



AGH Bulletin

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WORLD NEWS

Indian Oil To Double Ennore LNG Terminal's Capacity To 10 MTPA

1. IOC aims to expand the LNG terminal capacity at Ennore in southern India to 10 million ton per annum (MTPA) amid the demand for gas in the country.
2. India wants to increase the share of gas in its energy mix to 15% by 2030, as part of an effort to cut emissions. IOC hopes to boost local sales of gas to 20 mtpa by 2030, a substantial increase from the current 6.3 mtpa.
3. Aside from the Ennore terminal, IOC has leased capacity in at least two local projects operated by other companies to import gas. For price stability, India needs to sign more LNG import contract
4. IOC recently signed two agreements for 14-year LNG import contracts worth USD11 billion.

Source: Reuters, 24

AGH Commentary

India is working progressively for natural gas to achieve 15% of the country's energy mix by 2030.

Cambodia Scraps Coal Power Project To Build Gas-Fired Plant, Import LNG

1. Cambodia has abandoned plans to build a USD1.5 billion 700 MegaWatt (MW) coal-fired power project in a protected reserve along the southwestern coast and will build an 800MW natural-gas fired plant instead.
2. As part of the project, Cambodia is exploring construction of LNG terminal to import the super-chilled fuel and re-gasify it for use in the power plant.
3. The planned LNG terminal, likely to be a fixed land-based facility, would be Cambodia's first and would make it a new import market in Southeast Asia. Vietnam and Philippines took their first shipments this year.
4. Cambodia wants to lift its share of clean generation capacity to 70% by 2030 from 52% in 2022 by building new solar and wind farms and hydro projects.
5. Cambodia, where power demand has grown about 15% annually in the decade, has tapped hydropower to address surging electricity demand.

Source: Reuters, 20 November 2023

AGH Commentary

Cambodia has joined her ASEAN neighbours like Vietnam and Philippines to start importing LNG and to using natural gas at power plants.

WORLD NEWS (cont'd)

Shell's Prelude LNG Facility Expected To Resume Exports Next Month

1. Shell has almost finished extensive maintenance at its Prelude LNG facility off Australia and is set to resume export this month.
2. The timing of the giant floating facility's return to operations is likely to coincide with peak consumption in major markets, including China and Europe, in the northern hemisphere drives demand, although high inventories have limited buying so far this year.
3. Prelude is a complex facility in a remote offshore location, and this is Shell's first major turnaround which the company continue to work through methodically taking as much time as required to ensure safe execution of all activities.
4. Prelude, whose deck is longer than four soccer fields, was the world's first floating LNG facility to use novel technology and cost over USD12 billion.

Source: Reuters, 27 November 2023

AGH Commentary

This latest development at the Prelude LNG facility aims to minimize disruption of LNG supply.

Russian LNG Exports To EU Reach Record High Of 1.75 Millions Tons For November 2023

1. The record has surpassed the previous record set in December 2022, when 1.737 million tons were exported to the region.
2. Most of November's shipments went to France and Belgium, receiving LNG from facilities in the Yamal peninsula and Vysotsk, operated by Novatek, Russia's second-largest gas producer.
3. On a global scale, Russian LNG shipments totaled 2.914 million tons in November 2023, marking a 9.3% increase compared to the same period the previous year. However, deliveries to China experienced a significant decline, dropping to 0.1 million tons from 0.8 million tons in the previous month.
4. Apart from lower transportation costs to the EU from Yamal, equal pricing between Dutch TTF gas futures for November deliveries or higher than spot LNG supplies to Asia has shifted dynamically which contributed to the EU market's growing attractiveness.
5. In addition, China's CNPC, a buyer of Yamal LNG, had redirected some shipments from Russia to more profitable markets, compensating for the Chinese market with supplies

AGH Commentary

Russia has not been affected by its LNG exports despite receiving import restrictions by the EU due to military conflict with Ukraine.

[HOME](#)

PETRONAS Made 19 Discoveries, Over One Billion Barrels Of Oil In 2023

1. This achievement was the result of an intensified program in the last few years, which saw the drilling of 25 wells; the highest number of exploration wells drilled in a single year since 2015.
2. More than half of the discoveries were made in the Sarawak Basin, essentially in two clusters within the geological provinces in the Balingian and West Luconia area.
3. The significant exploration success confirms PETRONAS believes that there is more potential the matured Malaysia's basins.
4. Using the new 3D seismic data and the latest software technologies to better detect deeper hydrocarbon potentials, PETRONAS is fully supported by their partners adoption of new technologies strategies which focus on near-field potential, that will enable quicker monetization of the discoveries.
5. PETRONAS will launch the next series of the Malaysia Bid Round early next year and will offer more exploration blocks and discover resource opportunities to potential investors.

AGH Commentary

Apart from embracing advanced technologies, obtaining committed partners and strong support from oil and gas producing states and the federal government, PETRONAS has been successful in growing Malaysia's resource base.

PETRONAS Sees Lower Profitability Amid Volatile Oil & Gas Prices

1. Volatility in oil and gas prices were expected to higher due to economic uncertainties and heightened concerns over global energy security amid geopolitical in the Middle East.
2. The company, however, will continue to focus on its core business and sustainability agenda.
3. PETRONAS reported a lower profit after tax of RM23.9 billion (USD5.14 billion) for the July-September 2023 period, compared with a profit of RM30.8 billion in the same period last year.
4. Revenue in the quarter fell to RM82.9 billion primarily due to lower average realized prices, compared with RM 98.9 billion last year.
5. Capital investments amounted to RM34.3 billion, mainly attributed to upstream gas projects.

AGH Commentary

As a veteran in the industry, PETRONAS maintains its focus on core business and sustainability agenda despite various challenges faced.

HOME (cont'd)

PTTEP of Thailand To Focus On Malaysia

1. Petroleum Authority of Thailand (PTT) Exploration & Production Plc (PTTEP) says it is looking forward to producing more petroleum after discovering oil and gas in Malaysia, part of the company's long-term plan to seek new supply as gas reserves in Thailand dwindle.
2. Malaysia and Middle East are two key areas where PTTEP aims to increase gas production as energy analyst expect domestic gas supply to deplete within a decade, causing Thailand to import more LNG.
3. The new discoveries were made at three fields in offshore petroleum blocks SK405B and SK438 in Sarawak. These fields have proven to be high-quality oil and gas reservoirs, especially Babadon-1 exploration well, which revealed massive sweet gas sandstone reservoir with thickness of up 200 metres.
4. The company earlier discovered gas at Lang Lebah field, located in the SK410B block, some 90 kilometers off the coast of Miri in Sarawak. It is the company largest discovery.
5. PTTEP made a 42.5% investment in this gas business, while Kuwait Foreign Petroleum Exploration's subsidiary, KUFPEC Malaysia made a 42.5% investment. The remaining 15% was funded by PETRONAS Carigali.
6. The Lang Lebah project is scheduled to start commercial operation in 2027, producing up to 1 billion cubic feet of gas per day. This field is estimated to hold 5 trillion cubic feet of gas. Oil and gas international players find Malaysia to be a lucrative investment destination.

AGH Commentary

Source: Bangkok Post, 08 December 2023

GLOBAL HIGHLIGHTS – LNG & Natural Gas

Snapshots as of 08 December 2023

ASIA PACIFIC/INDIA

1. LNG spot deliveries price to North Asia is hovering around USD15.00-15.05/MMBtu for the front month of January.
2. Industry sources has indicated at least 11 spot cargoes have been offered by traders since early this week with at least two cargoes were concluded yesterday. But no inking on buyers.
3. Asian buyers are still having high gas inventories for winter, as such spot sales and purchasing is a bit slow so far.

AGH Commentary

Asian buyers are having no problem so far on the cold weather in Europe, however this may change in the upcoming weeks during festive seasons.

Source: Industry, 08 December 2023

EUROPE

1. Gas inventory in Europe fell by 6.3% of capacity to 93.3%. It comes after the bloc reported that the volume of natural gas had soared to an all-time high of almost 98% in October
2. Europe's gas benchmark, Dutch TTF was traded at Euro 41.21 MW/h or USD13.55/MMBtu or RM 61.20/MMBtu for front month January delivery.
3. In addition, the onset colder weather across northwestern Europe is likely to increase demand for heating, adding further upward pressure on prices.

AGH Commentary

Cold weather causes surge in European gas consumption.

Source: Industries, 8 December 2023

Freight Charges Selected Regions as of 08 December 2023 (RM/MMBtu)

Export Regions	Japan/Korea	Taiwan/China	Malacca
Bintulu	3.73	3.5	1.87
Singapore	4.20	3.27	0.93
M'cca	4.20	3.73	-

Charter Hire Rate as of 08 December 2023; USD55,000-60,000/Day

Source : Industry, 2023

GLOBAL HIGHLIGHTS – LNG & Natural Gas

Outlook as of 08 December 2023

Global Gas Future Index

Month	JKM Platts Future		TTF Natural Gas Future		CME HH Future	
	USD/ MMBtu	RM/ MMBtu	USD/ MMBtu	RM/ MMBtu	USD/ MMBtu	RM/ MMBtu
Jan 24	▼ 15.80	73.73	▼ 12.73	59.40	▼ 2.59	12.06
Feb 24	▼ 14.42	67.29	▼ 12.88	60.09	▼ 2.52	11.76
Mar 24	▼ 13.45	62.78	▼ 12.84	59.94	▼ 2.40	11.20
Apr 24	▼ 12.96	60.46	▼ 12.63	58.95	▼ 2.39	11.16
May 24	▼ 13.08	61.06	▼ 11.90	55.56	▼ 2.47	11.52
June 24	▼ 13.28	62.00	▼ 12.52	58.45	▼ 2.61	12.17
July 24	▼ 13.38	62.45	▼ 12.53	58.46	▼ 2.75	12.82
Aug 24	▼ 13.33	62.19	▼ 12.53	58.47	▼ 2.80	13.05
Sept 24	▼ 13.38	62.44	▼ 12.61	58.86	▼ 2.77	12.94
Oct 24	▼ 14.035	65.50	▼ 12.87	60.09	▼ 2.84	13.26
Nov 24	▼ 15.21	70.99	▼ 13.79	64.36	▼ 3.21	14.98
Dec 24	16.059	74.95	0.00	0.00	0.00	0.00

Sources: ICE Energy Report , CME Group
Market Data

Global Crude Future Benchmark Snapshots in RM per MMBtu

Month	Brent (ICE)	WTI (NYMEX)	JCC (ICE)
Dec23	▼ 62.53	0.00	0.00
Jan24	▼ 61.55	▼ 58.53	▼ 67.95
Feb24	▼ 61.64	▼ 58.75	▼ 65.32
Mar24	▼ 61.77	▼ 58.94	▼ 64.85
Apr 24	▼ 61.84	▼ 59.03	▼ 64.79
May 24	▼ 61.88	▼ 59.21	▼ 64.75
June 24	▼ 61.82	▼ 59.22	▼ 64.66
Jul 24	▼ 61.76	▼ 58.86	▼ 64.49
Aug 24	▼ 61.62	▼ 58.36	▼ 64.30
Sep 24	▼ 61.46	▼ 58.20	▼ 64.12
Oct 24	▼ 61.33	▼ 58.26	▼ 63.91
Nov24	▼ 61.16	57.84	63.69

Sources: CME Group Market Data, ICE Energy Report

GLOBAL HIGHLIGHTS – LNG & Natural Gas

Outlook as of 08 December 2023 (cont'd)

Regional Coal Future Index

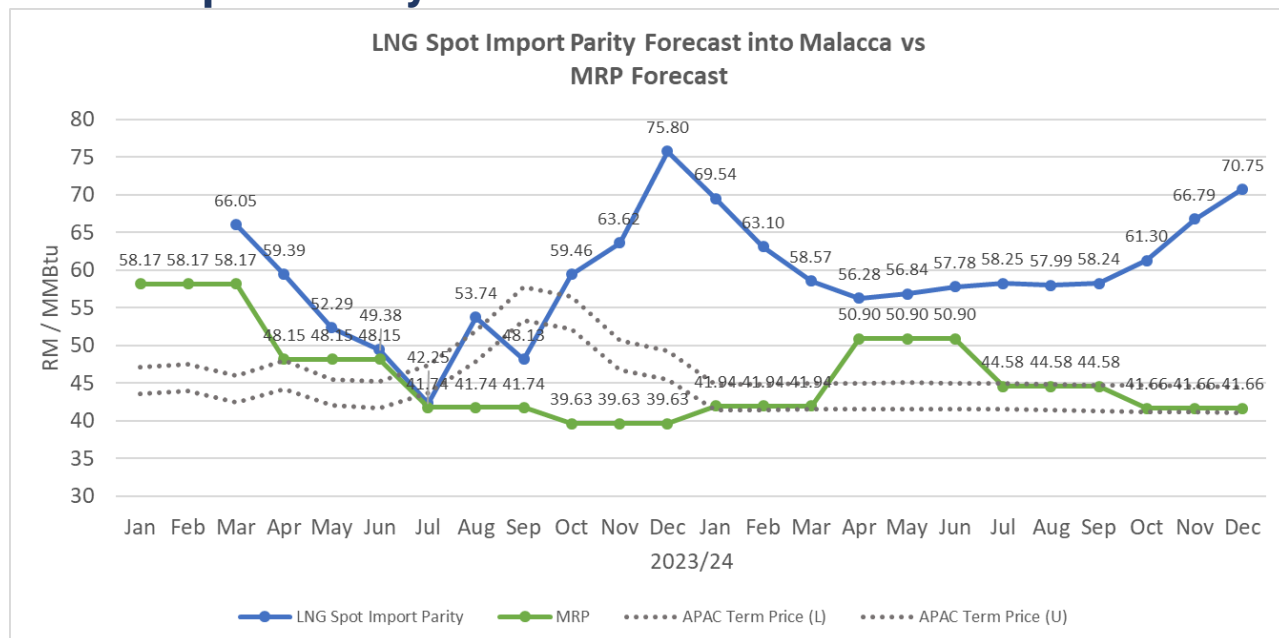
Month	ICE Newcastle Coal Index	
	USD/ MMBtu	RM/ MMBtu
Dec 23	▲ 5.36	25.01
Jan 24	▲ 5.38	25.09
Feb 24	▲ 5.24	24.46
Mar 24	▲ 5.12	23.92
Apr 24	▲ 5.17	24.13
May 24	▲ 5.12	23.91
June 24	▲ 5.15	24.06
July 24	▲ 5.21	24.30
Aug 24	▲ 5.26	24.54
Sept 24	▲ 5.29	24.68
Oct 24	▲ 5.31	24.78
Nov 24	▲ 5.33	24.88

Sources: ICI, www.cmegroup.com; ICE Newcastle Coal index, www.barchart.com

Liquid Petroleum Gas (LPG) Future Index (Saudi Aramco)

Month	Argus Propane Future Index		Mini Argus Butane Future Index	
	USD/ MMBtu	RM/ MMBtu	USD/ MMBtu	RM/ MMBtu
Jan 24	▼ 9.17	42.78	▲ 9.46	44.15
Feb 24	▼ 8.95	41.78	▲ 9.20	42.92
Mar 24	▼ 8.61	40.17	▲ 8.84	41.25
Apr 24	▼ 8.23	38.40	▲ 8.42	39.32
May 24	▼ 7.89	36.84	▲ 8.09	37.74
June 24	▼ 7.71	35.97	▲ 7.84	36.59
July 24	▼ 7.57	35.35	▲ 7.74	36.10
Aug 24	▼ 7.58	35.38	▲ 7.75	36.19
Sept 24	▼ 7.70	35.92	▲ 7.89	36.84
Oct 24	▼ 7.86	36.68	▲ 8.06	37.63
Nov 24	▼ 7.98	37.22	▲ 8.19	38.20
Dec 24	8.05	37.57	8.27	38.60

LOCAL HIGHLIGHTS – Domestic Forecast for MRP & LNG Import Parity as of 08 December 2023



Source: AGH Market Analysis

Month	Import Parity - MRP Spread	Change	APAC Term Ave - MRP Spread	Change
Sep-23	6.39	0.00	13.80	0.00
Oct-23	19.83	0.00	14.75	0.00
Nov-23	23.99	0.00	9.03	0.00
Dec-23	36.18	0.00	7.78	0.00
Jan-24	27.60	-6.70	1.14	-4.48
Feb-24	21.16	-11.22	1.21	-4.32
Mar-24	16.63	-11.86	1.30	-4.11
Apr-24	5.38	-11.18	-7.62	-3.69
May-24	5.94	-10.99	-7.59	-3.66
Jun-24	6.87	-10.95	-7.63	-3.53
Jul-24	13.67	-10.07	-1.35	-2.05
Aug-24	13.41	-11.64	-1.45	-1.94
Sep-24	13.66	-11.67	-1.56	-1.48
Oct-24	19.64	-8.09	1.27	0.60
Nov-24	25.14	-6.96	1.16	0.69
Dec-24	29.09	-6.75	1.05	0.79

Source: AGH Market Analysis

AGH Commentary

March – July 2024 are expected to be a good time to import LNG cargoes into the country, mainly for term price at 12% - 13.5% Brent.

MRP = Malaysia Reference Price used for domestic market

LOCAL HIGHLIGHTS – Peninsular Gas Utilities (PGU)

Gas Volume Updates as of 08 December 2023

There is no change in available capacity from last week.

Northern Region			
State	Exit CITY GATE (CG)/Metering Station (MS)	Available Capacity	
		MMscf/d	MMBtu/d
Perlis	Tambun Tulang CG	10.97	11375.89
	Ayer Puteh CG	30.92	32064.04
	TTPC MS	55.86	57926.82
Kedah	Pondok Labu CG	19.21	19920.77
	Kulim Hi Tech CG	75.18	77961.66
	Sungai Petani CG	20.44	21196.28
	Pokok Sena CG	20.86	21631.82
	PFK MS	16.25	16851.25
	NUR MS	200.97	208405.89
	Prai CG	24.97	25893.89
Penang	TNB Prai MS	98.28	101916.36
	TNB Gelugor MS	23.35	24213.95
	Prai Power MS	110.22	114298.14

Eastern Region			
State	Exit CITY GATE (CG)/Metering Station (MS)	Available Capacity	
		MMscf/d	MMBtu/d
T'gganu	Kerteh CG	0.89	922.93
	Teluk Kalong CG	8.68	9001.16
	Kerteh 3 CG	96.3	99863.1
	Kerteh 2 CG	3.79	3930.23
	TNB Paka MS	208	215696
	YTL Paka MS	139.16	144308.92
	CUF Kerteh MS	105.52	109424.24
Pahang	CUF Gebeng MS	125.84	130496.08
	Gambang CG	0.49	508.13
	Gebeng CG	29.51	30601.87
	Gebeng 2 CG	68.6	71138.2
	PCMSB MS	8.46	8773.02
	PCASB MS	7	7259
	Aromatic KR2 MS	3.3	3422.1
	PCOGD MS	50.51	52378.87
	PERWAJA MS	50.88	52762.56
	MTBE NG MS	11.6	12029.2
	PDH MS	8.4	8710.8
	BASF Fuel	8.29	8596.73
	BASF Feedstock	2.1	2177.7
	Idemitsu MS	9.83	10193.71
	Titan MS	37.78	39177.86
	Genting Sayen MS	47.95	49724.15

Source: PETRONAS Gas Berhad



IBR Base Average Tariff of GMD Natural Gas Distribution System

Year	2023	2024	2025
Rebate RM/GJ/Day	0.038	N/A	N/A
RM/GJ/Day	1.535	1,573	1.573

IBR : Incentives Based Regulation

GMD : Gas Malaysia Distribution (owner & operator of gas distribution line)

GJ : Gigajoules

RM : Ringgit Malaysia

LOCAL HIGHLIGHTS – Peninsular Gas Utilities (PGU)

Gas Volume Updates as of 08 December 2023 (cont'd)



There is no change in available capacity from last week

Central Region			
State	Exit CITY GATE (CG)/Metering Station (MS)	Available Capacity	
		MMscf/d	MMBtu/d
Klang Valley	KLIA CG	0.06	62.22
	Dengkil CG	71.6666	74318.2642
	Puchong CG	14.64	15181.68
	Batu Tiga CG	37.76	39157.12
	GB3 MS	93.48	96938.76
	Connaught Bridge MS	186.77	193680.49
	GDC KLIA MS	1.9	1970.3
	PNGV KLIA 1	0.47	487.39
	PNGV KLIA 2	0.7	725.9
	PNGV KLIA 3	0.41	425.17
	Venator MS	7.6	7881.2
S'gor	Serdang CG	76.4	79226.8
	Shah Alam CG	80.37	83343.69
	Kapar CG	9.07	9405.59
	Meru CG	95.42	98950.54
	Bestari Jaya CG	8.74	9063.38
	Kuala Langat Power Plant MS	50.35	52212.95
	Serdang MS	174.67	181132.79
	Kapar MS	268.04	277957.48
N.Sembilan	Seremban CG	15.91	16498.67
	Seremban 2 CG	10.29	10670.73
	Bandar Baru Nilai CG	10.66	11054.42
	Tebong CG	25.23	26163.51
	Port Dickson MS	230	238510

Southern Region			
State	Exit CITY GATE (CG)/Metering Station (MS)	Available Capacity	
		MMscf/d	MMBtu/d
Johor	Kluang CG	39.24	40691.88
	Kulai CG	18.2	18873.4
	Senai CG	114.96	119213.52
	Pasir Gudang CG	237	245769
	Plentong CG	74.2	76945.4
	Tg Langsat CG	17.66	18313.42
	Paya Rumpit CG	14.11	14632.07
	TNB Pasir Gudang MS	279.57	289914.09
	Pengerang COGEN Power MS	111.61	115739.57
	Southern Power Generation MS	20	20740
	Plentong (Senoko) MS	145	150365
	Plentong 2 (Keppel) MS	118	122366
	Alor Gajah CG	9.25	9592.25
	Tanjung Kling MS	50.01	51860.37
	Tanjung Gemok MS	38.93	40370.41
M'cca	Teluk Gong MS	111	115107
	Panglima MS	25.31	26246.47
	EDRA Energy Sdn Bhd	210.21	217987.77
	Tangga Batu Refinery MS	32.66	33868.42
	Tangga Baru Cogen MS	12.34	12796.58

Western Region			
State	Exit CITY GATE (CG)/Metering Station (MS)	Available Capacity	
		MMscf/d	MMBtu/d
Perak	Kamunting CG	20.96	21735.52
	Parit Buntar CG	18.47	19153.39
	Ayer Tawar CG	16.19	16789.03
	Hutan Melintang CG	47.86	49630.82
	Merbau CG	78.5	81404.5
	Tronoh CG	4	4148
	SEV Lumut MS	180.42	187095.54

Source: PETRONAS Gas Berhad

IBR Tariff for Peninsular Gas Utilization

Year	2023	2024	2025
RM/GJ/Day	1.061	1.063	1.063

IBR Tariff for Regassification Facilities

Facilities	RGTSU	RGTP
RM/GJ/Day	3.455	3.165

IBR : Incentives Based Regulation
 GJ : Gigajoules
 RM : Ringgit Malaysia
 RGTSU : Regas Terminal Sungai Udang, Malacca
 RGTP : Regas Terminal Pengerang

FUN FACTS

1 What vehicles and industry segments are suitable using LNG?

1. Currently, long haul truck segments are identified for LNG. LNG powered vehicles can offer a travel range upwards of 500km on a full tank.
2. In India, Petronet LNG Limited (PLL) which the largest gas distributor in India uses commercially registered LNG buses for employee transport and claims to get a travel range of 900km in a single filling.
3. Similarly, many core sectors like mining, power, cement etc have high material handling operations which consume huge amount of fuel.
4. With LNG, there is a massive scope of savings in fuel cost in addition to lower environmental impact.
5. Many industries particularly chemical, glass, fertiliser etc are using LNG fuel effectively.



2 ChatGPT Let's ask...

Can LNG To Be Used For Airplane?

LNG has not been widely adopted as a fuel for airplanes. However, the aviation industry is constantly exploring alternative fuels to reduce emissions and improve sustainability.

LNG has been used successfully as a fuel in some ground transportation, such as trucks and buses, but adapting it for aviation poses specific challenges. Aircraft require lightweight and energy-dense fuels to ensure efficiency and performance, and traditional aviation fuels like jet fuel have specific characteristics that make them suitable for aviation.

One of the challenges with LNG is that it need to be stored and transported at very low temperatures, which can be complex and add weight to the aircraft. Additionally, the infrastructure for LNG distribution at airports is not as widespread as that for conventional aviation fuels.



ASIA GAS HUB

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- Create transaction message
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- Online digital term and conditions
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- Anonymous bid and ask transactions
- Access to real-time prices and deals online
- Tradepoint at PGU transmission and GMD distribution pipeline

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