

Gas Operational Forum

MS Teams 17 June 2021 9.32am

Questions

MS Forms (link in the chat)

national**grid**



Gas Transmission

Introduction & Agenda



Joshua Bates Operational Liaison & Business Delivery Manager



national**grid**

Presenters

National Grid

Joshua Bates – Operational Liaison and Business Delivery Manager

George Killick - Operational Liaison Lead

Martin Cahill – Operational Liaison Lead

Glenn Townsend - Access Planning Manager

Ian Bennett – Change Delivery Manager

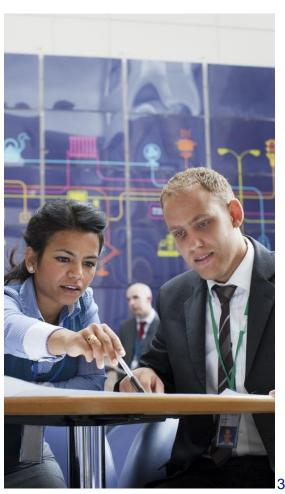
Mark Baker - Principal Capacity and Strategy Development Analyst

Guest Presenters

Mike Fulwood – Senior Research Fellow, Oxford Institute for Energy Studies

Wouter De Klein – Director Utility Markets, ICE Endex

Richard Genever – IT Delivery Lead, Correla (on behalf of Xoserve)



Calendar year 2021 Ops forums

All forums will be held via Microsoft Teams from June. We are looking to integrate back to the Amba hotel, whilst retaining the online functionality, in line with UK government announcements and will update you when we have firm information.

Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Online	Online	Online	Х	Online	Online	X	X	TBC	TBC	TBC	Х
28/01	25/02	25/03		20/05	17/06			23/09	21/10	25/11	

Registration is open for all 2021 events at:

https://www.nationalgridgas.com/data-and-operations/operational-forum

Housekeeping for Microsoft Teams Forums

During our Teams events;

- Attendees will be automatically muted on dial-in and cameras will be unavailable.
- You can use the 'raise a hand' function if you would like to speak and we will enable your camera and microphone options. You then have to un-mute yourself and turn your camera on to ask your question.
- We will be taking questions via the chat function, or if you would like to remain anonymous please use Microsoft Forms (link in the chat)
- For both presenters and any verbal comments, please state your name and company before speaking.



Key resources available to you

Gas Ops Forums

Throughout the year, we hold regular Operational forum meetings. This forum aims to provide visibility and awareness for our customers and stakeholders to help understand and discuss the operation and performance of the National Transmission System (NTS). We also proactively invite any suggestions for operational topics that would promote discussion and awareness.

Registration is open for all 2021 events at:

https://www.nationalgridgas.com/data-and-operations/operational-forum

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For the National Grid Gas Website, please visit;

https://www.nationalgridgas.com/about-us

Maintenance Planning https://www.nationalgrid.com/uk/g as-transmission/data-andoperations/maintenance



Energy Data Request Tool: <u>Microsoft</u> <u>Forms Link</u>

National Grid 6

How to contact us

Operational Liaison & Business Delivery Team

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For updates and interaction with National Grid please visit; https://datacommunity.nationalgridgas.com/

For the National Grid Gas Website, please visit; https://www.nationalgridgas.com/about-us



Agenda for Today

01	Welcome and Introduction	09:32
02	Operational Overview	09:40
03	Oxford Institute for Energy Studies Short Term Gas Outlook	09:50
04	ICE Endex	10:15
05	Ops Margins Update	10:40
06	Gemini Change Programme Update	10:50
07	Correla: Gemini Service Update	11:05
08	Bacton Non-Obligated Exit Capacity	11:15
09	Updates & Close	11:25
	·	

Please ask any questions using the chat function, or through Microsoft Forms (link in the chat).

Questions will be covered at the end of each agenda section.

Gas Transmission

Operational Overview



George Killick Operational Liaison Lead

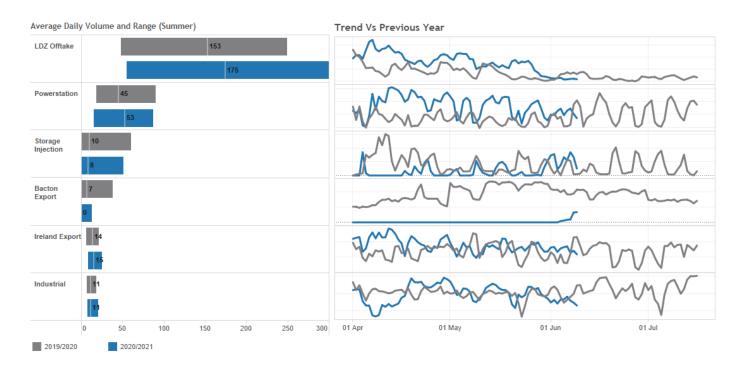


Martin Cahill Operational Liaison Lead



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NTS Demand

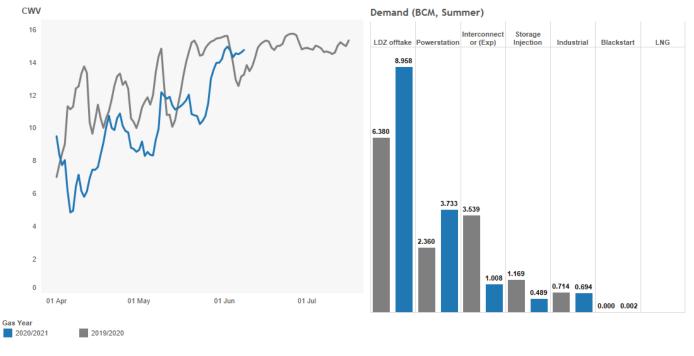


LDZ demand has remained low due to the hot weather.

Storage injection is similar to last years profile.

Export to Europe has begun, lower demand than last year.

Demand & CWV

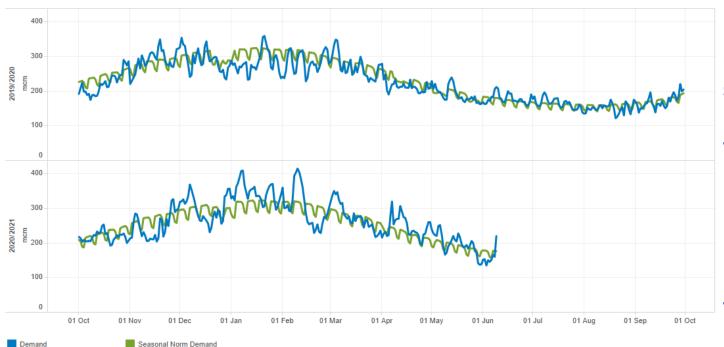


CWV has continued to increase as we progress into summer.

Total LDZ and PS demand remain higher than last year due to lower average CWV.

2.5BCM difference in interconnector export

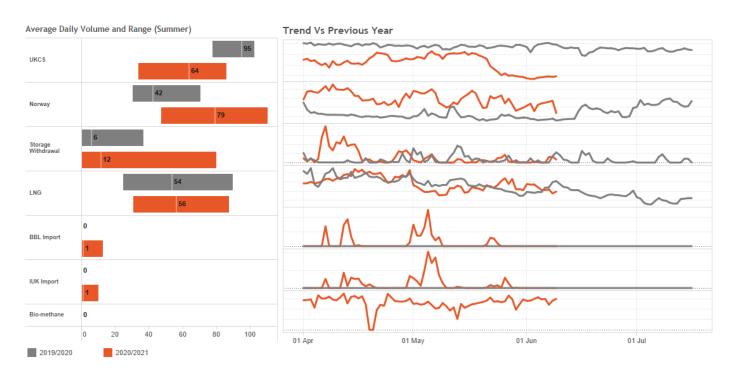
Demand – Comparison to Seasonal Norm



Demand has been aligning to seasonal norm in recent weeks.

Higher demand in April and May reflecting the lower CWV value.

NTS Supply

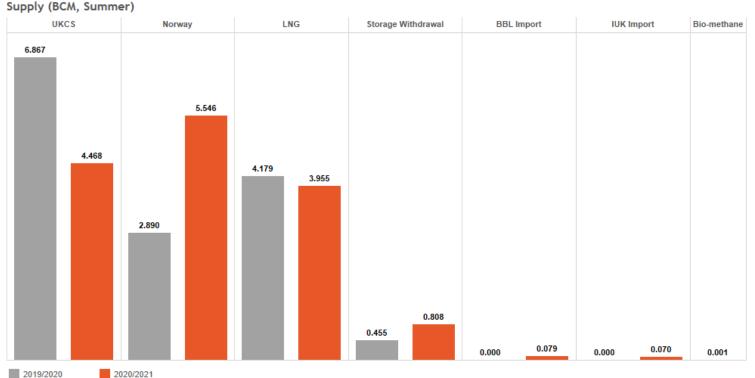


Supply from UKCS has remained lower than last year, with supply from Norway remaining higher than last year.

LNG supply has been consistent with last year.

Supply – Yearly Comparison





Reduction of 2.4BCM in supply from UKCS.

Increase of 2.6BCM in supply from Norway.

Supply Map

2019/2020 Percentage of total supply (Summer)





Large reduction in Bacton supply reflecting the reduction of UKCS supply.

Large increase in Easington supply reflecting the increase of gas from Norway.

Price

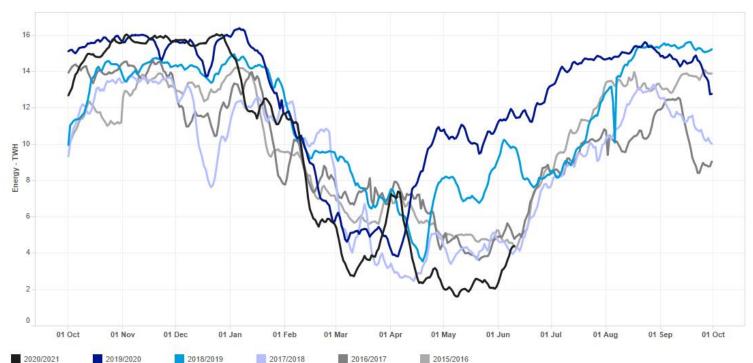




Over recent weeks
there has been a
discount to NBP and
TTF markets, but not
enough to incentivise
large exports to Europe

Combination of high Norway & LNG supplies and low exports has enabled storage stock build, despite lower UKCS supply due to shutdowns

Storage Stocks



Storage supplies responding to higher demands in April has resulted in lower stock levels.

Storage levels increasing over recent weeks, and expected to continue increasing over summer.

Residual Balancing













June 2021

Gas Operational Forum

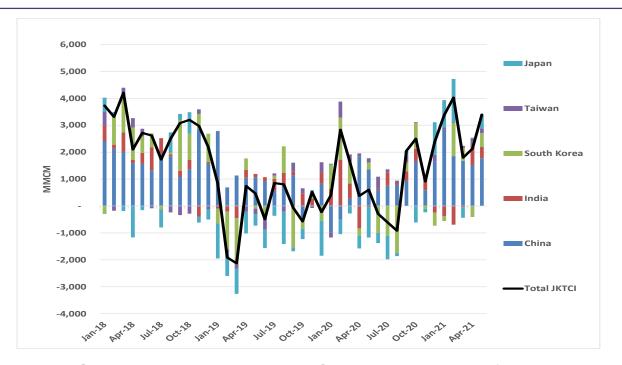
Mike Fulwood

Senior Research Fellow, Natural Gas Programme





Asian LNG Imports – Year on Year Change



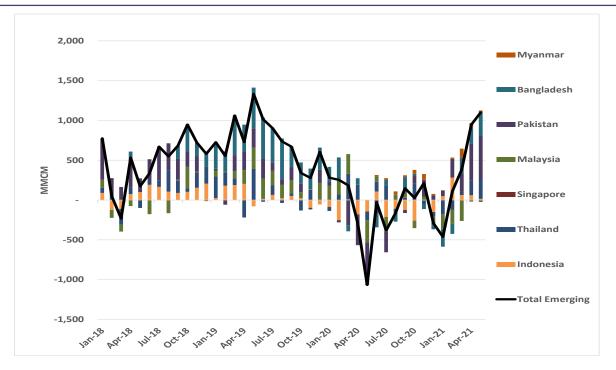
Big 5 LNG imports held up well in 2020 as China bounced back, performing better than 2019, as Japan and Korea volumes stopped declining

Big surge in Q4 and Q1 reflecting cold weather

Source: Kpler



Asian LNG Imports – Year on Year Change

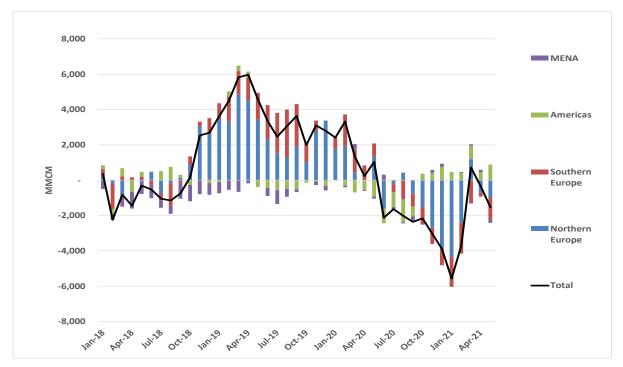


Emerging markets saw significant 2019 and Q1 2020 growth, but Q2 the impact of COVID-19 hit these markets – recovery in Q3 and Q4 and strong rebound in last few months

Source: Kpler



Non Asian LNG Imports – Year on Year Change



The rapid growth in LNG imports to Europe came to an end in June
MENA and Americas were in decline from mid-2018 but Brazil and Kuwait have
shown strong growth recently

Source: Kpler



N. Europe LNG Imports – Year on Year Change



Q2 2020 saw the end of Northern Europe LNG imports growth. Sharply down in winter with diversions to Asia but now signs of stabilising

Source: Kpler



S. Europe LNG Imports – Year on Year Change

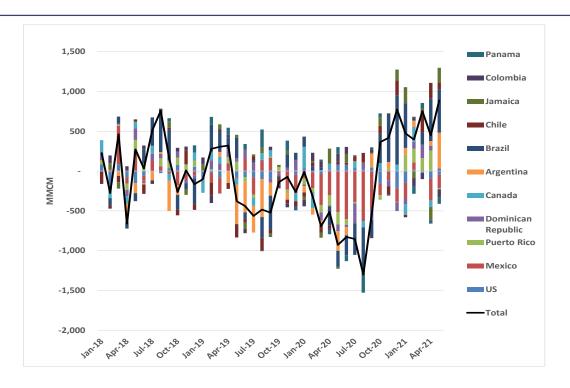


Southern Europe LNG imports being supported by growth in Turkey in early 2020 but this has now reversed with big reduction in Q3, Q4 and early 2021

Source: Kpler



Americas LNG Imports – Year on Year Change

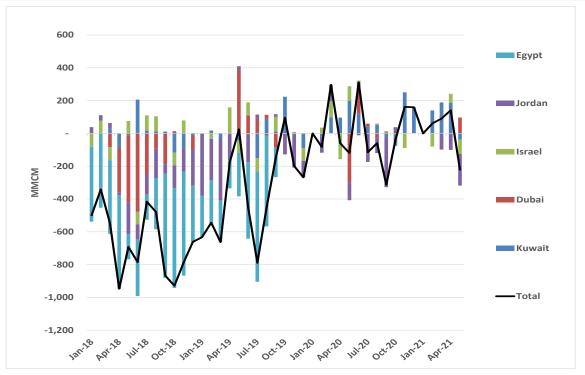


Americas LNG imports declining since early 2019 but a turnround in late 2020 as growth in Brazil resumes plus more Caribbean volumes and lately Argentina

Source: Kpler



MENA LNG Imports – Year on Year Change

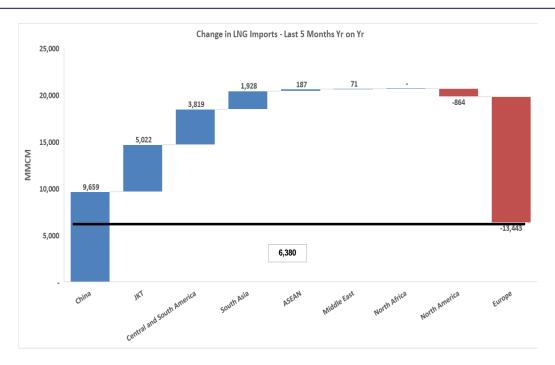


MENA reduction largely due to Egypt stopping LNG imports Kuwait now showing signs of growth, but Jordan in decline

Source: Kpler



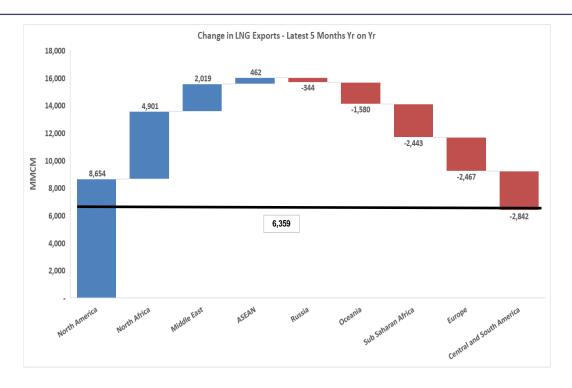
LNG Imports – Annual Change Last 5 Months



- China up 27% yr on yr JKT up 6%
- Large volumes diverted away from Europe down 22% in winter
- Total volume now up year on year (3%) after strong April and May



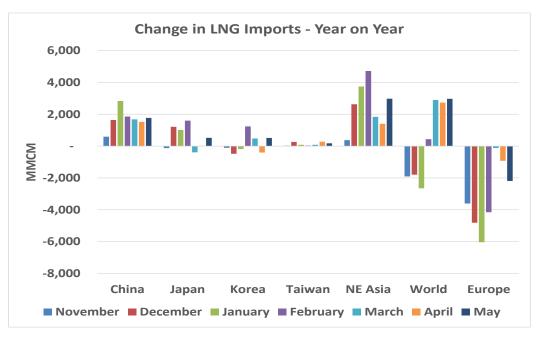
LNG Exports – Annual Change Last 5 Months



- · Main growth in supply from US plus Egypt and Algeria
- Europe decline reflects shut in at Hammerfest



Change in Imports

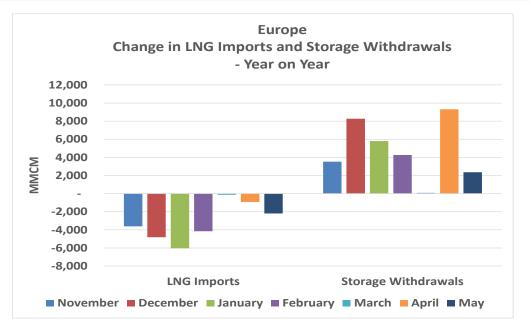


- Switch of LNG to NE Asia as a result of cold weather largely China and Japan
- Europe effectively provided the additional supply as LNG imports reduced

Source: Kpler



Impact on Europe

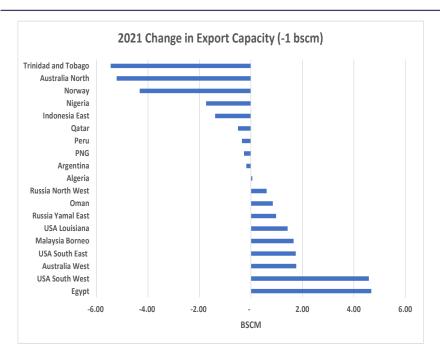


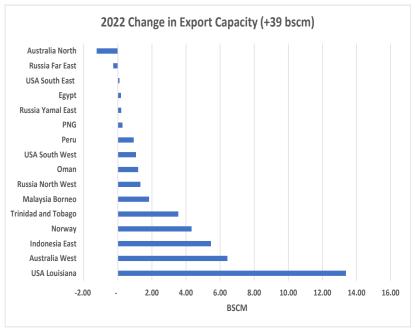
- Europe withdrew an extra 22 bcm in Nov 20 to Feb 21 compared to previous year – little change in March – April up again sharply
- LNG imports were 19 bcm lower over same comparison
- Europe storage has balanced Asian LNG demand

Source: Kpler, ENTSOG



Change in LNG Export Capacity

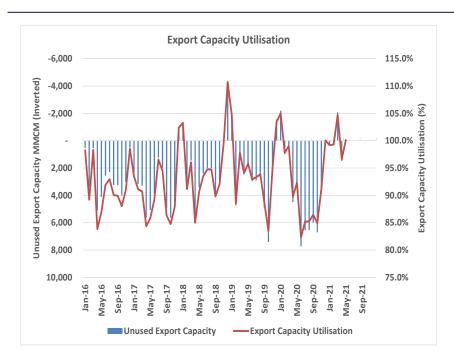


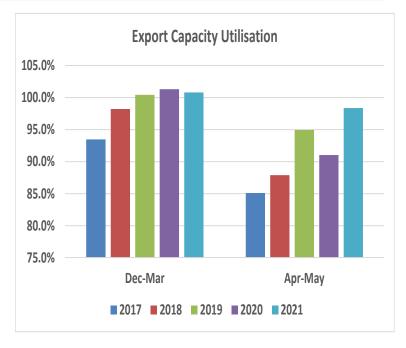


- 2021 Issues at Trinidad feedgas, Darwin planned shutdown, Hammerfest fire, Wheatstone maintenance, Peru short shutdown, Tangguh maintenance, PNG supply, more than offset gains elsewhere
- 2022 new trains onstream and restoration of 2021 declines



LNG Export Capacity Utilisation



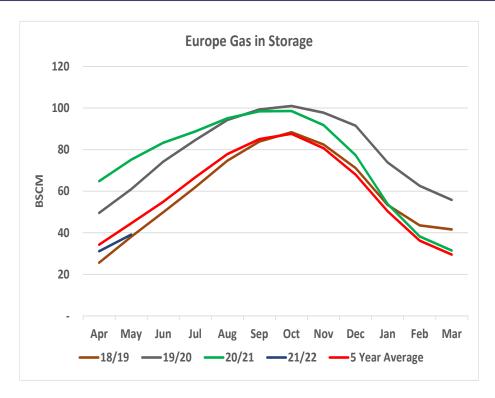


- Utilisation generally close to 100% in the winter period December to March but has fallen away from April onwards in previous years....
- ·but this year capacity utilisation has remained high

Source: Nexant WGM, Kpler



European Gas Storage



5 year average is 14/15 to 18/19 inclusive

End October storage at 99 bcm – 2 bcm lower than in 2019

End March at 31 bcm – 24 bcm lower than end March 2020 level – April no net injection

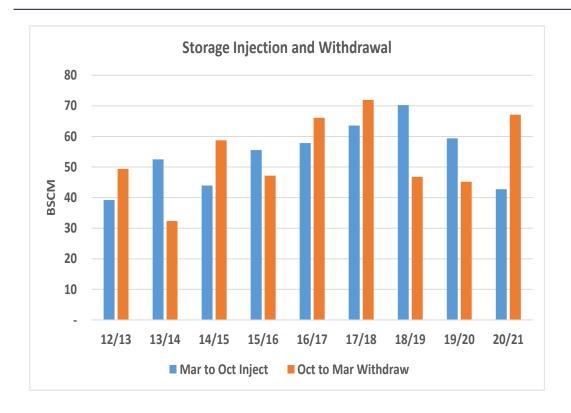
60 bcm withdrawn in December, January, February and March as LNG diverted to Asia

Storage level now below 5 year average

Source: Gas Storage Europe



European Gas Storage



Almost 70 bcm withdrawn in 20/21 winter – similar to 17/18 – last really cold Europe winter

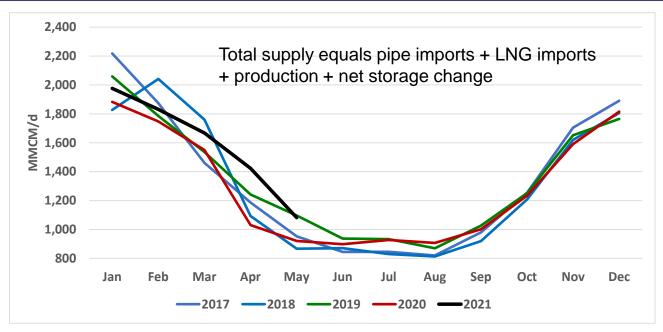
In 2018 followed by big storage injection – 70 bcm – which supported TTF price that summer

However, 70 bcm injection would pretty much fill storage again in 2021

Source: Gas Storage Europe



Total Supply to the European Market



- Total supply in 5 months to May in 2021 was 12% higher than in same 2020 period
- As a proxy for demand if the rest of 2021 was the same as last year then that is a 5% year on year rise

Source: Kpler, ENTSOG, Platts, Argus, National Grid



Europe Balance 2018 – 2021

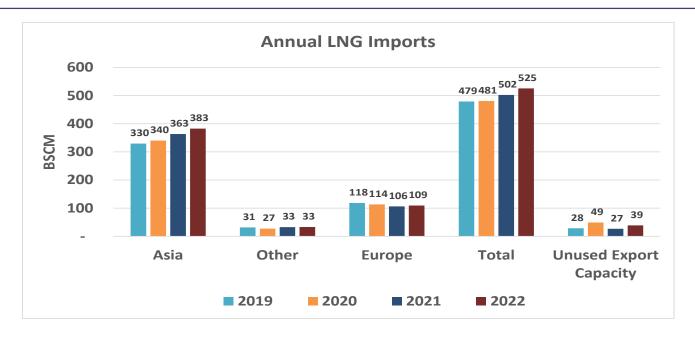
BSCM	2018	2019	2020	2021	20	20/2019	2021/2020
Demand	534.7	551.0	531.7	555.5	-	19.3	23.8
LNG Exports	5.8	6.4	4.2	0.4	-	2.2	- 3.8
Pipe Exports	13.0	15.6	12.1	2.8	-	3.5	- 9.3
Production	- 247.6	- 230.1	- 213.4	- 210.4	-	16.8	- 3.0
Import Gap	305.9	342.9	334.7	348.4	-	8.2	13.7
Pipe Imports	245.5	237.8	206.7	224.9	-	31.1	18.3
LNG Imports	69.3	116.0	113.5	106.3	-	2.5	- 7.2
Net Stock Withdrawal	- 5.4	- 20.0	14.2	16.0		34.1	1.8
Statistical Difference	- 3.4	9.1	0.3	1.1			
Pipe Imports							
Algeria	33.5	21.9	21.0	19.8	-	0.9	- 1.1
Libya	4.5	5.7	4.4	4.2	-	1.3	- 0.2
Azerbaijan	7.5	9.5	11.6	14.2		2.0	2.6
Iran	7.9	7.7	4.3	8.0	-	3.4	3.7
Russia	192.2	192.9	165.3	178.6	-	27.5	13.3

- Europe demand in 2020 more robust than thought pipe imports taken the hit with LNG remaining high
- Much stronger demand in 2021 net storage withdrawal again in 2021 to balance market
- LNG imports already down 13 bcm

Source: IEA, Nexant WGM and OIES Estimates



Annual LNG Imports 2019 – 2022

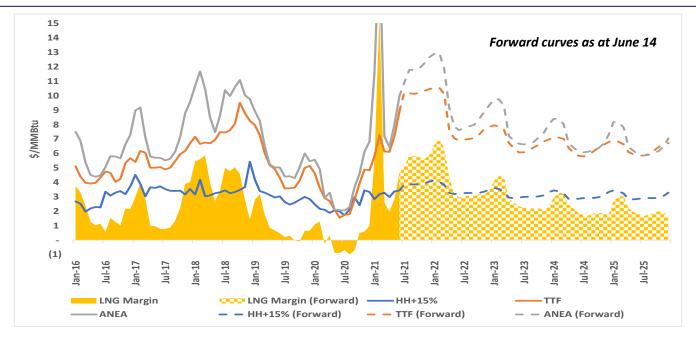


- Total LNG imports to rise by almost 20 bcm in 2021
- Decline in Europe partly offsets rise in Asia
- 2022 +23 bcm with unused capacity rising slightly as capacity shortfalls in 2021 restored and new capacity comes on

Source: Kpler OIES Estimates



OIES LNG Tightness Indicator

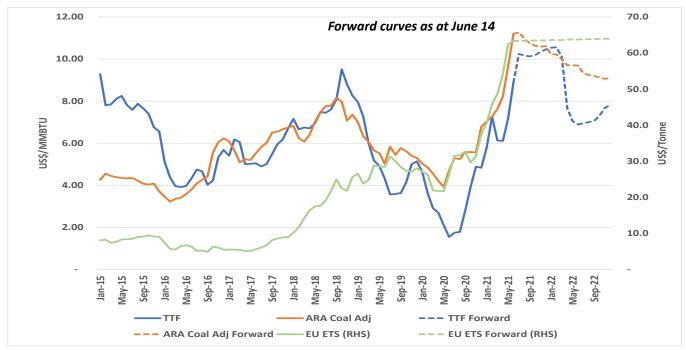


- LNG Margin is the highest netback from TTF or ANEA less Henry Hub
- The higher the margin the tighter the market
- Summer 2020 negative margin by \$1 hence significant shut ins of LNG
- Big jump in positive margins in last 4 months through 2021
- Next 12 month margins above \$4

Source: Argus, CME, ICE



TTF, Rotterdam Coal Prices and ETS Prices



- Significant coal to gas switching in 2019 and 2020
- Despite significant rise in TTF prices rising ETS and coal prices have kept gas competitive, but coal use in power in Europe has picked up pushing up coal prices

Source: Argus Media ICE



Key Points

- Gas prices have been remarkably strong this year after the historic lows during the height of the pandemic
- The cold Northeast Asian winter caught out some LNG buyers, resulting in LNG being diverted away from Europe which rapidly drew down storage to compensate
- The extended cold weather in Europe has boosted demand such that 2021 may see total demand above even 2019 levels
- Pipe imports from Russia into Europe are recovering but partly constrained by no Nordstream 2 yet and only baseline Ukraine transit booking
- High TTF prices might have been expected to lead to a switch back to coal in power in Europe, reversing the 2019 and 2020 switching but rising coal and ETS prices have preserved the competitiveness of gas, but coal burn has been growing
- LNG export capacity, which was expected to increase slightly in 2021 as the US trains ramped up to full capacity, does not appear to have increased at all, possibly even declining slightly with multiple plants experiencing technical and/or feedgas issues
- Asian LNG demand, particularly in China, supplemented by rising demand in South America (largely Brazil), has added to the tightness in the LNG market



Thank you!

Email: mike.fulwood@oxfordenergy.org

Gas Transmission

Operating Margins



Glenn TownsendAccess Planning Manager



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Operating Margins (OM) Overview

- NGG procures capacity and access to a volume of gas for OM on an annual basis to insure against times of system stress
- National Grid is required to procure its OM requirements on an annual basis in accordance with TPD Section K of the Network Code, the obligations set out in National Grid's gas transporter licence, and the obligations detailed in the National Grid's Safety case.
- The OM service is utilised at times of severe system stress to maintain NTS pressures in the period before other system management services become effective (e.g. national or locational balancing actions).OM was last used during March 2018

OM Components and their usage:

- Supply Loss

 –used to cover large supply loss, in the period before other balancing measures become effective.
- Orderly Rundown

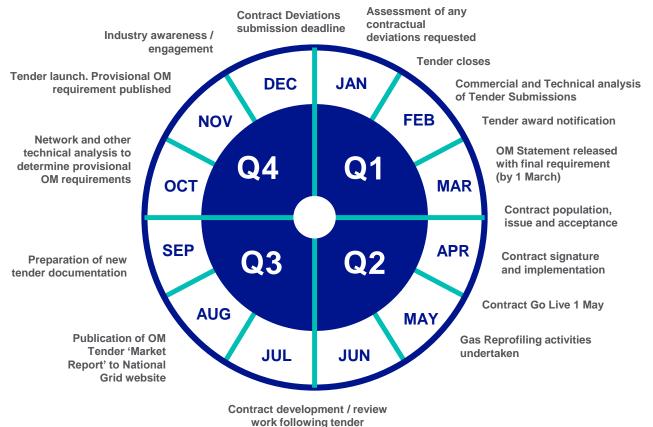
 –quantity of OM kept in reserve for Emergency, to manage the orderly run-down of the network following the exhaustion of all other storage gas.
- Locational—used to support local network pressures for up to 24 hours following a compressor trip, pipe break, or other failure or damage to transmission plant.
- Non-Locational—a margin to cover withinyear unavailability of contracted OM sources.

Why the review of OM taking place now

- The current OM Methodology has been in place for many years, and was developed on the following assumptions:
 - NTS flow patterns had greater consistency annually
 - UKCS made up a greater proportion of the supply mix and subsequently flows were predominantly North to South.
 - There were fewer market development initiatives in both gas and electricity markets(such as gas Demand Side Response and development of the electricity Capacity Market) when the original OM process was put in place.
- The benefits to industry of a review of the OM process;
 - Costs associated with Operating Margins are on a pass-through basis and as such it is important to regularly review OM ensuring the process is still fit for purpose and is good value for money.
 - Discovery of further opportunities for competition or efficiency improvements, reducing cost to industry
 - Opportunity for you to become an OM supplier
- We would like this review to be industry led as the outcome affects all parties operating in the industry.

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OM Annual Activity Timeline (Indicative)



OM Review – next steps

Industry Webinars

- Industry webinar will be set up to further discuss OM requirements methodology, and tendering / contract processes with interested parties and we strongly encourage you to attend.
- If you would like to attend the webinar please contact: Box.OperationalLiaison@nationalgrid.com

1-2-1 stakeholder sessions

- We will be reaching out pervious or potential new partners individually seeking to have in depth discussions on a 1-2-1 basis, and discuss any specific feedback an individual party may have.
- Although we will be reaching out to individual organisations, if you would like to arrange a 1-2-1 session with us please contact: Box.OperationalLiaison@nationalgrid.com
- These meetings will be held during July and August 2021

Gas Transmission

Gemini Change Programme



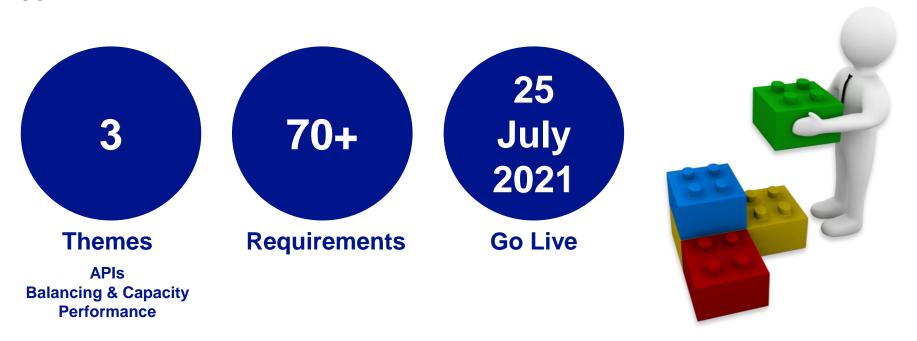
lan Bennett Change Delivery Manager



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What is the GSE Project?

Engaging external and internal users to deliver improvements to the Gemini application



What are the Benefits?



Improved automation



Improved APIs and data access



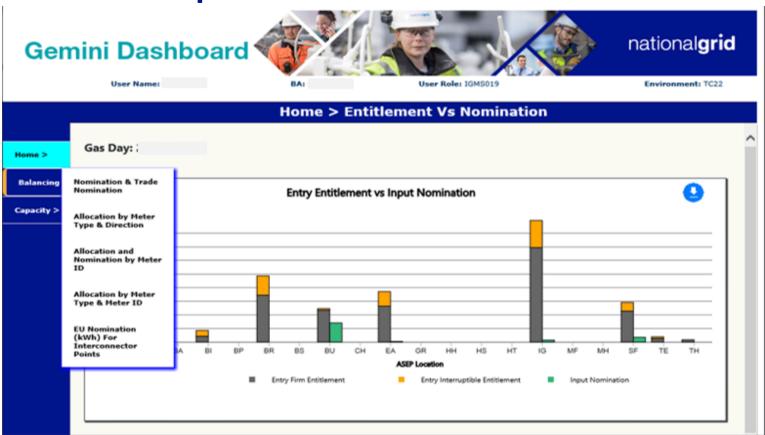
Improved usability and user experience



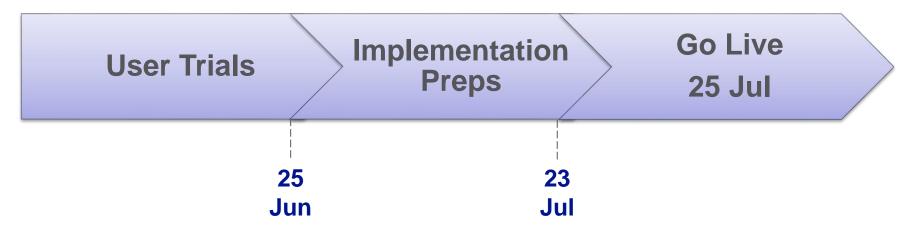
New APIs

Gemini Entry Capacity APIs	View Bid Information for IP Location
	Bid Capture
Gemini Entry Balancing APIs	Shipper Imbalance
	View Shipper Allocation UIG Share
	View Allocation Details by LDZ and Meter Type
	Shipper Preliminary Balance across Date Range
	View Shipper Input Claims
	Update Shipper Input Claims
	Update Storage Output Claims
Gemini Exit Capacity APIs	Auction Request Information for IP Locations
	Capture Request
	Transfer Registration
	View Transfer Registration

Dashboard example



Where are we?



What do you need to do?

- No extended outage
- Consult the GSE website
- Liaise with your IT departments

Communications

For further information please visit:

GSE website

For further communication please contact the GSE Project Team:

box.xoserve.GeminiSystemEnhancements@xoserve.com

UNC0745S – Mandatory setting of Bid Parameters

- Prior to 1st October 2021, Bid Parameters for Bid-Price and Bid-Capacity will need to be set up in User/Shipper preferences for that Method of Sale (MoS) before being able to participate in placing bids for the auction.
- From the 1st October 2021, the validation of Bid Parameters will be applied and affects the following short-term auctions.

Gemini Entry	Gemini Exit
DADSEC	DADNEX
WDDSEC	WDDNEX
DISEC	DONEX

 Further details of the system changes can be found in Xoserve's May 2021 Change Pack Change Pack May 2021 (xoserve.com)

UNC0728B - Introduction of a Conditional Discount for Avoiding Inefficient Bypass of the NTS

- Changes are required to both Gemini and the UK Link System Applications to support delivery of UNC0728B. These changes will become effective in the systems from 01/10/2021.
- System Users can register to apply for the new product on eligible routes by following the existing SPA Registration Nomination and Confirmation processes, from 7th September 2021.
- A new invoice and new charge types are being created to support the changes, along with new file formats for SPA and the .NCI Gemini invoice.
- Further information can be found here. <u>Extraordinary Change Pack</u> <u>May 2021 (xoserve.com)</u>

Operations Stability Summary Report

April 2021



Background

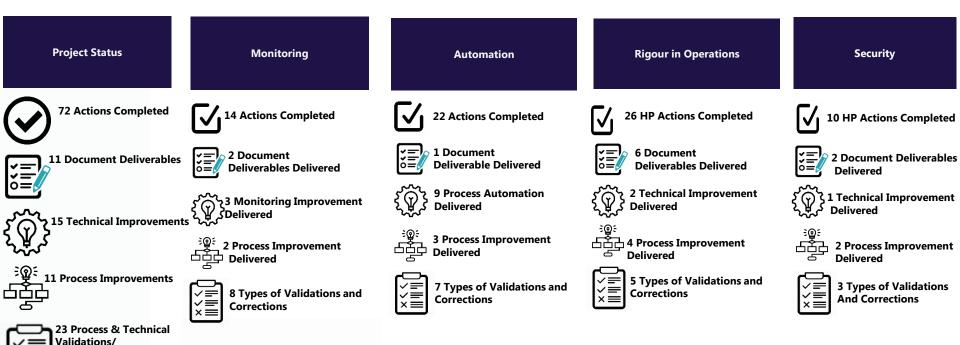
Following the Gemini Re-platform, there were multiple incidents experienced on the TCS ECP environment that were service impacting. At a summary level, these incidents occurred due to either an operational error, product failure, misfortune or as a consequence of change testing approach.

To address these incidents, TCS initiated an Operations Stability Programme which implemented technical and process corrections to achieve an error free operation with no negative impacts to users. TCS undertook a comprehensive review on the instability issues and prepared a correction plan through a joint review with the Correla SWOT team.

The programme plan produced jointly created by TCS and Correla had four categories – Monitoring, Automation, Rigour in Operations (RiO) and Security. Actions were further categorised to High Priority which addressed the immediate stability issues and Medium priority which were targeted for ensuring service improvements.

TCS and Correla carried out weekly reviews at an Operations team level on the progress of actions and monthly review at leadership level on benefits achieved. This slide deck provides an overview of the outcomes of the Operations stability programme that successfully concluded on the 31st March 2021

Operations Stability Summary



✓

Corrections

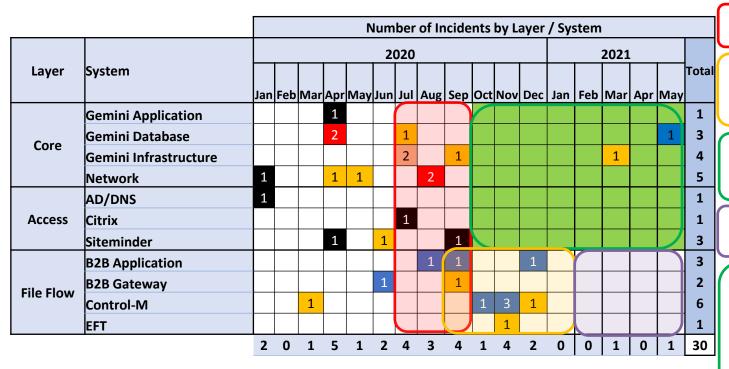
- ✓ 1130+ Monitoring Thresholds
 Validated and implemented

 ✓ Dynatrace DEM monitoring to measure user experience and
- measure user experience and Full Stack Monitor optimisation for fine grain app monitoring proposed
- ✓ Automatic OS & Application Layer Patching
- ✓ Gemini Code Deployment
 ✓ Service Restoration for FS Read
- Service Restoration for FS Read
- ✓ only issue & Citrix VDA unavailability
- ✓ Housekeeping and daily checks

- Resource assessment & Training process rolled out
- Four Eye Approach and Change impact review implemented
- FMEA consolidation & backup config validation completed
- ✓ License and Capacity process validated

- Penetration Testing
 Approach formulated
 and drafted
- VA Scan Approach revalidated
- ✓ UCF Compliant
- Document Controls validated

Incident Trend Analysis



Period of higher instability in services, which were a mixture of change, product, and operational error

File flow disruption has become more common and too frequently as a result of operational error, which is key focus within the operational stability plan

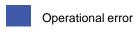
7 months of stability, following root cause implementation, delivery of operational stability actions, and the completion of the Gamma IX migration project.

No Operational error in EFT and Control M as a positive outcome of Resource training, stringent change reviews

Major incidents during Stability Period

- Product issue faced in Gemini Infrastructure layer. Vendor recommended solution implemented as fix.
- Operational error when refreshing Exit database on what was believed to be a test system but was Production.









Thank You



Gas Transmission

Bacton Non-Obligated Exit Capacity



Mark Baker
Principal Capacity and
Strategy Development Analyst



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Bacton IP Exit – non-obligated capacity release

What is non-obligated IP capacity?

Additional firm capacity that can be released on a discretionary basis subject to system capability.

When is non-obligated IP capacity released?

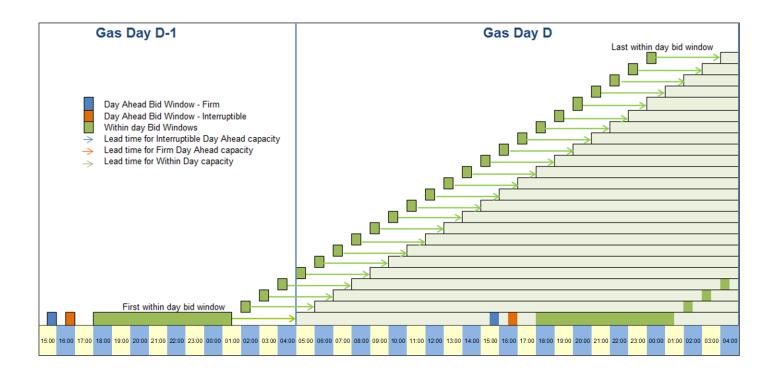
Either Day Ahead or Within Day subject to auction timings and on a discretionary basis.

How is non-obligated IP capacity marketed?

Appears on PRISMA as 'firm' capacity for the relevant auction and is bundled with any firm capacity offered by the adjacent TSO. Any residual mismatching capacity is offered in a separate auction as unbundled firm capacity (Entry or Exit).



Non-obligated IP capacity release timings*

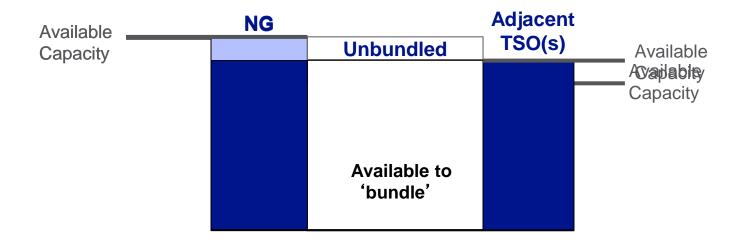


National Grid *All times in GMT/BST

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The bundled and unbundled capacity determination

The amount of unbundled capacity offered is determined by the amount of bundled capacity matched with any adjacent TSO. The process of bundling TSO capacity offerings happens automatically on PRISMA.



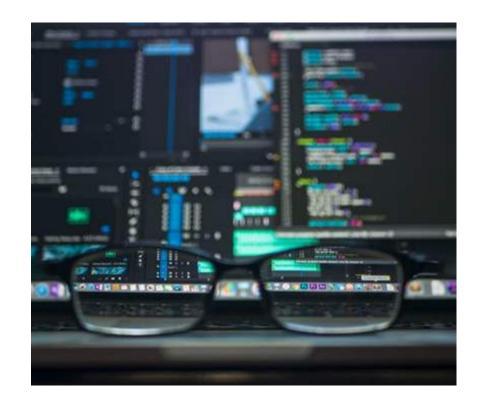
Non-obligated capacity release – Gas Day 8th June 2021

A capability assessment was carried out on 7th June for Gas Day 8th June and an amount of non-obligated firm capacity was uploaded to PRISMA for the Bacton BBL Within Day auction.

The amount of Exit firm capacity offered by NG exceeded the BBL Entry offering and all capacity was automatically bundled. This meant that no unbundled BBL Entry capacity could be booked from this point.

This led to issues in relation to unbundled product availability for Shippers which we are currently working to resolve.

NG continues to offer interruptible (off-peak) capacity at Bacton BBL Exit which is an unbundled product.



Gas Transmission

Updates



Joshua Bates Operational Liaison & Business Delivery Manager

nationalgrid

National Grid Gas Transmission Sale

National Grid has announced the acquisition of Western Power Distribution, and the sale of our Rhode Island business in the US to WPD's current owner, PPL. In addition, we announced our intention to initiate the sale of a majority stake in our UK gas business.

For UK Gas Transmission, the preparation for the sale process has already started, and the formal sale process is expected to start in the second half of this calendar year with closing of the transaction expected during the first half of 2022.

For now, it is business as usual. The announcements have no impact on our plans for the RIIO-2 price control period or what we have to deliver.

Gas Transmission

Close



Joshua Bates Operational Liaison & Business Delivery Manager



nationalgrid

Next Forum

The Next Operational Forum will take place on the 23 September via Teams

Please send any topic requests to:

Box.OperationalLiaison@nationalgrid.com

Register now at:

https://www.eventbrite.co.uk/e/operationalforum-september-tickets-159959612507

