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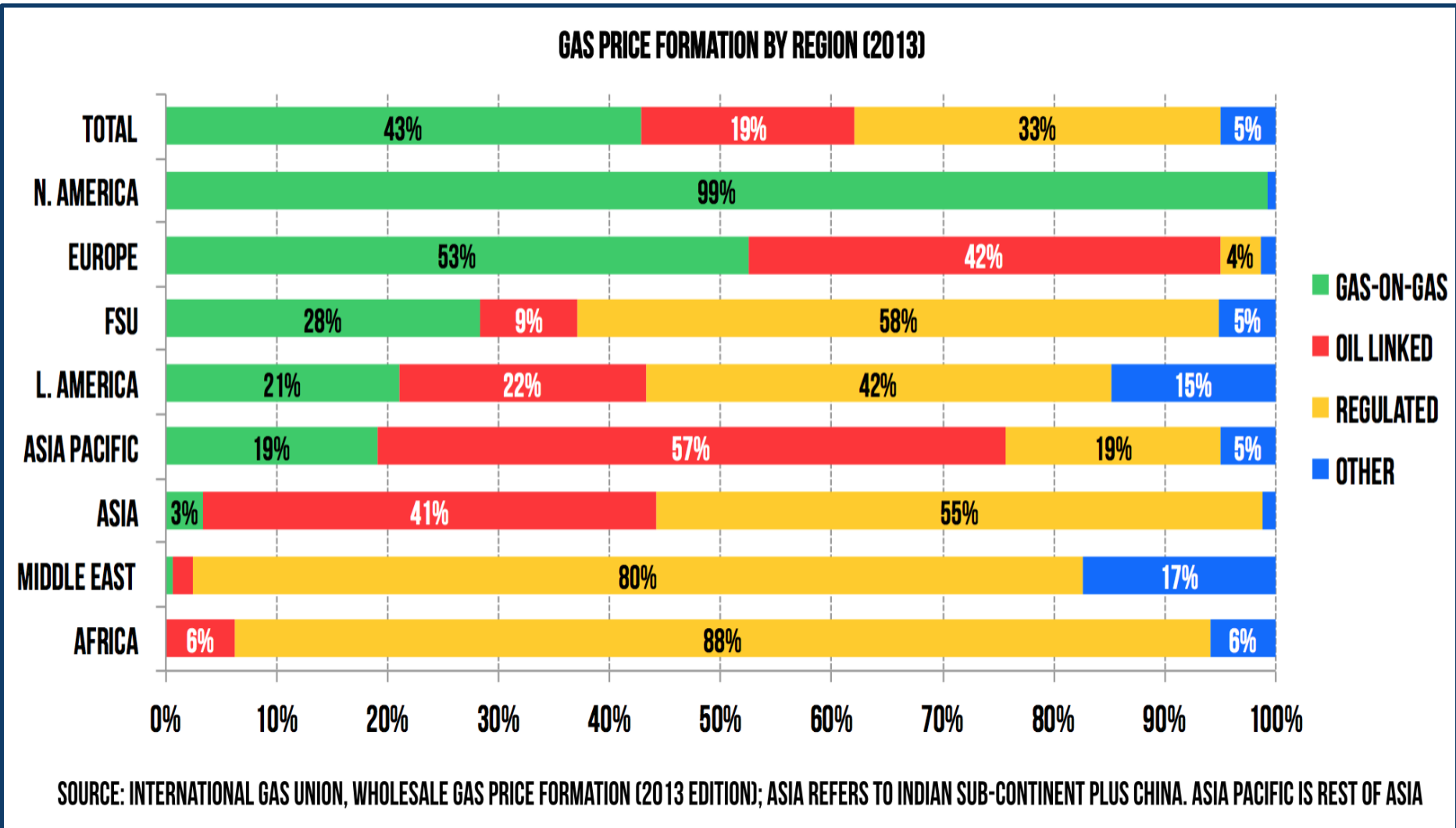
# OPTIMAL GAS PRICING

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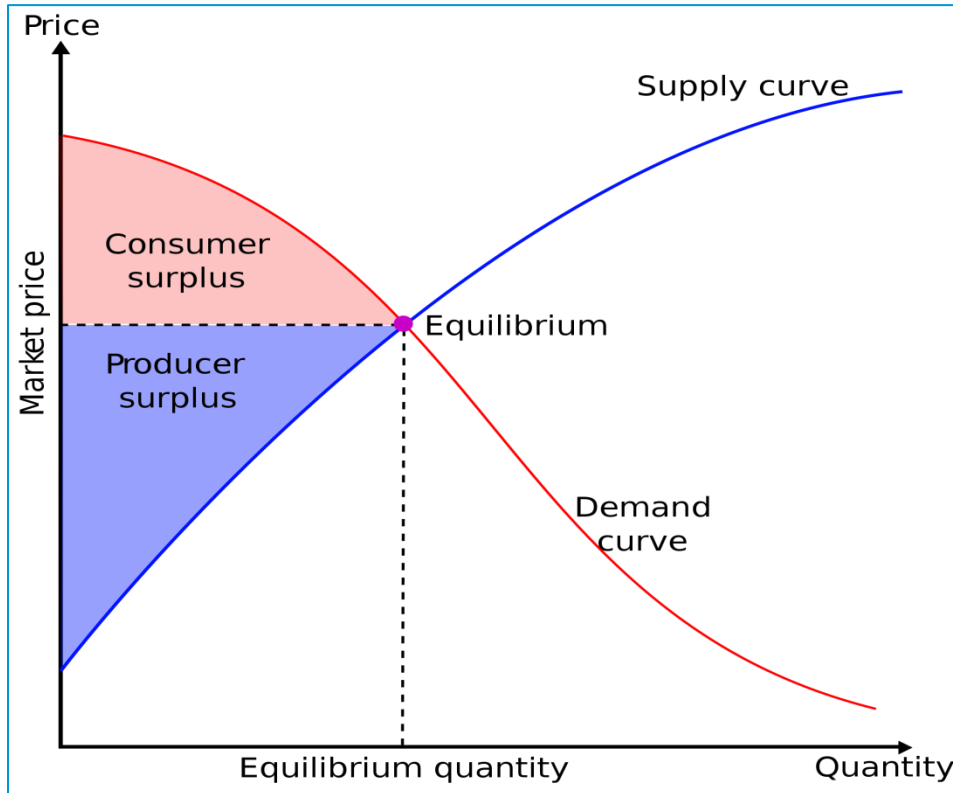
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# There are many different models of gas pricing



# What is Optimal gas pricing? ... let's go back to fundamentals



## Key drivers of Optimal Pricing

- **Transparent market** – best market information of supply and demand
- **Free market** – Demand and supply players interact freely, to discover a “fair” market price
- **Balanced market** – neither oversupply nor under supply

“Optimal gas pricing” also known as “Market Gas Pricing” ensures the best long-term outcomes for supply and demand sides

# How will (Optimal) Market gas pricing help the India market

**Market gas pricing is beneficial for the market because ...**

**1**

... **builds Supplier confidence** to invest in exploration and production activities leading to new discoveries and technological development (eg: US Shale gas revolution)

**2**

... **increase Supply volumes** to meet growing demand either by LNG or by pipeline (eg: Europe)

**3**

... **attract new investments** eg: Pipeline infrastructure to build last mile connectivity

**4**

... **building a “green” gas economy** to replace dependence on Liquid fuels (often expensive than gas) and Coal (highly polluting)

**5**

... **optimization of gas logistics** to bring “stranded gas” to demand centers, and also supplying gas to remote areas not connected by pipeline

# Myths to (Optimal) market gas pricing in India – Potential solutions

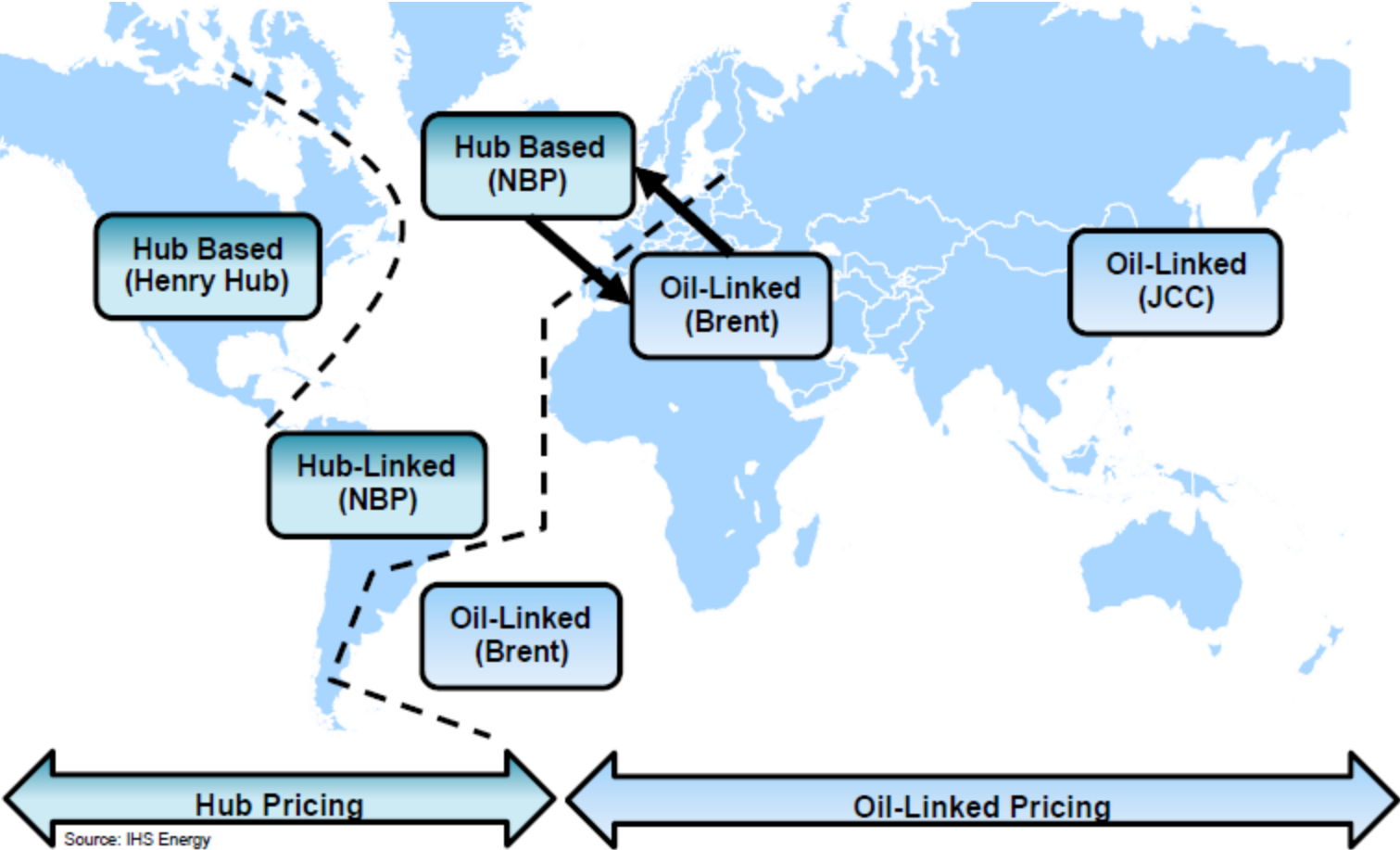
## Myths to Market Gas Pricing in India

- India imports ~40% of its gas demand from LNG, and hence **can not adequately determine a “fair” market price**
- Long-term LNG contracts is **not a reliable** gas price marker
- **Oil price linkage can not be widely used**

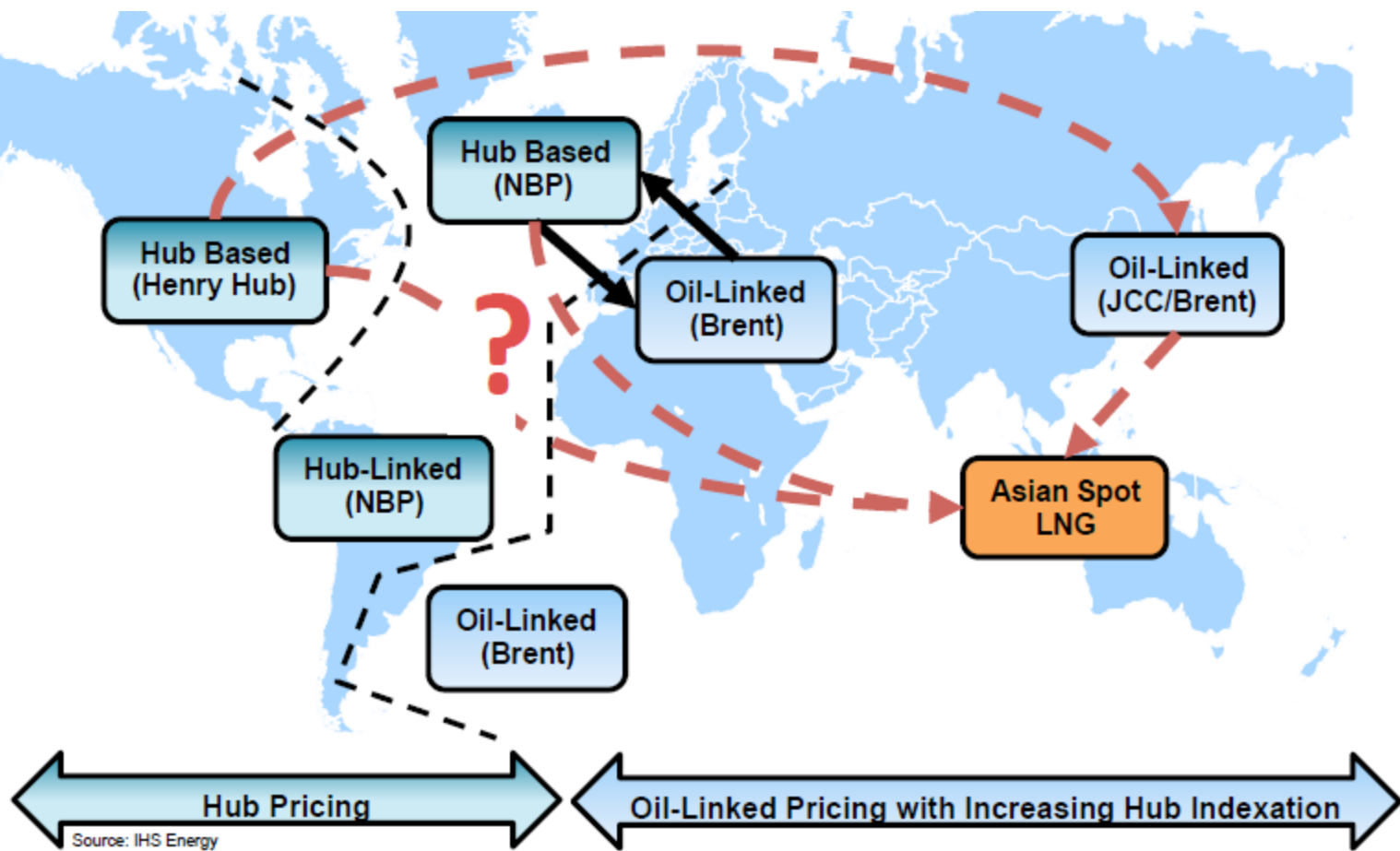
## Potential solutions: examples for discovering Market Gas Price

- Most of the Asian countries are net LNG importing countries – a potential solution is to set up a **“Asia hub price”** for the region (eg: NBP in Europe, or HH in US)
- **Factoring-in long-term LNG contracts** in the Market Gas Price can be done with subsidies (discounts to the LNG price) in the short run, which can gradually phase out leading to a “fair” gas price in the long-term
- **Oil price linkage works** for many countries to set a fair Market Gas Price eg:
  - European gas markets developed on this basis from the 1960s
  - JCC the basis of Japanese LNG pricing is based on a slope to oil
  - Chinese gas price reform

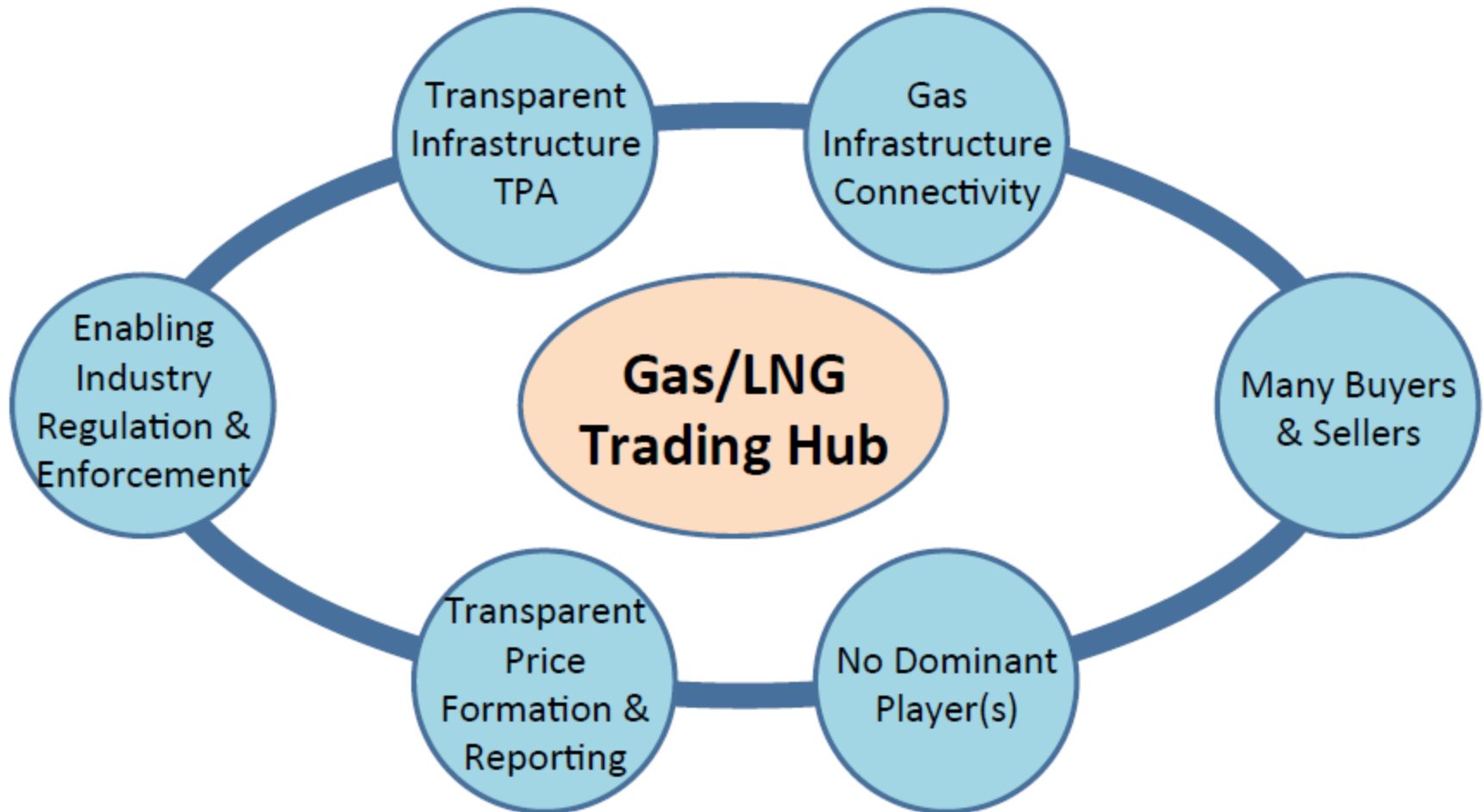
# Historical regional pricing mechanisms



# Evolving regional pricing mechanisms



# Critical success factors for gas hub development





# Asian gas hub development – current status

	Japan	China	SE Asia
Number of Potential Buyers & Sellers	Enabling	Neutral	Neutral
Existence of One or More Dominant Player(s)	Neutral	Constraining	Constraining
Physical Gas Supply Infrastructure Connectivity	Constraining	Improving	Enabling
Transparent TPA to Gas Supply Infrastructure	Constraining	Improving?	Constraining
Enabling Gas Industry Regulation & Enforcement	Neutral	Constraining	Constraining
Transparent Price Formation & Reporting	Enabling	Neutral	Enabling
Energy Commodity Trading Environment	Neutral	Neutral	Enabling

**LEGEND**

<b>Constraining</b>	<b>Neutral</b>	<b>Enabling</b>
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## So can an Asian hub evolve? Yes, but...

**Supply availability needs to increase to provide the desired liquidity**

**Removal of LNG supply destination restrictions and relaxation of take-or-pay obligations?**

**Number of market participants needs to expand beyond the established incumbents**

**Commercial agreement standardisation is required for access to LNG terminal capacity and transaction Facilitation**

**In the **near – unlikely****

**Liquidity and churn rates are expected to be insufficient to become a true indicator of market fundamentals**

**In the **medium term – possibly** ... but will require considerable regional cooperation to create harmonised regulations**

**Atlantic Basin gas hubs took 20 years to develop and led to lower prices . . . but for different reasons**

**Physical pipeline gas/LNG supply integration necessary to facilitate development of a truly liquid hub**