

☆RIM LNG INTELLIGENCE DAILY

★No.2262 Sep 27 2019

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--TOKYO, 17:00 JST Sep 27 2019<Assessment Closing Time>

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### ORenewal of Rim's Website

Rim Intelligence will renew our website on Oct 7, Mon. Before the renewal, we will transfer the server of our website on Oct 6, Sun. Although we do not change the URL (<https://eng.rim-intelligence.co.jp/index/top>) of the top page, some URLs for our reports or market news pages will be changed. Therefore, in case you have bookmarked some URLs in our website, please bookmark again after the website is renewed on Oct 7.

Moreover, the URL of Rim Trading Board will be changed, but you can jump to the new page automatically when you access the current page. Please bookmark the new URL.

If you have any questions, please feel free to contact us.

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### OStart of assessment of TFDE, MEGI and X-DF tankers

Rim Intelligence started assessments of daily rates for "TFDE tankers", "MEGI tankers" and "X-DF tankers" on a short-term basis on May 7. For further inquiries, please contact Rim LNG team.

## © RECX-22 index

RECX-22 index for Friday was 95.62, up 1.15 points from the previous day.

### -----Introduction of Rim reports-----

Please access the URL below for a lineup of Rim reports. You can view sample reports as well as detailed explanations on the contents:

<https://eng.rim-intelligence.co.jp/first/report>

Lineup:

Bunker Oil	Crude/Condensate	Products	
LPG	Petrochemicals	Polyolefins	
LNG	South Asia Gas (Weekly)	Daily Data	Rim Data File

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©Spot LNG Price Assessment (\$/mmBtu)						
ODES Japan (DJ)						
	Nov	Dec	Jan	Feb	Mar	Apr
	6.05	6.30	6.50	6.70	6.50	6.40
Daily Changes	0.00	0.00	0.00	0.00	0.00	0.00
	May	Jun	Jul	Aug	Sep	Oct
	6.30	6.20	6.30	6.40	6.30	6.20
Daily Changes	0.00	0.00	0.00	0.00	0.00	0.00

ONortheast Asia (DES)						
	Nov 1H	Nov 2H	Dec 1H	RIM Index		
--NEA	5. 85-6. 15	5. 95-6. 25	6. 15-6. 45	6. 13		
Daily Changes	0. 00	0. 00	0. 00	0. 00		
RIM Index Monthly Cumulative Avg		5. 51				
*RIM Index is a daily average price of the three delivery periods of NEA.						
*RIM Index Monthly Cumulative Avg is a monthly cumulative average price of RIM Index.						
	Jan	Feb	Mar	Apr	May	Jun
--NEA Forward	6. 35-6. 65	6. 55-6. 85	6. 35-6. 65	6. 25-6. 55	6. 15-6. 45	6. 05-6. 35
Daily Changes	0. 00	0. 00	0. 00	0. 00	0. 00	0. 00
	Winter	Spring				
--NEA Seasonal Index	6. 57	6. 30				
Daily Changes	0. 00	0. 00				
*NEA: Northeast Asia						

O0thers			
	Oct 2H	Nov 1H	Nov 2H
--Middle East (FOB)	4.35 - 4.65	4.55 - 4.85	4.65 - 4.95
Daily Changes	0.00	0.00	0.00
--Middle East (DES)	5.65 - 5.95	5.75 - 6.05	5.85 - 6.15
Daily Changes	0.00	0.00	0.00
--South Asia (DES)	5.75 - 6.05	5.85 - 6.15	5.95 - 6.25
Daily Changes	0.00	0.00	0.00
	Oct 1H	Oct 2H	Nov 1H
--Atlantic (FOB)	3.85 - 4.15	4.15 - 4.45	4.25 - 4.55
Daily Changes	0.00	0.00	0.00
--Europe (DES)	3.55 - 3.85	3.55 - 3.85	4.45 - 4.75
Premiums to NBP	-0.23 - 0.07	-0.23 - 0.07	-1.03 - -0.73
Daily Changes	0.00	0.00	0.00
--South America (DES)	4.90 - 5.20	4.90 - 5.20	5.00 - 5.30
Daily Changes	0.00	0.00	0.00

©Freight		
	Freight Rates (\$/mmBtu)	380cst Bunker Prices (Sep 26) (\$/mt)
--Middle East/Northeast Asia	+ 0.80 - 0.85 +	--Tokyo 481.50
--Atlantic/Northeast Asia	1.26 - 1.31	--Singapore 466.50
--Middle East/Europe	0.65 - 0.70	--Rotterdam 381.50
	Daily Rates (\$)	
--Conventional Tankers	36,000 - 41,000	
--DFDE Tankers	55,500 - 60,500	
--TFDE Tankers	55,500 - 60,500	
--MEGI Tankers	64,000 - 69,000	
--X-DF Tankers	64,000 - 69,000	
Daily rates include all costs.		

\*\*\* Please visit <https://eng.rim-intelligence.co.jp/rpt/assessment/select/type/lng-en> to refer to the assessment methodology for the above price assessments.

◎Japan Crude Cocktail (JCC)								
	Expected					Result		
	Jan	Dec	Nov	Oct	Sep	Aug	Jul	Jun
JCC(bbl)	63.14	64.20	65.27	64.98	64.02	67.39	67.33	73.09
Daily Changes	+0.05	+0.07	+0.03	-0.03	0.00	0.00	0.00	-
JCC(mmBtu)	10.70	10.88	11.06	11.02	10.85	11.42	11.41	12.39

◎Natural Gas Futures Prices (\$/mmBtu)									
ONYMEX Henry Hub (Sep 26)					OICE NBP (Sep 26)				
	Oct	Nov	Dec	Jan		Oct	Nov	Dec	Jan
Settle	2.428	2.443	2.596	2.711	Settle	3.780	5.476	6.210	6.590
Change	-0.074	-0.075	-0.072	-0.063	Change	-0.041	+0.098	+0.047	+0.064
High	2.540	2.562	2.707	2.809	High	3.865	5.550	6.289	6.617
Low	2.390	2.412	2.563	2.676	Low	3.761	5.380	6.134	6.575
Estimated Volume: 409,584					Estimated Volume: 24,285				

◎Petroleum Futures/Physical									
ONYMEX Petroleum Futures (Sep 26)					OPetroleum Physical (Sep 26)				
-WTI Futures (\$/mmBtu)				9.726	-Dubai Crude (\$/mmBtu)				10.649
				56.41					61.77
-Heating Oil (\$/mmBtu)				14.097	-Minas Crude (\$/mmBtu)				10.935
				195.51					64.30
OICE Petroleum Futures (Sep 26)					-LSWR Indonesia (\$/mmBtu)				10.419
-Brent Futures (\$/mmBtu)				10.892					64.60
				62.74	-HSFO Singapore (\$/mmBtu)				10.603
-Gasoil Futures (\$/mmBtu)				13.951					424.00
				593.25	-LPG CFR Japan (\$/mmBtu)				9.343
					(Propane) (\$/mt)				444.75

◎Coal Prices and Electricity Prices									
OCoal Prices (Sep 26)					OElectricity Prices(Yen/kWh) (Sep 27)				
-FOB New Castle-Global Coal (\$/mmBtu)				2.847	-JEPX 24h				8.17
				65.15	-JEPX Daytime				8.88
-ICE Futures FOB Richards Bay (\$/mmBtu)				2.640	-JEPX Peakttime				8.96
				60.40					

◎LNG Benchmark						
	Aug-19	Jul-19	Jun-19	May-19	Apr-19	Mar-19
-JLC Japan LNG Cocktail (\$/mmBtu)	10.103	9.522	9.332	9.438	9.680	10.599
	523.31	493.21	483.41	488.90	501.42	549.02
-Asia CIF Cocktail (\$/mmBtu)	-	-	-	-	-	-
	-	-	-	-	-	-
-US Import Price Avg (\$/mmBtu)	-	-	-	-	6.970	7.335
-US Export Price Avg (\$/mmBtu)	-	-	4.390	4.153	4.522	4.659

**©Transactions**
**○ Recent Spot Transactions**

Reported date	Dealt Date	Origin	Seller	Buyer	Price	FOB/ DES	Volume (cargoes)	Timing	Destination
Sep 25	early Sep or Aug	Algeria	T.B.R.	Botas	T.B.R.	DES	1	Sep 27	Turkey
Sep 25	Aug	Angola	SITME	BPCL	T.B.R.	DES	1	Sep 12	India
Sep 25	mid Sep	NWS or Pluto	Woodside	T.B.R.	more than \$6.00	DES	1	Dec	T.B.R.
Sep 25	mid Sep	APLNG	APLNG	Chinese national energy company	\$5.00-5.10	FOB	1	2H Oct	T.B.R.
Sep 24	Sep 19	T.B.R.	T.B.R.	IOC	T.B.R.	DES	1	H2 Oct	India
Sep 20	Sep 19	T.B.R.	T.B.R.	Tohoku Elec	\$5.80-5.90	DES	1	Oct 17-20	Japan
Sep 20	early to mid Sep	Brunei	Brunei LNG	Shell	high \$4.00	DES	1	Oct 3-8	NEA
Sep 20	before mid Sep	T.B.R.	Chevron	Shell	\$5.20-5.30	DES	1	end Oct	NEA
Sep 20	mid Sep	T.B.R.	Shell	Vitol	T.B.R.	DES	1	Nov	China
Sep 18	Aug	Das Island	Trafigura	IOC	T.B.R.	DES	1	Sep 9	India
Sep 18	Sep 9	Yamal	Novatek	T.B.R.	flat price	DES	1	Dec 20-29	Europe
Sep 17	Sep 9	T.B.R.	BP	CPC	NEA market - 20cts	DES	1-9	Jan-Dec 2020	Taiwan
Sep 17	Sep 9	T.B.R.	Marubeni	CPC	NEA market - 20cts	DES	1-9	Jan-Dec 2020	Taiwan
Sep 17	Sep 9	T.B.R.	Shell	CPC	NEA market - 20cts	DES	1-9	Jan-Dec 2020	Taiwan
Sep 17	Sep 9	T.B.R.	DGI	CPC	NEA market - 20cts	DES	1-9	Jan-Dec 2020	Taiwan
Sep 17	Sep 5	T.B.R.	T.B.R.	Calamari LNG	high \$4's	DES	35,000 cbm	Sep 14-23	Columbia

**○ Recent Term Transactions**

Reported date	Origin	Seller	Buyer	Price	FOB/ DES	Volume	Start	Duration
Sep 18	Woodside portfolio	Woodside	Uniper	oil link	FOB/ DES	0.50mil mt/yr (2021-2024) 1.00mil mt/yr (2025 onward)	2021	13 yrs
Aug 22	T.B.R.	T.B.R.	SK Gas	crude oil x low 11%	DES	0.40mil mt/yr	2024	15 yrs
Aug 22	T.B.R.	T.B.R.	EWP	crude oil x low 11%	DES	0.60mil mt/yr	2026	10 yrs
Aug 16	T.B.R.	Qatargas	KOGAS	crude oil x 11.2-11.3%	DES	2.00mil mt/yr	Apr 2025	T.B.R.
Aug 16	Freeport or Calcasieu Pass	BP	KOGAS	crude oil x 11.2-11.3%	DES	1.58mil mt/yr	Apr 2025	15 yrs
Aug 13	T.B.R.	Total	AES	T.B.R.	FOB/ DES	0.40mil mt/yr	2018	10 yrs
Jun 28	Woodfibre	Woodfibre LNG Export	BP	T.B.R.	FOB	0.75mil mt/yr	2023	15 yrs
Jun 24	T.B.R.	T.B.R.	Uniper	T.B.R.	FOB	1 cargo/month	Sep 2019	more than 1 yr
Jun 20	Tokyo Gas portfolio	Tokyo Gas	Sumitomo Joint Electric Power	T.B.R.	DES	around 0.17 mil mt/yr	FY 2021	5 yrs (HOA)
Jun 14	Plaquemines	Venture Global LNG	PGNiG	T.B.R.	FOB	1.5 mil mt/yr	2023	20 yrs
Jun 14	Plaquemines	Venture Global LNG	PGNiG	T.B.R.	FOB	1.0 mil mt/yr	2023	20 yrs
Jun 14	Calcasieu Pass	Venture Global LNG	PGNiG	T.B.R.	FOB	1.0 mil mt/yr	2022	20 yrs
Jun 11	Tangguh	Tangguh LNG	end-user	Brent x around 12%	FOB	0.50 mil mt/yr	2022	3 yrs
Jun 7	T.B.R.	Petronas	EGAT	T.B.R.	DES	1.5 mil mt/yr	2020	8 yrs (MOU) cancelled

**○Recent Tenders**

Reported Date	Issuer	Close	Buy/ Sell	FOB/ DES	Timing	Price(\$)	Origin	Winner
Sep 26	NLNG	Sep 26	Sell	FOB	Oct 3-9, Oct 21-25	T.B.R.	Nigeria	T.B.R.
Sep 26	Nippon Steel	Sep 26	Buy	DES	Nov 7-20	T.B.R.	T.B.R.	T.B.R.
Sep 26	EGAS	Sep 24	Sell	FOB	Oct	T.B.R.	Idku	T.B.R.

Sep 25	Novatek	Sep 26	Sell	DES	late Nov	T.B.R.	Yamal	T.B.R.
Sep 24	EGAS	Sep 24	Sell	FOB	Oct 5- early Nov x5	T.B.R.	Idku	cancelled
Sep 24	BHP Billiton (EOI)	T.B.R.	Sell	FOB	Oct x 1, Nov x 1, Dec x 1	T.B.R.	T.B.R.	T.B.R.
Sep 20	GSPC	Sep 23	Buy	DES	late Oct-early Nov	T.B.R.	T.B.R.	cancelled
Sep 20	Brunei LNG	early to mid Sep	Sell	DES	Oct 3-8	high \$4.00	Brunei	Shell
Sep 19	Woodside	Sep 19	Sell	FOB/DES	Dec 5-12 (DES basis)	T.B.R.	Pluto	T.B.R.
Sep 18	Tohoku Elec	Sep 19	Buy	DES	Oct 17-20 or Oct 26-Nov 2 or Nov 4-11	\$5.80-5.90	T.B.R.	T.B.R.
Sep 18	Ichthys LNG	Sep 20	Sell	FOB/DES	Oct 6-9 (loading)	T.B.R.	Ichthys	T.B.R.
Sep 18	Angola LNG	Sep 23	Sell	DES	Oct	T.B.R.	Angola	T.B.R.
Sep 17	IOC	Sep 19	Buy	DES	H2 Oct	T.B.R.	T.B.R.	T.B.R.
Sep 17	Calamari LNG	Sep 5	Buy	DES	Sep 14-23 (35,000 cbm)	high \$4's	T.B.R.	T.B.R.
Sep 13	Novatek	Sep 9	Sell	DES	Dec 20-29	flat price	Yamal	T.B.R.
Sep 12	Angola LNG	Sep 30	Sell	FOB/DES	2 years from 2020 (up to 3 years)	T.B.R.	Angola	T.B.R.
Sep 11	Nippon Steel	Sep 12	Buy	DES	Nov 7-20	T.B.R.	T.B.R.	not awarded
Sep 10	RIL	Sep 5	Buy	DES	Oct 23-30	\$4.30-4.40	T.B.R.	T.B.R.
Sep 6	CPC	Sep 9	Buy	DES	Jan-Dec 2020, one cargo/month	NEA market - 20cts	T.B.R.	BP, Marubeni, Shell, DGI
Sep 6	IOC	Sep 5	Buy	DES	Oct 5	\$4.20-4.30	T.B.R.	T.B.R.
Sep 4	Angola LNG	Sep 5	Sell	DES	Sep 28-Oct 4	T.B.R.	Angola	trader
Sep 4	Ichthys LNG	Sep 6	Sell	FOB/DES	Oct 5-7 (loading)	\$4.25 (FOB)	Ichthys	JERAGM
Sep 4	KUFPEC	Sep 4	Sell	FOB	Oct 22-29	\$4.20-4.25	Wheatstone	BP or Shell
Sep 4	Guangzhou Gas	Sep 3	Buy	DES	Oct-Dec x3	\$4.50(Oct 10) \$5.45-5.55(Nov) \$6.20-6.30(Dec)	T.B.R.	Mitsui (Nov, Dec) Glencore(Oct)
Sep 4	Novatek	Sep 2	Sell	DES	Dec 3-6	TTF-15cts	Yamal	Orsted
Sep 4	KPC	Sep 4	Buy	DES	Oct 22-29	ard \$5.40	T.B.R.	Kuwait
Sep 2	Hokkaido Elec	Aug 29	Buy	DES	Nov 29	\$5.70-5.90	Bintulu	Petronas
Sep 2	Petronas	Aug 29	Sell	DES	Nov 3-4	T.B.R.	T.B.R.	not awarded

## Recent Shipping Transactions

Reported date	Vessel Name	charterer	counter party	Type	Price	Start	Duration
Sep 24	Stena series	ExxonMobil	Stena AB	na	around \$80k	Jun	6-7 month (until end-2019)
Sep 18	Maran Gas Troy	Trafigura	na	D	na	H1 Sep	several voyages
Sep 18	Seri Balquis	Gunvor	na	D	na	early Sep	short term
Sep 17	British Sapphire	Total	BP	D	na	end Sep	short term
Sep 13	Arctic Princess	Pavillion Energy	Equinor	S	na	late Oct	single voyage
Sep 10	Stena Clear Sky	Stena AB	Total	D	na	Sep	3 years
Sep 9	Grace Barleria	na	Kyushu Elec	S	na	na	until mid-Oct
Sep 6	Gaslog Salem	Gunvor	Gaslog	T	na	Oct	short term
Sep 5	Gaslog Singapore	Sinolam	Gaslog	T	na	Nov 2020	10 years
Sep 3	Gaslog Sydney	Pavillion Energy	Gaslog	D	na	Sep	short term
Aug 30	Cadiz Knutsen	ECGS	Cheniere	S	na	late Aug	na
Aug 30	LNG Jurojin	TOTAL	KEPCO	S	na	late Aug	na
Aug 29	Maran Gas Coronis	PetroChina	na	S	na	late Aug or early Sep	6 months
Aug 26	Golar Penguin	TOTAL	Golar LNG	D	low \$80k	na	6 months
Aug 26	Flex Constellation	Gunvor	Flex LNG	M	na	na	short term

Types of tankers are indicated as C= Conventional, D = DFDE, T = TFDE, X=X-DF

**Projects/Receiving terminals Latest Information**

Report Date	Project	Train No	Country	Start	Period	Remark
Sep 27	Tango FLNG	na	Argentina	Oct	na	second cargo from the project would be exported in Oct.
Sep 26	Sabine Pass	T5	US	Sep	na	planned maintenance, but would take longer due to flood caused by tropical storm Imelda.
Sep 25	Sabine Pass	na	US	mid Sep	na	feedgas supply dropped by production level at one train.
Sep 25	Freeport	T1	US	early Sep	na	delay in exports due to stoppage of feedgas.
Sep 24	Cove Point	T1	US	Sep 20	3 weeks	planned maintenance in entire facility.
Sep 19	Atlantic	T1	T&T	na	na	supply from one of gasfields to T1 is reduced.
Sep 19	Dabhol	na	India	end Sep	na	GAIL restart receiving cargoes after monsoon.
Sep 19	Cameron	T1	US	2nd weekend of Sep	na	supply reduction will be continued about one year due to a trouble at compressor
Sep 19	na	na	Mexico	na	na	construction of some gas pipelines to end-users will be delayed to 2025
Sep 18	Freeport	T1	US	Sep 17	2 days	gas supply and production was temporarily stopped due to tropical depression.
Sep 17	NWS	na	Australia	Sep 4	around 10 days	Goodwyn platform resumed operation.
Sep 17	Cameron	T1	US	2nd weekend of Sep	na	force majeure declared on LNG export due to compressor trouble.
Sep 17	Oman	na	Oman	Sep 2	na	planned maintenance might be extended.

\*\*\* The information found during the day is highlighted in red in both Spot and Term transactions.

**©MARKET COMMENTARY**
**ODES Japan**
**Contracts steady from previous day as NE Asia market shows no change**

The November and December contracts on the Japan OTC Exchange (JOE) on Friday were assessed unchanged at \$6.05 and \$6.30 respectively as no

changes were seen in prices in the DES Northeast Asia market. On the other hand, in the JOE physical and swap markets, no bids and offers were posted and no deals were heard as of 17:00 Tokyo time.

**ONE Asia**
**DES Northeast Asia unchanged, upside of price capped on weak demand**

DES Northeast Asia prices were stable at \$5.85-6.15 for first-half November delivery, \$5.95-6.25 for second-half November delivery and \$6.15-6.45 for first-half December delivery. Spot demand remained weak and the upside of prices was capped. In particular, demand from China did not increase. In China, National Day holidays would start from Oct 1 and many Chinese companies like state-run energy companies refrained from buying. Portfolio players moved to buy prompt cargoes which were perceived to be attractive, and several end-users in Japan and South Korea moved to buy sporadically. Thus, prices did not fall. But market sentiment was not strong.

**DES Northeast Asia forward market stable; talks linked to crude prices or LNG market**

In the DES Northeast Asia forward market, prices for January to June 2020 delivery were unchanged. Several portfolio players like a European major seemingly considered buying January-February delivery cargoes. But at this moment offers were notably higher than their price ideas, so that deals were not done. "At this stage, negotiations for winter delivery cargoes were mainly linked to crude prices or the LNG market rather than at fixed prices," a public energy company in the Northeast Asia said.



**Demand from China low due to suspension of plants ahead of National Day**

In China, gas demand sharply declined especially in the northern part such as around Beijing. The National Day holidays would start on Oct 1 for many companies but a lot of plants in the region had suspended operation since mid-September. Although such movements were not as conspicuous in the eastern part of China such as Shanghai and the southern part such as Shenzhen compared with the northern part, gas demand for plant operations was lower than usual. An independent energy company said, "A very grand celebration would be held for the National Day as this year is the 70th anniversary of nation building. The manufacturing industry would be idle for around one month from mid-September."

**Demand from China declining for mid- to long-term due to US-China trade friction**

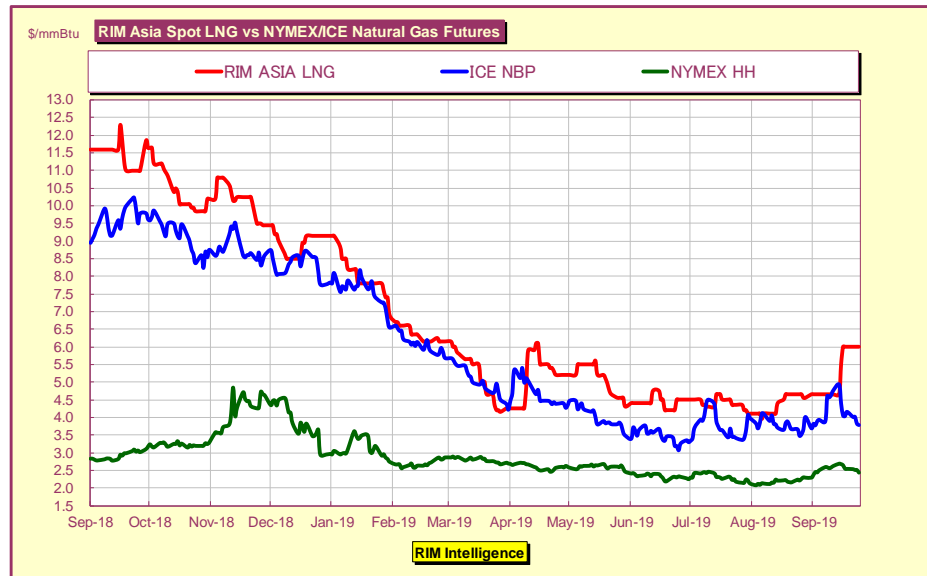
Few market sources forecast demand from China would sharply grow even after the National Day in China because of an economic slowdown caused by the US-China trade friction. The energy company said, "National companies would unlikely buy huge volumes of LNG like in the winter in 2017. Natural gas supply from inland areas such as Kazakhstan is higher than then. And players increased purchase of long-term cargoes including US ones, although Chinese players would not buy directly."

**For Tohoku Electric buy tender, winner not heard for Oct 17-20 cargo**

For a buy tender Tohoku Electric Power closed on Sep 19 for delivery in mid-October through mid-November, an Oct 17- 20 delivery cargo was awarded but details including the winner were not heard yet. Tohoku Electric Power excluded cargoes from the 5.60 mil mt/year Das Island project in the United Arab Emirates (UAE) and from US projects such as the 22.00 mil mt/year Sabine Pass project in this tender. A European trader mentioned that Tohoku Electric Power decided the exclusion of these cargoes, considering its overall balance including the spec of LNG the company is buying. The trader added that Tohoku Electric Power with a long-term contract for ex-Cameron cargoes excluded US and Abu Dhabi cargoes this time but this does not mean Tohoku Electric Power would not take these cargoes from now on.

**EGAT cancels long-term contract with Petronas**

State-owned Electricity Generating Authority of Thailand (EGAT) apparently canceled a long-term contract with Malaysia's state-run Petronas. Both companies had signed a Memorandum of Understandings (MoU) for Petronas to supply 1.50 mil mt/year to EGAT. But at this stage, EGAT indicated its intention to cancel the contract. In Thailand, LNG demand did not increase as expected. Therefore, the government requested EGAT to cancel the contract to avoid oversupplies. Meanwhile, Thailand's government reportedly allowed EGAT to buy two spot cargoes by the end of the year.



## South Asia

### DES South Asia unchanged with sustained demand- supply

DES South Asia prices were assessed unchanged on Friday for the second-half October delivery window at \$5.75-6.05. Ex-ship prices for the first-half November delivery window were also assessed unchanged at \$5.85-6.15. For the second-half November delivery window too, prices were assessed unchanged at \$5.95-6.25. City gas companies including subsidiaries of GAIL and Gujarat State Petroleum Corp (GSPC) with collective demand of more than 10mil cubic meters per day (mcmd) were keen to import spot LNG for delivery during November. Almost matching supply was seen available from liquefaction projects in the Middle East, US and the Atlantic.

### India imported 10% more LNG in Aug on year-on-year basis

Indian LNG import for August touched 2,740 mil cubic meters (mcm) which was 10.3% higher compared with the corresponding period of the previous year. Total Indian import from January to August 2019 was 8.1% higher compared to the first eight months of 2018. The cumulative LNG import had touched 13,487mcm in the first eight months of 2019, according to the Petroleum Planning and Analysis Cell (PPAC), under the Ministry of Petroleum and Natural Gas (MoPNG). Interestingly, capacity utilization of the 5.00mil mt/year Kochi terminal, operated by Petronet LNG, had touched 15% during August. Among other terminals, Dahej terminal's capacity utilization had touched 109% of its capacity of 17.5mil mt/year whereas the Shell-operated 5.00mil mt/year Hazira terminal had touched 96.8% of its installed capacity.

## Middle East

### FOB Middle East flat, no changes seen in supply/demand fundamentals

FOB Middle East prices were flat at \$4.35-4.65 for second-half October loading, \$4.55-4.85 for first-half November loading and \$4.65-4.95 for second-half November loading. In the Middle East, availability was seen from the 77.00mil mt/year Qatar project and the 5.60mil mt/year Das Island

project in Abu Dhabi. No further looseness, however, was seen in supply/demand fundamentals as demand was seen from South Asia.

### EGAS cancels five-cargo sell tender

Egyptian Natural Gas Holding Co (EGAS) cancelled a sell tender closed on Sep 24 for a total of five cargoes from the 7.20 mil mt/year Idku project.



The company had closed another tender on Sep 24 for an October loading cargo. EGAS floated a sell tender for September loading cargoes in August but cancelled the tender due to low bids.

### **DES Middle East unrevised; cargoes mostly imported under term contracts**

DES Middle East prices were left unrevised from the previous day at \$5.65-5.95 for second-half October delivery, \$5.75-6.05 for first-half November

delivery, and \$5.85-6.15 for second-half November delivery. All terminals in the Middle East import cargoes constantly. However, most of the cargoes were supplied under long-term contracts and spot demand was limited. The 3.85 mil mt/year Aqaba terminal in Jordan constantly imports cargoes from the 22.50mil mt/year Sabine Pass project and the 15.50mil mt/year Atlantic project in Trinidad and Tobago. However, all cargoes were supplied under long-term contracts.

## **○Atlantic Region**

### **FOB Atlantic supported by uncertainty of US supply**

FOB Atlantic prices stayed intact at \$3.85-4.15 for first-half October loading, \$4.15-4.45 for second-half October loading and \$4.25-4.55 for first-half November loading. Supply in the Atlantic was

ample with cargoes seen from the 5.50 mil mt/year Angola project and 22.00 mil mt/year Bonny Island project in Nigeria. But as shipments from US projects were reduced owing to maintenance and troubles, supply/demand fundamentals did not loosen.

## **○Europe**

### **DES Europe steady with limited cargo movement**

DES Europe prices were steady on Friday at \$3.55-3.85 for first-half and second-half October delivery, and at \$4.45-4.75 for first-half November delivery. Although Britain's NBP and the Netherlands' TTF showed volatility this month, LNG demand was limited as pipeline gas was well supplied. The pace of cargo intake at the 8.80mil mt/year Gate terminal in the Netherlands had dropped from mid-September. Movements of cargoes became limited due to a low demand season and no re-export cargoes were seen from the terminal.

### **NBP falls to month ago level**

Britain's NBP futures rose temporarily in the middle of the month but fell back to the level of a month ago. Prices on Sep 10 had strengthened by 70cts or more compared to the previous day. This was due to the European Court of Justice overruling a decision to increase the usage volume of the Opal pipeline by Russia's Gazprom. But there was no impact on pipeline gas supply from Russia to Europe. A source in Europe mentioned that although Gazprom could not increase its supply via the Opal pipeline, it could supply gas through other pipelines and supply/demand was not affected. European gas markets rose on the back of the ruling by the European Court of Justice but as there was no impact on supply/demand, prices returned to previous levels.

## **○South America**

### **DES South America steady; demand not seen**

DES South America prices held steady at \$4.90-5.20 for first-half and second-half October delivery and \$5.00-5.30 for first-half November delivery. Demand was not observed and talks were thin. No fresh movements were seen since Argentina's state-owned IEASA closed a buy tender

on Sep 3. Argentina could meet its demand with cargoes procured thus far and with domestic gas. The Escobar terminal did not take any cargoes in September. On the other hand, an LNG shipment from the Tango FLNG project in Argentina was seen to be delayed to October.

**Tango FLNG shipment expected in Oct**

Argentina's state-owned YPF was producing LNG at the 3.00 mil mt/year Tango FLNG project and the shipment of the next cargo was apparently delayed to October. Previously, the shipment had been expected in September. YPF chartered in the 138,200cbm conventional tanker "Excalibur" to

transport cargoes from Tango and the next cargo would likely be sold in the spot market on a DES basis. The tanker had been anchored offshore of the Tango FLNG project since early September. As the scale of production at the project was small, it would take a month and a half to two months to ship the cargo after this one.

**○Freight Market****Freight market stable; moves to charter tankers seen**

For short term charter of less than three months, daily rates were stable at \$36,000-41,000 for conventional tankers, \$55,500-60,500 for DFDE and TFDE tankers and \$64,000-69,000 for MEGI and X-DF tankers. Some players were moving to charter tankers towards the high demand winter season. Apart from this, some producers were moving to charter tankers to transport spot cargoes. As chartering demand was seen, supply/demand fundamentals were not slack.

**Petronas mulls chartering spot tanker**

Malaysian state-owned Petronas considered chartering a tanker. As reported, several coal-fired thermal power plants in Korea might halt operations from October. As a result, demand for spot cargoes from Korea might emerge and Petronas apparently wanted to sell on a DES basis. As reported, shipping company MISC, a subsidiary of Petronas, was managing its own fleet and tankers under long-term charter including the Seri series. On the other hand, Petronas also charters spot tankers where necessary. It was therefore difficult to grasp its overall position.

**○Long term and project****Excelerate's plan approved by Department of Energy in Philippines**

US Excelerate Energy submitted a plan to the Department of Energy in the Philippines to construct a receiving terminal in the form of a floating storage regasification unit (FSRU) and the plan was reportedly approved. Including this proposal, the construction of 4 receiving terminals

in the Philippines was approved. Among these, construction of an LNG receiving terminal and power plant by international LNG infrastructure company Energy World Corporation (EWC) at Pagbilao in the Quezon province on Luzon Island had started with operations expected to begin in 2021.

**○Japan Domestic Natural Gas Market****LNG truck trial runs continue**

Japanese car producer Isuzu, Shell Japan and the Organization for the Promotion of Low Emission Vehicles (LEVO) jointly resumed trial runs of LNG trucks in March. Two LNG trucks are used for the trial runs. Tonami transportation and Sagawa transportation are each hiring one truck for the trial runs. A spokesman at LEVO said, "To obtain more precise verified data, trial runs are conducted even after the verification test by the Ministry of

Environment." The resumed trial runs would be carried out up until end-February next year. These trucks would be delivered to the related organization for inspections in March. During the trial runs, LNG supply stations are operating in the Nanko area of Osaka and at the Keihin Truck Terminal in Tokyo. These LNG supply stations would be closed temporarily until LNG trucks are in practical use.

## ONYMEX/ICE Natural Gas Future Market Commentary (Sep 26)

### H.H. Oct gas slides with higher stockbuild

The October natural gas contract on NYMEX closed at \$2.428 per million British thermal units (mmBtu) on Thursday, down 7.4cts from the previous day, as stockbuild of US natural gas was higher than the previous week. According to the US Energy Information Administration, inventories as of Sep 20 were at 3.205 trillion cubic feet (tcf), up 102 bil cubic feet (bcf) from a week earlier. The stockbuild for the previous week was 84bcf.

The October natural gas contract of NBP on ICE in London settled at \$3.780, down 4.1cts from

the previous day, amid selling tied to a drop in gas demand for power generation as operation of wind power generation was high in the UK. Meanwhile, according to the latest data provided by British multinational electricity and gas utility National Grid plc, the physical price for gas delivered on Wednesday, Sep 25, correlated to \$3.085, down 19.0cts from the previous day.

In NYMEX ACCESS TRADE, the front-month November natural gas contract as of 9:30am local time on Friday was trading at \$2.440/mmBtu, down 0.3cts from the close on Thursday.

## ©MARKET NEWS

### OTEPSCO Daily: oil, gas & coal fired capacity estimated at 30,450MW

Japanese largest utility Tokyo Electric Power Co (TEPCO) had 30,450 megawatts (MW) of available capacity tied to fossil fuel (oil, gas, coal) power generation, a figure that represents roughly 66% of its total capacity including solar power and so on, as of 08:30 Tokyo time on Friday based on Rim Intelligence's projection. The total capacity was forecast to reach 46,140 MW, while estimated peak demand was at 35,100 MW in Tokyo area.

The Japan Meteorological Agency has forecasted temperatures in Tokyo to reach a daily high of 29 degrees Celsius.

Meanwhile, total peak demand for nine areas (excluding Okinawa) has been foreseen at 119,190 MW for which a total of 139,280 MW of power will be available.

(unit: MW)	Estimated Available Capacity		Estimated Peak Demand in Tokyo Area
	Oil, Gas & Coal	Total	
Friday	30,450	46,140	35,100
Thursday	30,260	45,160	36,820

## OJapan August LNG imports down 10.6% from previous month (details): MOF

Imports of liquefied natural gas (LNG) by Japan in August reached 6.10 mil metric tons (mt), down 10.6% from the previous month, according to import data released by Japan's Ministry of Finance (MOF). The Kawasaki terminal pulled in the largest volume in August receiving a total of 979,938mt followed by Kisarazu with 720,203mt and Chiba at 697,855mt.

Port	Country	Aug 2019			Jan-Aug 2019		
		Volume	Amount (1,000 yen)	Unit Price (1,000 yen)	Volume	Amount (1,000 yen)	Unit Price (1,000 yen)
Ishikari	Brunei	-	-	-	67,962	4,017,627	59.116
	Russia	-	-	-	387,679	20,247,316	52.227

	Australia	126,456	7,208,998	57.008	188,924	11,165,500	59.100
	Total	126,456	7,208,998	57.008	644,565	35,430,443	54.968
Hachinohe	Malaysia	-	-	-	64,452	4,295,012	66.639
	Peru	-	-	-	68,549	3,813,758	55.636
	Australia	-	-	-	66,154	4,487,985	67.841
	Total	-	-	-	199,155	12,596,755	63.251
Sendaishiogama	Malaysia	16,090	1,136,261	70.619	160,413	10,209,651	63.646
	Indonesia	-	-	-	63,382	4,105,560	64.775
	Qatar	-	-	-	242,114	15,110,845	62.412
	Russia	65,008	3,755,328	57.767	65,008	3,755,328	57.767
	Peru	-	-	-	60,160	2,755,897	45.809
	Australia	-	-	-	69,476	3,932,347	56.600
	Total	81,098	4,891,589	60.317	660,553	39,869,628	60.358
Sooma	Malaysia	-	-	-	178,846	10,228,478	57.192
	Australia	-	-	-	28,887	1,678,423	58.103
	Total	-	-	-	207,733	11,906,901	57.318
Hitachi	Malaysia	-	-	-	176,545	11,515,167	65.225
	Qatar	-	-	-	118,002	6,660,397	56.443
	Russia	64,709	3,593,510	55.533	129,246	7,120,335	55.091
	Australia	-	-	-	121,328	7,129,768	58.764
	Total	64,709	3,593,510	55.533	545,121	32,425,667	59.483
Chiba	Malaysia	175,519	8,776,908	50.005	530,392	24,783,229	46.726
	Brunei	201,506	12,348,522	61.281	2,045,302	124,893,747	61.064
	Qatar	-	-	-	59,845	3,857,723	64.462
	Oman	-	-	-	64,385	3,261,744	50.660
	Russia	64,884	3,672,042	56.594	387,817	20,440,616	52.707
	Australia	255,946	15,104,840	59.016	2,643,238	160,973,608	60.900
	Papua New Guinea	-	-	-	144,134	8,847,933	61.387
	Total	697,855	39,902,312	57.179	5,875,113	347,058,600	59.073
Kisarazu	Malaysia	-	-	-	356,775	16,950,556	47.510
	Brunei	-	-	-	68,441	3,980,487	58.159
	Indonesia	-	-	-	436,963	22,815,496	52.214
	Qatar	363,832	21,779,801	59.862	1,370,421	79,285,139	57.855
	Oman	-	-	-	188,792	9,358,147	49.569
	Abu Dhabi	-	-	-	423,121	28,912,275	68.331
	Russia	-	-	-	129,401	7,429,306	57.413
	US	134,355	8,100,605	60.293	268,339	14,420,553	53.740
	Egypt	-	-	-	62,119	3,495,559	56.272
	Australia	222,016	12,867,156	57.956	2,365,621	149,155,423	63.051

	Papua New Guinea	-	-	-	602,261	35,392,903	58.767
	Total	720,203	42,747,562	59.355	6,272,254	371,195,844	59.181
Yokohama	Malaysia	-	-	-	482,056	25,627,893	53.164
	Russia	-	-	-	258,729	13,541,982	52.340
	Australia	190,639	10,525,585	55.212	1,586,967	94,088,329	59.288
	Total	190,639	10,525,585	55.212	2,327,752	133,258,204	57.248
Kawasaki	Malaysia	65,918	2,879,188	43.678	612,357	27,884,263	45.536
	Brunei	-	-	-	125,052	7,405,481	59.219
	Indonesia	-	-	-	176,896	9,559,666	54.041
	Qatar	57,532	3,295,858	57.287	591,904	32,783,700	55.387
	Oman	-	-	-	62,499	2,866,843	45.870
	Abu Dhabi	-	-	-	1,028,984	64,149,290	62.342
	Russia	129,730	7,553,271	58.223	579,581	31,683,772	54.667
	US	138,015	7,371,943	53.414	794,348	47,492,756	59.788
	Nigeria	-	-	-	63,707	1,634,162	25.651
	Australia	588,743	33,507,808	56.914	3,127,282	187,704,451	60.022
	Papua New Guinea	-	-	-	205,454	13,865,502	67.487
	Total	979,938	54,608,068	55.726	7,368,064	427,029,886	57.957
Niigata	Malaysia	118,838	6,546,143	55.085	701,217	39,296,420	56.040
	Indonesia	-	-	-	120,000	6,866,153	57.218
	Qatar	-	-	-	177,944	10,575,347	59.431
	Oman	-	-	-	129,522	5,116,015	39.499
	Russia	129,645	5,421,264	41.816	516,721	29,058,311	56.236
	US	-	-	-	67,765	3,439,370	50.754
	Nigeria	-	-	-	62,160	1,596,566	25.685
	Australia	-	-	-	475,874	28,379,542	59.637
	Total	248,483	11,967,407	48.162	2,251,203	124,327,724	55.227
Naoetsu	Malaysia	-	-	-	59,342	3,370,869	56.804
	Brunei	-	-	-	67,625	4,748,688	70.221
	Indonesia	-	-	-	55,253	3,255,865	58.926
	Qatar	-	-	-	59,221	3,123,185	52.738
	Russia	-	-	-	323,100	18,021,080	55.776
	Peru	-	-	-	65,063	4,197,772	64.519
	Nigeria	59,332	1,601,659	26.995	59,332	1,601,659	26.995
	Australia	75,092	4,473,955	59.580	657,004	39,037,507	59.417
	Papua New Guinea	-	-	-	302,380	15,724,145	52.001
	Total	134,424	6,075,614	45.197	1,648,320	93,080,770	56.470
Shimizu	Malaysia	-	-	-	179,225	11,130,310	62.102
	Qatar	-	-	-	63,084	4,141,883	65.657

	US	-	-	-	65,093	2,981,770	45.808
	Australia	134,203	7,992,985	59.559	399,507	24,601,769	61.580
	Papua New Guinea	-	-	-	132,396	9,066,356	68.479
	Total	134,203	7,992,985	59.559	839,305	51,922,088	61.863
Nagoya	China	-	-	-	70,560	2,250,297	31.892
	Malaysia	56,377	3,162,651	56.098	767,048	39,784,730	51.867
	Indonesia	54,130	3,200,942	59.134	379,098	23,449,080	61.855
	Qatar	59,723	3,420,142	57.267	1,061,423	63,842,974	60.148
	Oman	-	-	-	62,501	2,165,842	34.653
	Russia	64,651	3,903,182	60.373	322,612	19,603,541	60.765
	US	-	-	-	136,425	7,689,859	56.367
	Algeria	-	-	-	61,438	2,505,334	40.778
	Nigeria	-	-	-	70,147	4,048,404	57.713
	Australia	337,761	19,697,841	58.319	1,632,069	93,611,355	57.357
	Papua New Guinea	73,664	3,744,206	50.828	220,010	11,671,720	53.051
	Total	646,306	37,128,964	57.448	4,783,331	270,623,136	56.576
Yokkaichi	Malaysia	60,260	2,576,168	42.751	422,780	22,339,771	52.840
	Indonesia	-	-	-	509,696	32,367,833	63.504
	Qatar	60,682	3,536,865	58.285	1,171,561	72,228,619	61.652
	Oman	62,323	3,059,246	49.087	62,323	3,059,246	49.087
	Russia	-	-	-	64,430	3,427,396	53.196
	US	-	-	-	69,379	3,856,949	55.592
	Peru	-	-	-	140,667	7,572,540	53.833
	Australia	189,102	10,775,628	56.983	939,823	56,361,799	59.971
	Papua New Guinea	-	-	-	74,151	3,938,749	53.118
	Total	372,367	19,947,907	53.571	3,454,810	205,152,902	59.382
Osaka Sakai	Malaysia	-	-	-	296,645	16,642,249	56.102
	Brunei	64,628	4,022,329	62.238	327,476	19,130,977	58.419
	Indonesia	60,535	3,676,405	60.732	723,902	41,333,718	57.098
	Qatar	91,949	5,825,846	63.360	269,517	16,371,032	60.742
	Oman	68,954	2,908,006	42.173	897,919	45,355,334	50.512
	Russia	-	-	-	319,859	14,317,474	44.762
	US	-	-	-	277,292	16,369,695	59.034
	Peru	-	-	-	69,401	3,463,247	49.902
	Nigeria	-	-	-	63,786	2,237,247	35.074
	Australia	130,989	7,614,751	58.133	1,633,230	94,855,024	58.078
	Papua New Guinea	72,159	4,430,048	61.393	513,651	32,480,160	63.234
	Total	489,214	28,477,385	58.210	5,392,678	302,556,157	56.105
Himeji	Malaysia	-	-	-	239,231	13,889,669	58.060



	Brunei	-	-	-	254,865	15,543,331	60.987
	Indonesia	-	-	-	328,138	20,182,892	61.507
	Qatar	-	-	-	424,394	25,816,957	60.833
	Oman	58,601	3,708,940	63.291	180,604	9,659,744	53.486
	Russia	-	-	-	64,158	3,160,248	49.257
	US	72,456	3,751,773	51.780	218,915	11,674,066	53.327
	Peru	-	-	-	59,607	3,848,738	64.569
	Nigeria	-	-	-	74,034	4,198,650	56.712
	Australia	377,572	20,317,594	53.811	2,338,207	136,261,030	58.276
	Papua New Guinea	72,272	4,611,563	63.808	293,276	17,494,699	59.653
	Total	580,901	32,389,870	55.758	4,475,429	261,730,024	58.482
Mizushima	Malaysia	-	-	-	245,541	13,976,102	56.920
	Australia	55,528	3,275,845	58.994	400,881	22,104,235	55.139
	Total	55,528	3,275,845	58.994	646,422	36,080,337	55.815
Hiroshima	Malaysia	7,931	615,786	77.643	79,315	6,093,827	76.831
	Indonesia	-	-	-	7,889	434,111	55.027
	Russia	-	-	-	106,834	7,539,940	70.576
	Australia	29,976	1,872,267	62.459	80,010	5,413,841	67.665
	Total	37,907	2,488,053	65.636	274,048	19,481,719	71.089
Iwakuni	Malaysia	-	-	-	62,910	3,333,790	52.993
	Qatar	-	-	-	59,995	3,866,112	64.441
	Oman	62,900	3,161,920	50.269	376,516	19,559,620	51.949
	Australia	125,764	5,114,682	40.669	580,712	31,429,597	54.123
	Total	188,664	8,276,602	43.870	1,080,133	58,189,119	53.872
Sakaide	Malaysia	59,834	3,342,922	55.870	241,649	13,385,429	55.392
Tobata	Malaysia	-	-	-	113,186	6,495,098	57.384
	Indonesia	-	-	-	119,408	8,098,519	67.822
	Russia	64,626	3,820,053	59.110	388,239	20,890,635	53.809
	Australia	55,878	3,030,858	54.241	225,746	11,208,176	49.649
	Papua New Guinea	-	-	-	69,488	4,488,123	64.588
	Total	120,504	6,850,911	56.852	916,067	51,180,551	55.870
Nagasaki	Malaysia	-	-	-	24,672	1,691,873	68.575
Ooita	Indonesia	108,928	6,932,823	63.646	162,942	10,641,184	65.307
	Russia	-	-	-	160,223	9,083,092	56.690
	Australia	-	-	-	463,579	28,729,051	61.972
	Total	108,928	6,932,823	63.646	786,744	48,453,327	61.587
Kagoshima	Australia	-	-	-	87,082	6,011,716	69.035
Okinawa	Australia	-	-	-	131,724	10,203,957	77.465
	Grand Total	6,038,161	338,624,912	56.081	51,133,927	2,964,842,757	57.982

Following the Custom Law of Japan, some import data is omitted this month. The total import volume is 6,100,689mt, total amount is JPY 342,147,880,000 and average import price is JPY 56,083.

**OTABLE 9/27 LNG Cargo Arrivals at Ise Bay**

Japan LNG Terminal Cargo Arrivals						
Arrival	Terminal	Carrier	Capacity(cum)	Capacity(mt)	Origin/Last_Port	Note
<b>Ise_Bay</b>						
01-Oct-19	Nagoya	Pacific Eurus	137,000	63,020	Darwin, Australia	
28-Sep-19	Nagoya	Tangguh Hiri	155,000	71,300	Indonesia	
25-Sep-19	Nagoya	Grand Mereya	147,200	67,712	Russia	
23-Sep-19	Nagoya	Alto Acrux	147,200	67,712	Malaysia	
21-Sep-19	Nagoya	Al Zubarah	137,573	63,284	Qatar	
20-Sep-19	Yokkaichi	Enshu Maru	125,000	57,500	Papua New Guinea	
19-Sep-19	Nagoya	Puteri Nilam Satu	137,100	63,066	Malaysia	
17-Sep-19	Yokkaichi	Asia Endeavour	160,000	73,600	Gorgon, Australia	
13-Sep-19	Nagoya	Methane Julia Louise	170,000	78,200	Gorgon, Australia	
13-Sep-19	Yokkaichi	Asia Vision	160,000	73,600	Wheatstone	
12-Sep-19	Nagoya	Woodside Rogers	159,760	73,490	NWS, Australia	
10-Sep-19	Yokkaichi	Seri Angkasa	145,000	66,700	Malaysia	
08-Sep-19	Yokkaichi	Bishu Maru	164,700	75,762	Ichthys, Australia	
05-Sep-19	Yokkaichi	Ekaputra 1	136,400	62,744	Indonesia	
05-Sep-19	Nagoya	British Mentor	174,300	80,178	Singapore	
01-Sep-19	Nagoya	Puteri Nilam	130,405	59,986	Malaysia	
<b>Total</b>			<b>2,386,638</b>	<b>1,417,592</b>		

**OTABLE 9/27 LNG exports from Ichthys, Australia**

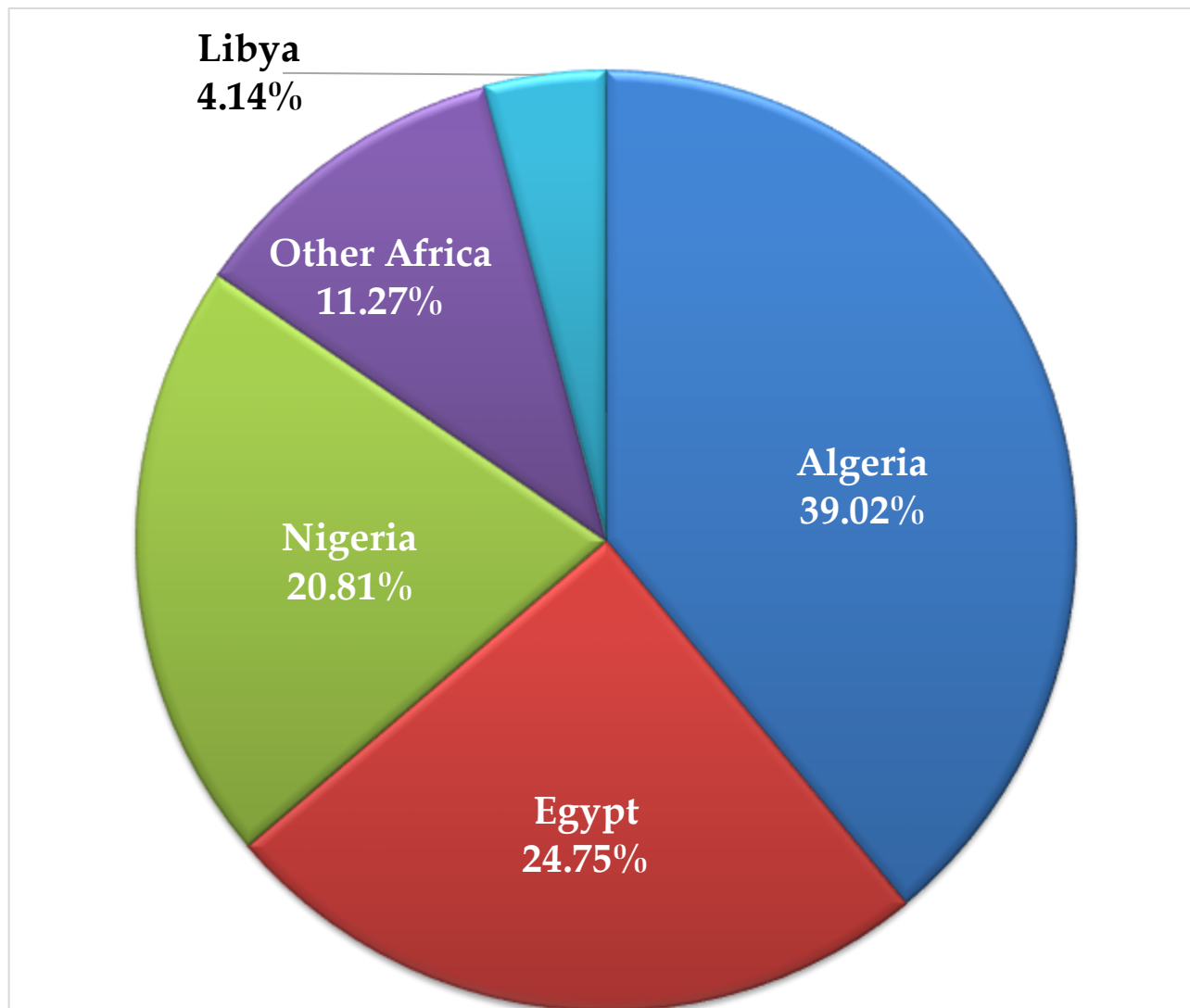
LNG Exports from Australia				
Departure	Carrier	Capacity(cum)	Capacity(mt)	Note
<b>Ichthys</b>				
02-Oct-19	Oceanic Breeze	155,300	71,438	
<b>Total</b>		<b>155,300</b>	<b>71,438</b>	
30-Sep-19	Pacific Breeze	180,000	82,800	
28-Sep-19	LNG Fukurokuju	165,134	75,962	
25-Sep-19	Seishu Maru	153,000	70,380	
21-Sep-19	WilPride	155,900	71,714	
19-Sep-19	Energy Progress	145,000	66,700	
16-Sep-19	Nizwa LNG	145,000	66,700	
13-Sep-19	Pacific Breeze	180,000	82,800	



10-Sep-19	Energy Confidence	153,000	70,380
07-Sep-19	Trinity Arrow	154,200	70,932
04-Sep-19	La Mancha Knutsuen	173,613	79,862
<b>Total</b>		<b>1,604,847</b>	<b>738,230</b>

## Natural Gas production in 2018

### - Africa-

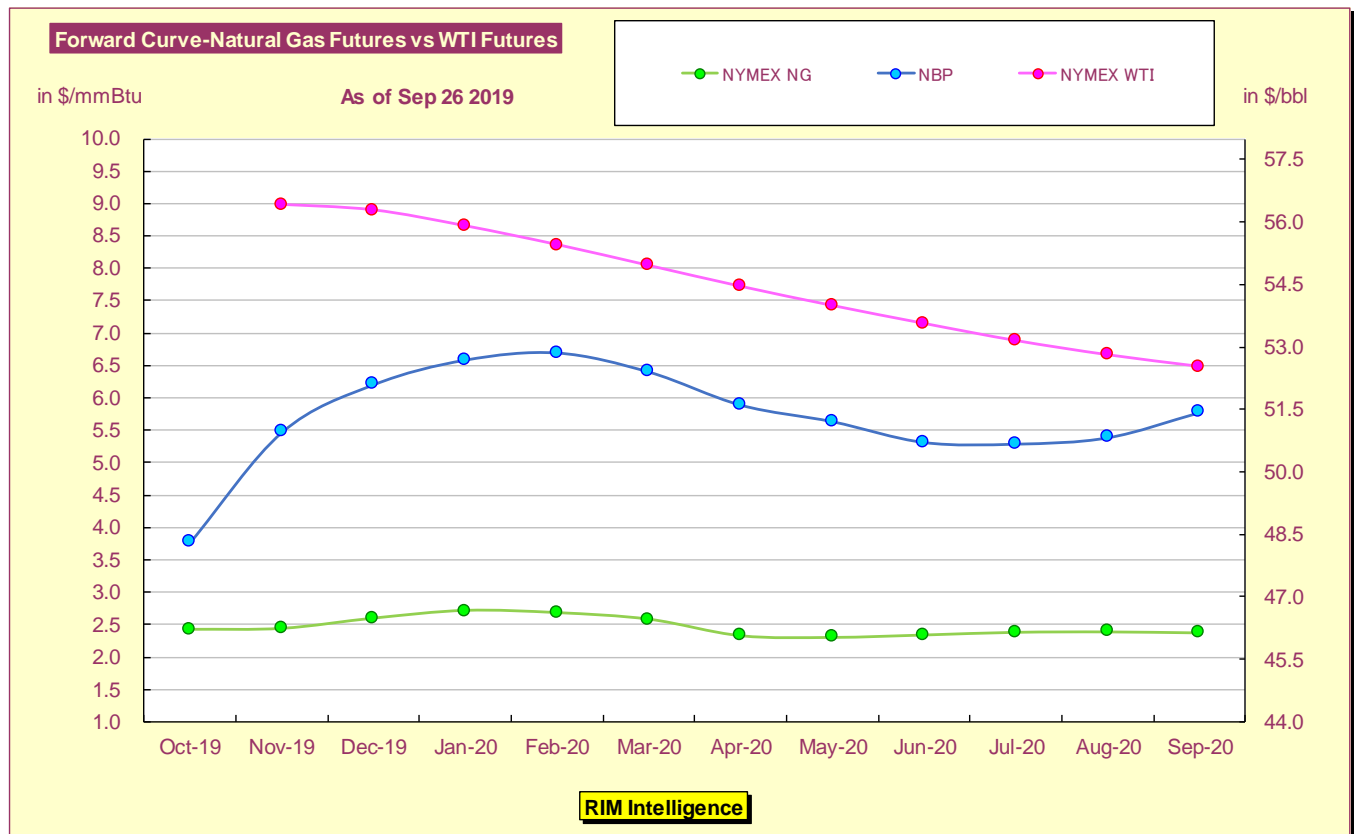


Source : BP statical report 2019

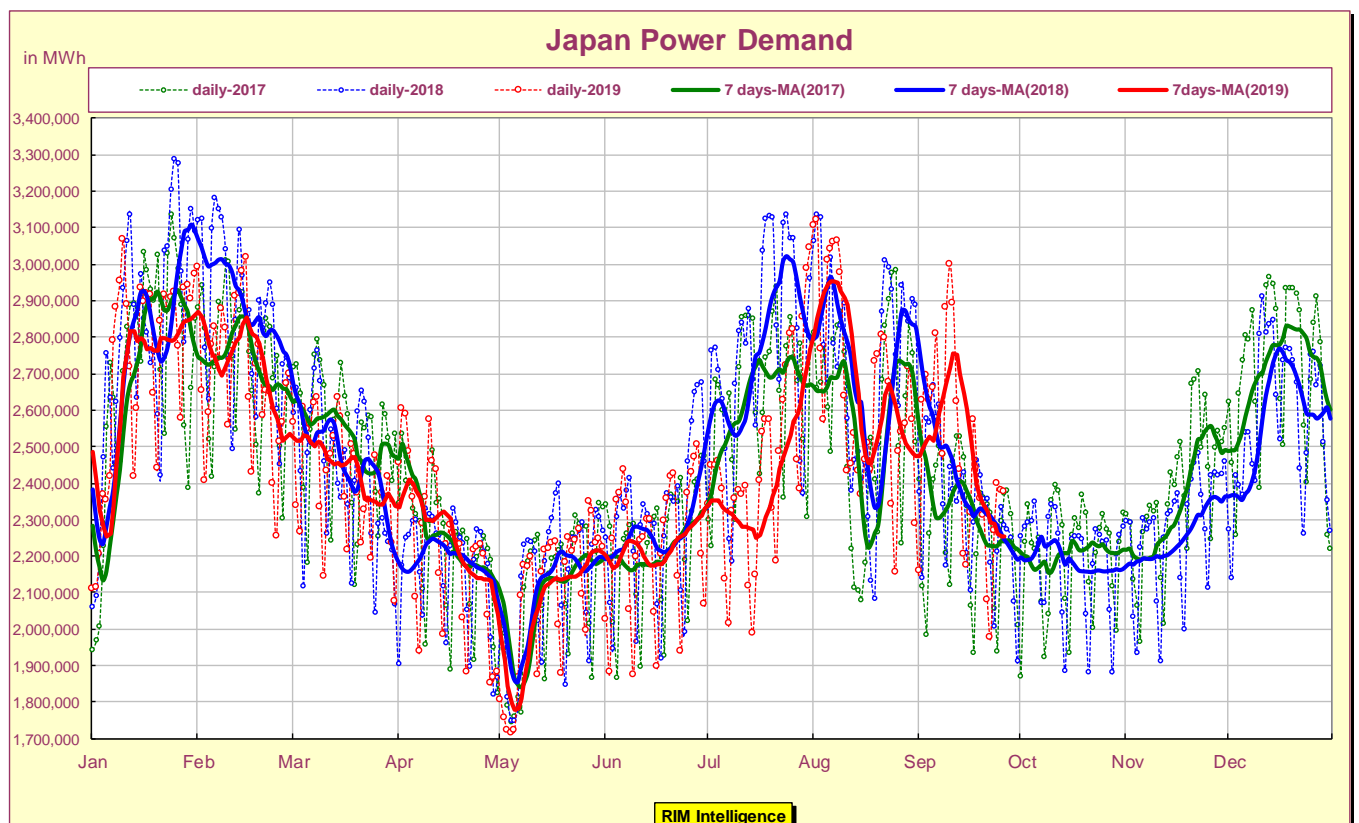
Gas production in 2018 Unit: billion cubic meter (bcm), mil ton (mt)		
Country	Gas production in bcm	Gas production in mil mt (LNG conversion)
Algeria	92.30	69.78
Egypt	58.56	44.27
Nigeria	49.24	37.23
Other Africa	26.66	20.16
Libya	9.80	7.41
<b>Total</b>	<b>236.57</b>	<b>178.84</b>

bcm - to - mil mt (LNG) : 0.756

## Forward Curve-natural Gas Futures vs WTI Futures



## Japan Power Demand



## Spark Spread

Rim Index (yen/kWh Sep.28)			
	DT	Peak	Night
<b>8.72</b>	<b>9.31</b>	<b>9.09</b>	<b>7.90</b>

Fuel	thermal efficiency(%)	Fuel Price yen /ton · kl	After tax yen/ton · kl	Generation cost yen/kWh	Spread (yen/kWh)			
					24 hr	DT	Peak	Night
L N G	44.10	33,793	35,653	<b>5.33</b>	+3.39	+3.98	+3.76	+2.57
	50.00			<b>4.70</b>	+4.02	+4.61	+4.39	+3.20
	59.00			<b>3.98</b>	+4.74	+5.33	+5.11	+3.92
Coal	40.50	8,535	9,905	<b>3.43</b>	+5.29	+5.88	+5.66	+4.47
	45.00			<b>3.08</b>	+5.64	+6.23	+6.01	+4.82
imported CFO	38.40	55,790	55,790	<b>12.69</b>	-3.97	-3.38	-3.60	-4.79
domestic CFO								
0.3% sulfur	38.40	50,500	50,500	<b>11.49</b>	-2.77	-2.18	-2.40	-3.59
3.0% sulfur	38.40	46,500	46,500	<b>10.58</b>	-1.86	-1.27	-1.49	-2.68
Crude	38.40	44,130	46,930	<b>11.17</b>	-2.45	-1.86	-2.08	-3.27



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