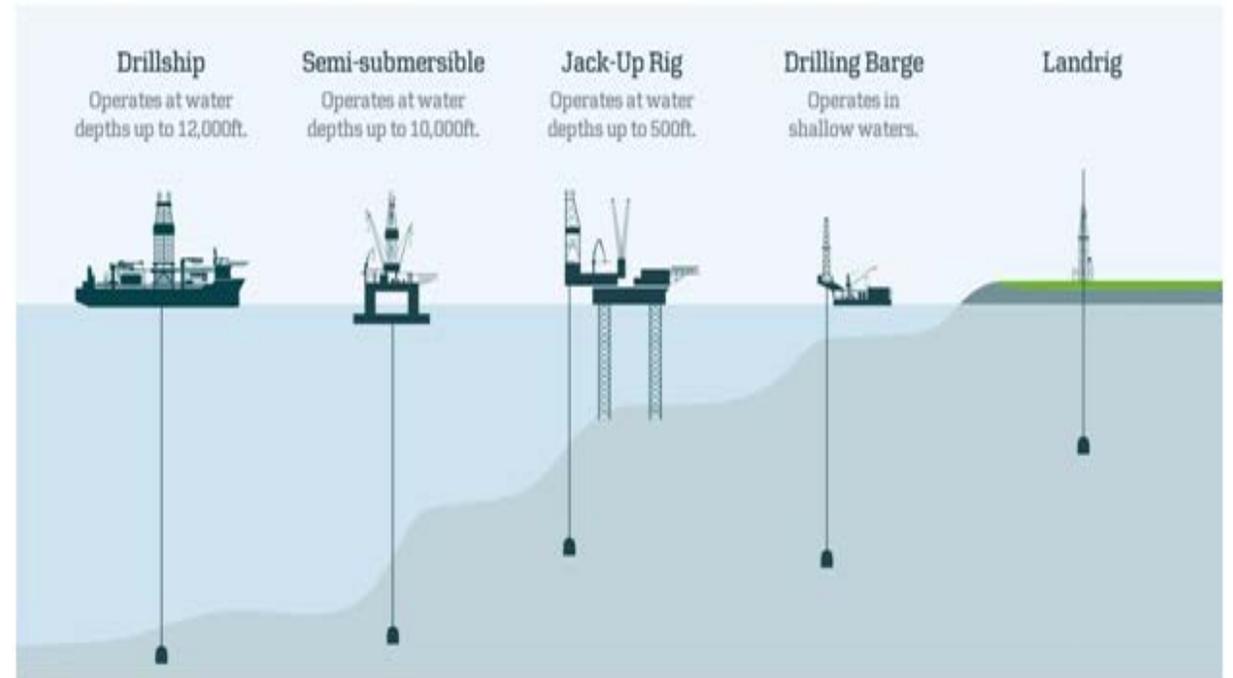
- Offshore oil and gas production is more challenging than land-based installations:
 - Remote
 - Harsher environment:
 - Winds
 - Weather
 - Seas.



II. OFFSHORE v ONSHORE, Cont:

DRILLING OFFSHORE:

- Much higher cost, due to-
 - **Smaller worldwide fleet** of offshore drilling units;
 - **Complications with water** before wellhead (difference in drilling cement requirements, BOP pressures, etc)
- **Cost of bringing a blowout under control** may be substantially higher, for example you may need to hire in additional drilling rig(s) to drill relief wells.
- **Anchor drags** impacting pipe and vessel impacts of platforms etc.



II. OFFSHORE v ONSHORE, Cont:

CONSTRUCTION: Offshore cost= 2.5-3% Greater than Onshore

- Highly complex and expensive structures;
- Offshore elements significantly increase:
 - Cost of rectification,
 - Transit of materials,
 - Load-out,
 - hook-up,
 - Installation, etc.



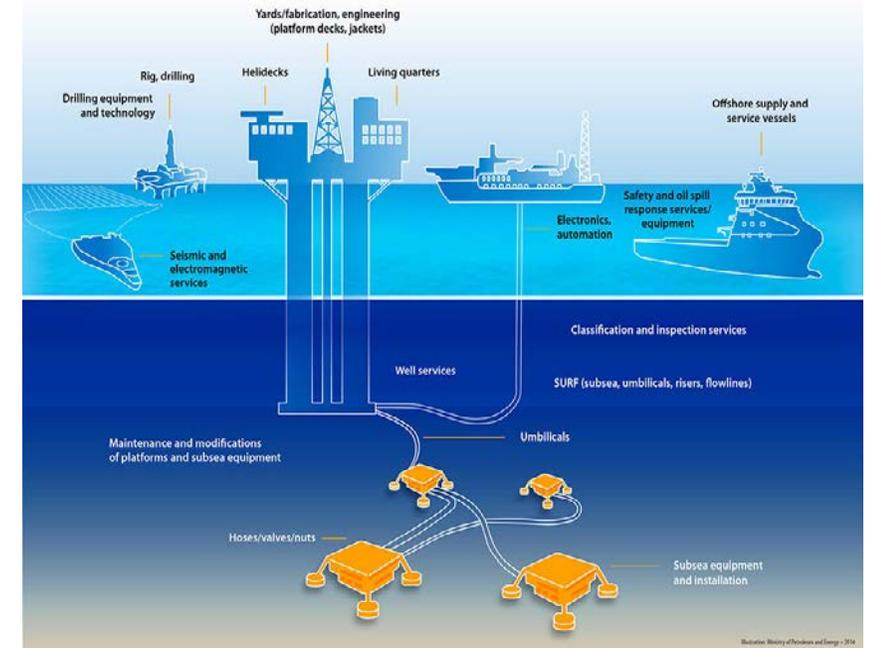
II. OFFSHORE v ONSHORE, Cont:

OPERATING:

- Equipment more complex & expensive
 - Higher Risk- total loss of platform/rig/equipment (due to lack of spread of risk).
- Wreckage removal: difficult,
 - Requires specific equipment (Usually less readily available than onshore equipment)
 - Higher cost

DECOMMISSIONING:

- Due consideration must be given to the eventual decommissioning of offshore assets, which in itself brings a number of risks and complexities.



II. OFFSHORE v ONSHORE, Cont:

SECURITY:

- Offshore has no security fences- open perimeter, freely accessible
 - Traffic
 - Piracy
 - Terrorism
 - Interstate Hostilities
 - Vandalism



II. OFFSHORE v ONSHORE, Cont:

INSURANCE: Offshore Insurance Premiums are roughly 2.5% higher than Onshore

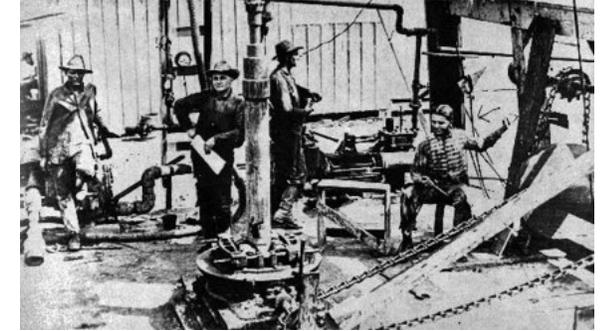
PREMIUM TYPE	ONSHORE RANGE	OFFSHORE RANGE	COMMENTS
CAR	0.075% to 0.300% net	0.200% to 0.800% net	<i>Supply and demand economics will push the rate up relative to the % of total market capacity the project consumed.</i>
PD	0.025% to 0.045% net	0.050% to 0.100% net	<i>reflects the more complex nature of fixing an offshore pipeline versus onshore. The need for barges, supply vessels and divers etc</i>
COW		Roughly Onshore COW rates loaded by x2.5	<i>This reflects the much high cost of the vessels and equipment needed to bring an offshore well under control.</i>



III. RISKS

- **DRILLING:**

- Drilling takes place onshore below the subsoil of the earth and offshore below the earth's seabed.
- Offshore drilling presents environmental challenges, both offshore and onshore from the produced hydrocarbons and the materials used during the drilling operation.
- Depth
 - The ocean can add several thousand meters or more to the fluid column. The addition increases the equivalent circulating density and downhole pressures in drilling wells, as well as the energy needed to lift produced fluids for separation on the platform.



- **HUMAN RESOURCES:**

- Offshore manned facilities also present logistics and human resources challenges.

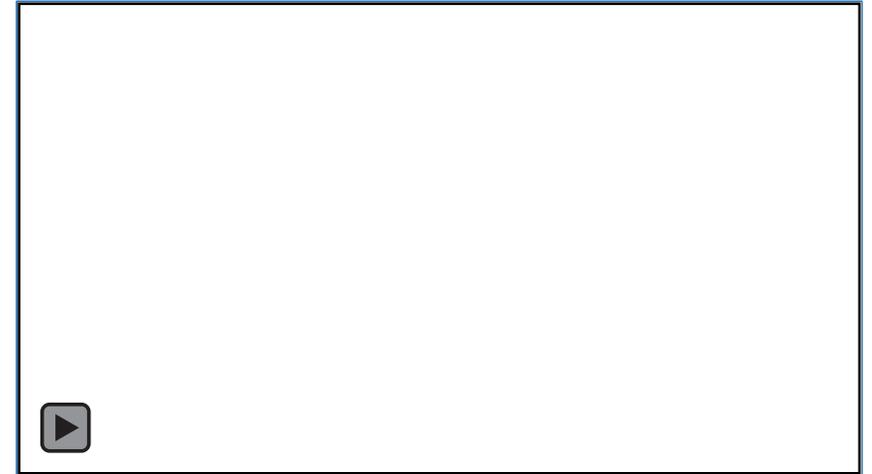


III. RISKS, Cont:

POLLUTION:

Each phase of development, operation and decommissioning (of platforms/rigs) harbors its own potential environmental hazards

- Onshore- pollution incidents are generally localized
- Offshore- far greater potential for environmental damage
 - oil plumes are
 - more difficult to contain and
 - can spread through water potentially reaching coastlines and endangering wildlife.
 - Higher cost: higher clean-up costs, potential fines of a higher magnitude etc.



III. RISKS, Cont:

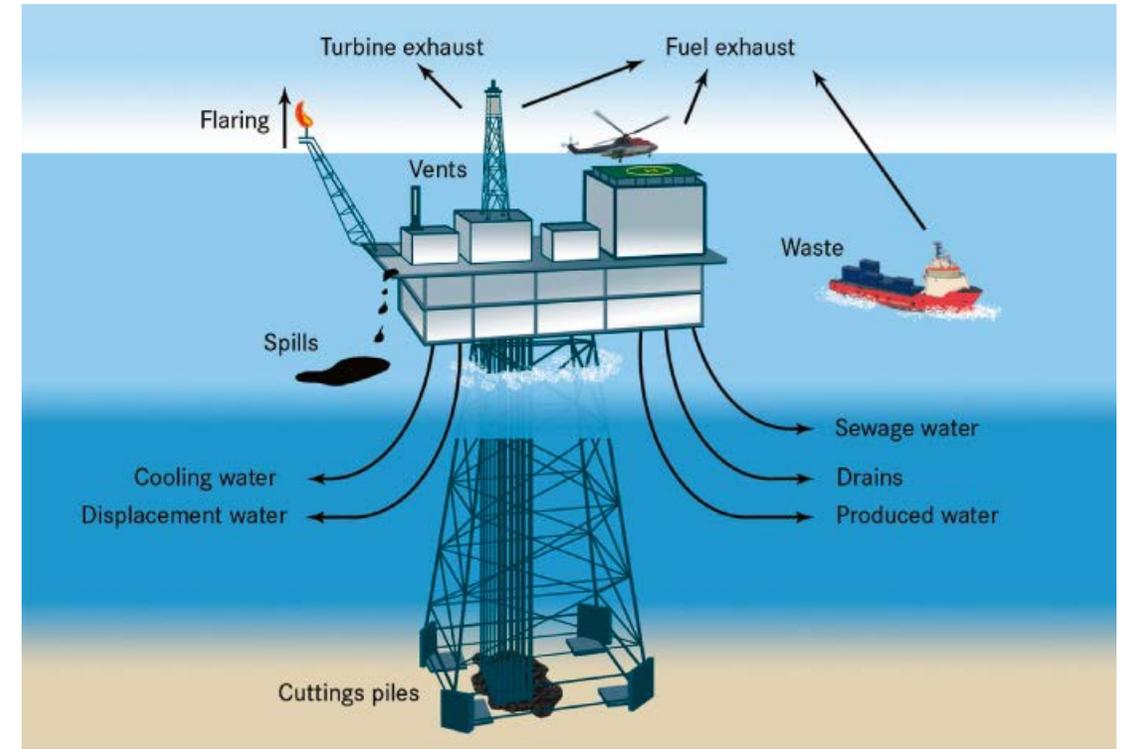
- DRILLING:

- Discharge of wastes:
 - Drilling fluids (drilling muds);
 - Drill cuttings; and,
 - Produced formation water..

- OPERATIONS:

- Oil spills
 - Oil tankers/pipelines
- Leaks & accidents on the platform.
- Produced water- Muddied waters
- Waste discharges

- DECOMMISSIONING: Waste discharges and their effects during Decommissioning / Abandonment / Removal of obsolete offshore installations.



IV. MITIGATION:

- HSSE Standards
- Operational Efficiency
- Project Management

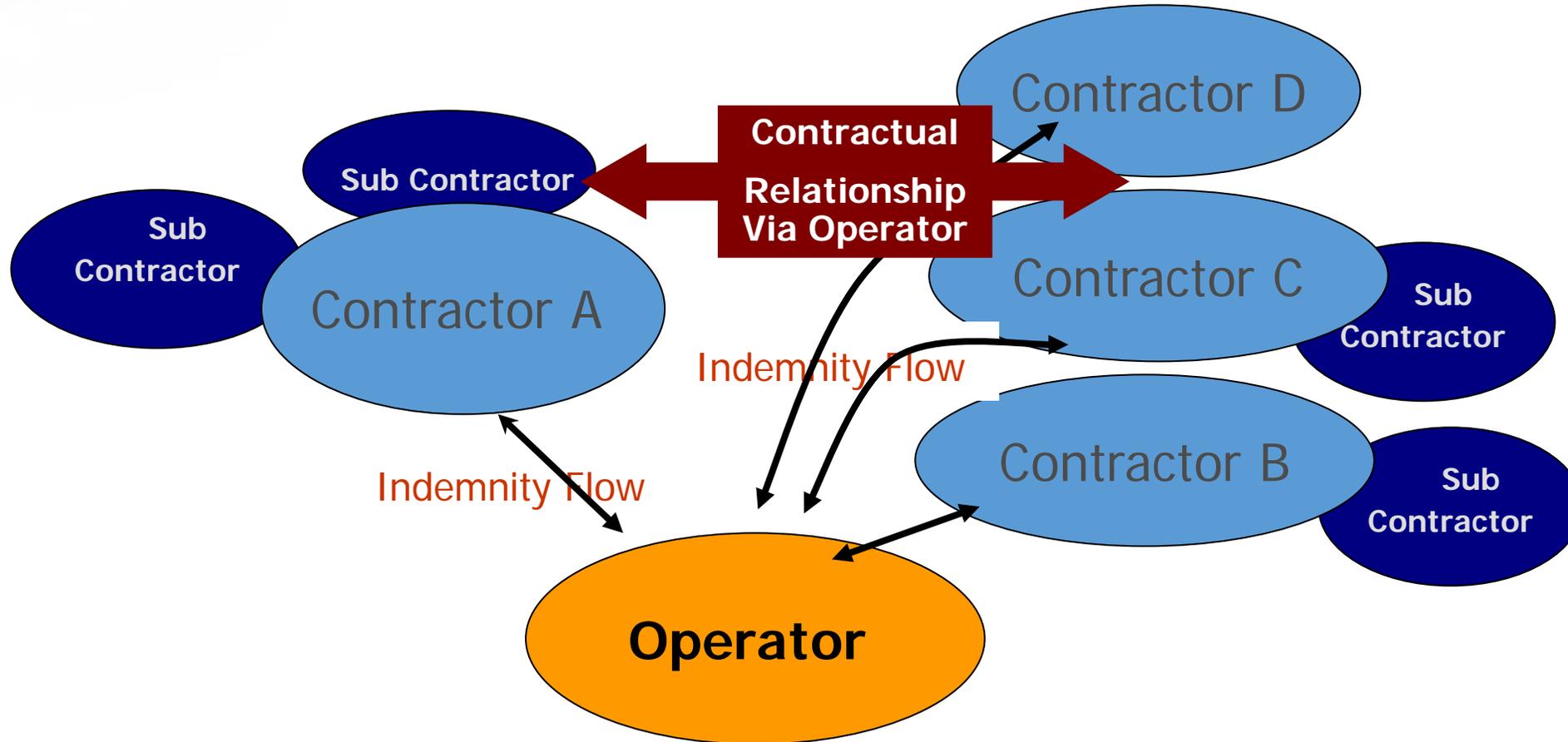


IV. MITIGATION: Risk Transfer (Insurance)

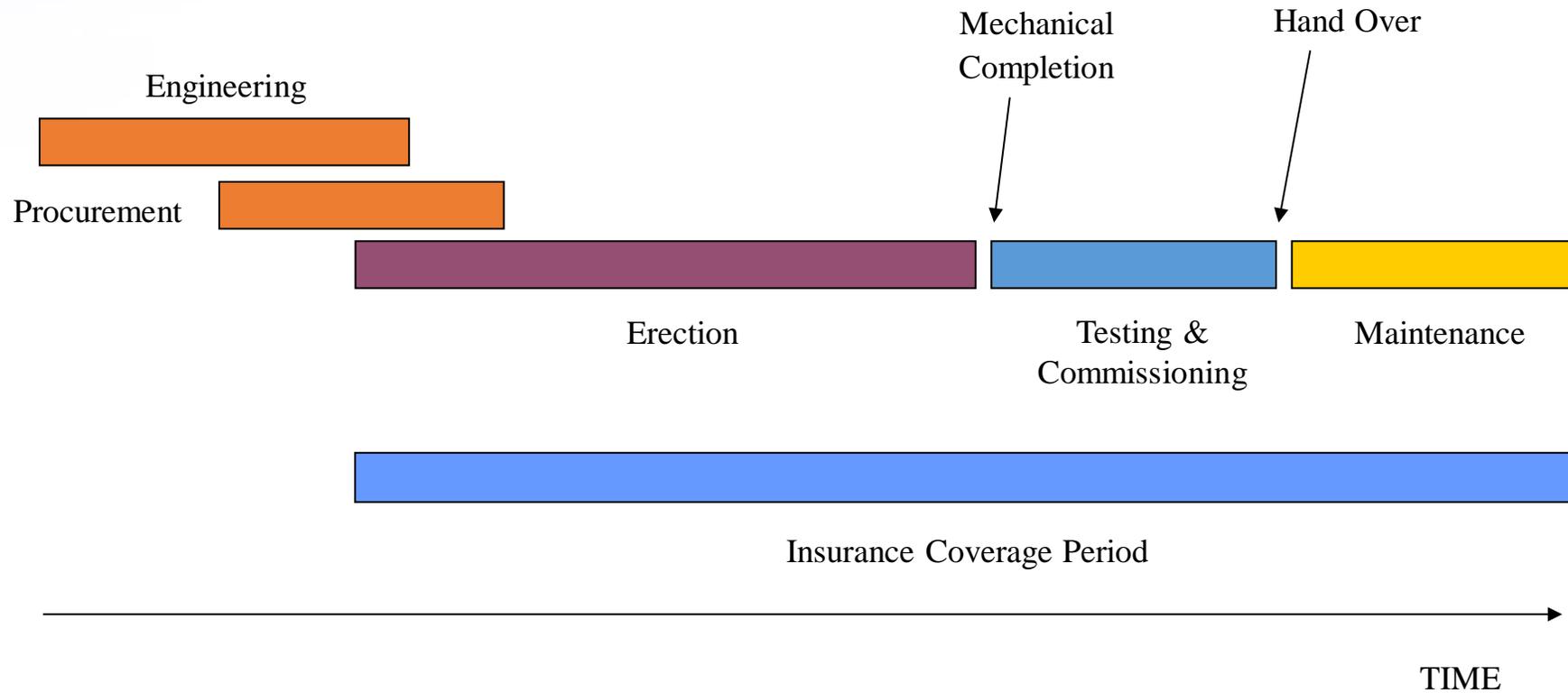
- Required Policies
- Limits and sub-limits
- Underwriters Selection



Claims Management



Construction All Risk





END



FOOTNOTES

- 1 Digital News Group Hart Energy, Tuesday, December 18, 2018
- 2 [Rystad Energy & Offshore Mag.](#)
- 3 Digital News Group Hart Energy Tuesday, December 18, 2018
- 4 Rystad Energy, a Norway-based energy research and consulting firm
5. [BUSINESS Wire](#): the "Global Offshore Contract Drilling Market - Growth, Trends, And Forecast (2018 - 2023)"

