



GAS IN EUROPE: CHANGES & ITS CONSEQUENCES

How recent fundamental shifts would reshape European & global gas industry

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Content

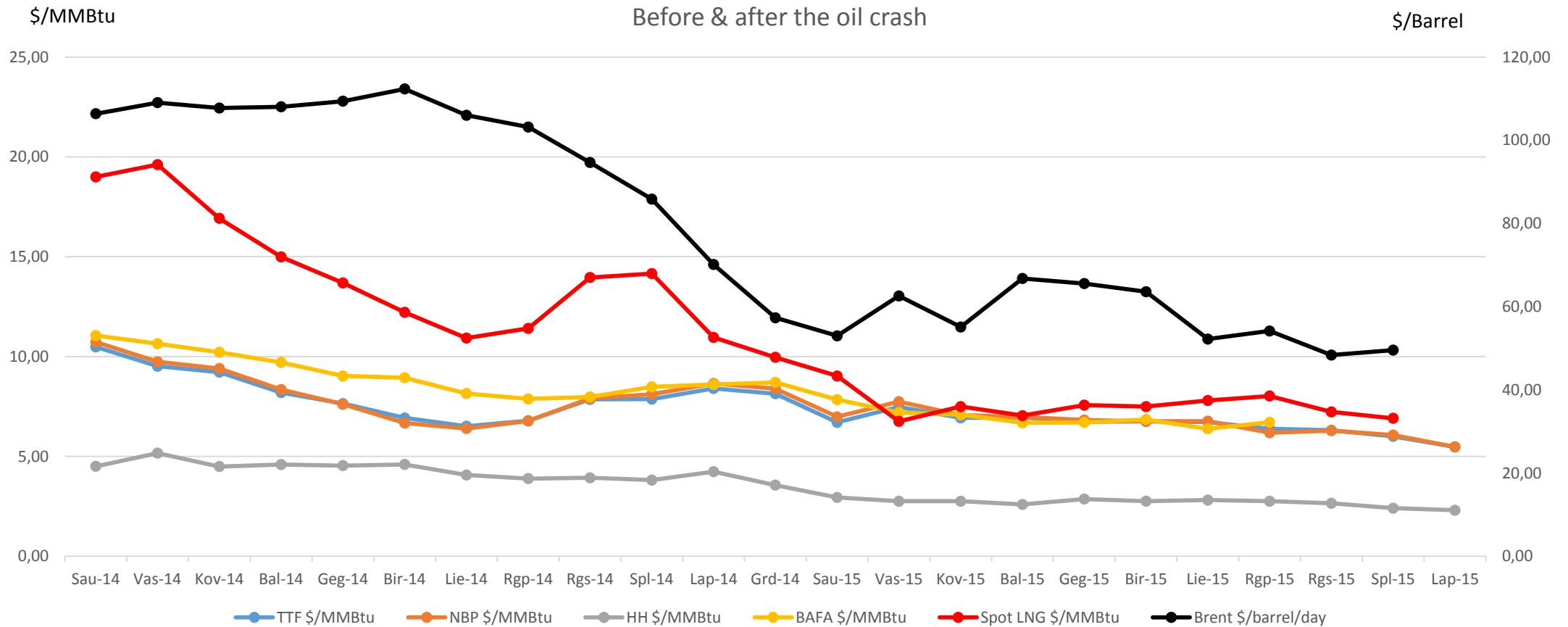
- ▶ World after oil price collapse
- ▶ World awaits to be washed in wave of LNG
- ▶ What does all these mean



Oil & LNG prices – conscious decoupling?

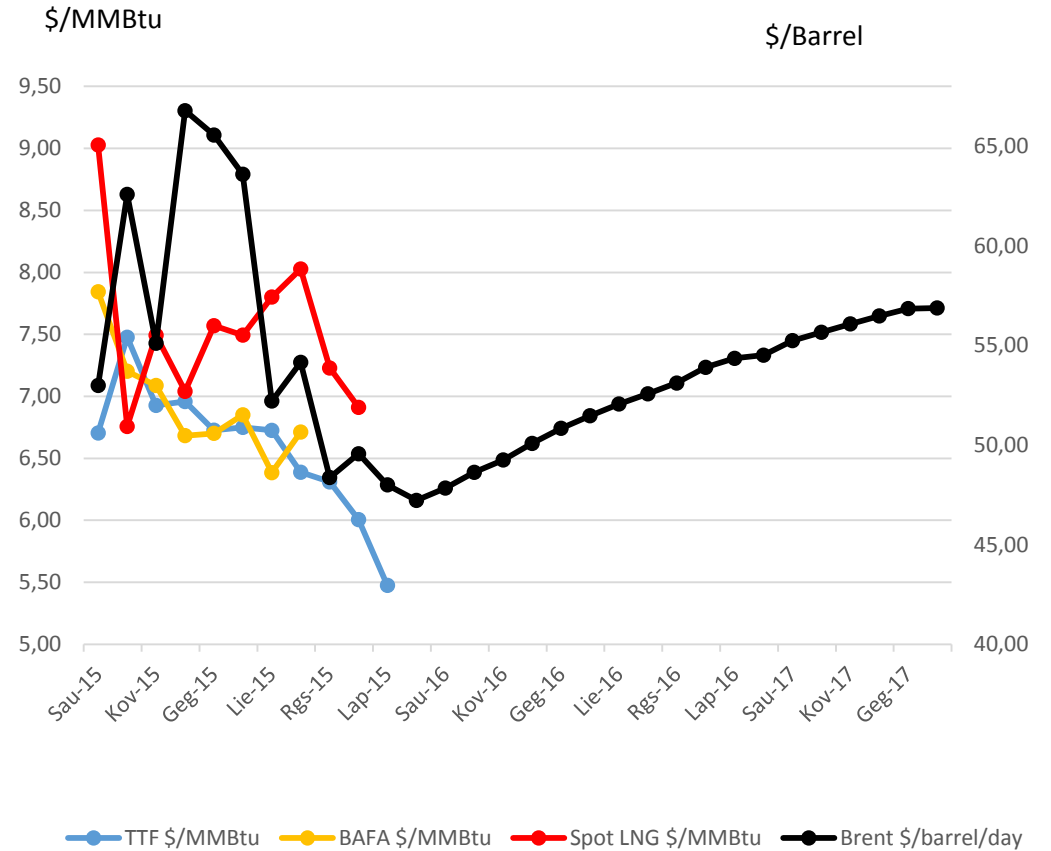
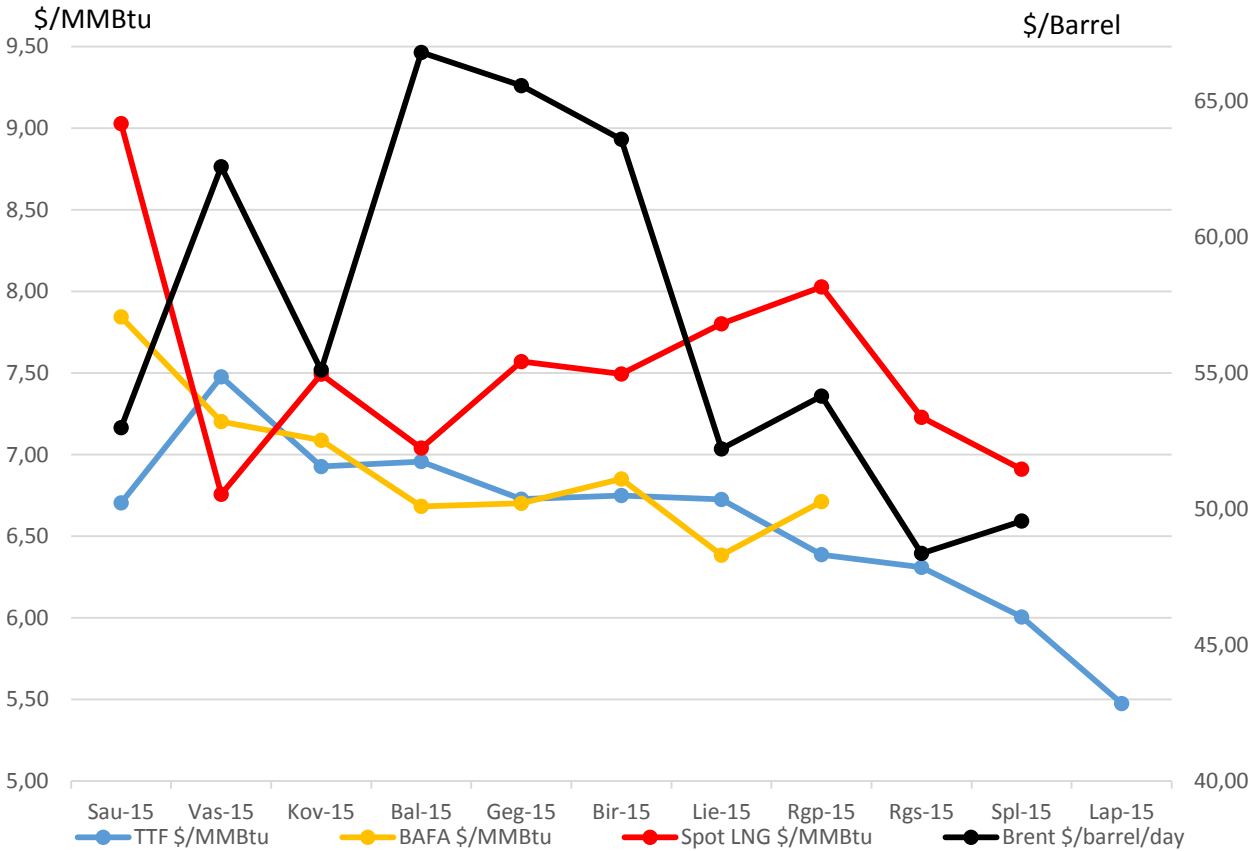


THE GREAT FALL OF OIL



- East Asian Index moves ever so close to liquid European hubs (NBP, TTF).
- Henry Hub maintains its isolation
- Long term European oil linked contract prices move converges to hub/spot prices.

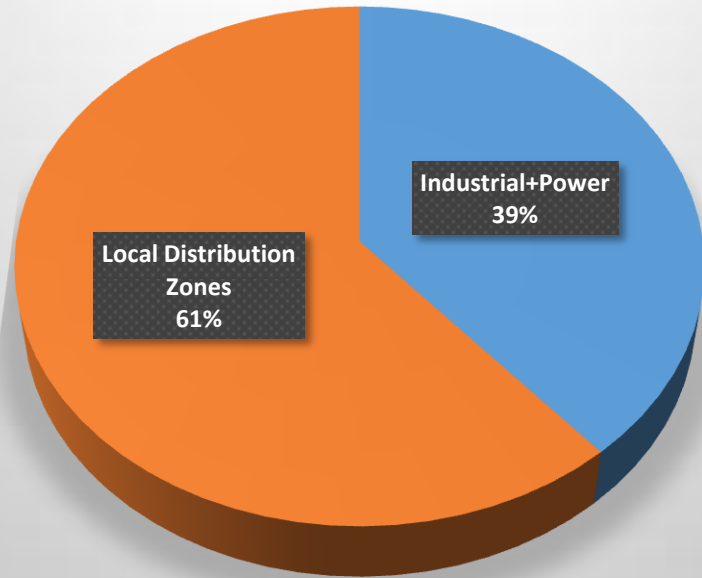
Relationship under scrutiny – Spot LNG & oil price: A conscious decoupling?



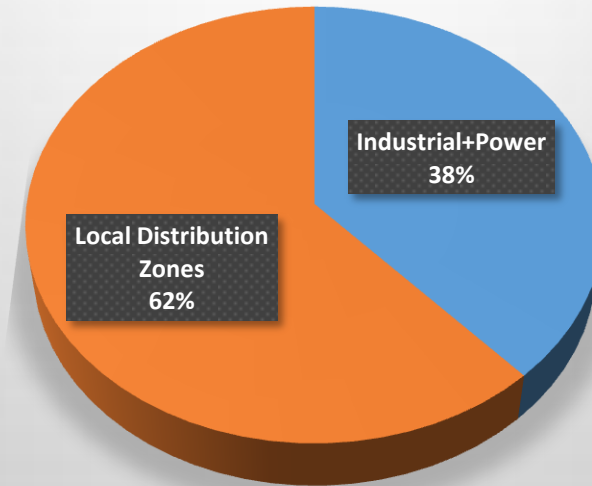
- Lower global demand and European capacity to absorb extra LNG meant East Asian LNG spot prices are following trends in liquid European hubs more closely than before.
- European border prices for long term contracts (BAFA) fell below spot prices following the oil price crash. A cold winter might repeat such events

Shape of European Gas Consumption- Has it changed?

Gas demand by sector in Europe - 2015



Gas demand by sector in Europe - 2014



- ▶ 5% increase in total gas consumption this year compared to 2014 (Jan-Oct).
- ▶ Increase is felt mostly in power sector

LNG – silent revolution in European gas industry

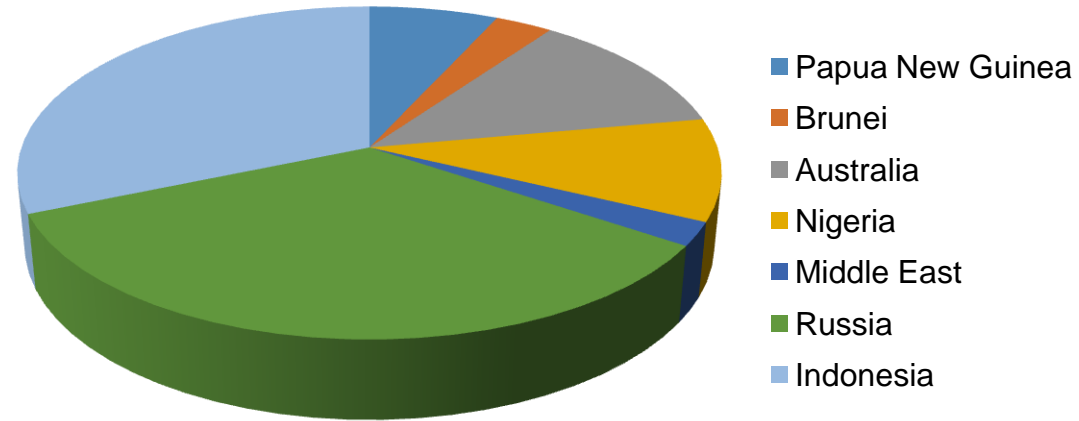
What has changed in the world of LNG

- ▶ Breaking down trends by region
- ▶ Boost in short-term trade
- ▶ Europe back in focus

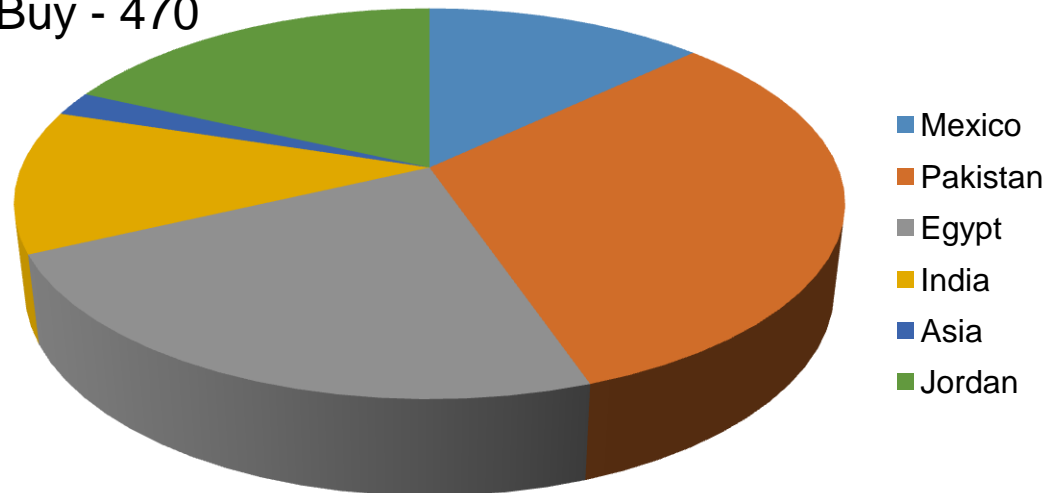


New tale of LNG : ICIS short-term tenders for 2015 tell a Global tale

Sell – 180



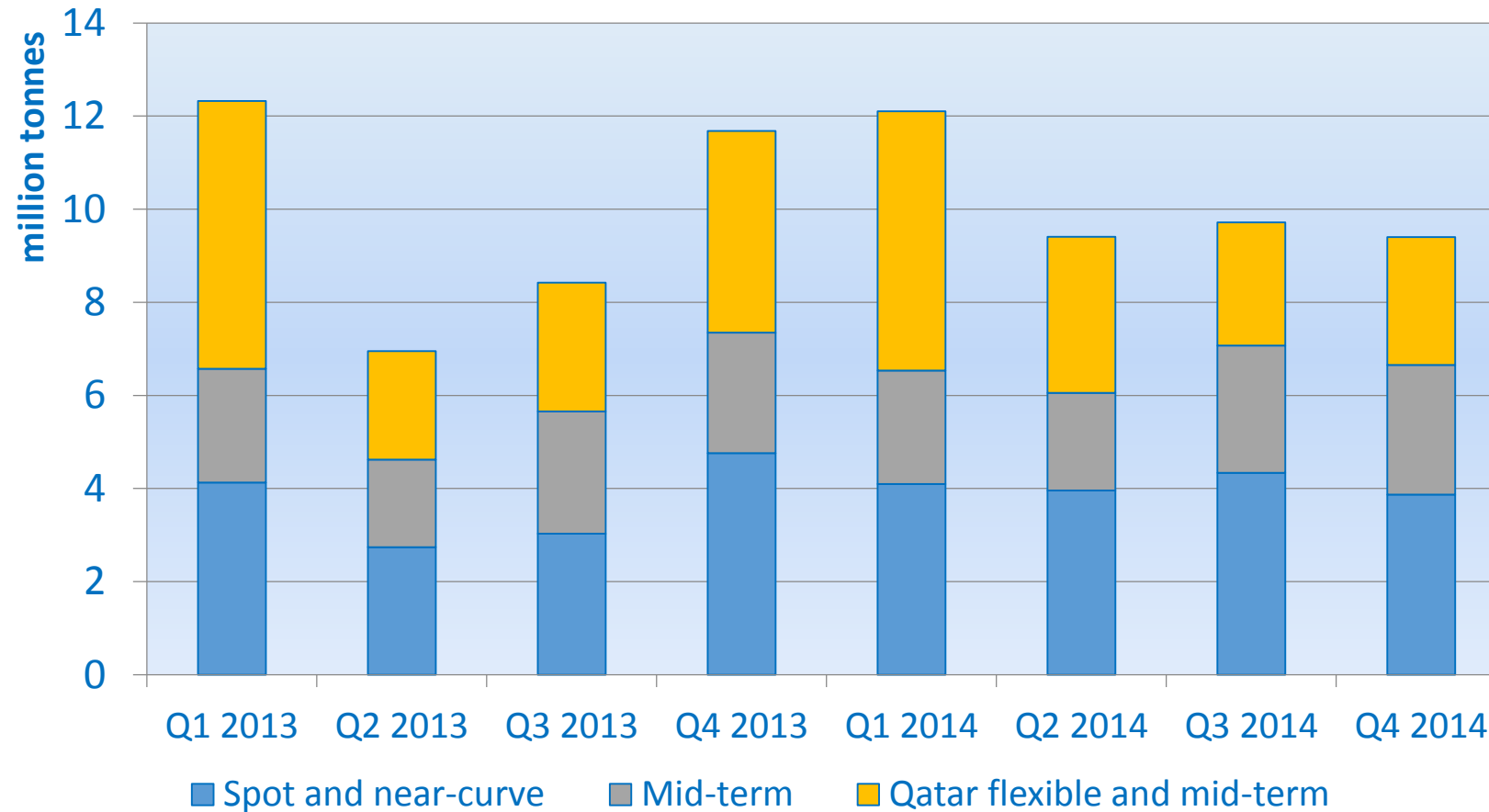
Buy - 470

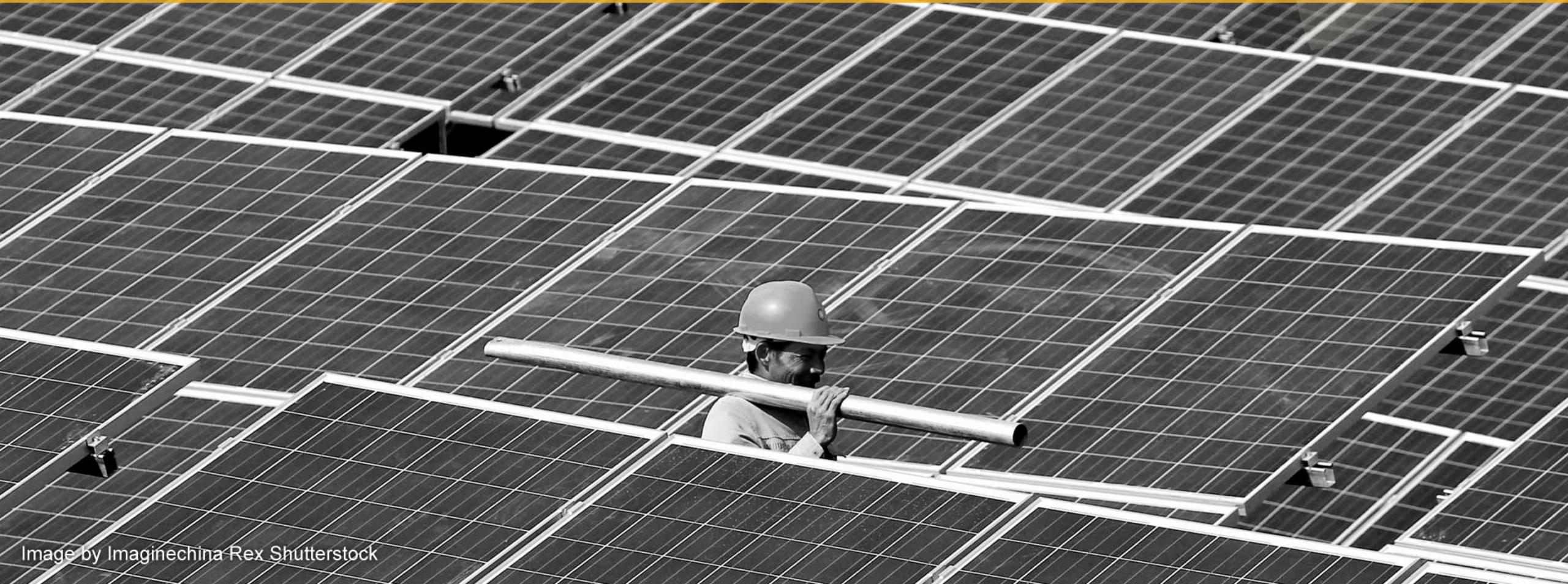


LNG liquidity – Breaking conventional wisdom

Liquidity even more than 2013

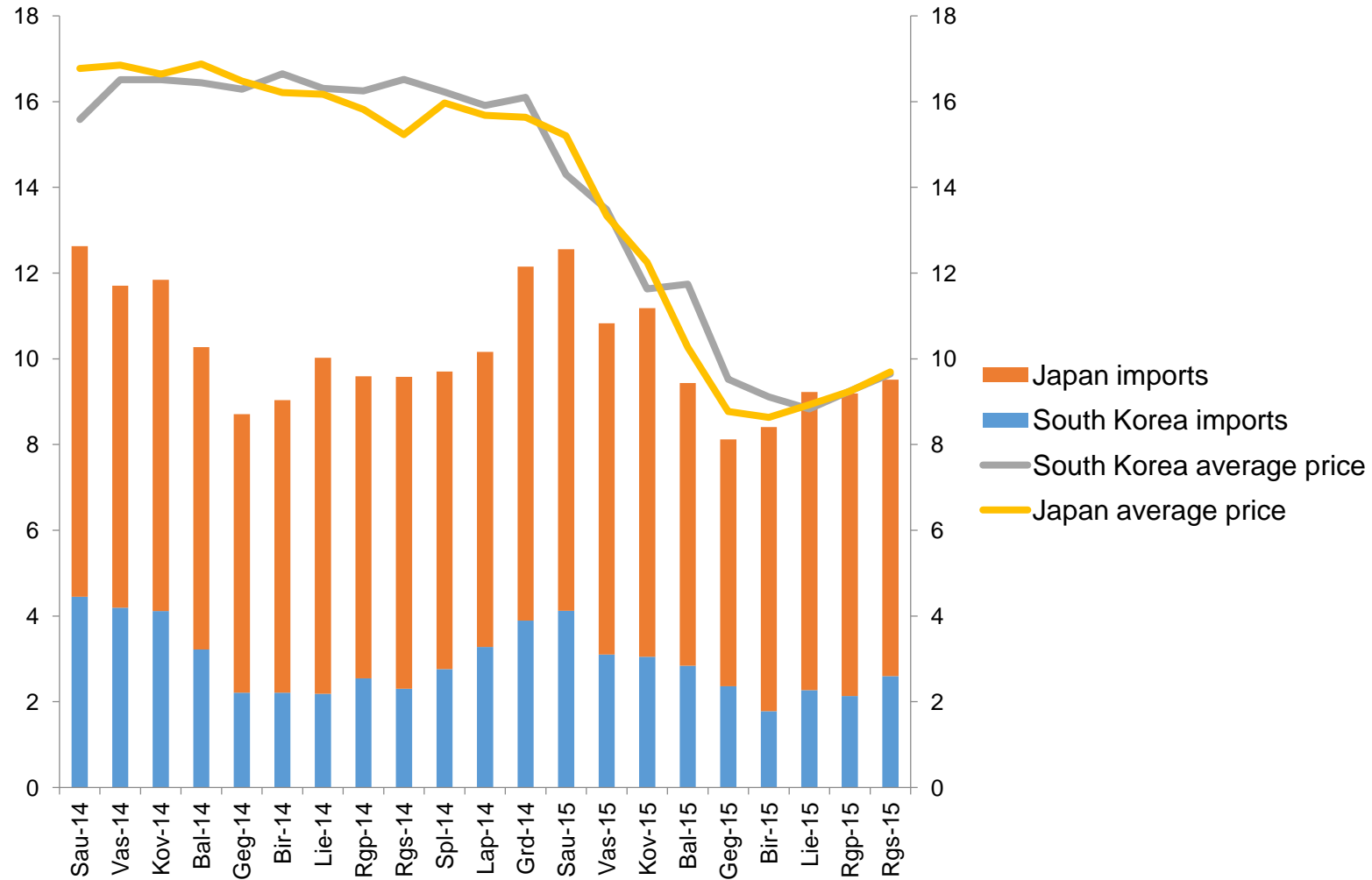
**Short-term sales to East Asia 2013-2014
(ICIS estimate)**





Demand in the new world

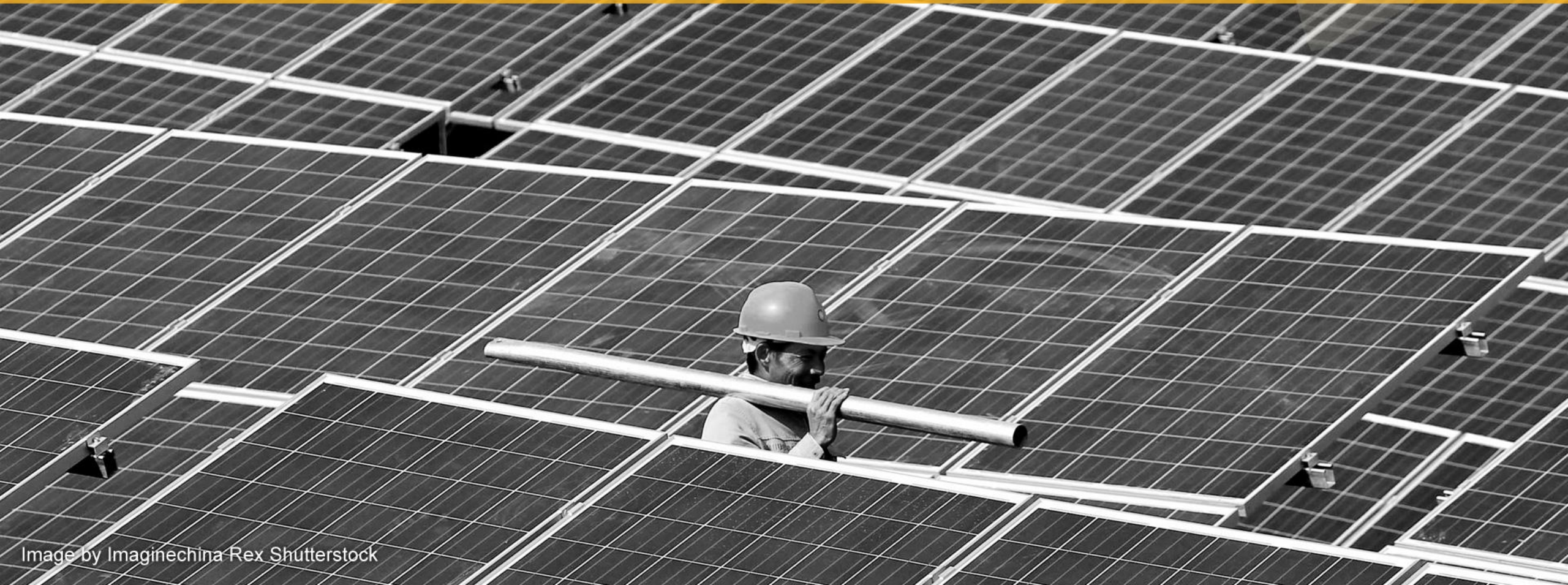
Falling prices fail to stimulate Asian demand



Demand in the new world

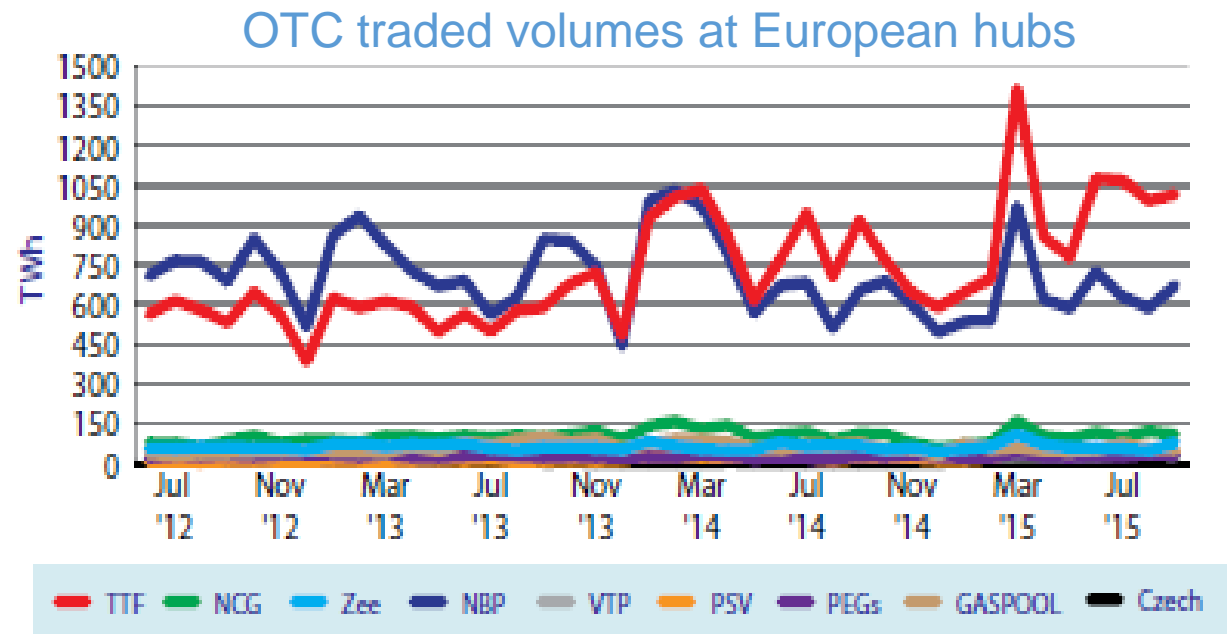
Other Asian markets playing growing ST role

Market	Principal buyers	Procurement method
Thailand	PTT (Thailand)	-PTT has bought on spot basis through rolling series of tenders with MSA counterparties -Qatargas 2mtpa contract started in 2015
Malaysia	PETRONAS	PETRONAS has procured mainly through mid-term deals to augment long-term self supply acting as a portfolio buyer/seller. Will take 3.5mtpa from GLNG
Singapore	BG Group (aggregator), Pavilion.	BG Group now sole aggregator, largely meeting requirements through self-supply. Secured one cargo through Pavilion Energy in 2014. first commercial reload completed in 2014 -In 2015 buyers are competing for import licences
India	Petronet, GSPC, GAIL, Reliance, Shell, Total	-Indian buyers have relied more on short-term contracts in 2015 and have capitalised on lower prices to step up spot procurement

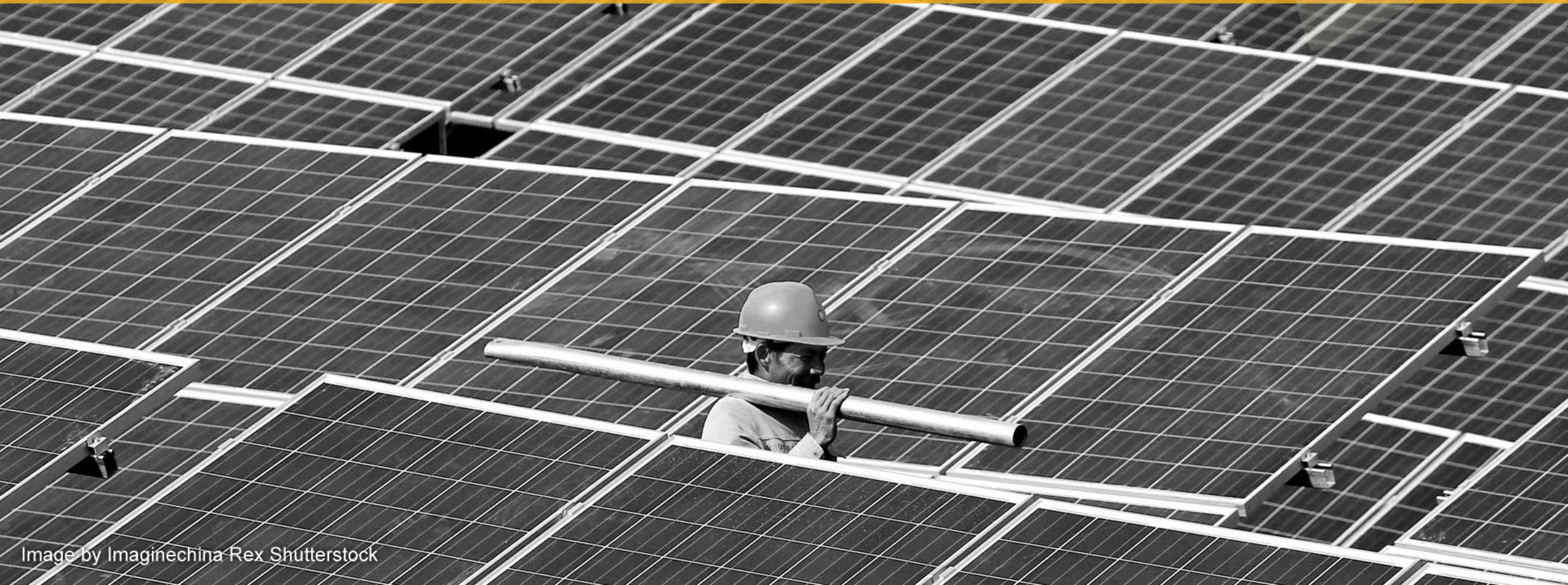


Europe is back in favour

- ▶ US, Asian sellers focus on European traded hubs
 - ▶ TTF liquidity offers hedging opportunity



Middle East and North Africa



New players: Egypt, Pakistan, Jordan

Flexibility of FSRUs

Large-scale tenders offers portfolio sellers opportunity

Pricing on a Brent crude basis

Egypt: Two tenders, over 100 cargoes

Jordan: 2016-2017, Shell wins 18 cargoes per year on top of 5-year 1mtpa contract

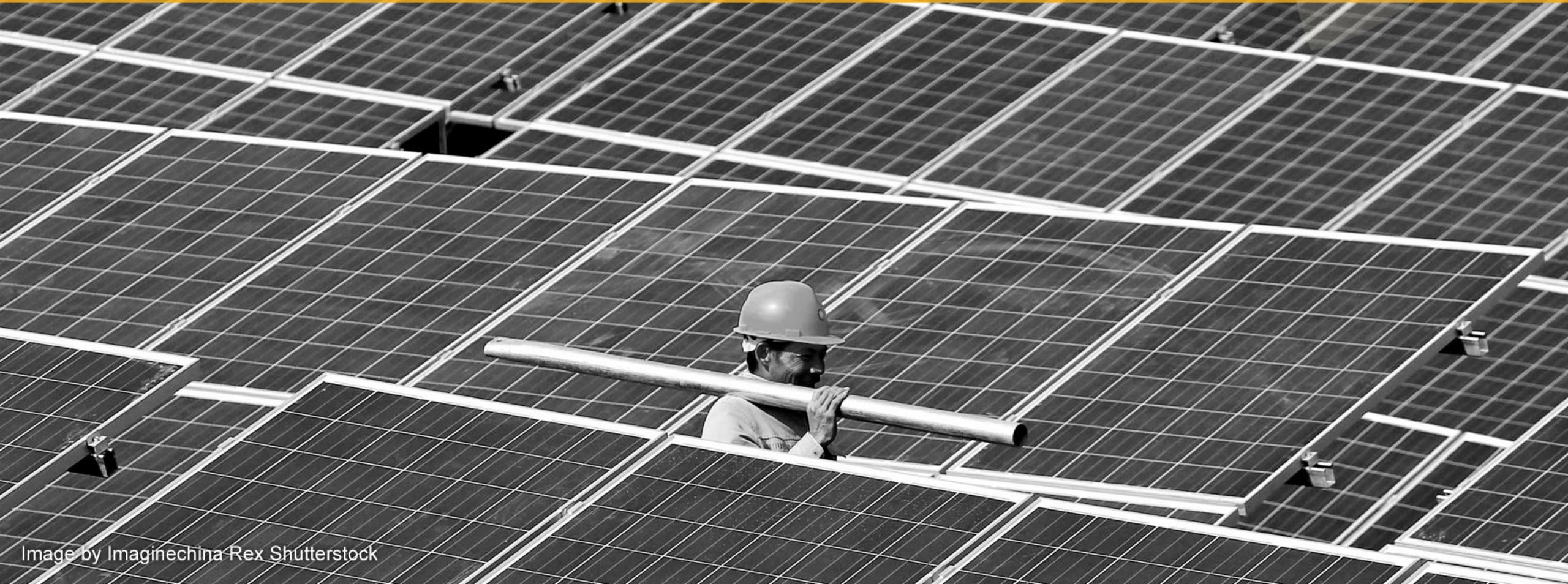
Pakistan: Long-term contract finally with Qatar. Short-term tenders have proved difficult – seeking 120 cargoes from 2016-2020

Egypt: importing LNG from round the world

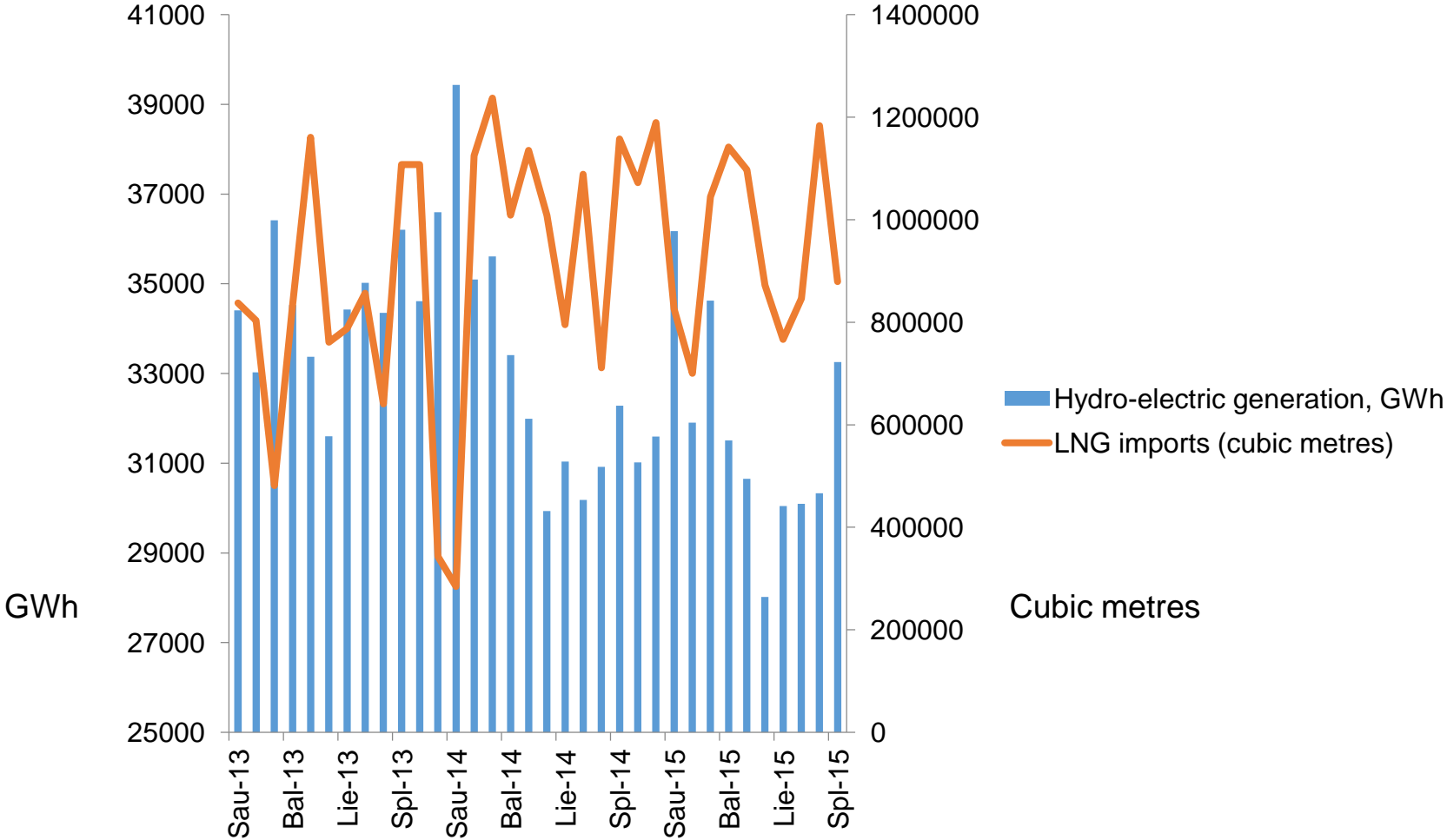
- ▶ Location is attractive to portfolio sellers
 - ▶ Brent pricing means European reloads can work

LNG suppliers to Egypt in 2015	
Algeria	Nigeria
Australia	Norway
Belgium	Qatar
Equatorial Guinea	Spain
India	Trinidad
Netherlands	

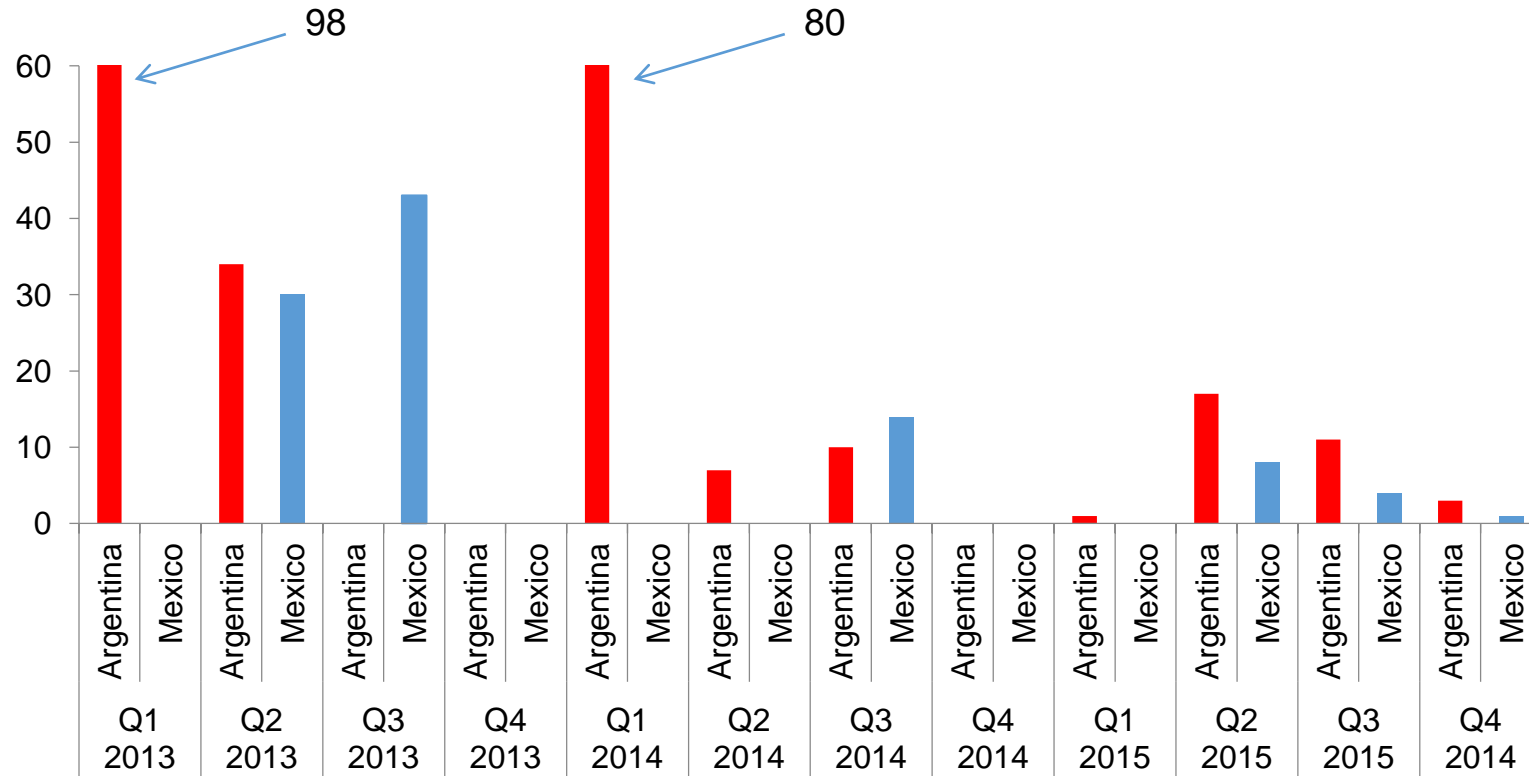




Brazilian LNG imports, power generation

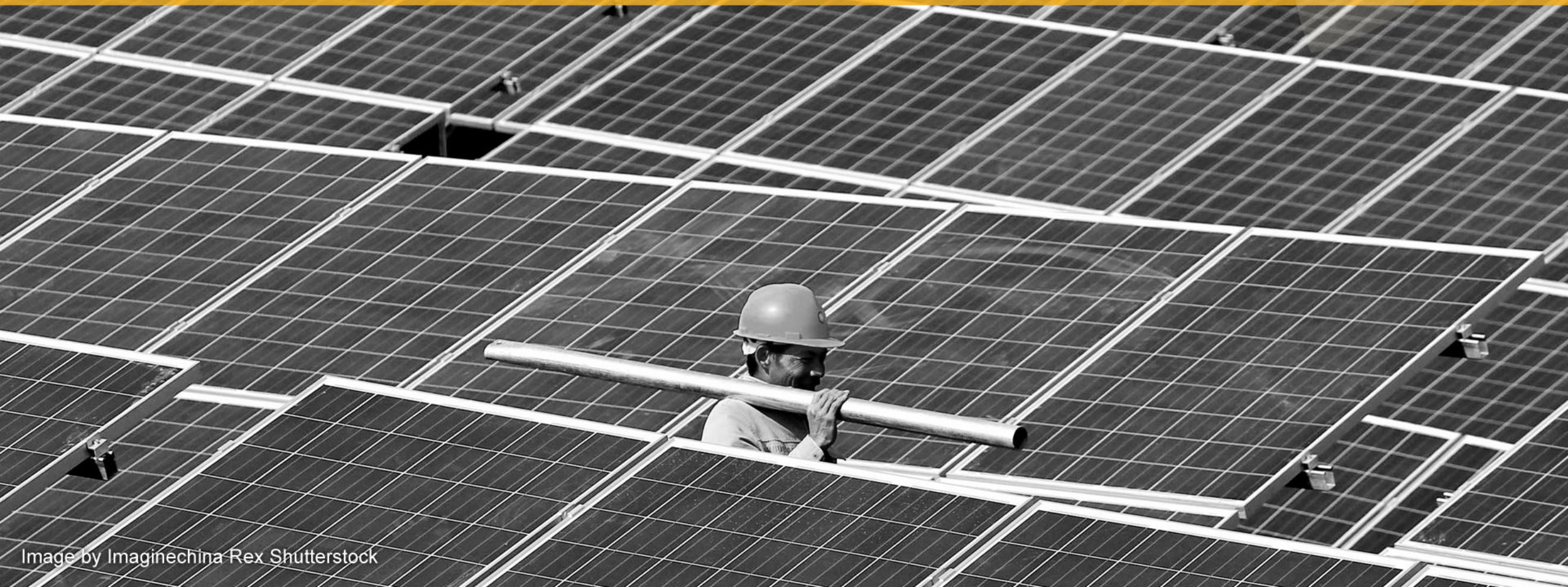


Seasonality brings others to tender





Outlooks: This winter and further ahead



Winter outlook: here comes the wave

**Russia's Sakhalin issues
five-cargo tender**

Origin Energy's APLNG to start production

US Sabine Pass to ramp up in early 2016

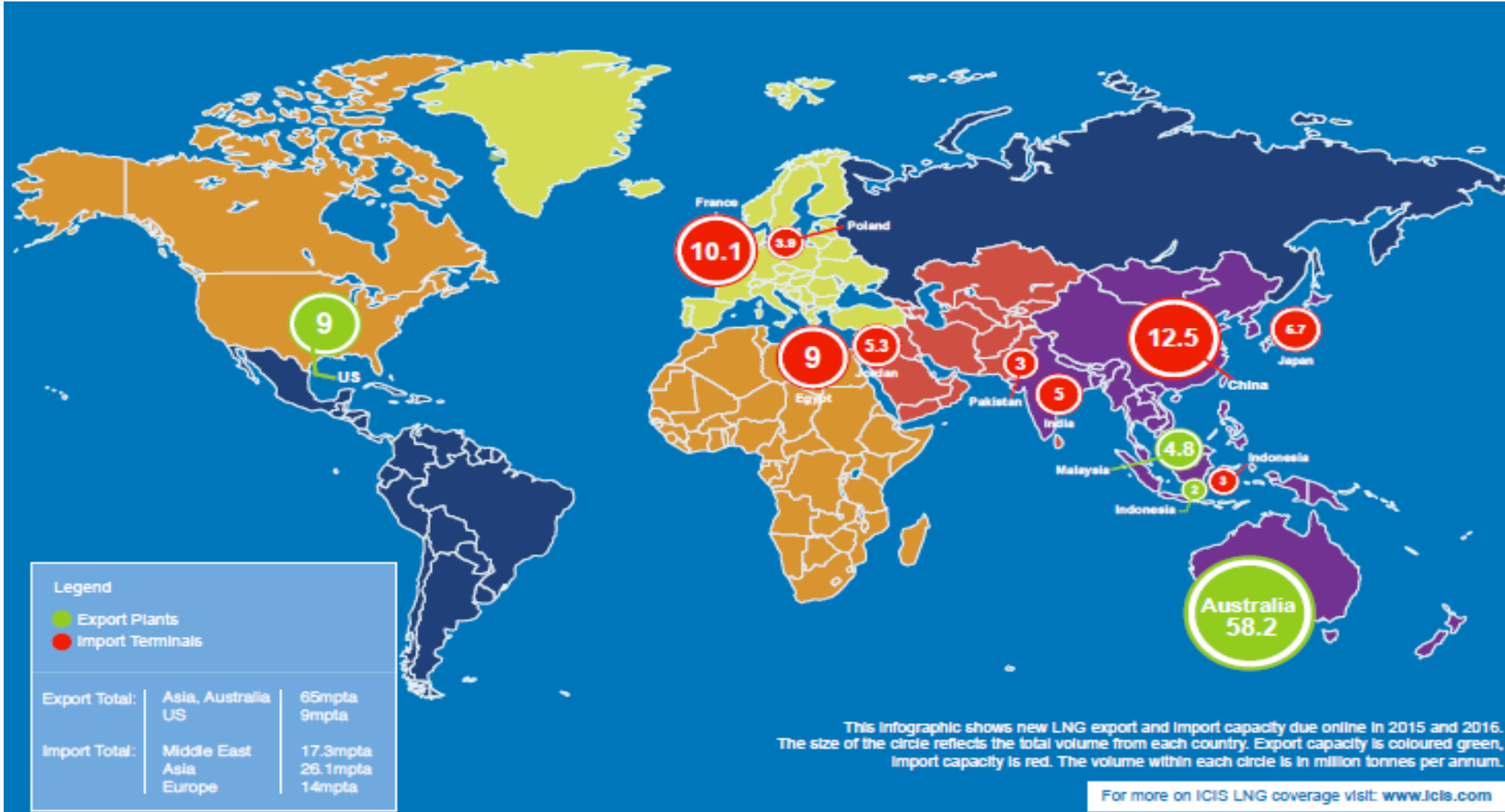
Japan nuclear restart

Indonesia's Donggi Senoro offers fourth cargo

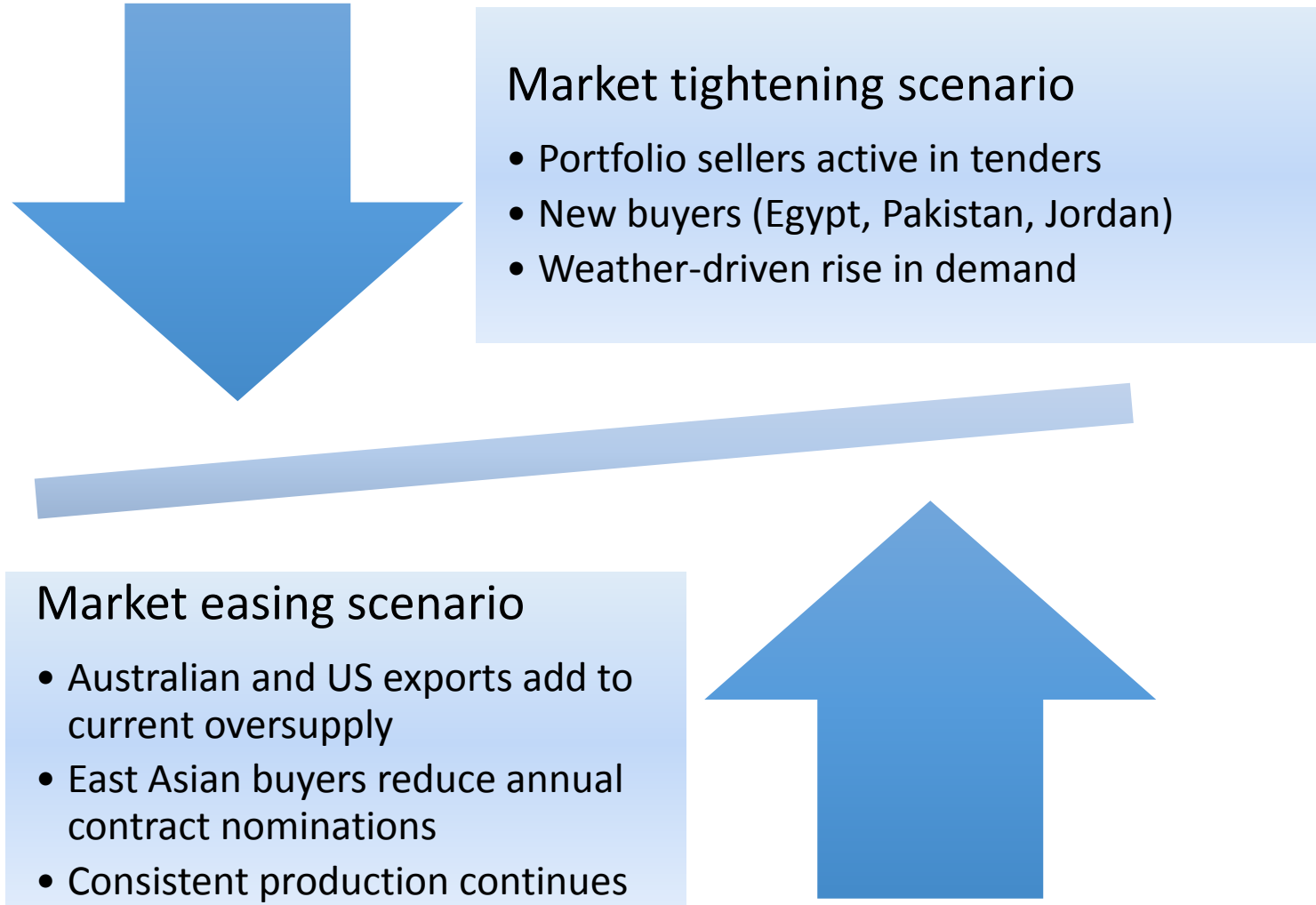
South Korea focuses on nuclear,
coal and renewables

Oil dips below
\$50/bbl

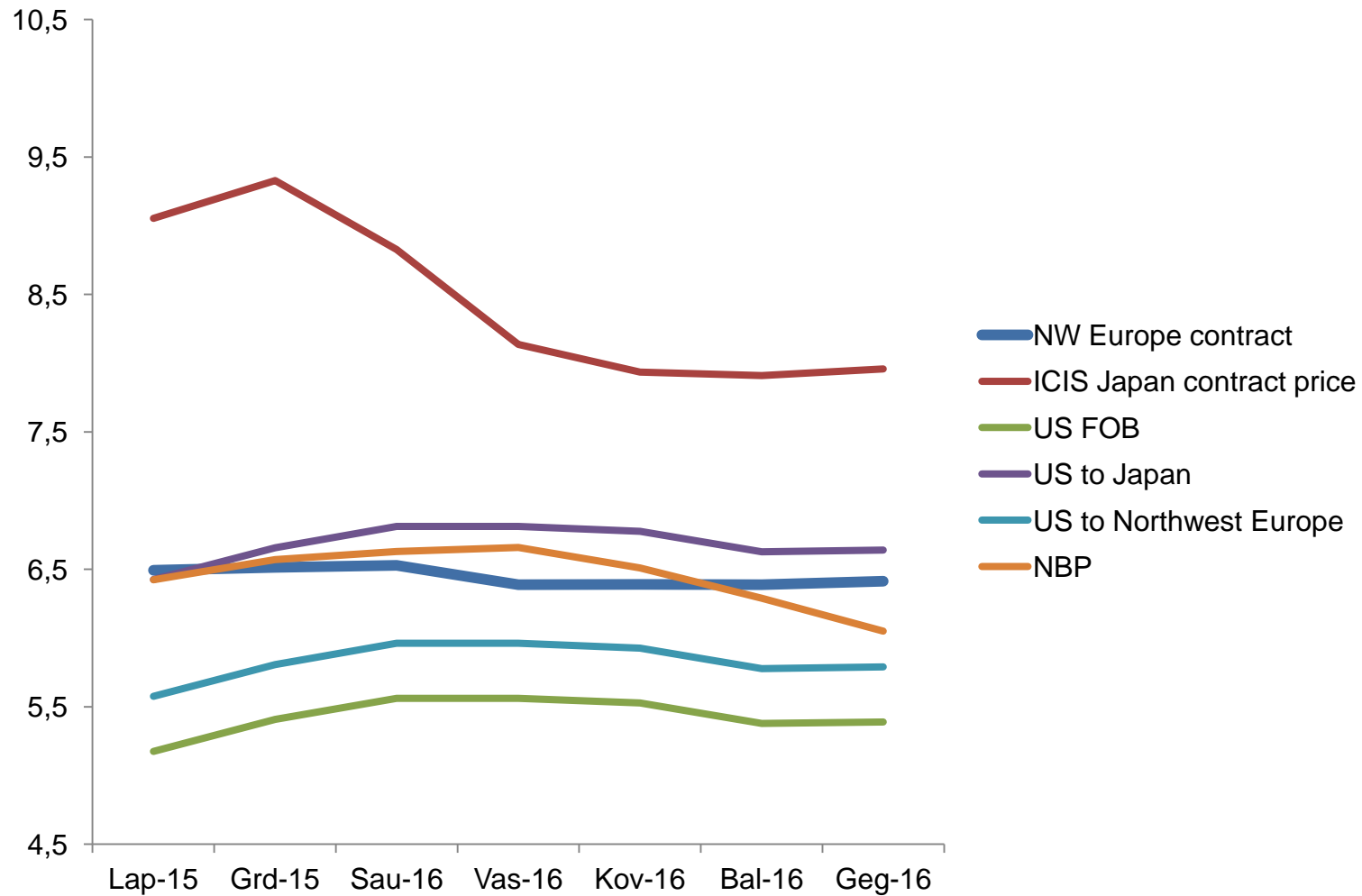
New export, import capacity 2015-2016



Short-term outlook: Winter oversupply



Forward winter prices for 2015-2016



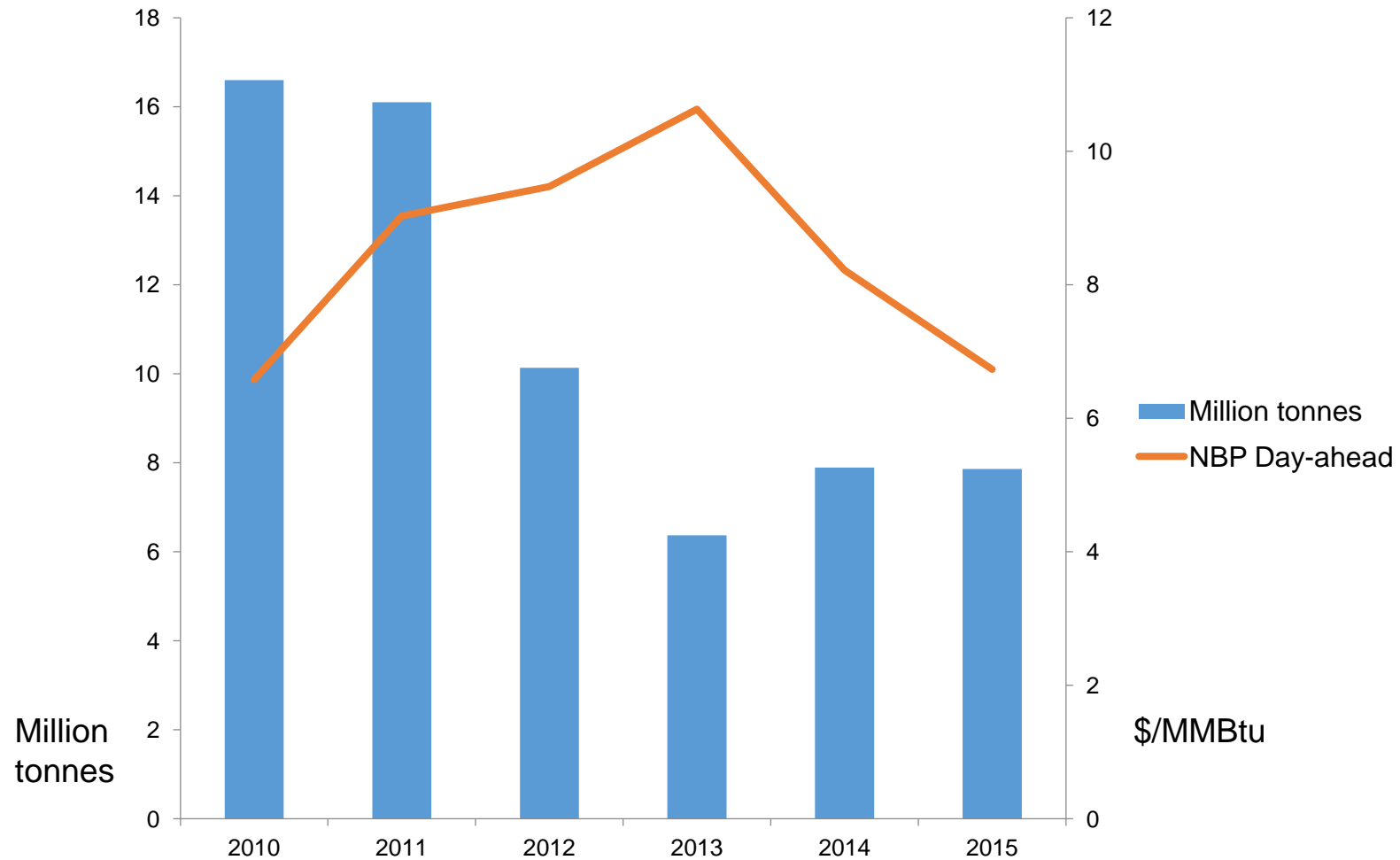
What does all these mean for near future

- ◆ Forecast of lower oil price makes long term European gas contract prices lower than ever before
- ◆ Oversupply of LNG puts enormous pressure to European hub prices
- ◆ Our view of lower gas price is accompanied by increase in gas demand in Europe
- ◆ LNG importing countries are set to win from lower oil and abundance LNG supply
- ◆ Established gas exporters to Europe are set to face increased competition from LNG.

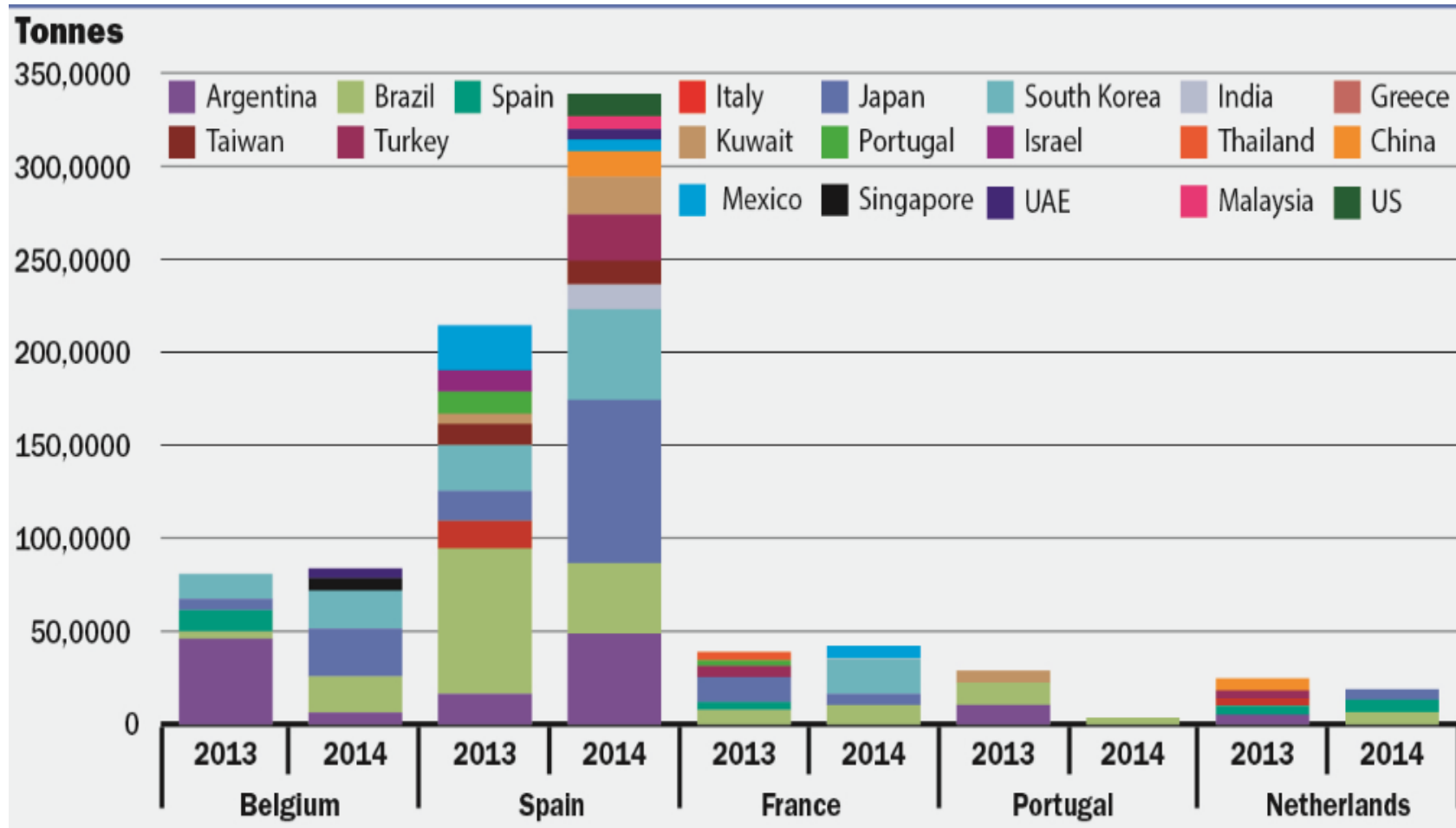
THANK YOU



UK Qatari imports and NBP



Europe's role as an LNG re-exporter



US LNG exports on the horizon between 2016-2020

► Five US LNG export projects under construction

Export project	Location	Start-up	mtpa
Sabine Trains 1-4	Cameron Parish, Louisiana	2016	18
Freeport	Freeport, Texas	2017-2018	13.2
Cameron	Hackberry, Louisiana	2018	12
Cove Point	Lusby, Maryland	2017	5.6
Corpus Christi Trains 1-2	Corpus Christi, Texas	late 2018	9
Total			57.8

Projects that have received US DOE approval, waiting for final investment and pending FERC approval: Corpus Christi Train 3, Lake Charles, Oregon LNG, Jordan Cove

Oversupply and new price indexation

Asia

- Price diversification needs satisfied by Henry Hub?
- Chinese independent buyers push for access
- Singapore hub? Australia FOB?

US

- FOB terms open cargoes up to other markets
- Halt in FIDs?
- Will end prices justify production?

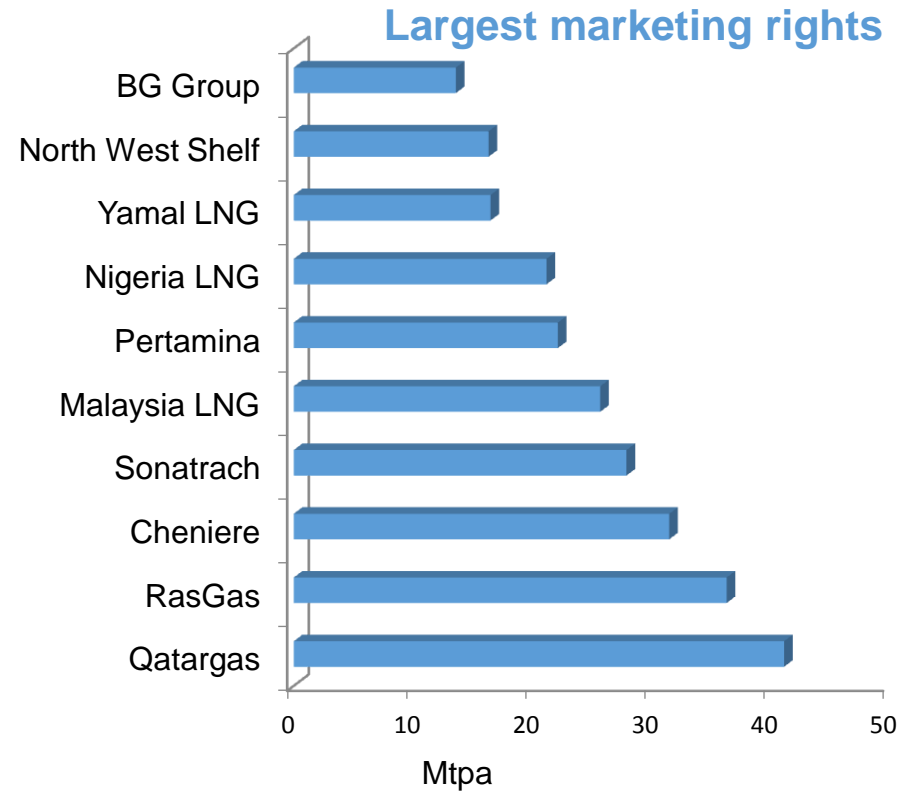
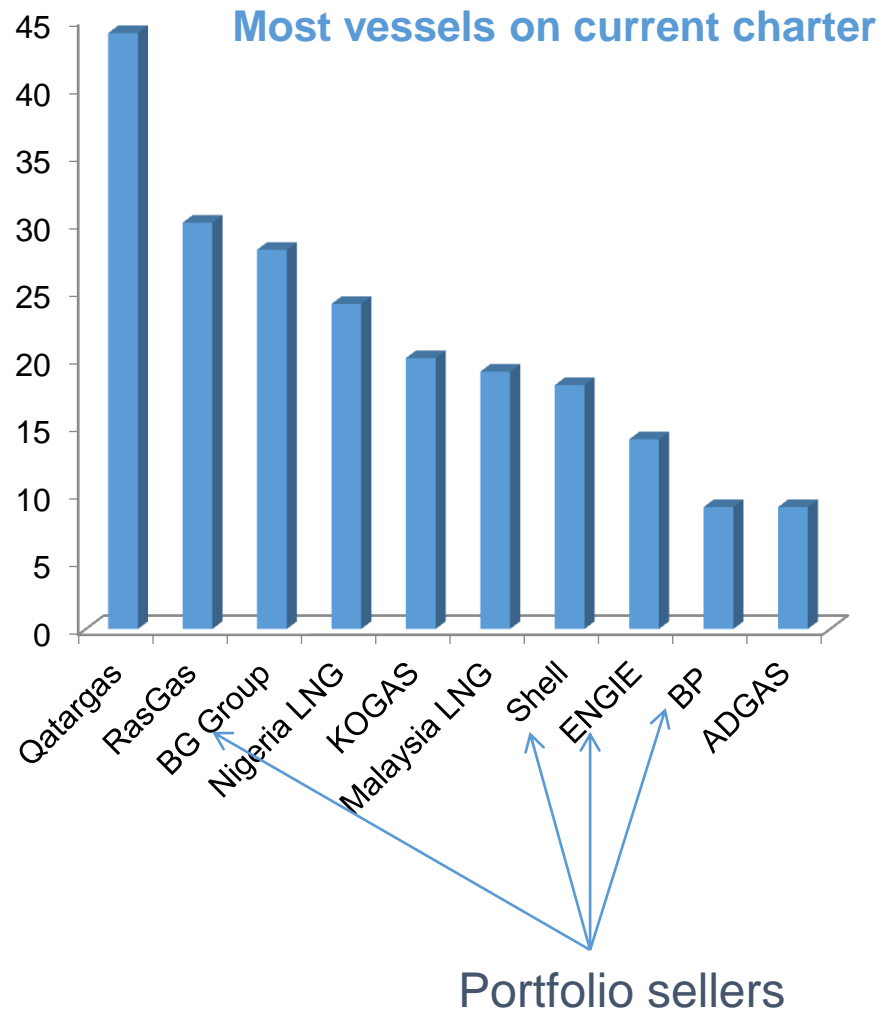
Europe

- Role as final market with attractive hedging
- New capacity but concerns over demand

Middle East

- Flexibility of LNG lures portfolio sellers
- Role of Middle East index?
- Long-term supply turnaround?

Who are the charter kings?



LNG Destinations this winter

