

O GNL hoje : Desafios e Oportunidades



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WIDEANGLE LNG

Encontro Anual AGN
Lisboa, 27 de novembro de 2018

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1. Tendências Globais



LNG : Diversificação

An Exponential Diversification Process

Sale & Purchase agreements + milestone spot trades (not exhaustive). Not featuring small scale terminals.
source : GIIGNL, company websites, Kpler

<1995 >2008

		PRODUCERS																			
		1969	1969	1972	1977	1978	1978	1989	1996	1999	1999	2000	2004	2005	2007	2007	2009	2010	2013	2014	2016
		Algeria	Alaska	Brunei	Abu Dhabi	Indonesia	Malaysia	Australia	Qatar	Trinidad	Nigeria	Oman	Russia	Egypt	EqGuinea	Norway	Yemen	Peru	Angola	Papua	USA (*)
1964	UK	2005							2014				2017	2005		2010	2010				
1969	Spain	2002		2002					1997	1999		2006		2005		2007	2009	2010	2011		2016
1969	Japan	2008	1969	1972	1977	1978	1978	1989	1996			2000	2004				2010		2014	2014	2016
1972	France	1972							2010		2006		2018	2005		2007	2010		2014		
1972	Italy	1972							2009		2006				2010			2016			2017
1978	USA			2002		2008			2009	1999				2009	2009	2010	2011				
1983	S. Korea			1994		1995	1995					2005	2005		2009	2010	2009	2018	2013		2017
1987	China	2010	2011			1987			2009			2007	2017		2011		2010	2010	2014	2014	2016
1987	Belgium	1987															2011				
1990	Taiwan		2015			1998	1995		2008		2008	2008				2011		2011		2014	
1994	Turkey	1994									1999						2013		2018		2017
2000	Puerto Rico									2000											
2000	Greece	2000									2011				2012						
2003	Dom Rep.									2003											2016
2004	India	2009		2013	2009		2009	2009	2004		2009	2008		2008			2010	2015	2016		2017
2004	Portugal									2004											2016
2006	Mexico								2009		2008						2009	2010			2016
2008	Argentina									2008	2011					2012		2017			2016
2009	Kuwait	2017		2010				2009			2010	2009		2010	2010		2014				2016
2009	Chile	2010								2009				2010	2010	2011	2010				
2009	Brazil									2009	2009			2013	2010	2011		2010		2013	2016
2009	Canada								2009												
2010	Egypt								2010		2015					2015					2018
2010	Indonesia	2010							2010												
2010	Dubai								2014	2010		2016				2016	2014			2017	2016
2011	Thailand			2017	2017				2015	2011		2014					2012	2011			
2011	Netherlands		2017													2011					2016
2012	Israel																				
2013	Singapore								2013						2013						
2013	Malaysia			2013					2013								2014				
2015	Jordan	2016			2017				2015		2015	2016				2017					
2015	Pakistan								2015		2015	2018							2018		2017
2015	Lithuania															2015					2017
2015	Poland								2015							2016					2017
2016	Colombia									2016											

GNL : Mercados Emergentes

« Legacy markets » : Japão, Coréia, Europa

« JKT » = 50% do mercado

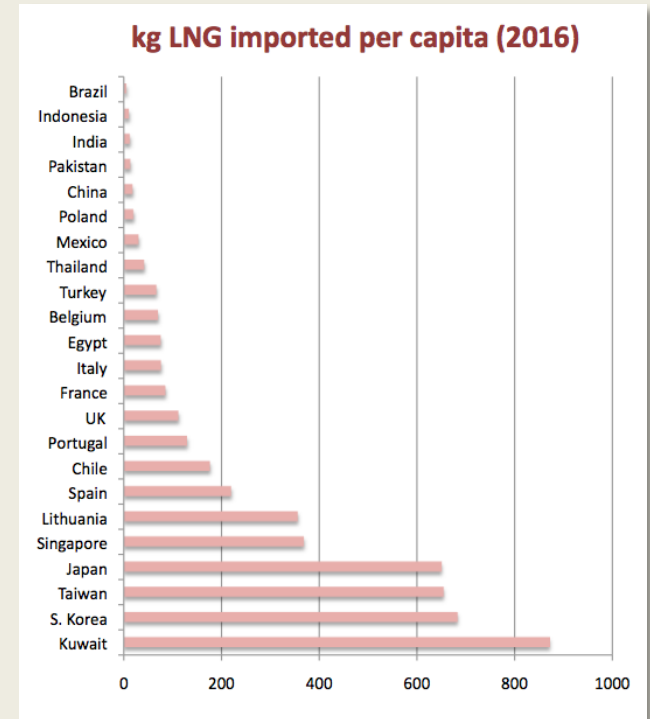
Demanda madura

Emergentes : China, Paquistão, Tailândia

Imenso potencial

Muito dependente das políticas governamentais

Necessidade de infraestrutura integrada (pipelines...)



LNG Trading

30% dos volumes globais tratados no mercado spot

Gas index substitui aos poucos o índice Brent

Transparência é possível graças à tecnologia

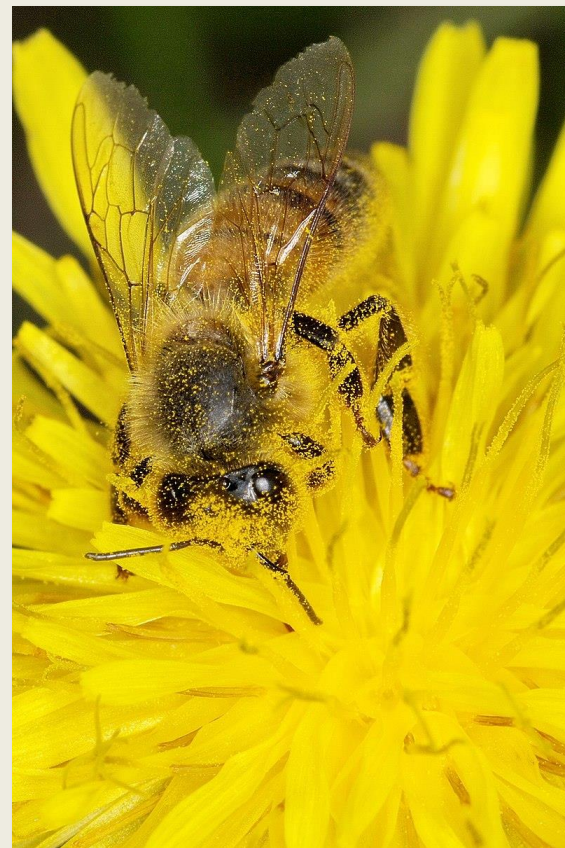
Produtores e compradores : aderiram ao jogo comercial

Portfolio players : ainda consolidando

Trading houses : muitas espécies - e os «Big 4»

Paper trading está aumentando

Contratos ainda não são padrão




Global, mas a geografia ainda conta

	US Gulf	Yamal	Qatar	Australia (W)
UK	6	0	10	17
Turkey	6	4	0	6
India	20	19	0	6
Japan	13	11	7	0
Argentina	0	5	4	5

« Shipping Handicap » definido como a diferença positiva (em dias) da duração da viagem em relação à do produtor mais próximo (calculada em 17 knots)

Shipping é muito caro...

... e os armadores (e autoridades dos canais de Suez / Panama) ficam felizes



Gibraltar → Karachi :
via Suez 12 dias = 2,4 MUSD
via Good Hope 24 dias = 4,8 MUSD

2. Destaques Continentais



O mapa global de GNL se desdobra

Fuller's « Dymaxion » projection



América do Norte

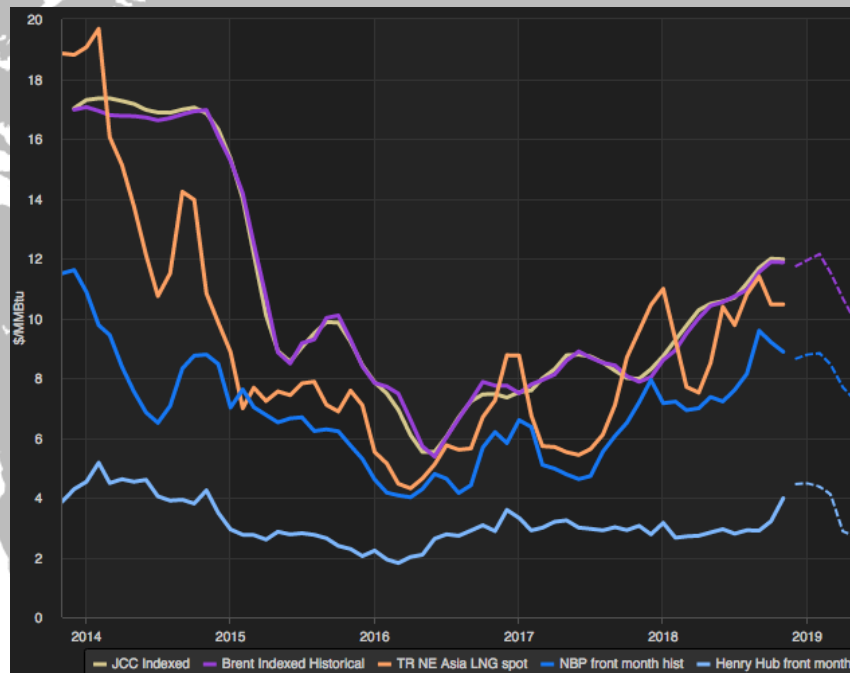
Canada :
Realização

USA :
Competição

México :
Conversão

Panama :
Limitação

Market Segment	Transits			
	Panamax		Neopanamax	
	2018	2017	2018	2017
Container	1,395	1,539	1,209	954
Dry Bulk	2,476	2,790	210	125
Vehicle Carriers/RoRo	793	779	41	22
Chemical Tankers	2,035	1,955	9	4
Liquified Petroleum Gas	407	337	610	539
Liquified Natural Gas	-	4	290	159
Crude Product Tankers	583	607	94	20
Passengers	236	239	20	1
General Cargo	658	724	-	-
Refrigerated	779	868	-	-
Other	348	322	6	4
Grand Total	9,710	10,164	2,489	1,828



Source : Refinitiv Eikon

América do Sul

Trinidade & Tobago :
Sobreviver

Brasil :
Mudar

Argentina :
Exportar



LNG Excelsior (Argentina)

Europa, Russia

Europa Oeste :
Integração

Baltics :
Emancipação

East Med :
Procrastinação

Yamal :
Navegação



Montoir (France)

Africa

Argelia :
Desafiado

Egito :
Abençoado

Senegal :
Salvo

Camarões :
Confirmado

Moçambique :
Ameaçado

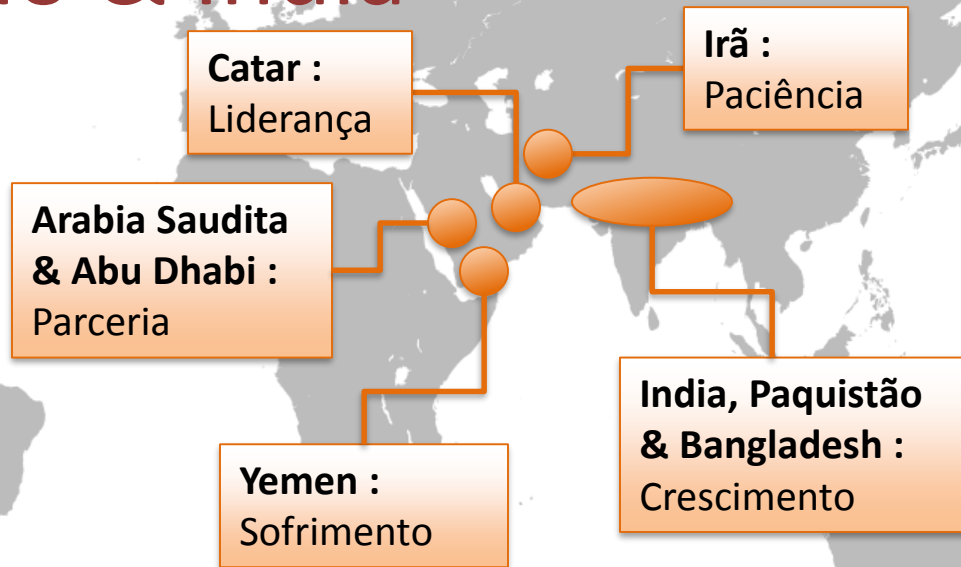


Hilli Episeyo (Camarões)

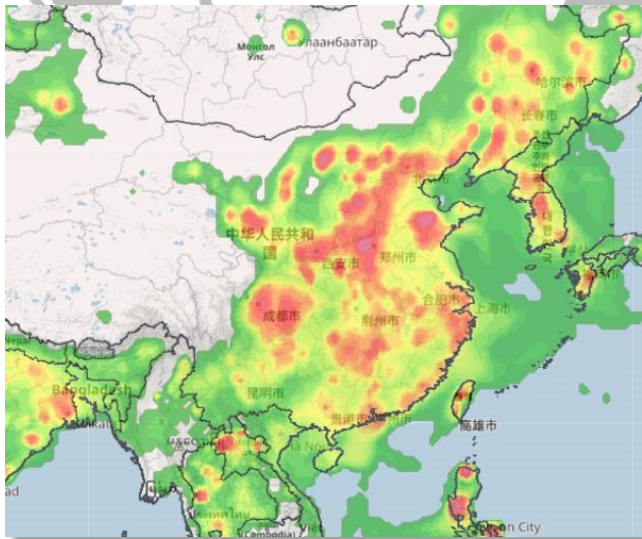
Oriente Médio & Índia



Falcão (Catar)



Asia Pacifico



Qualidade do ar na China

China :
Consolidar

Japan :
Otimizar

Indonesia :
Preparar

Australia :
Equilibrar

3. Lidar com a Incerteza



LNG Black Swans



2009 : US Shale
Gas



2016 : Groningen



2006 : Ukraine/Russia



2008 : Financial crisis



2015 : Yemen war



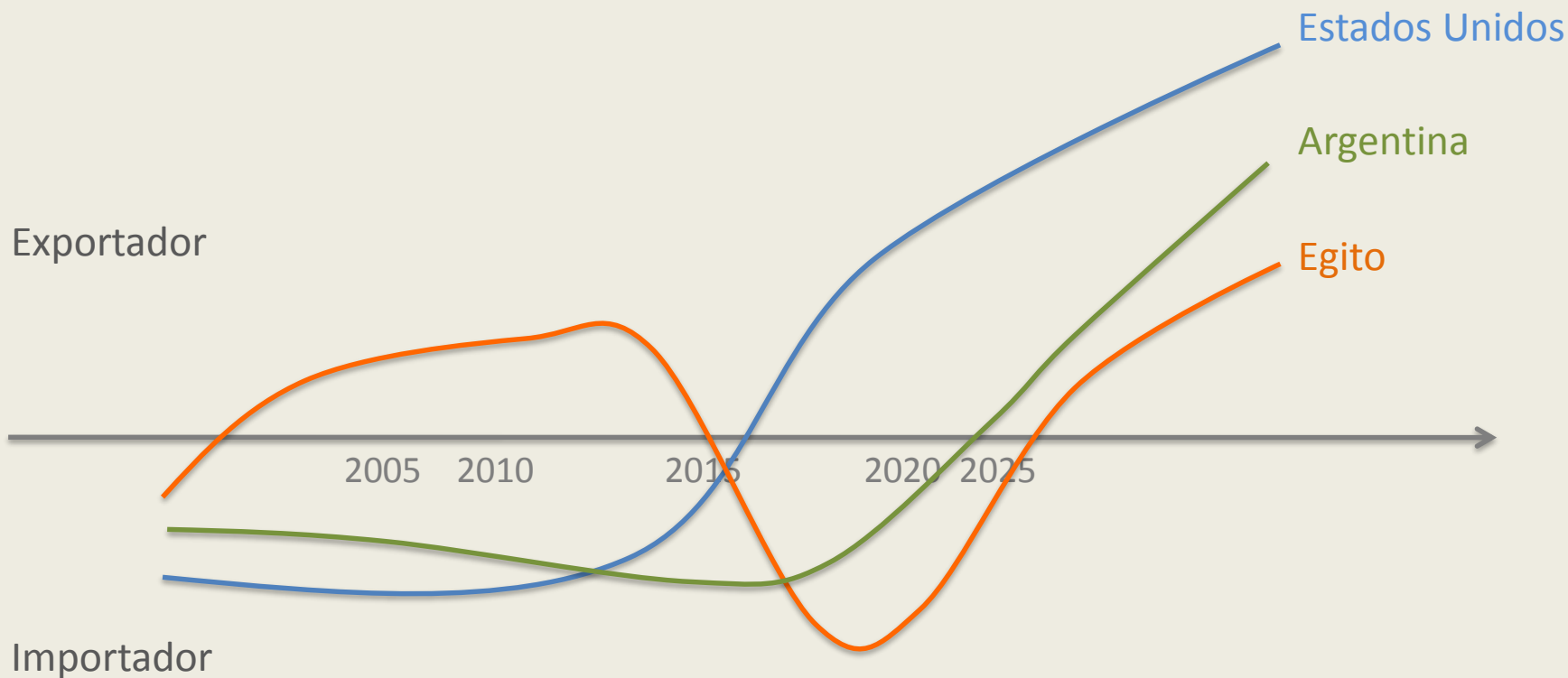
2017 : China winter



2011 : Fukushima



Destinos GNL



GNL para Bunkering : Jogo de Pôquer

IMO 2020 : tampa em teor de enxofre (0,5% max)

Soluções :

- *Scrubbers*
- *Ultra Low Sulphur Fuel*
- *Retrofitting* de navios ... ou construção de novos

Impacto na demanda GNL : +20 / +50 mtpa até 2030





“Você pode ser um especialista em
avalanche... a avalanche não sabe disso.”

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