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GAS POLICY, MARKET REGULATION: CATALYSING DEVELOPMENT OF GAS INDUSTRIAL HUBS

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THE NIGERIAN GAS STORY

POTENTIAL

Capable of producing over 40,000 MW of electricity FOR APPROXIMATELY 60 YEARS based on a daily production rate of

8.5 billion cubic feet (bcf)

Gas reserves are about three

3 times

the value of crude oil reserves

Gas is known as SWEET GAS because it contains

0%

of sulphur and is rich in liquids

Largest natural gas reserve in the continent of Africa with about

600 Tcf of unproven reserves

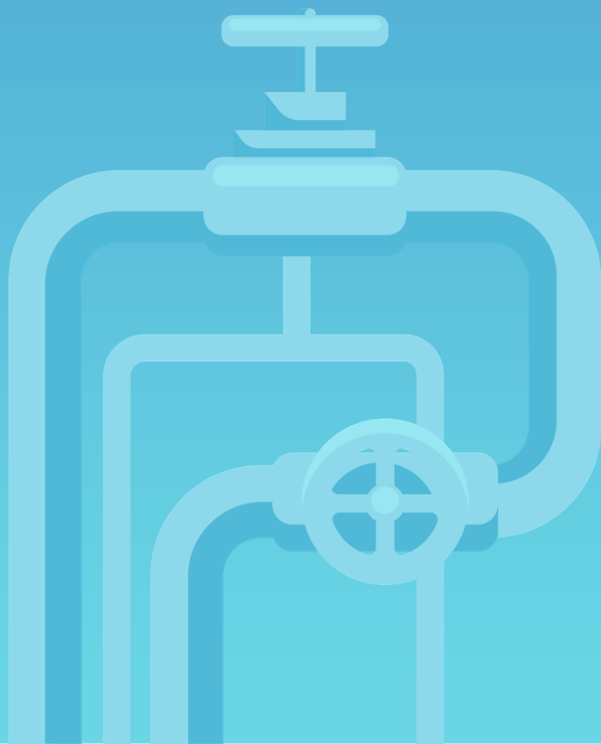
Latest reserves figures now places Nigeria

7th

globally

Strategically placed

on the MAP to be gas hub for Africa and by extension the world



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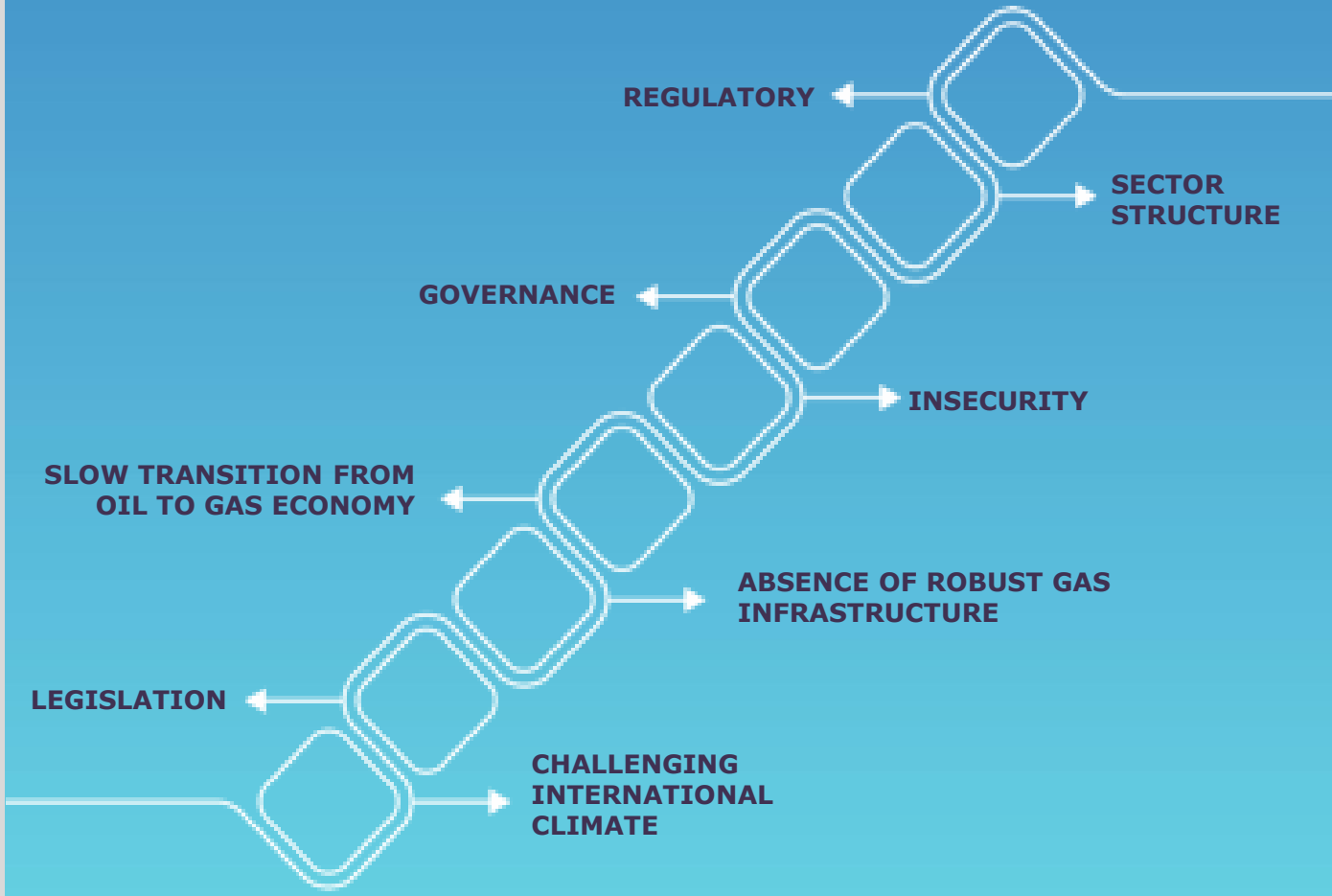
CHALLENGES



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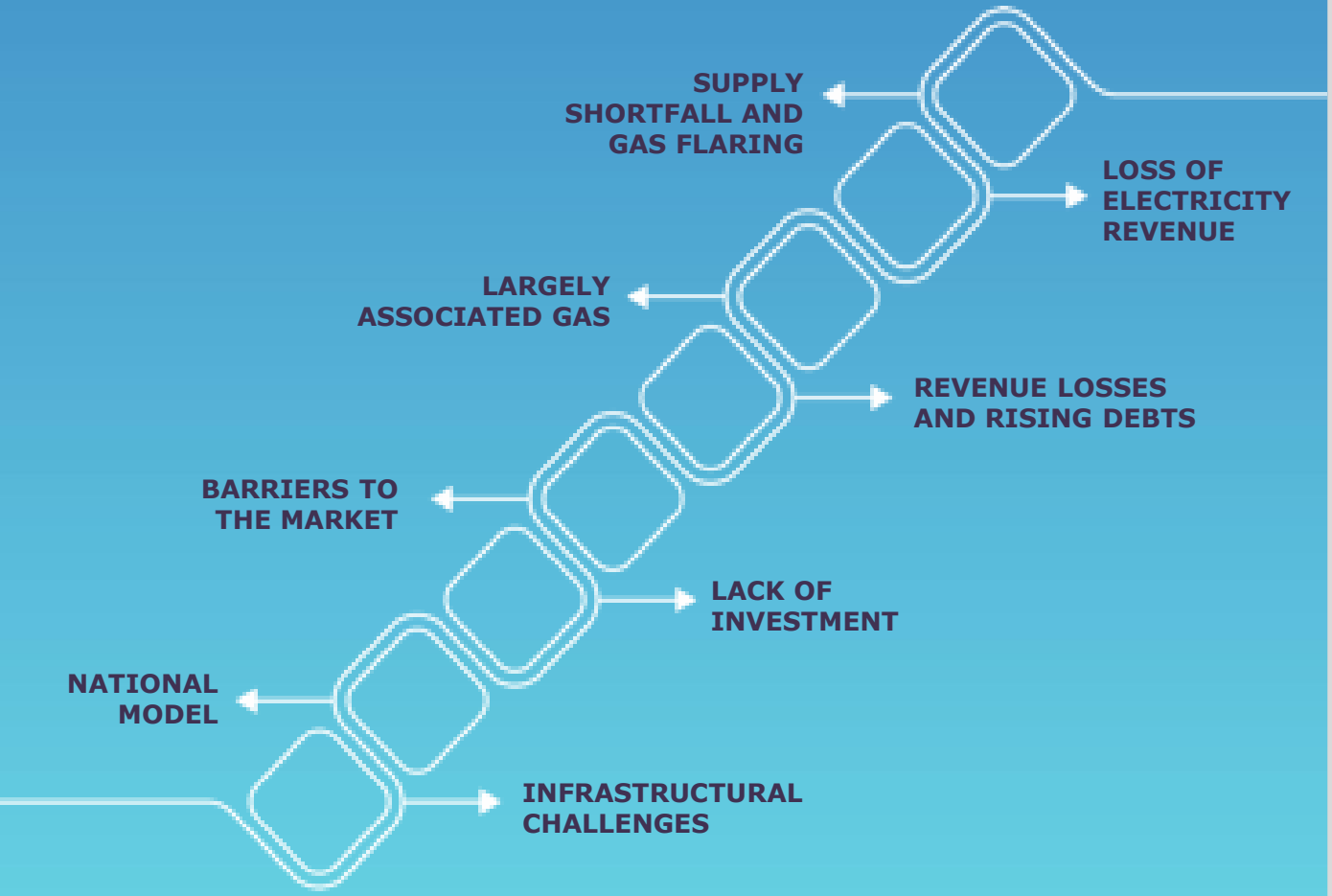
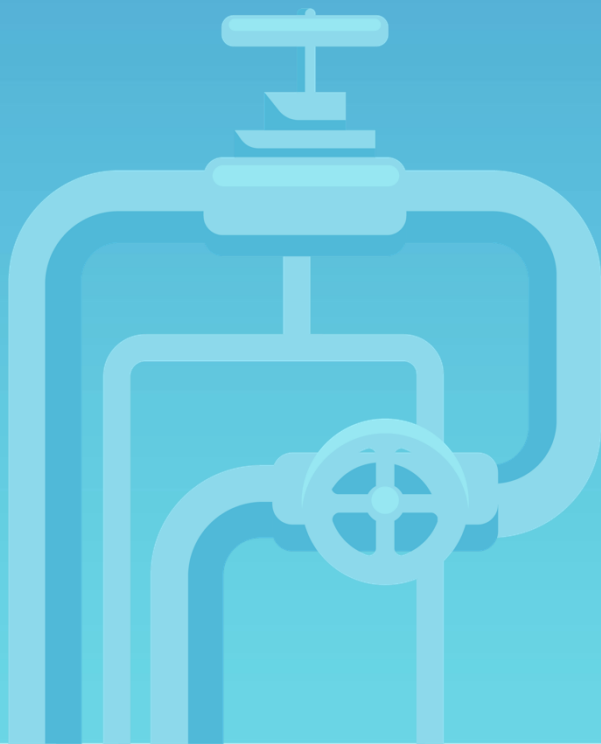
REALITY





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DESIRED REALITY

06 — Deliberate and articulate policy for exploration for gas

05 — Wholesale market competition with gas pricing set by the market

04 — To be an attractive gas-based industrial nation, with a significant presence in national and international markets

03 — Position Nigeria as Africa's regional hub for gas based industries such as fertilizer, methanol, petrochemicals etc

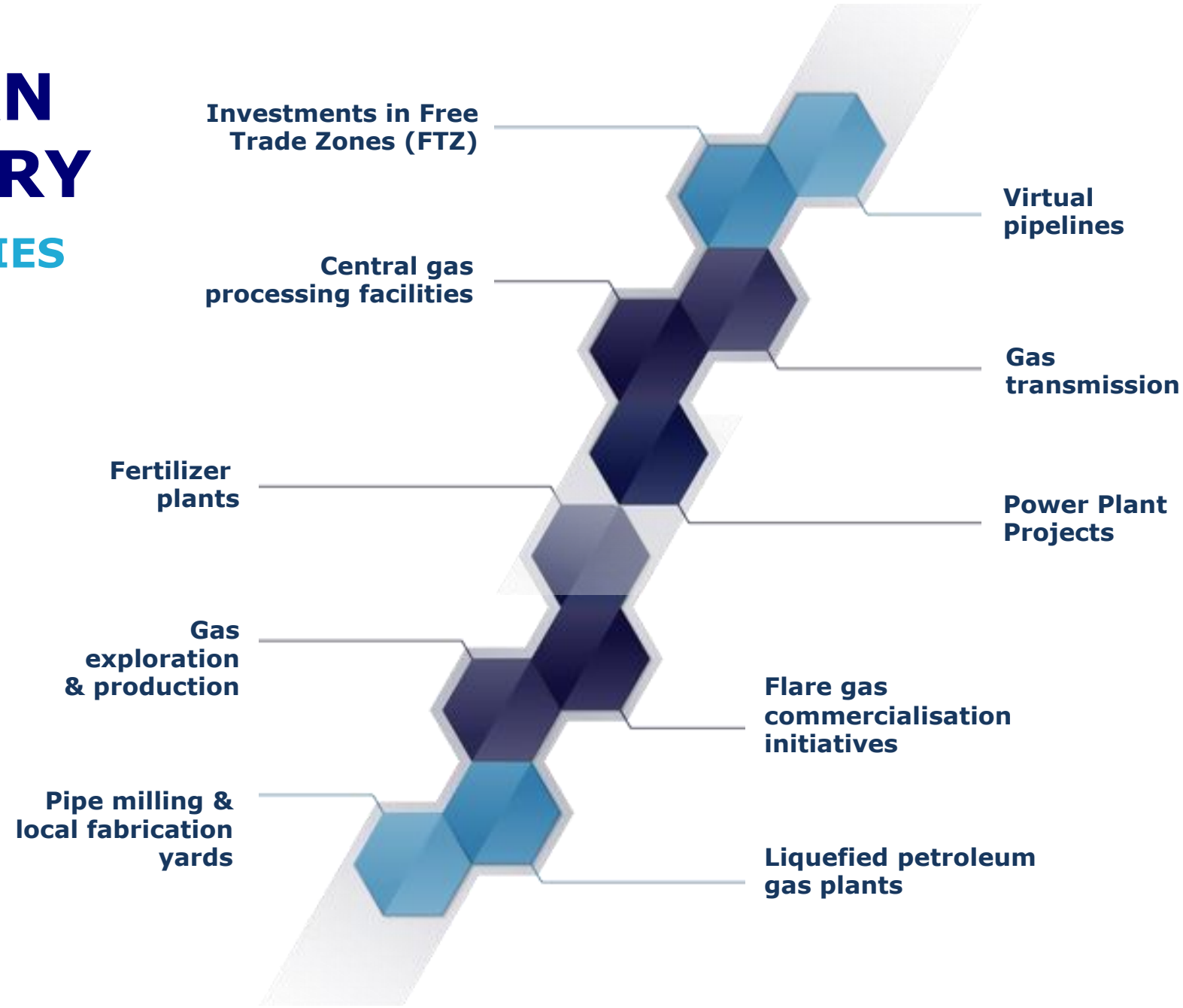
02 — Mature key gas infrastructure with liberalised access to infrastructure and gas processing

01 — Adequate supply of gas to meet domestic market demands include power generation as well as developing a significant presence in international markets

THE NIGERIAN GAS STORY

OPPORTUNITIES

About
$51 billion
worth of investment opportunities currently exists in Nigeria's gas sector



UNLOCKING OUR GAS POTENTIAL: GAS HUBS

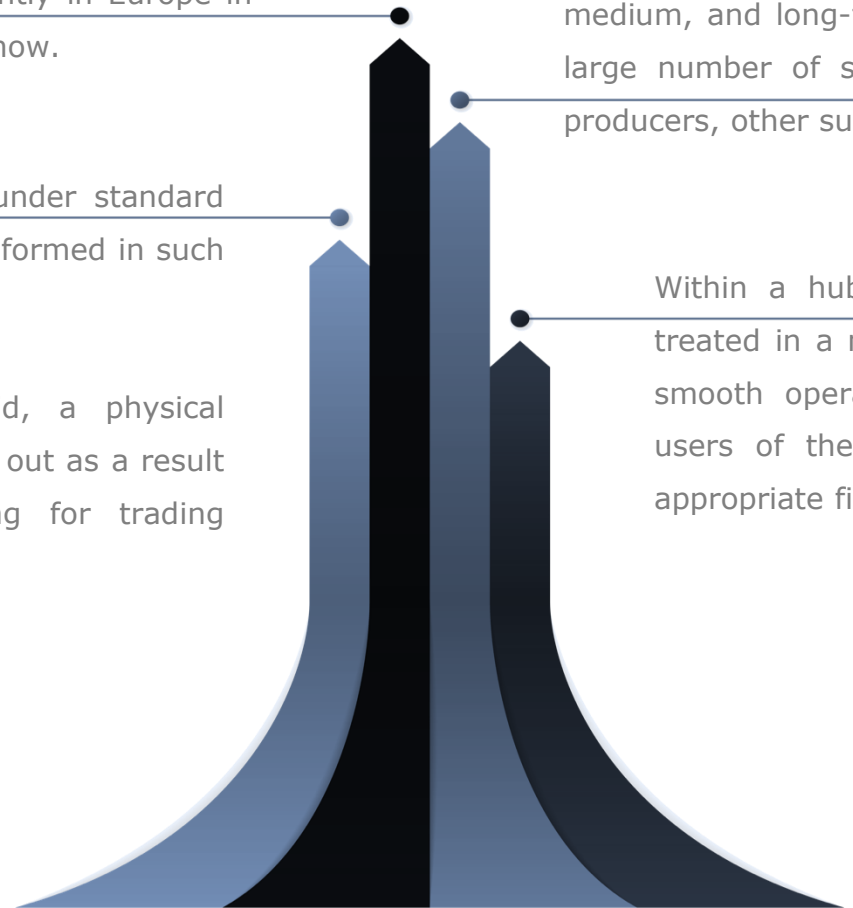
GAS HUBS: A common connection point where gas is transported, stored and from which gas is exported and utilised. Initially developed in the US in 1980s, UK in 1990s, more recently in Europe in the 2000s and mulled in East Asia now.

A hub allows the participants of the trading carried out within their operating area to access short, medium, and long-term supplies, as well as access a large number of sellers and buyers (these can be producers, other suppliers or large customers).

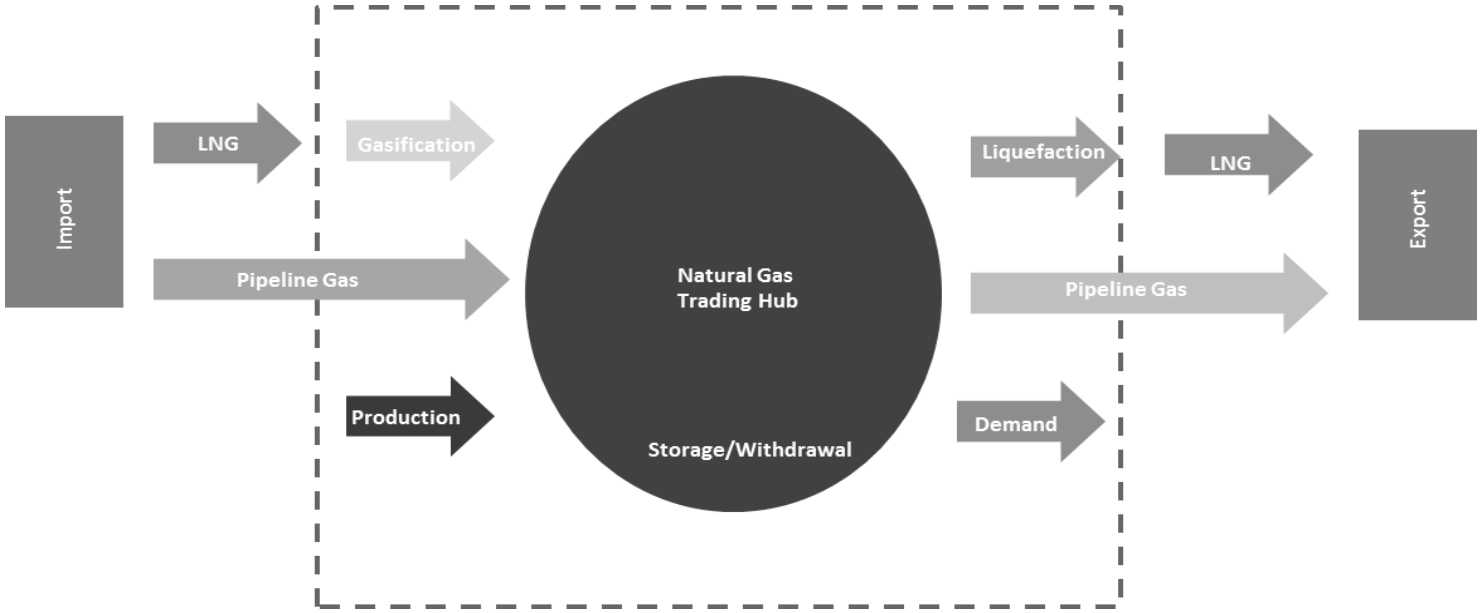
The gas trade at the hub occurs under standard and transparent conditions that are formed in such a way that they boost liquidity.

When a hub is sufficiently liquid, a physical delivery, i. e., the supply, is carried out as a result of multiple trading and searching for trading opportunities.

Within a hub all the participants have to be treated in a non-discriminatory way. To allow a smooth operation within a hub, the potential users of the hub's services should meet the appropriate financial and industrial standards.



GAS HUB VALUE CHAIN



VIRTUAL GAS HUBS

A trading platform defined through a pipeline grid (interconnected pipelines with no point of origin or end) representing the entire country or a trans-regional zone such that the whole transportation grid is defined as being the hub.

Examples include UK's National Balancing Point (NBP); Netherlands Title Transfer Facility (TTF), Frances PEG Nord and Italy''s Punto di Scambio Virtuale (PSV).

PHYSICAL GAS HUBS

A geographical point in the network where a price is set for natural gas delivered on that specific location.

Examples include the Henry Hub in the US and Zeebrugge in Belgium and the Central European Gas Hub.

GAS HUBS – US, UK, & EUROPE

Underlying idea was to foster competition and obtain more competitive commodity business - in short, create a more efficient natural gas marketplace.

The solution: Henry Hub, a plethora of pipelines connecting buyers and sellers that converge and serve as a transit point for transportation for consumers, distributors and storage operators. In essence, the whole North American natural gas system operates around a price set by the natural gas exchange at Henry Hub resulting in prices across the US that differ, albeit staying reasonably close together taking into account regional disparities and production and transport costs to that specific regional

In the UK, **concerns** stemmed from the appropriate way to price natural gas (balancing).

When the British natural gas sector was deregulated in the 1990s, the British regulator established a network code that created the virtual National Balancing Point (NBP).

The solution: a virtual trading point was established as a daily balancing tool for the entire British geographic area. The NBP price reflects the commodity price in the entire area without geographic differentials due to transport costs.

Currently the European Union prefers to integrate its natural gas markets through the establishment of virtual (regional) trading hubs.

This is a pragmatic approach, since it builds on the existing arrangements of member states (rather than creating one overarching European regulator) and an infrastructure built to facilitate long-term import contracts with national balancing and limited interconnections.

GAS HUBS – GAINS IN THE US, UK, & EUROPE

HENRY HUB

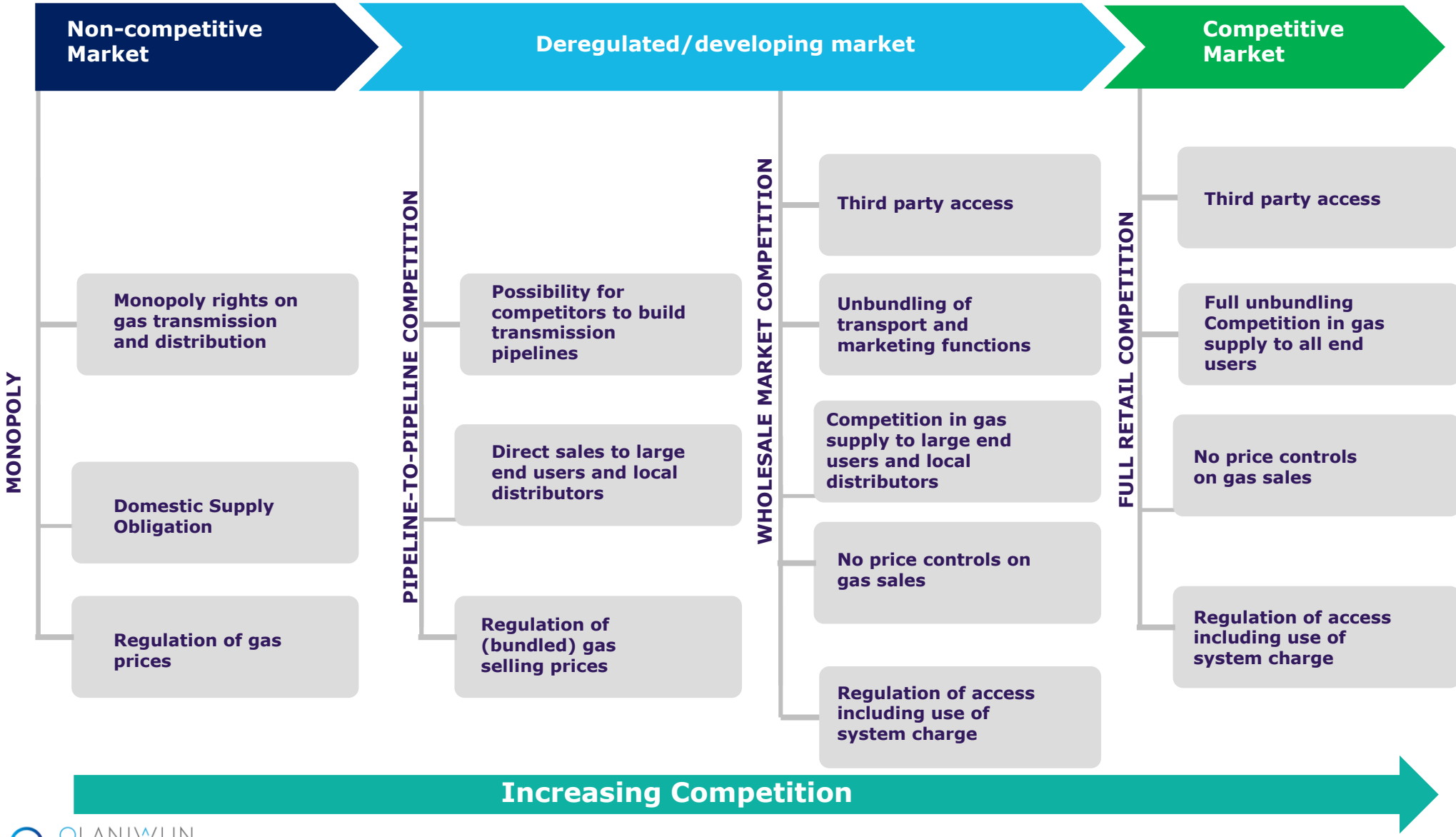
- Increase in competition
- US becoming LNG exporter albeit also attributed to the rise of shale gas
- Also increasingly important benchmarks for many E&P companies

NBP

- At the forefront of the European Gas market
- Full mature traded market
- Offers reliable price benchmark

Establishing a Gas Hub

Transition to competitive market



ESTABLISHING A GAS HUB – REQUIRED ACTIONS

STRUCTURAL ACTIONS

- Involvement of financial institutions
- Sufficient network capacity to prevent separate islands that behave according to their own supply/demand dynamics
- Non-discriminatory access to networks to increase the number of market participants
- Increased number of parties with competitive market shares

INSTITUTIONAL OVERHAULS

- Hands off government approach relegating role and function to one of regulator
- Unbundling of transport and commercial activities
- Wholesale price deregulation (letting the market set the wholesale price level for natural gas)
- Application of competition policy

DEVELOPING OUR GAS HUB –
A FEW CHALLENGES

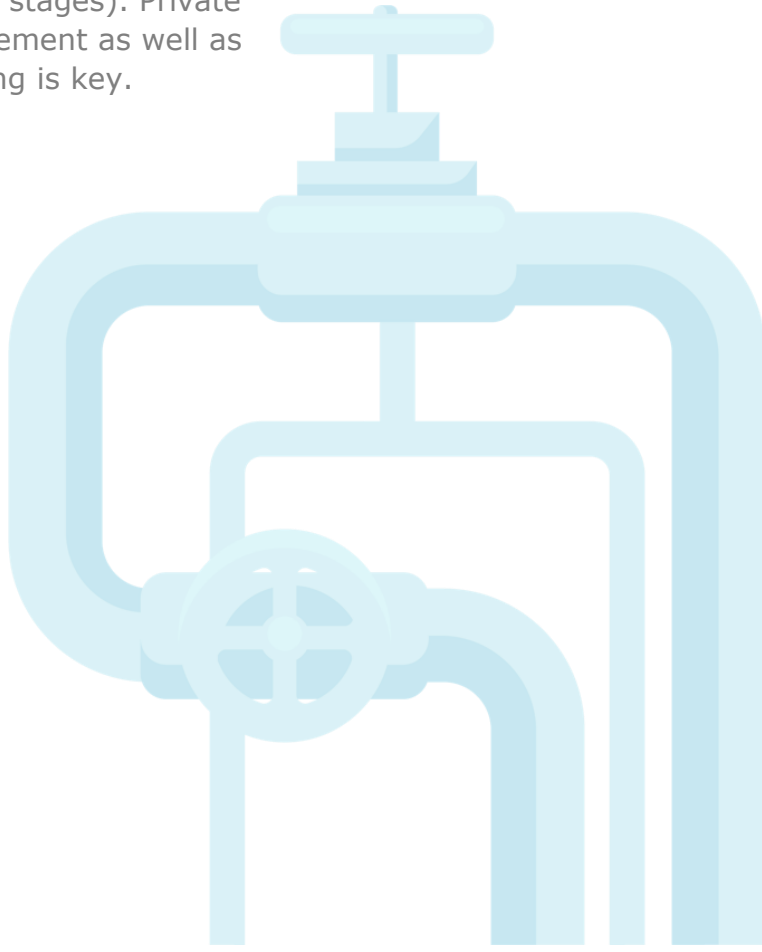
Transition from the oilcetric focus to gas

Demonstration of government's willingness to let go so that the market can begin to develop the fundamentals required for a price-led gas market.

Considerable upfront capital investments (due to the capital intensive infrastructure requirements and the rather low returns associated with the development stages). Private sector involvement as well as funding is key.

Legislative overhaul may face some resistance due to existing, typically long term contractual obligations for commercial parties.

Poor political and regulatory framework



Gas Hubs –
The Way Forward??


THANK
YOU