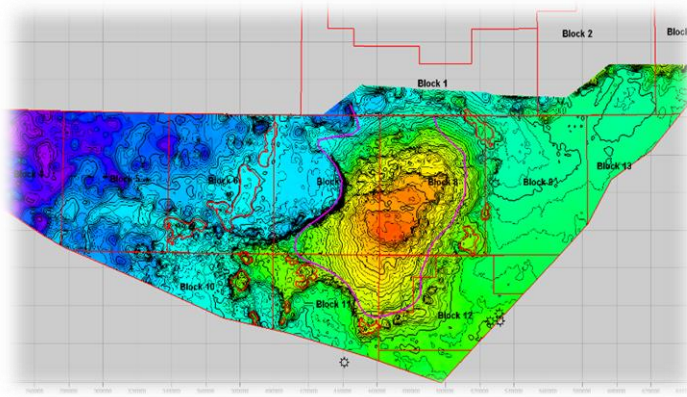


The outlook for Cyprus' exploration and production opportunities



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7th Energy Symposium

Nicosia

December 2019

Cyprus EEZ – Activity Snapshot

- 9 Blocks Licensed
- 8 Oil Companies
- 8 Exploration Wells
- 3 Discoveries



Licensing Round	Block	Operator	Status		
1 st	12	NOBLE	Exploration	Discovery	Development
2 nd	2,3 & 9	ENI	Exploration	Discovery	Development
	11	TOTAL	Exploration	Discovery	Development
3 rd	6	ENI	Exploration	Discovery	Development
	8	ENI	Exploration	Discovery	Development
	10	EXXON	Exploration	Discovery	Development
Restricted	7	TOTAL	Exploration	Discovery	Development

Challenge: Finding the resources

- Cyprus as a frontier area for exploration
 - First well in Cyprus EEZ only drilled in 2011
 - 8 exploration wells in over 70,000km² of EEZ



Aphrodite Field Monetisation



➤ Challenge:

- ✓ Low Price Environment
- ✓ Field isolated from Infrastructure

➤ Destination: Egypt

- ✓ Supply & Demand
- ✓ Availability of Infrastructure

➤ Solution:

- ✓ Synergies across the value chain
- ✓ Robust technical solution

International Markets



Midstream (Liquefaction)



Midstream (Pipeline)

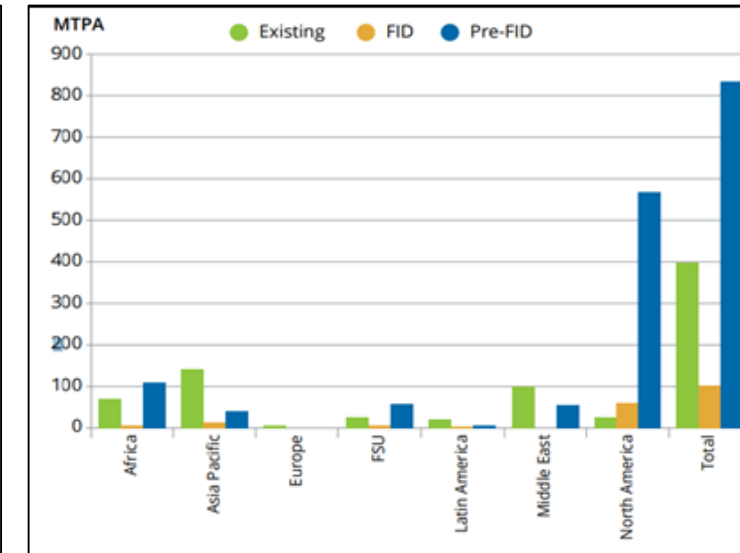
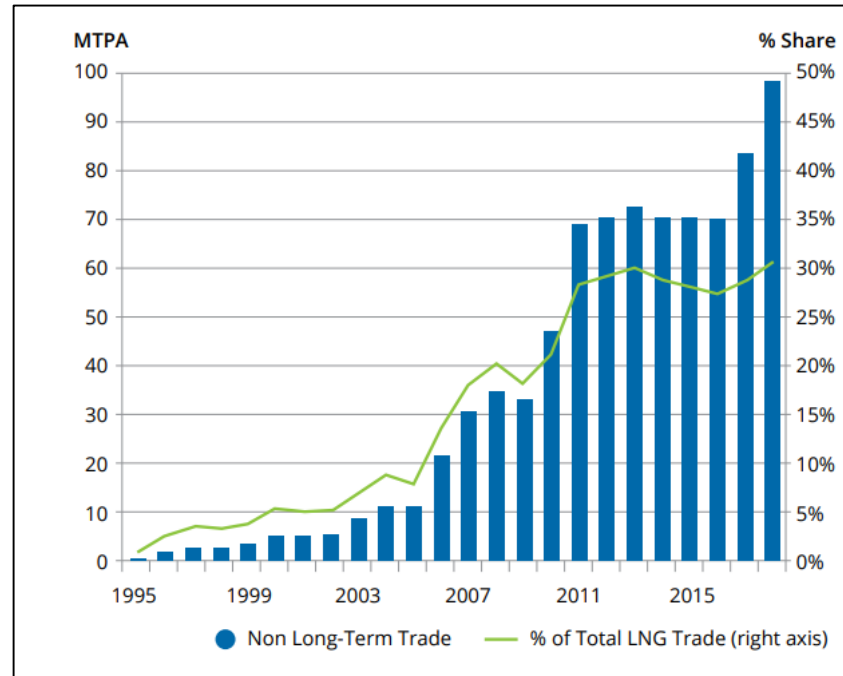
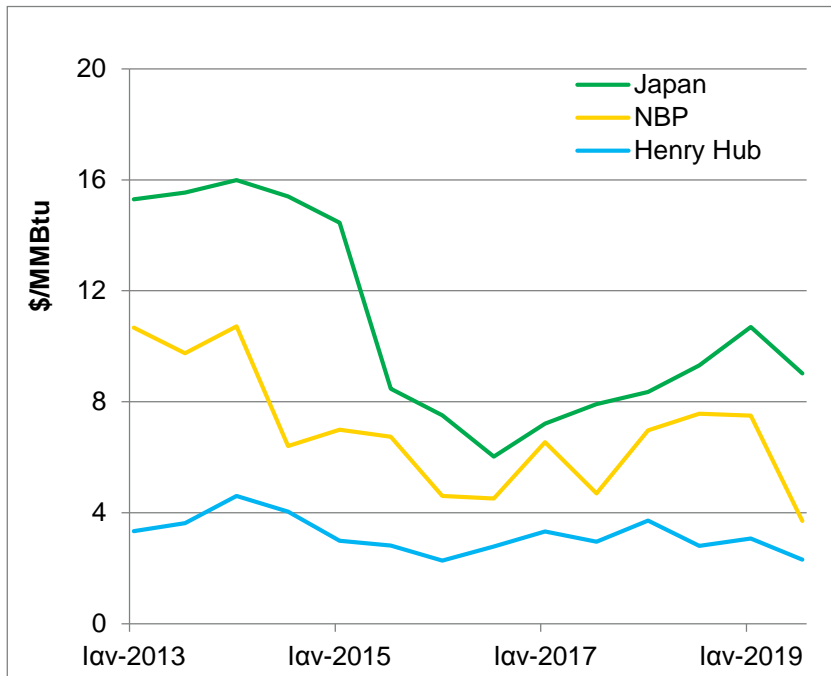


Upstream



Challenge: The 'gas glut' and effect on pricing

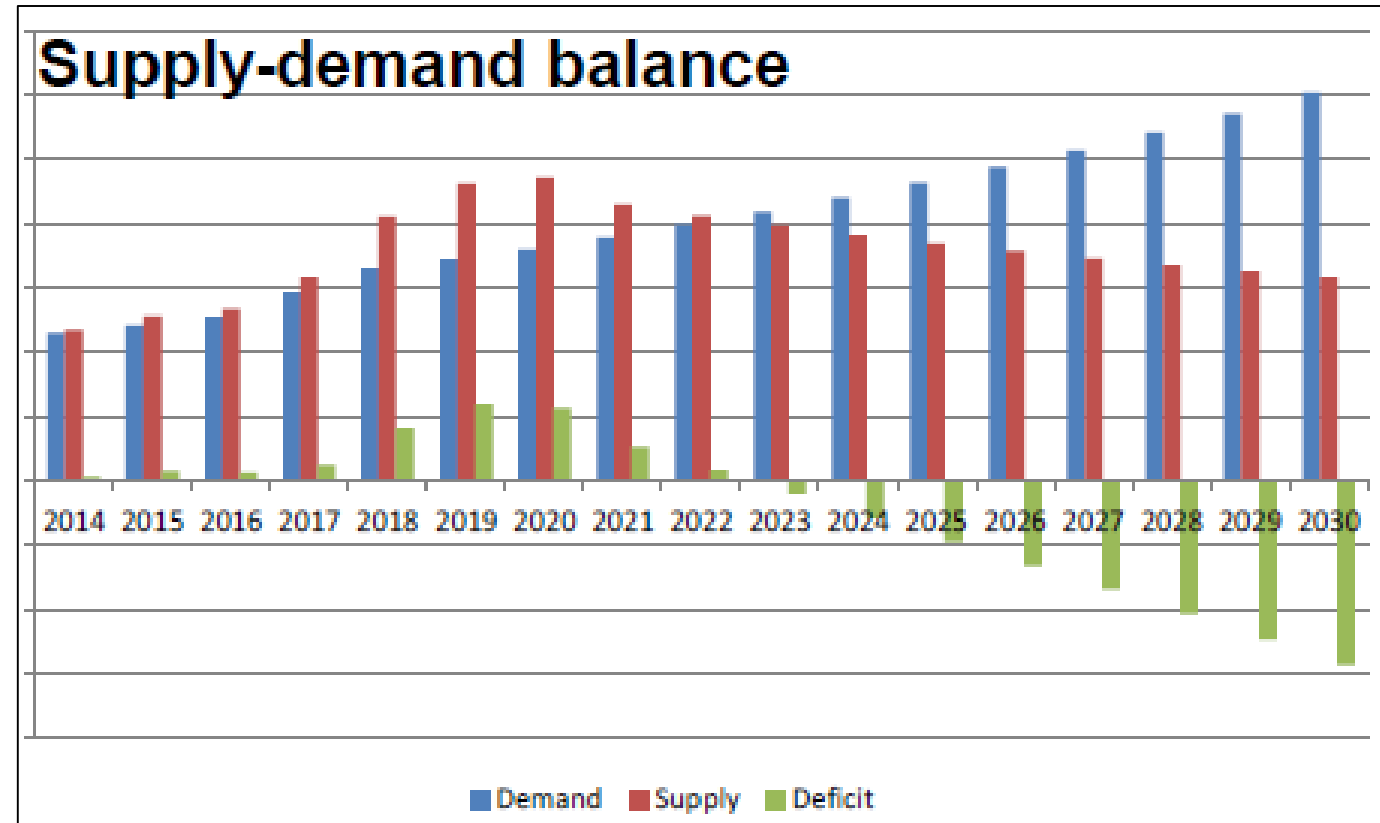
- Prices in various gas markets at low levels
- Long-term contracts increasingly replaced by spot-market trades
- Numerous LNG projects in various stages of engineering
 - 100MTPA Sanctioned
 - 840MTPA in Pre-FID



Source: IHS Markit

Opportunity: Regional Markets - Egypt

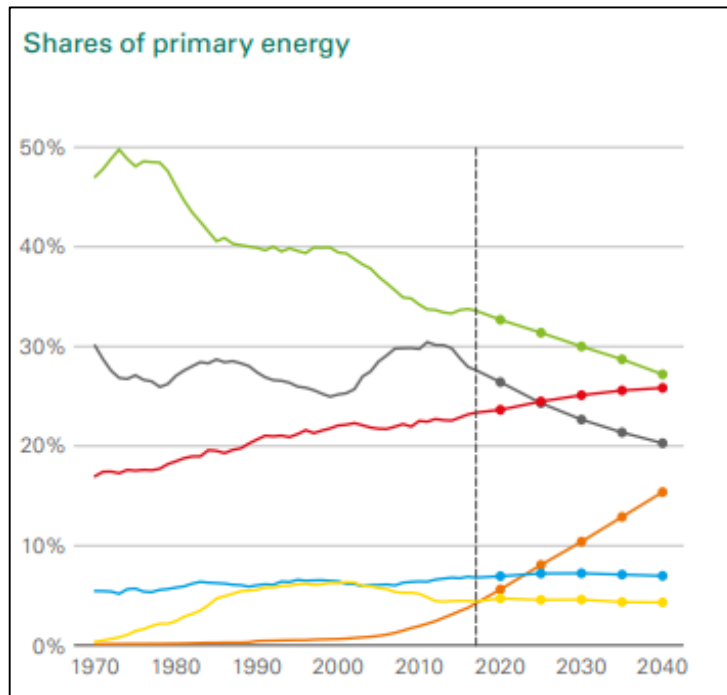
- Gas demand expected to increase significantly
 - Growing population
 - Increased share of power generation
- Recent gas discoveries not sufficient to sustain demand indefinitely
- LNG export capacity still available
 - Potential for expandability as well
 - Opportunity for regional gas discoveries



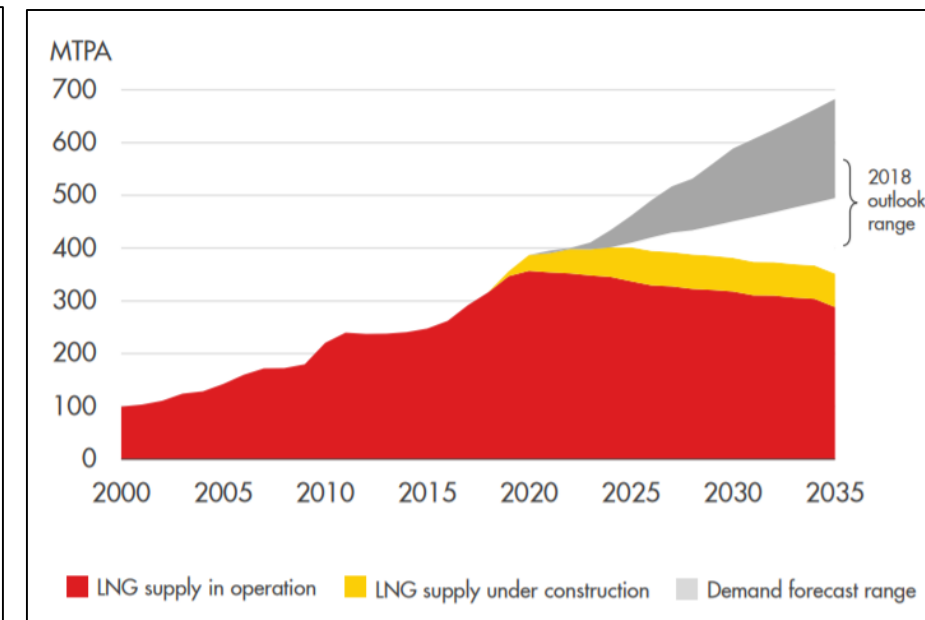
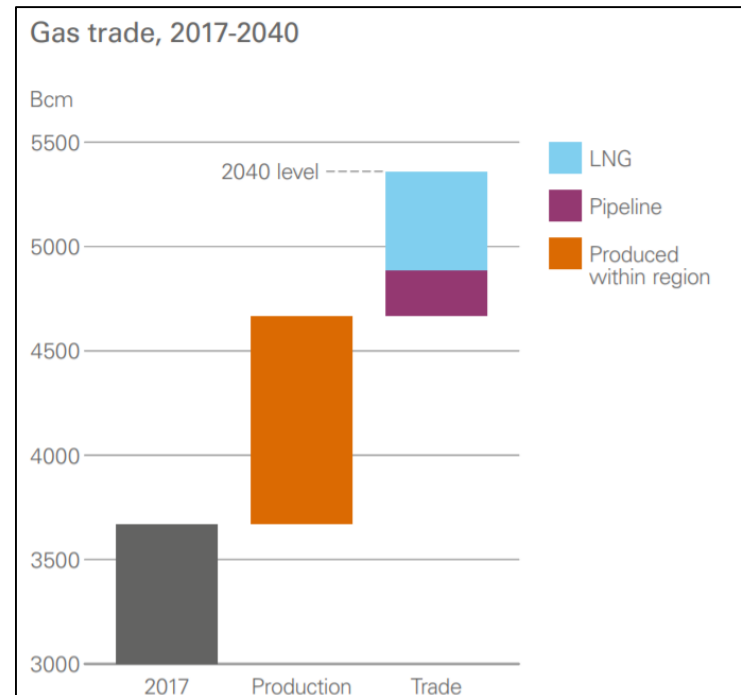
Source: GCA, CHC

Opportunity: Strong Gas Demand Forecast

- Global energy demand expected to grow
- Gas forecast to have an increased share in the primary energy mix
- LNG share of gas trade increasing
 - Provides flexibility for suppliers
- Additional liquefaction capacity needed for the medium term



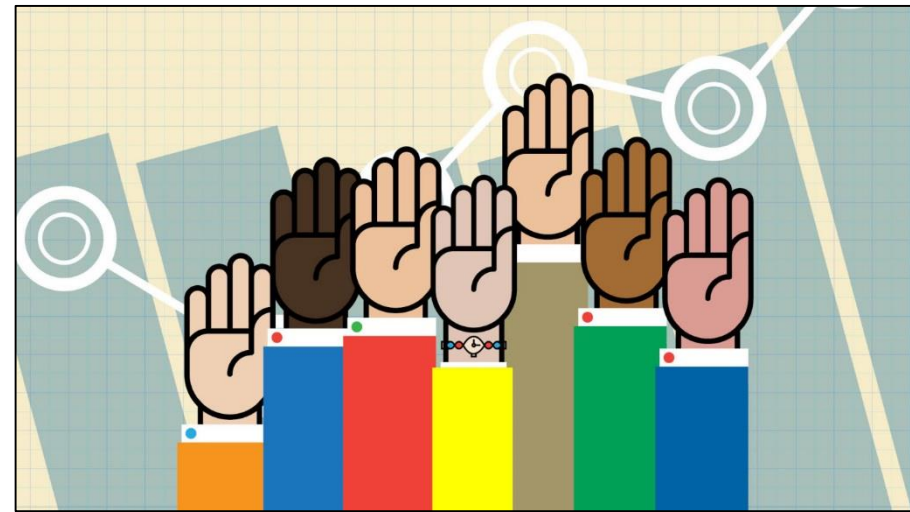
Source: BP Energy Outlook 2019



Source: Shell LNG Outlook 2019

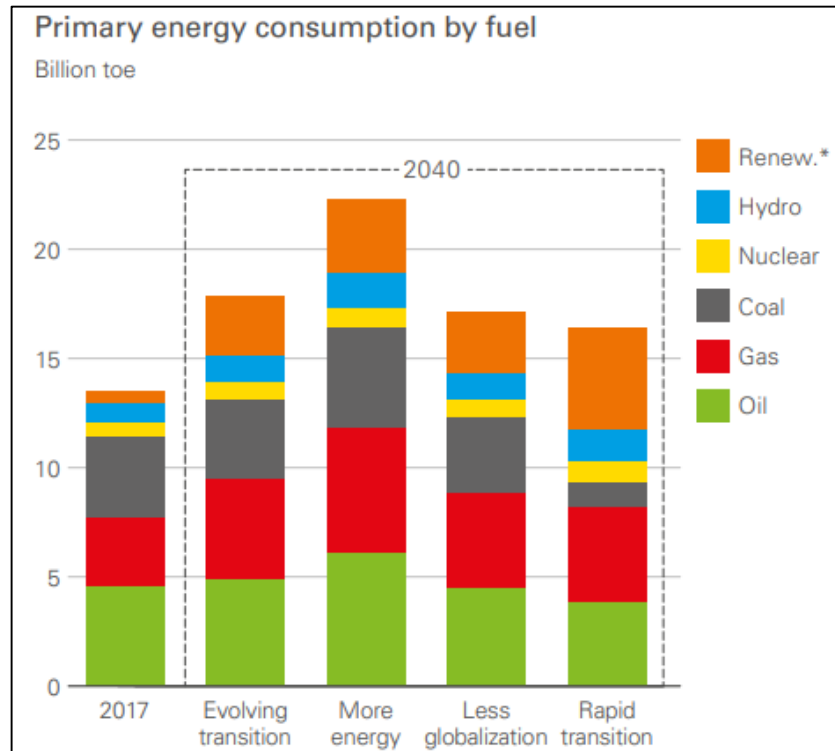
Challenge: Transition to Renewables

- Will 'energy transition' reduce demand for hydrocarbons?
- Increasing number of investor motions related to climate and sustainability
 - Since 2015, such motions passed at XOM, Chevron, BP, Shell, Equinor
 - Related to assessment of climate risks, setting emissions targets

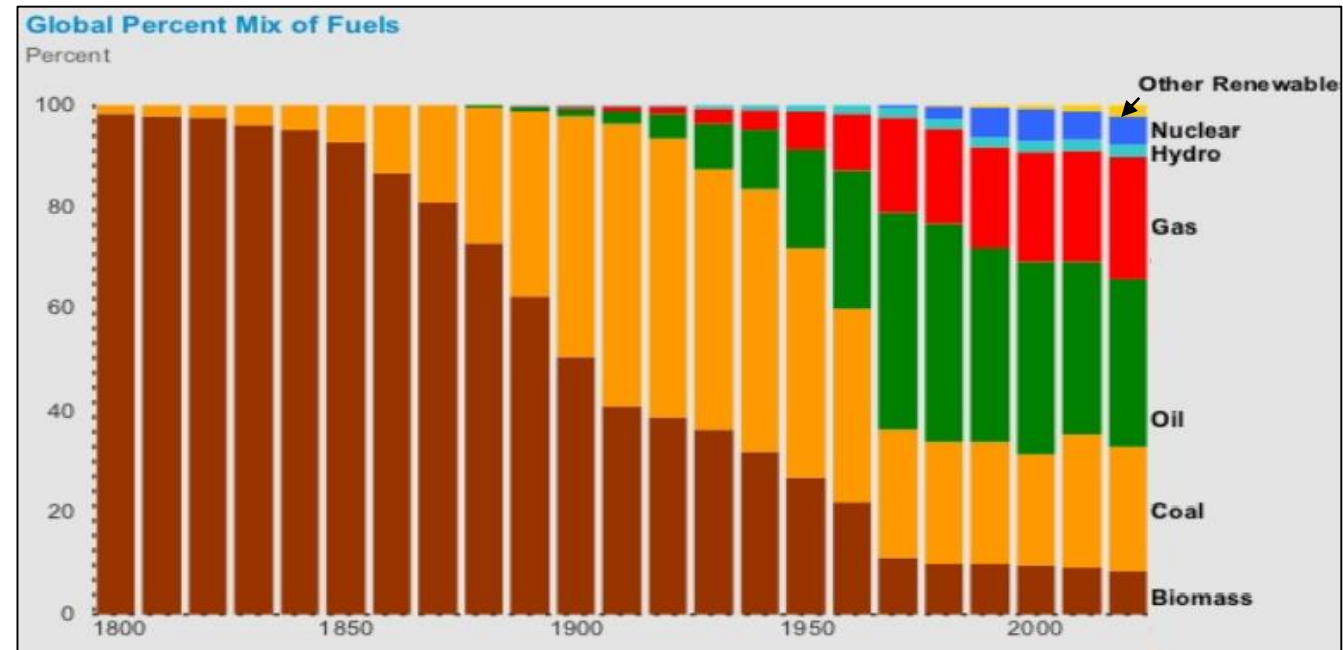


Opportunity: Gas as a 'bridge' to low-carbon future

- Transition will not happen instantaneously
- Gas expected to form integral part of mix in all scenarios
 - Efforts to improve urban air quality
 - Less GHG intensive than oil, coal
- Construction of new nuclear, once identified as a significant low-carbon energy source, has stalled



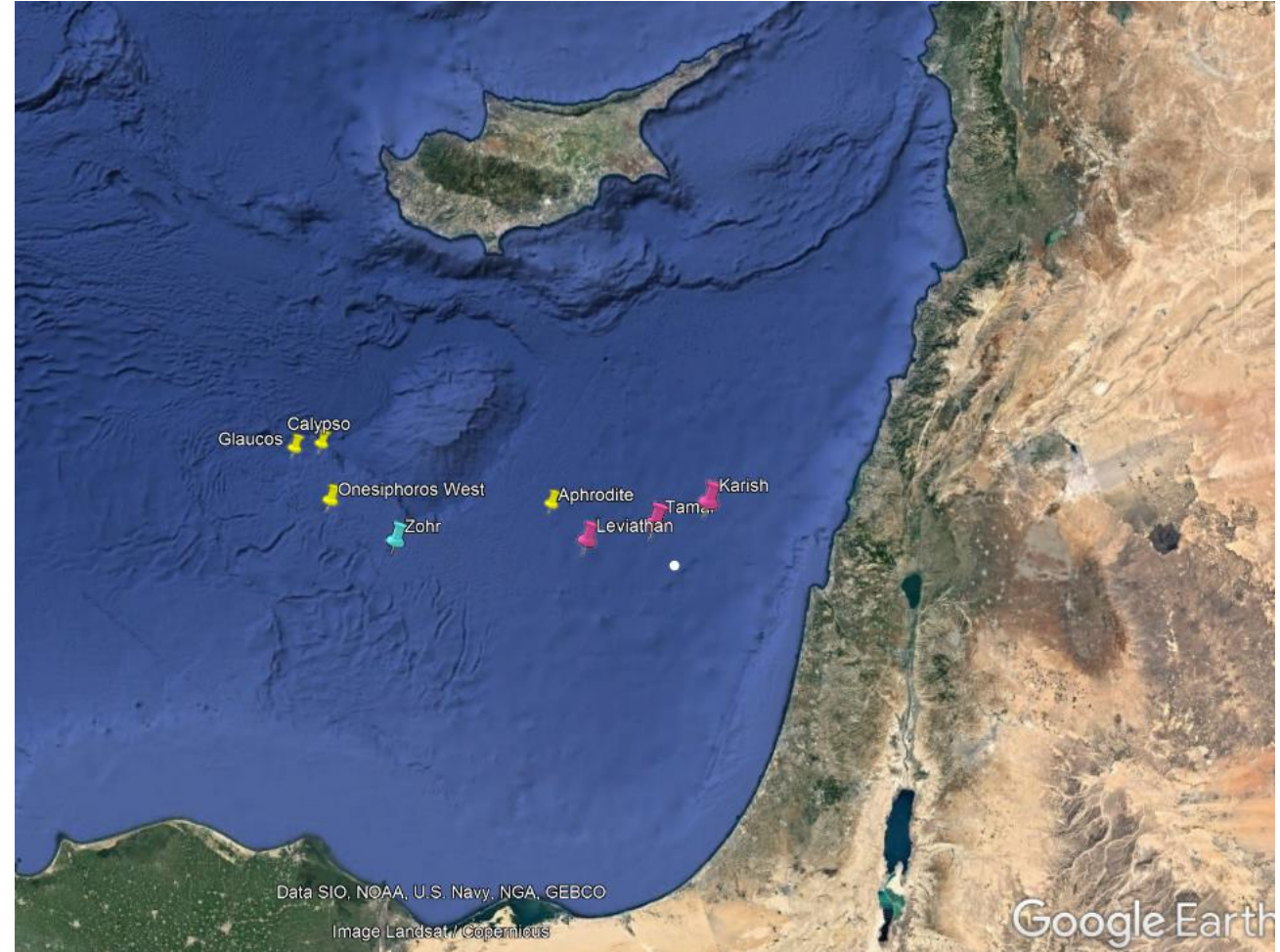
Source: BP Energy Outlook 2019



Source: Smill, Energy Transitions

Challenge: Developing 'stranded' gas fields

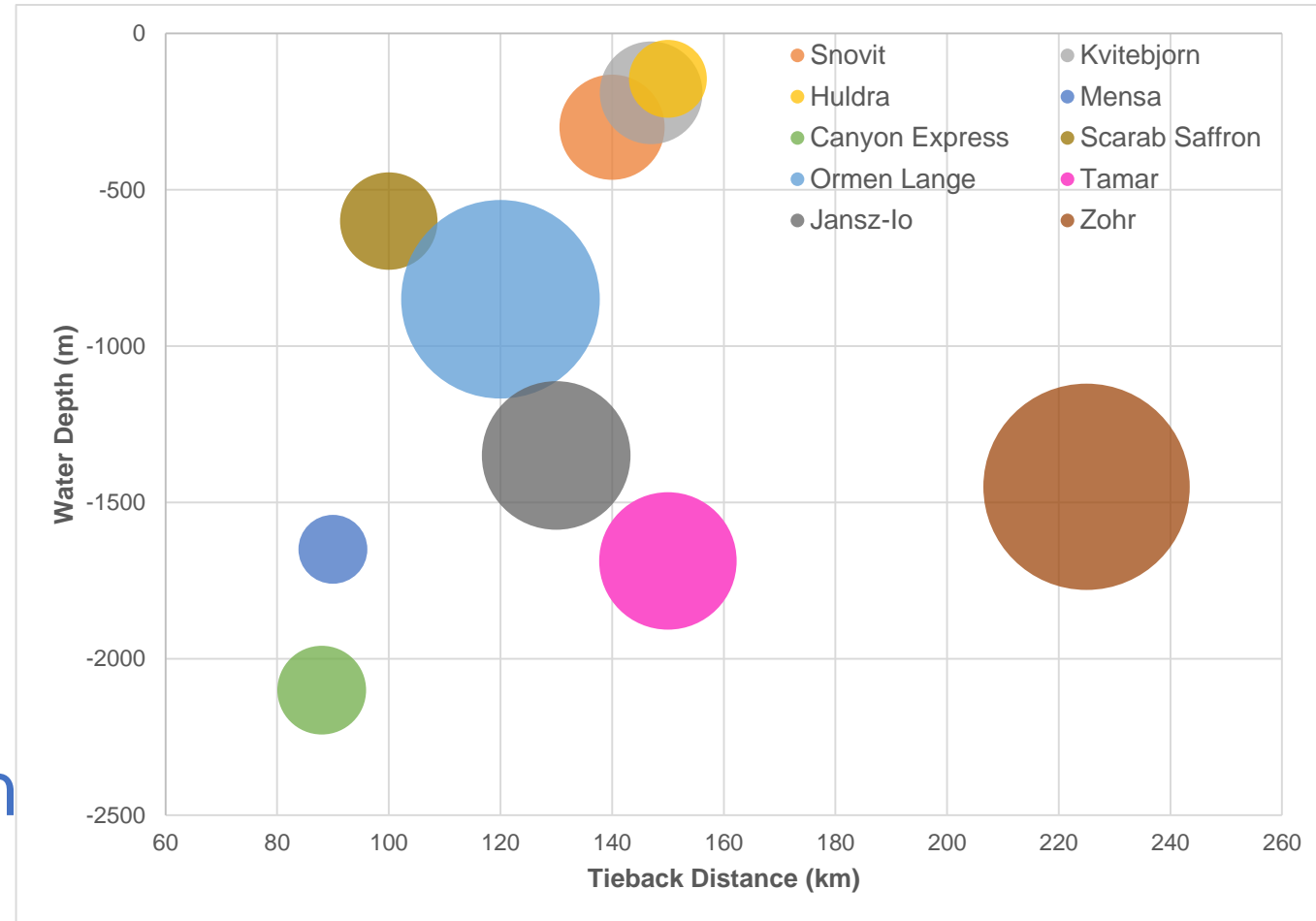
- Gas requires transport to end market
 - More challenging than oil development
- Discoveries in deepwater
 - All wells drilled in Cyprus EEZ >1500m WD
- Isolated from infrastructure
- Topography
 - Eratosthenes seamount
 - Cyprus Arc
 - Deepwater Channels



Opportunity: Development of Technology

– Subsea tie-backs

- Longer, deeper, higher flowrates
- Development of isolated gas resources
- Limit requirement for on-field infrastructure
- Enabled by advances in subsea monitoring and flow modelling
- Many considering addition of subsea compression

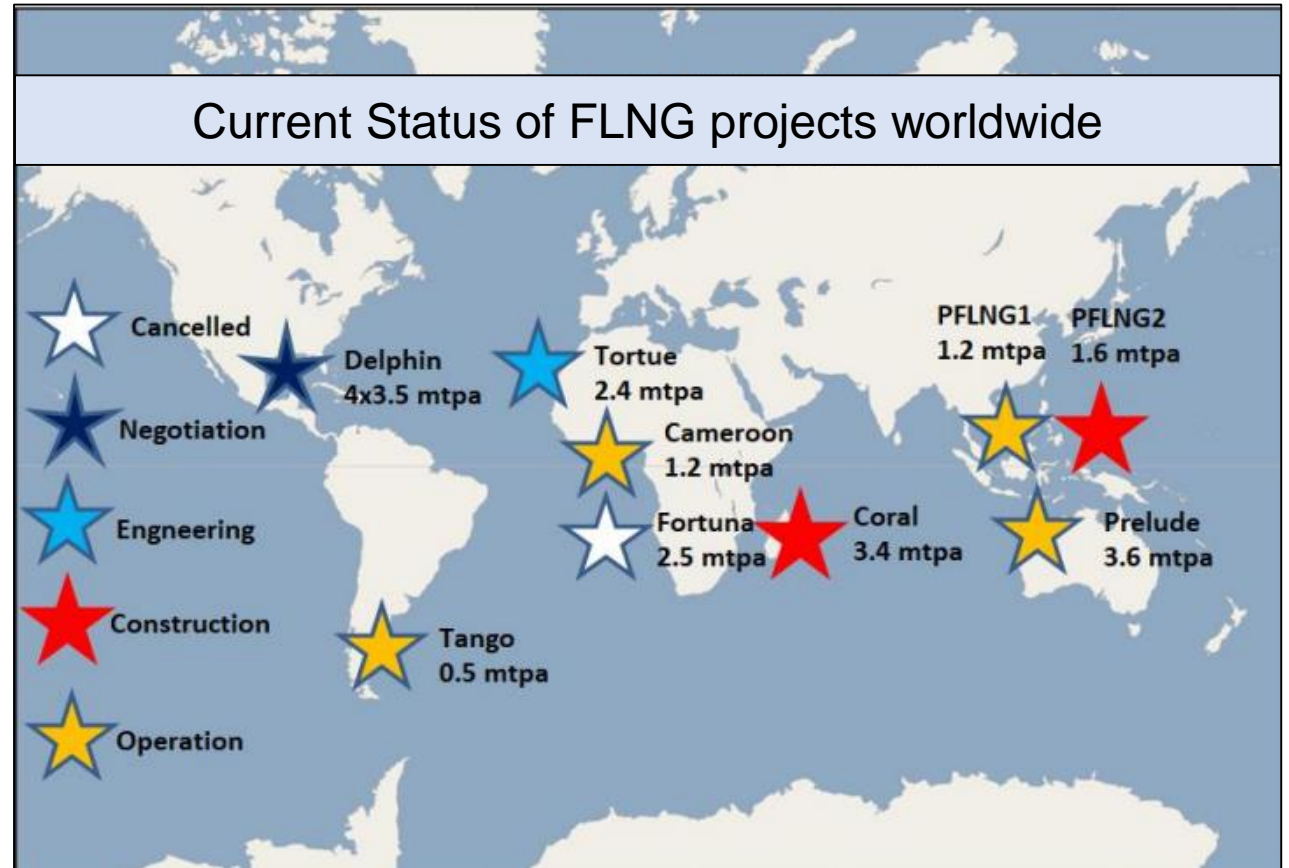


Opportunity: Development of Technology – FLNG

- Significant maturation since 2017
 - PFLNG- 1 first producing unit



- 4 units now operational worldwide
- Estimated ~20 projects at FEED/Pre-FEED Stage



Source: OEIS, 2019

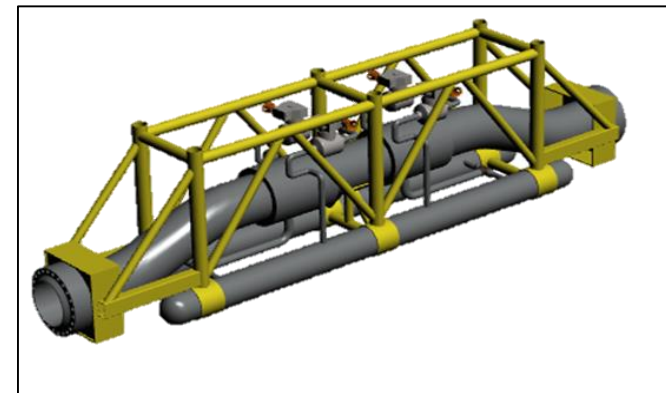
CHC - Active Involvement in tech development



- EU funded Horizon 2020 project
- New monetisation option; targeting smaller gas markets
- Underpinned by new pressure vessel technology
- 13 participants from 8 countries

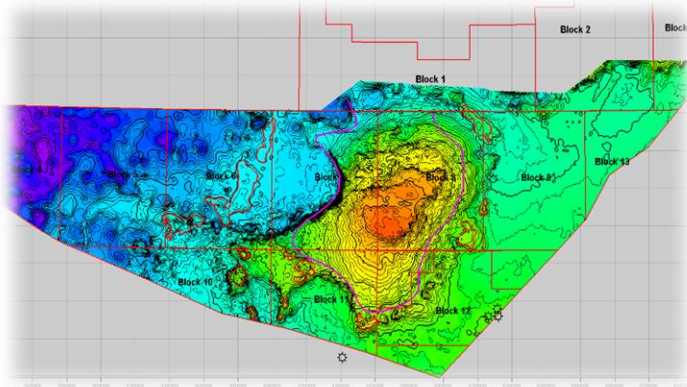


- Testing underway with Cranfield University
- Significant industry participation
- Potential benefits: Less infrastructure, longer tiebacks → Increased Recovery



Key Messages

- The outlook for gas as a primary energy source is positive
- Technical innovation will monetise assets previously considered stranded
- The East Mediterranean is an attractive exploration target with unlocked potential
- Cooperation at all levels (technical, commercial, political) is needed to discover and develop the regional hydrocarbons



Thank you

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