

Distributing Clean Energy

Market Opportunities in an Oversupplied LNG market

February 2020

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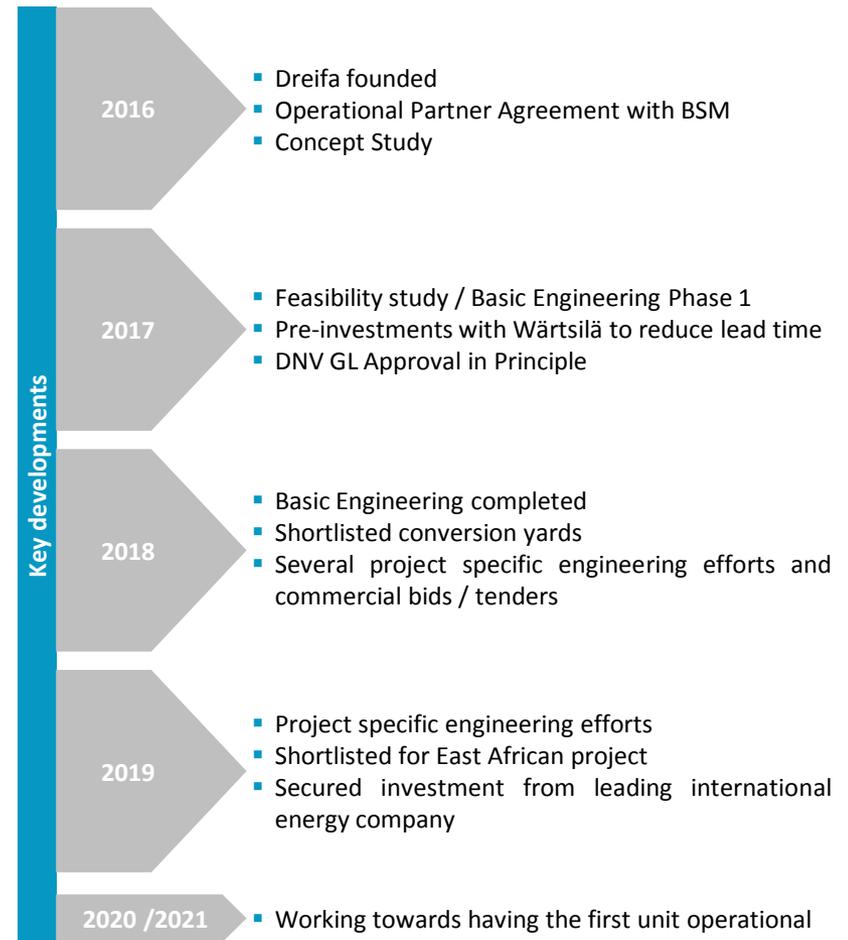
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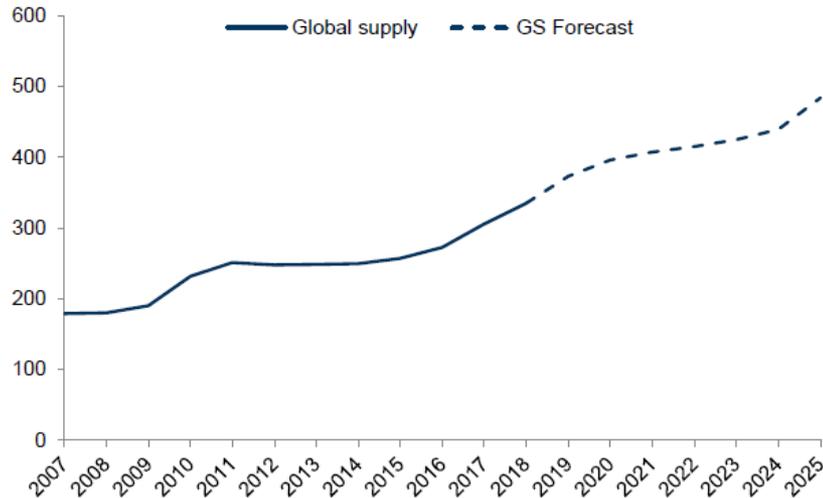
Background and strategy

- Dreifa Energy Limited (“Dreifa” or “Company”) was founded in 2016 by an experienced team from the LNG and shipping industry
- The Company offers small to medium-scale floating infrastructure for LNG import to new LNG markets. These include power generators and industrial consumers worldwide
- Combining low capex Dreifa Floating Regasification Units (“FRU”) with low cost amortised LNG carriers as Floating Storage Units (“FSU”) significantly reduces barriers to entry in new markets
- Dreifa’s lower costs enable emerging and smaller markets to be economic even where Floating Storage Regasification Units (“FSRU”) are not feasible
- Dreifa Energy aims to be a leading developer, owner and operator of interim and permanent LNG import terminals over the next 5 years



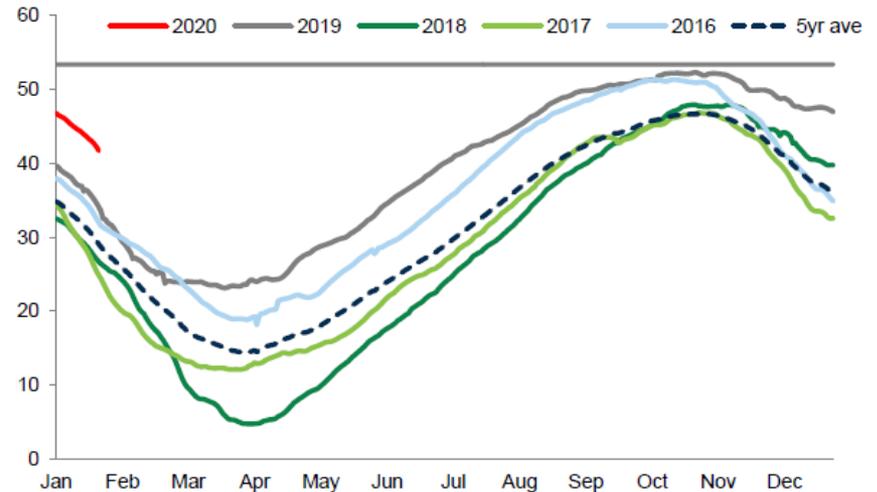
Huge growth in LNG production capacity has flooded the market

Global LNG production



Source: Goldman Sachs

NW Europe Natural Gas Storage



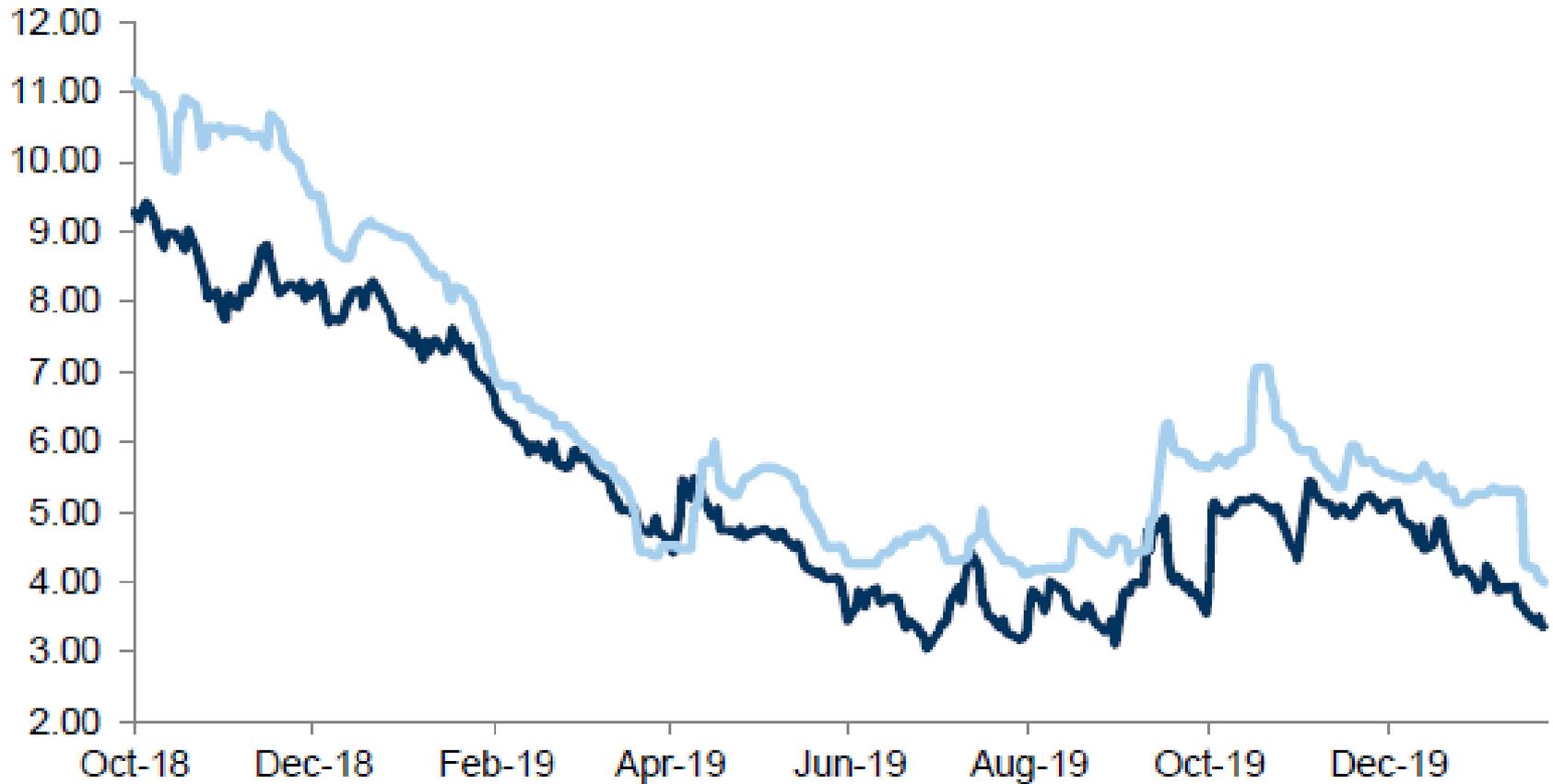
Source: Goldman Sachs

- Significant increase in global LNG production capacity over the last two years and this is expected to continue as further new supplies come to market without dedicated buyers
- Existing LNG markets are becoming mature with limited growth. Most larger new LNG market opportunities have already been developed
- The LNG surplus is suppressing LNG spot prices and impacting on long-term contract prices
- The LNG industry rapidly needs to create new LNG demand to absorb the surplus
- Floating regasification solutions are the ideal tool to quickly and cost efficiently start importing LNG in new markets

World-wide LNG prices at all time lows

TTF and JKM Price Developments

— TTF — JKM



Source: Goldman Sachs

No easy solutions (**bad news**) – industry waking up? (**good news**)

“A global glut of natural gas has gotten so massive that U.S. exporters could soon face their worst-case scenario: Halting shipments to get supply and demand back in balance.” (Bloomberg, 25th November 2019)

“Chinese companies are offering to resell liquefied natural gas cargoes in the spot market as they grapple with high inventory amid weak demand due to a slowing economy and a milder than usual winter,....” (Reuters, 10th December 2019)

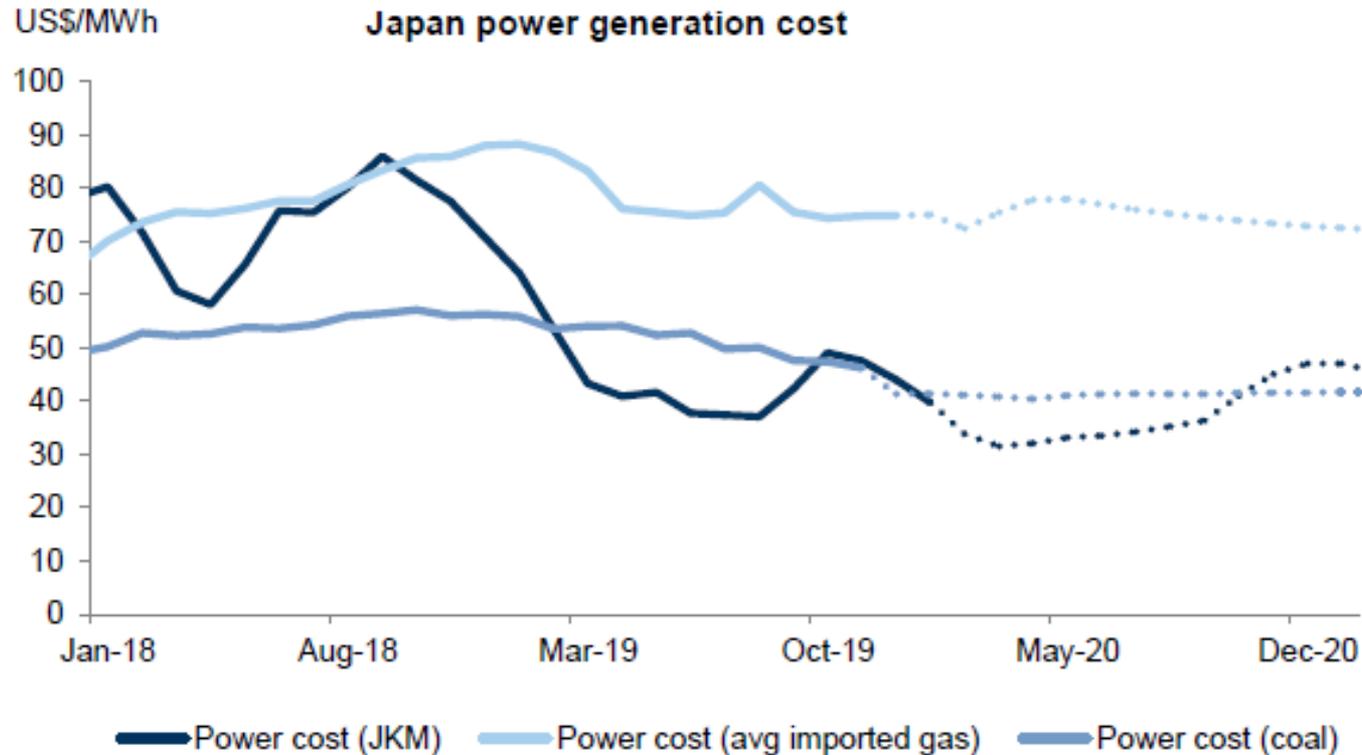
“However, it will also help to make LNG a more competitive fuel, especially in Asia, where it faces a struggle against both coal and renewables.”

*“With new coal mines and power plants increasingly finding it hard to access capital and insurance, the low price of LNG offers the industry an opportunity to seize, and maintain, market share. “
(Reuters, 29th January 2020)*

***“Until more LNG-receiving terminals start getting built as an alternative to long pipelines, then it’s China or bust. LNG exporters need more demand from new markets.”** (Forbes, 29th January 2020)*

LNG for power production is now competitive with coal

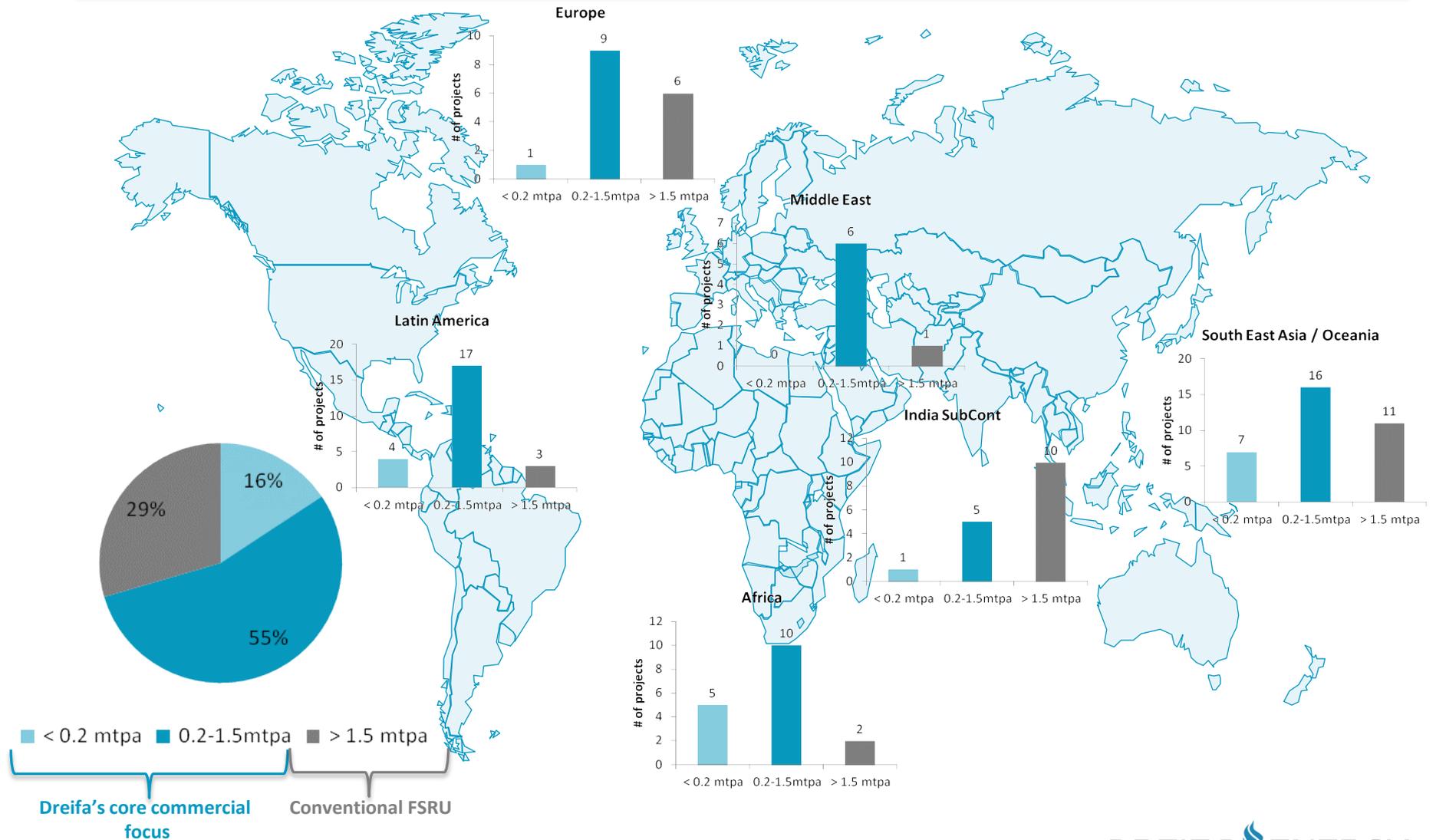
Japan Power Generation Cost



Source: Goldman Sachs

New potential LNG markets – 70% have less than 1.5MT/a potential

Global floating LNG import opportunities identified



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Build for what you need

Illustrative LNG demand versus floating regas capacities

Small island based markets

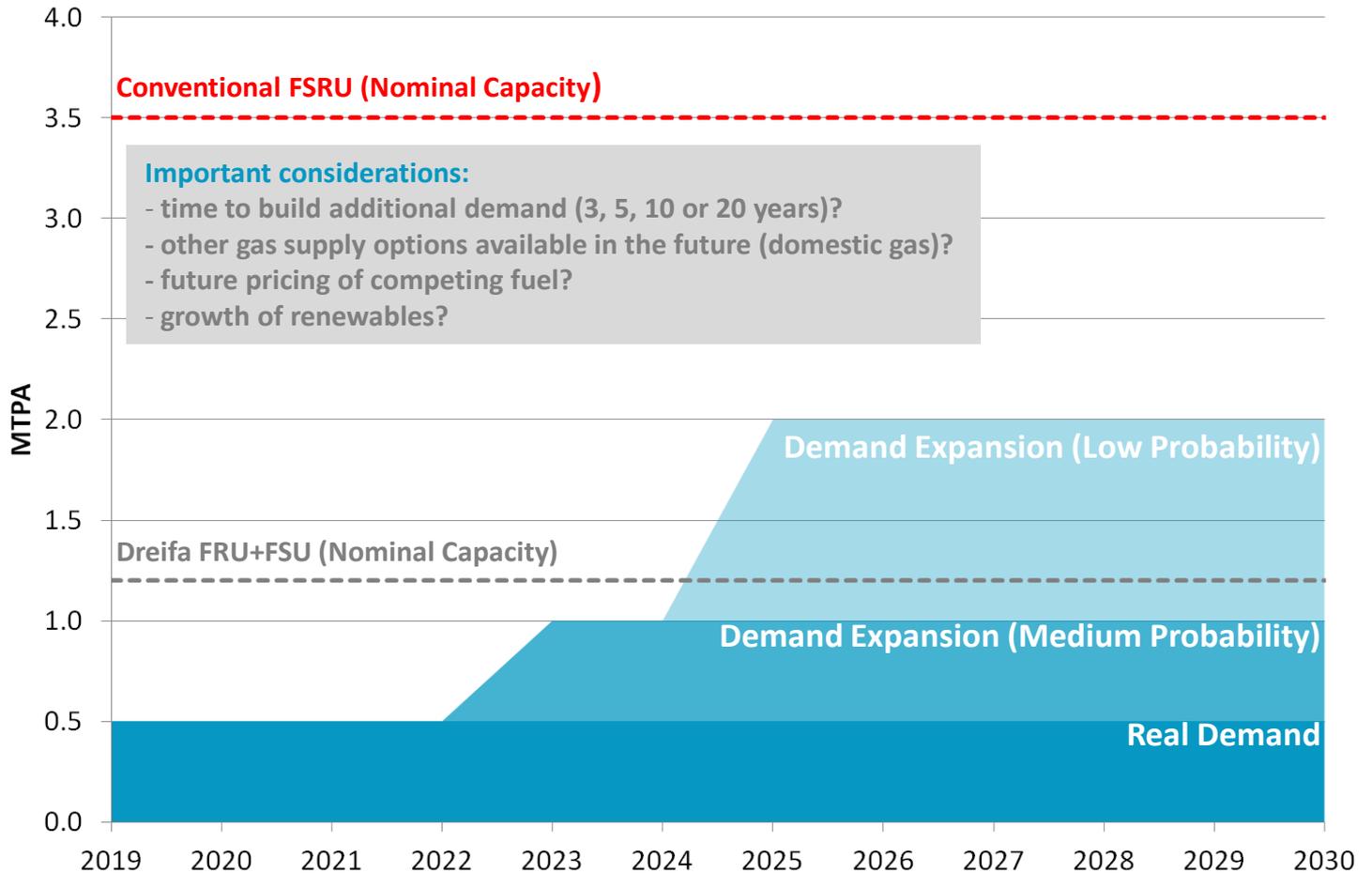
limited initial demand and capped growth

Frontier markets

limited initial demand, but significant potential growth – high risk wrt infrastructure build-out

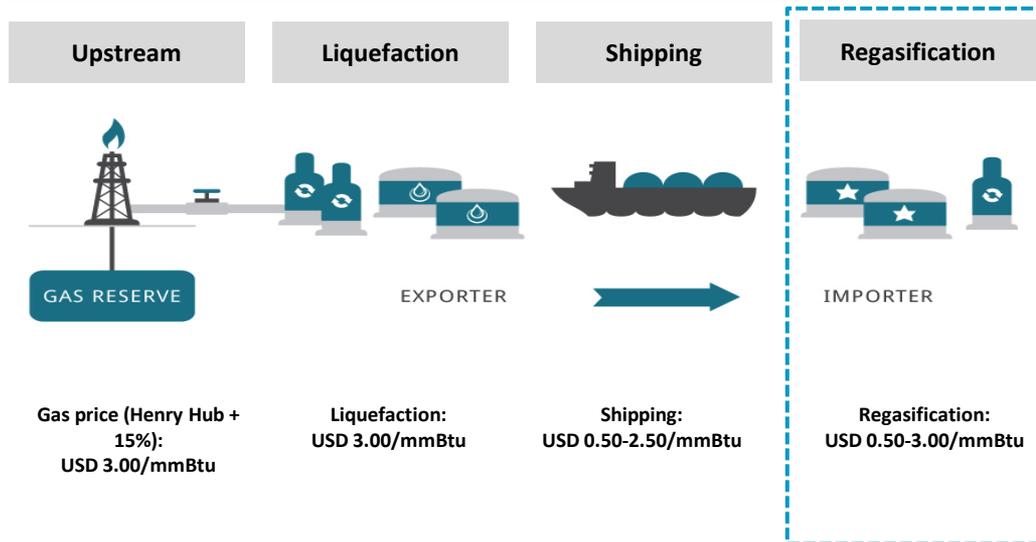
Single industrial consumers

either stand alone or key cornerstone offtaker



Dreifa FRU concept targets projects < 1.5 MT/a initial demand

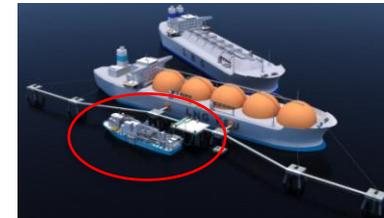
LNG value chain



Marine regasification solutions



1 – FSRU
Integrated FSRU solution for fast track/ capex sensitive LNG import projects (3-7 MT/a demand)



2 – FRU + FSU
Dreifa solution with FRU and FSU outperforms FSRUs on small/medium LNG import projects (<1.5MT/a demand)

Key advantages of Dreifa solution

Constructing new cryogenic LNG storage tanks is highly expensive

Existing LNG carriers are widely available and inexpensive to use as FSU – limited conversion risk compared to FSRU

Compatible with existing and conventional LNG supply chain, thereby reducing overall project scope and risks

FRU + FSU solution allows for customized capacity to meet specific project demands over time

For small/mid sized volumes the Dreifa solution is economically superior and more flexible than competing alternatives

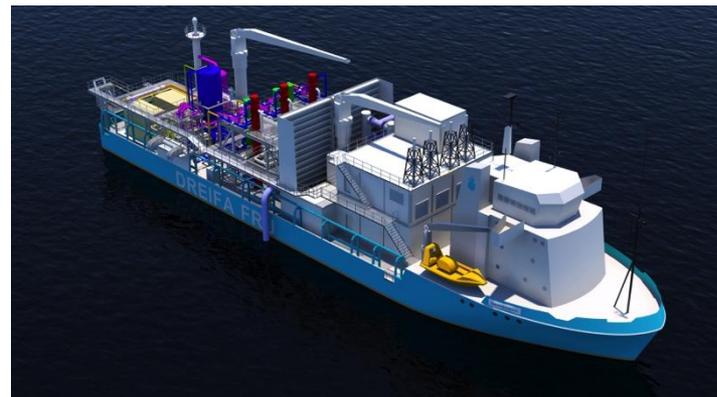
Dreifa FRU design and development

Main Particulars

Class Notation	1A Supply Vessel REGAS GAS FUELED
Regas Capacity	3x75 mmscfd
Delivery Pressure	50 – 100 bar
Dual Fuel power generation	
Shell and Tube vaporizers with sea water heated glycol water as intermediate fluid (open loop)	
BOG receiving and management facilities / zero venting	
Extended dry docking interval / In water survey prepared	
13 to 14 months schedule from FID to “Ready for Start-up”	

Design Developments

Concept Study: Q4 2016
Feasibility Study: Q1 2017
Basic Engineering Phase 1: Q2/Q3 2017
Approval in Principle received from DNV GL: Q4 2017
Basic Engineering Phase 2: Q4 2017 / Q1 2018
Shipyard selection ongoing



DNV·GL

APPROVAL IN PRINCIPLE

Particulars of Product

Designer:	Dreifa Management AS
Product:	DREIFA FRU (Floating Regasification Unit) Concept

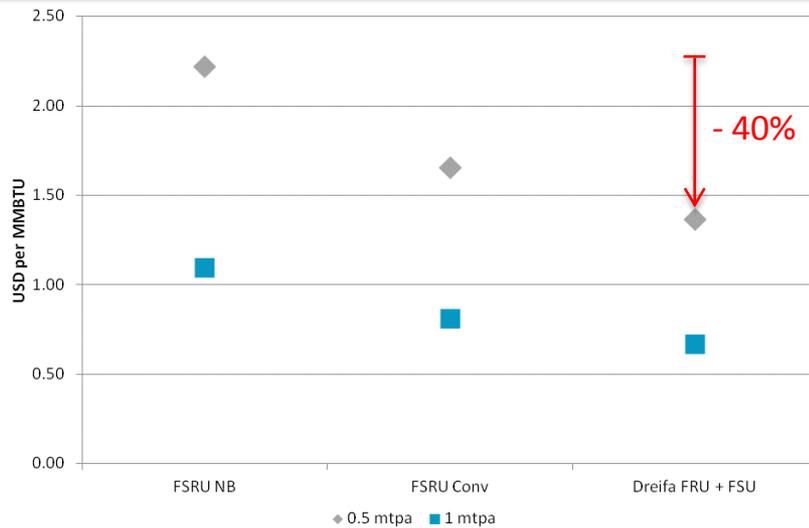
This is to verify:

That DREIFA FRU concept has been assessed by DNV GL and found to comply with current Rules of the Society, as specified below.



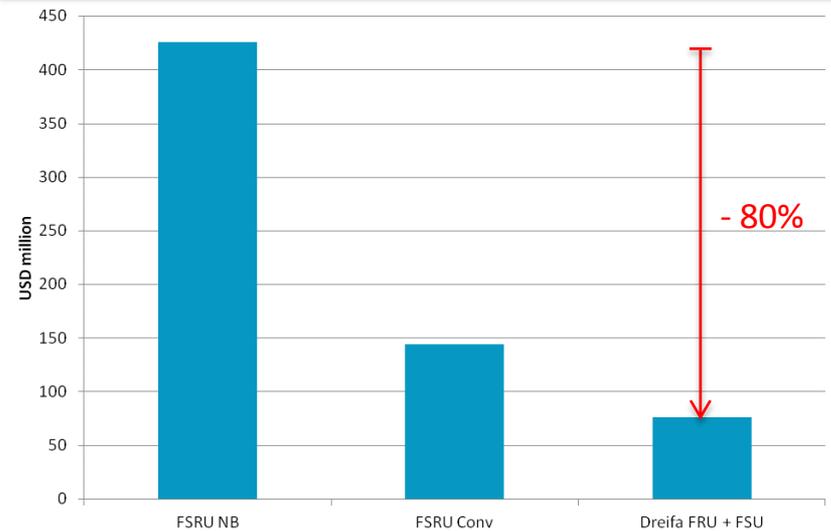
Lower unit costs and significantly reduced financial entry barriers

Total terminal cost*



* Including CAPEX, OPEX and fuel

Total balance sheet exposure**



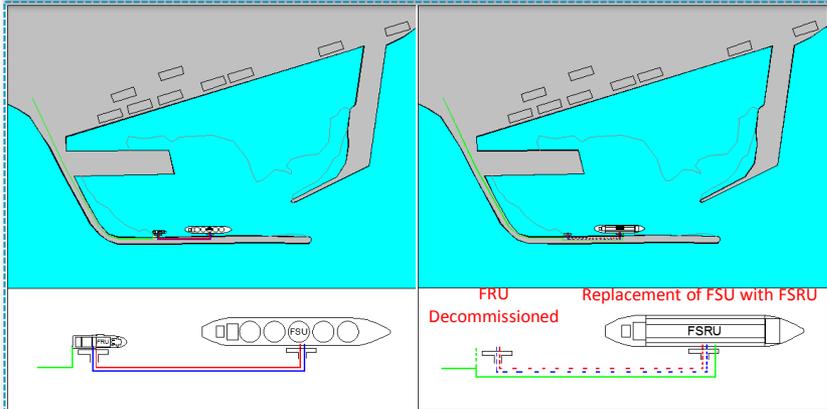
**Accumulated capex lease rate + owner's residual value

- The introduction of the FSRU was an important industry development in achieving better cost efficiency and flexibility. However, these solutions are designed for relatively large opportunities in the range 2 to 5 MT/a
- A low capex Dreifa FRU in combination with an amortised low cost steam LNG carrier as FSU results in a terminal cost 40% below a conventional FSRU New Build ("NB") solution. This also reduces the total balance sheet exposure by 80%
- The total balance sheet exposure is an important indicator of the level of financial backing required by sponsors to secure the import capacity (equity and debt financing and corporate/governmental guarantees)

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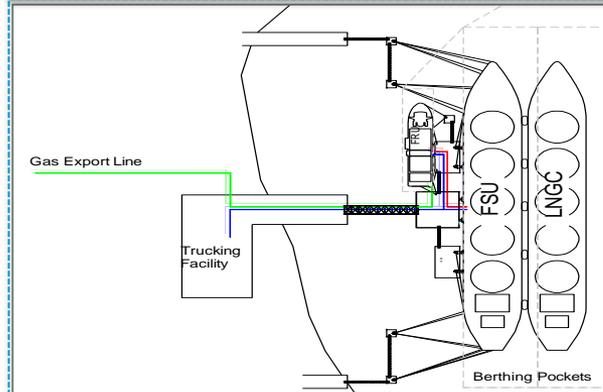
Technical solution adaptable to project specific requirements

Phased developments



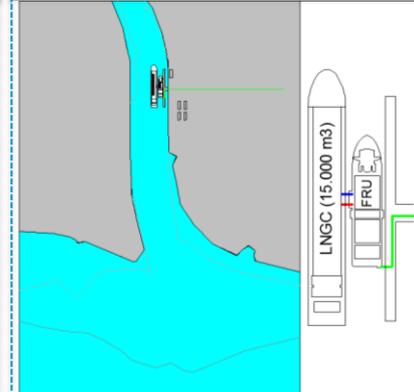
- FRU in early phase of project when demand is low. Replaced with FSRU when demand is sufficient

Combined with truck loading



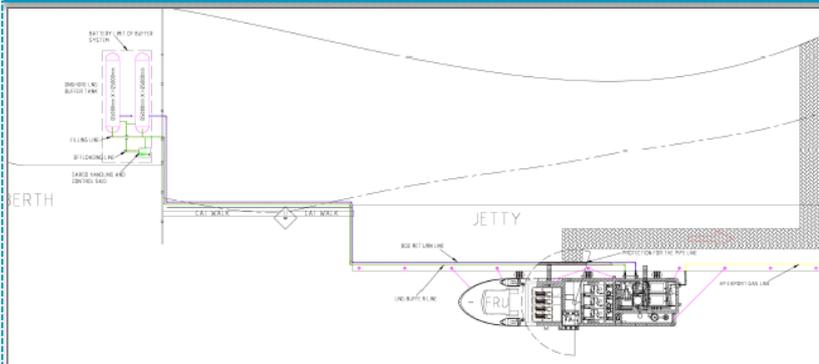
- Can facilitate truck loading for break bulk and increased turnover of storage

Shallow draft



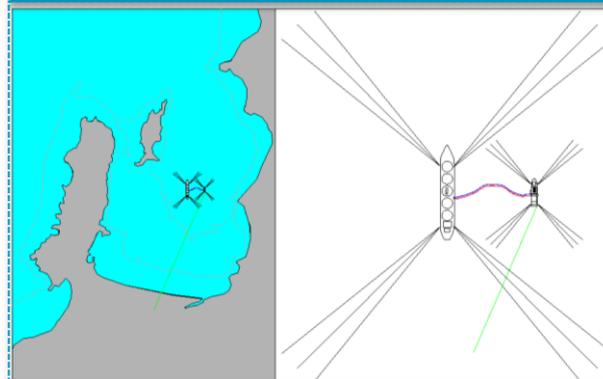
- The Dreifa FRU has a draft of 4.5m

No dedicated FSU – very low CAPEX



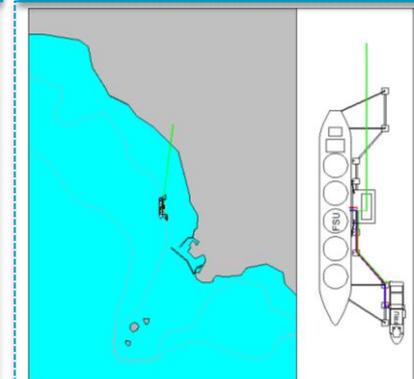
- Onshore LNG buffer storage included to allow for uninterrupted natural gas supply without dedicated FSU

Spread moored



- FSU and FRU spread moored with LNG transfer by floating cryogenic hoses

Sea island



- Used as replacement for conventional FSRU

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Operational Partner Agreement signed with BSM

Operational Partner Agreement

- Agreement signed on 30th November 2016 between Dreifa Energy Limited and Bernhard Schulte Shipmanagement (Isle Of Man) LTD
- The companies will work closely to materialise the project and ensure a reliable and cost-efficient floating regasification solution
- The agreement covers three distinct phases of the project and aims to provide
 - a safe and reliable design based on best practices from decades of experience - **ongoing**
 - successful execution of the conversion project – **in planning**
 - high quality operation of the Dreifa Terminal – **in planning**



About BSM and the Schulte Group

- BSM is an integrated maritime solution leader and part of the Hamburg based Schulte Group managing a fleet of 600 vessels
- The Schulte Group has over 130 years of experience in the shipping industry
- Bernhard Schulte and BSM have owned and managed gas carriers for 45 years, and have over 38 LNG carriers on the books
- Bernhard Schulte has taken delivery of a 175k cbm Panamac LNGC for long term charter and a 7.5k cbm LNG Gas Supply Vessel



7,500 cbm LNG Gas Fuel Supply Vessel

The Dreifa team – significant LNG expertise and experience

Dreifa key team members

David Thomas (59) – Independent Director

- Independent LNG advisor
- Until 2017 David ran Vitol's global LNG business, having joined in 2006 to set up the team
- Prior to Vitol, David spent 20 years at BP primarily engaged in natural gas and LNG marketing and trading activities

Trym Tveitnes (46) – Director

- CTO and co-founder of FLEX LNG (listed on Oslo Stock Exchange with ticker FLNG).
- 15 years experience from the maritime and LNG industries, including positions in FLEX LNG, Det Norske Veritas, Hoegh LNG and Liquiline

Jostein Ueland (40) – Director

- CFO and co-founder of FLEX LNG
- Has worked within the Investment Management Division of Goldman Sachs International in London and as an Equity Research Analyst in Enskilda Securities ASA in Oslo

John Riis (47)

- Naval architect on multiple ship, FPSO and FLNG projects both from engineering and field operator side
- CEO of Norwegian engineering firm 7Waves

Henrik Austgulen (38)

- COO and board member of family office Auris Holding AS with >USD 100m in commercial real estate transactions.
- Previously in Direct Investments team of Industrifinans in Oslo

Relevant experience

Complex LNG Infrastructure Developments



Development and design of various LNG carrier solutions adaptable for LNG production

LNG carriers and FSRU



Development, design and supervision for 2x MEGI LNG carriers from Samsung

Development and design of FSRU

FPSO



Naval architecture of 1.6bcm gas FPSO for Noble Energy and numerous other projects

Schulte Group LNG Experience - Key Milestones

