



European gas market

Market evolution & asset investment challenges

EAGC Nov 2018

www.timera-energy.com

 **TIMERA
ENERGY**

Global gas market is tightening

Europe

- \$5 → \$10 (Jul 17–Sep 18)
- 50% of move since Jul

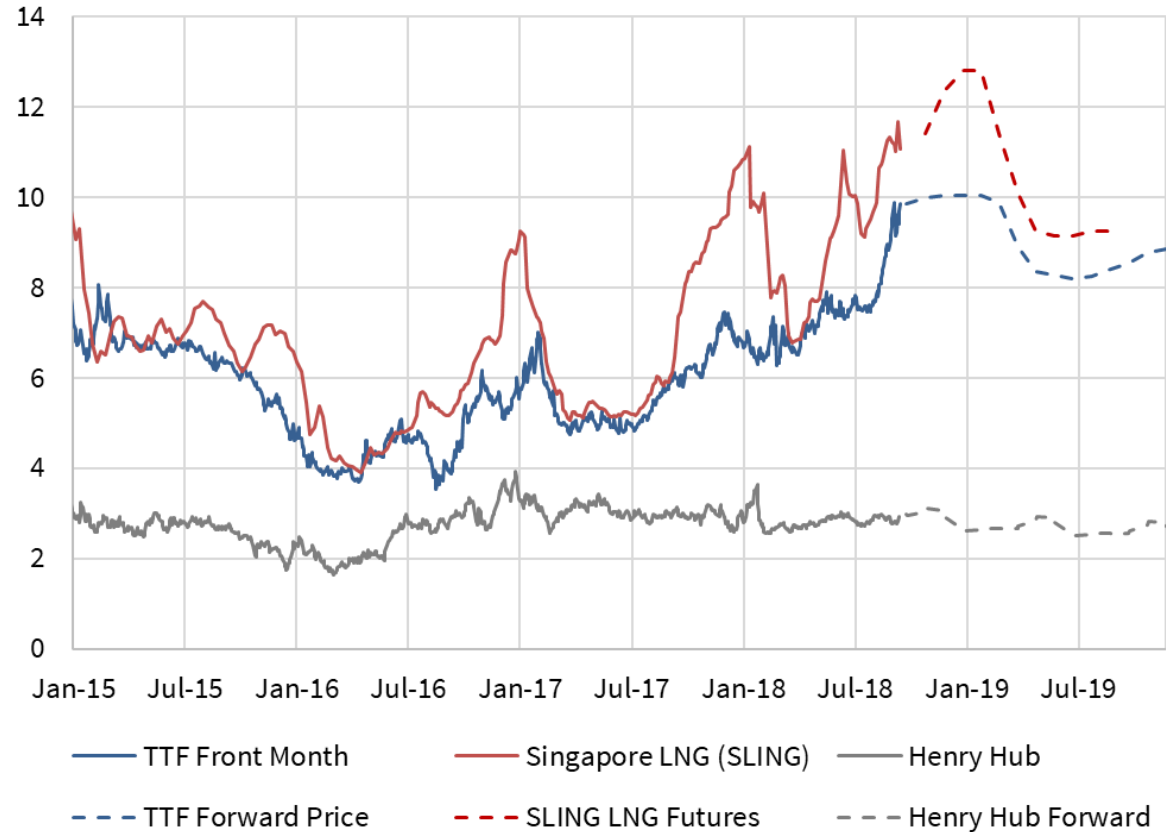
Asia

- Pulling gas from Europe
- Strong price linkage

US

- Ample supply
- Disconnected

\$/mmbtu Global gas price benchmarks

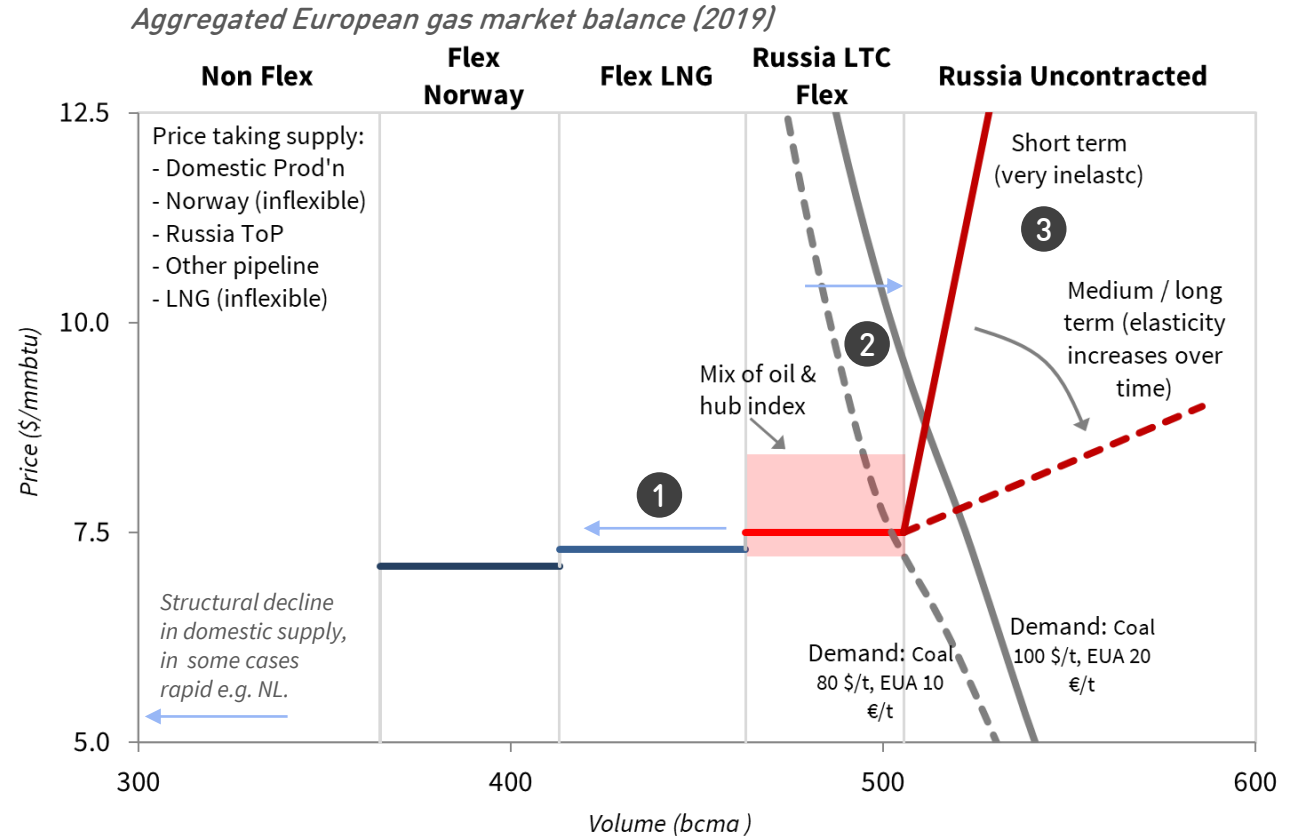


Source: Timera Energy

European supply & demand balance

3 key drivers

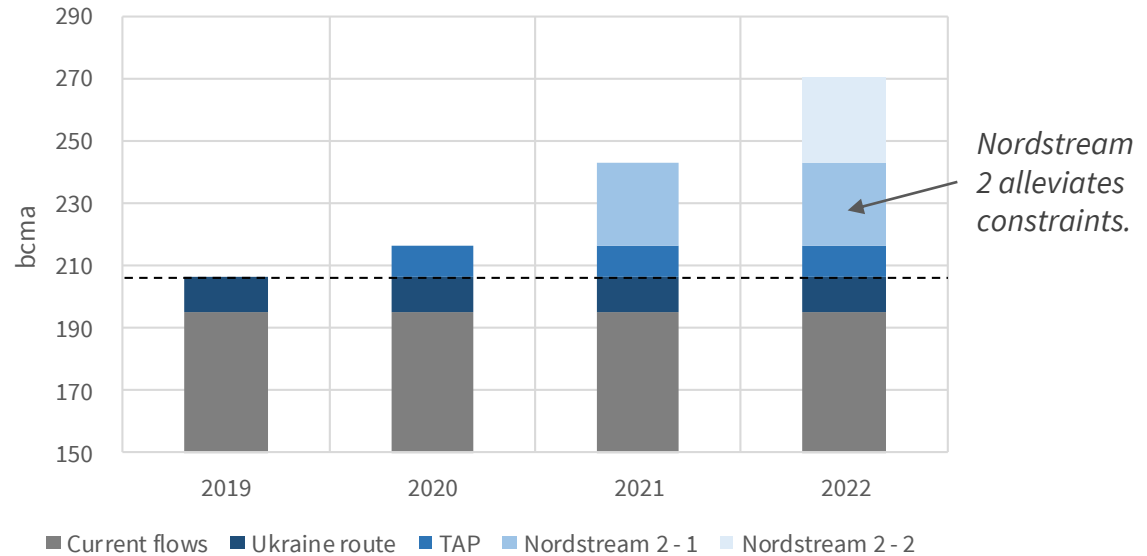
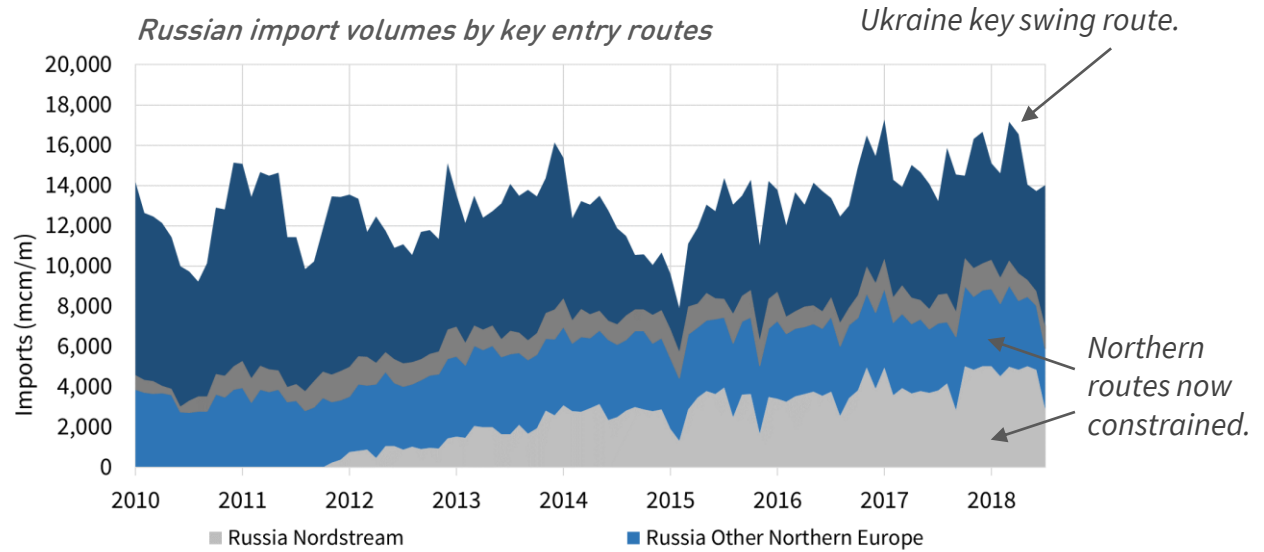
- 1 LNG flows
Asia / TTF spot price signal
- 2 Power switching
Coal/CO2 price signal
- 3 Russian flows
'marginal molecule'



Source: Timera Energy

Key driver: Russian flows

- **Short term:**
strategic/commercial /logistical constraints on increasing flows
- **Long Term:**
not in Gazprom's interest to have TTF above LRMC of new LNG (~ 8 \$/mmbtu)



3 scenarios for price evolution

3 key drivers of increasing supply flex value

1. Import dependency – longer supply chains
2. Power sector swing – gas on margin + intermittency
3. Ageing infrastructure – low investment this decade

Squeeze

Strong Asian demand outstrips supply

Consensus

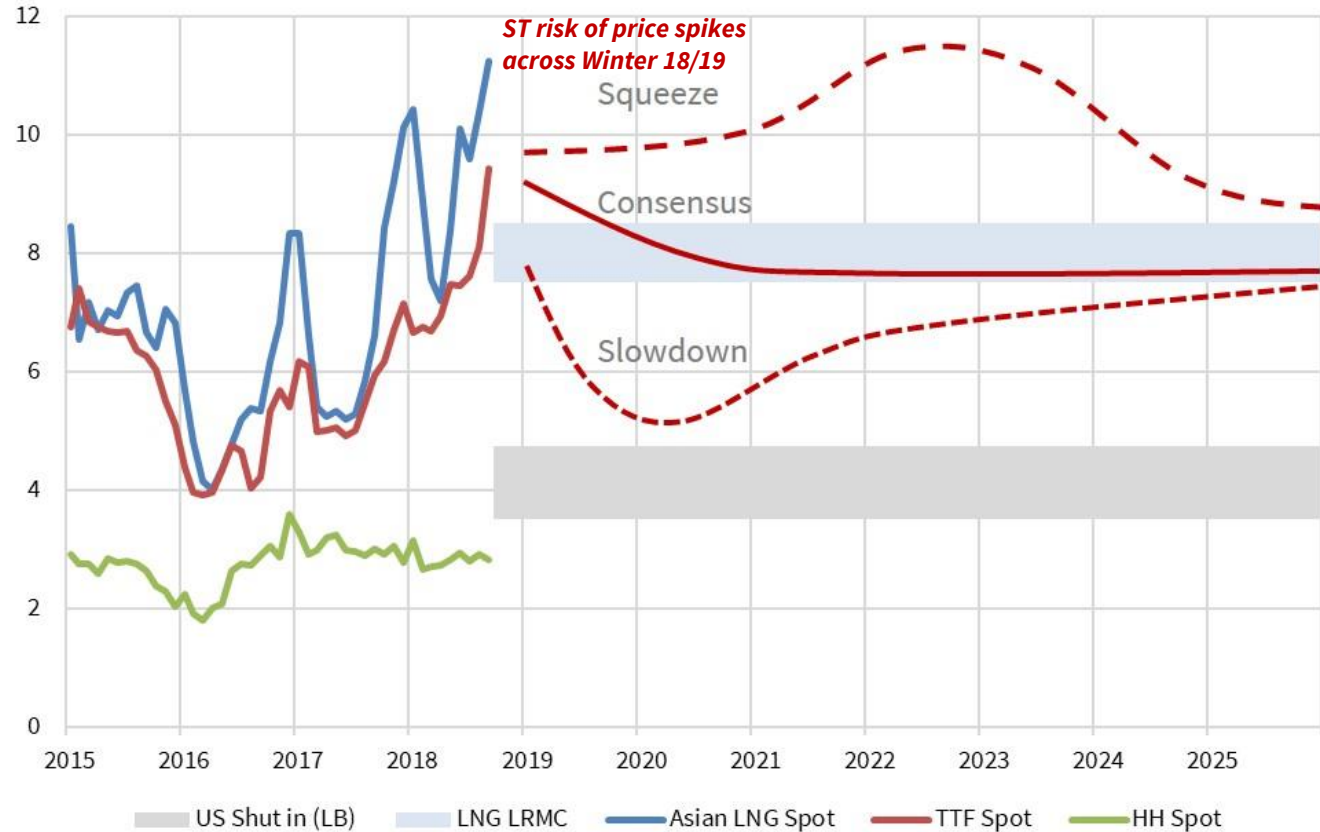
Prices ease with New LNG + Russia flows

Slowdown

LNG spills into Europe (e.g. demand shock)

Note: Asia & Europe structurally converged

\$/mmbtu 3 potential paths for European hub price evolution



Source: Timera Energy

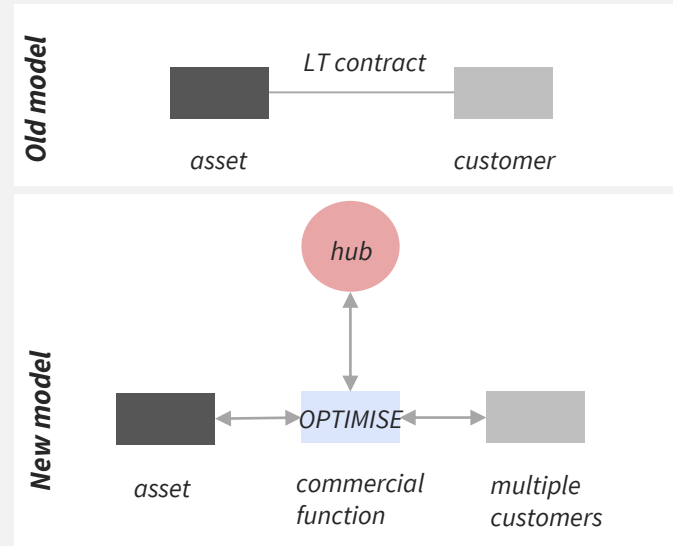
Challenge A: Value capture

5 trends impacting gas
asset value capture

Trend

- 1 Value shifting to prompt
- 2 'Shock' value rising
- 3 LT contracts rolling off
- 4 Flex value recovering
- 5 Optimisation creating value

Value capture models (e.g. pipes, storage, regas)



5 ways to boost midstream asset value

1. **Optimise asset variable costs**
(i.e. reduce cost hurdle to capture value)
2. **Optimise asset supply chain** (e.g. entry/exit, maintenance, fuel gas, linepack)
3. **Retain asset flexibility into prompt**
(i.e. capturing vs selling out flex value)
4. **Use hubs to enhance asset flex & services**
(i.e. de-link services from physical asset)
5. **Broaden/refine capacity product offering**
(e.g. customer netting, virtual products)

Challenge B: Portfolio construction

5 trends impacting gas portfolio construction

Trend

- 1 Decarbonisation
- 2 Rapid growth of LNG
- 3 Power sector linkage
- 4 From LTCs to trading
- 5 Refocusing in supply chain

Gas portfolio evolution: 4 case studies



Shell

*Expand & diversify**

- **Power:** acquire retail & generation (e.g. First Utility, Inspire, Axiom)
- **LNG:** expand supply & trading portfolio (e.g. BG, Shell Canada, Hazira India)



Equinor

Rebrand & diversify

- **Power:** 20% capex on renewables by 2030 (offshore wind key e.g. Arkona, Dogger Bk)
- **Trading:** expand gas & power trading (e.g. acquisition Danske Commodities)



Uniper

Split & expand

- **Trading:** Expand across regions & markets (e.g. US & coal desk expansion)
- **LNG:** expand supply & trading portfolio (e.g. Woodside/Pavilion deals, DE regas)



Engie

Divest & refocus

- **Sales:** cut supply chain & regional footprint (e.g. upstream & thermal power sales)
- **Services:** refocus on core infra & services (e.g. grow energy services – Evbox, EPS)

*Total following similar strategy

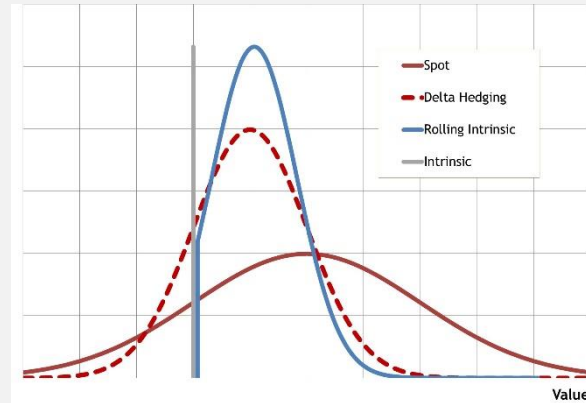
Challenge C: Asset investment

5 trends impacting gas asset investment

Trend

- 1 Gas market tightening
- 2 LT contract challenge
- 3 Value shift to prompt
- 4 Risk/ return profile shift
- 5 Buyer competition

Asset valuation



Quantifying asset value requires probabilistic modelling analysis that captures asset risk/return distribution and impact of contracting strategy.

5 drivers of gas asset valuation

1. **Utilisation** Evolution of supply volumes, routes and flow patterns drive capacity utilisation
2. **Constraints** System constraints, both physical & contractual, drive capacity value premia
3. **Flex value** Interaction between physical asset flex & market price signals drives extrinsic value
4. **Liquidity access** Access to liquid hub price signals drives ability to monetise capacity value
5. **Risk/return** Ability to quantify asset risk/return distributions & price market risk is a key differentiator between investors (see diagram)



Questions?

David Stokes
Managing Director

david.stokes@timera-energy.com
+44 (0) 7957 656 337

www.timera-energy.com

 **TIMERA**
ENERGY