



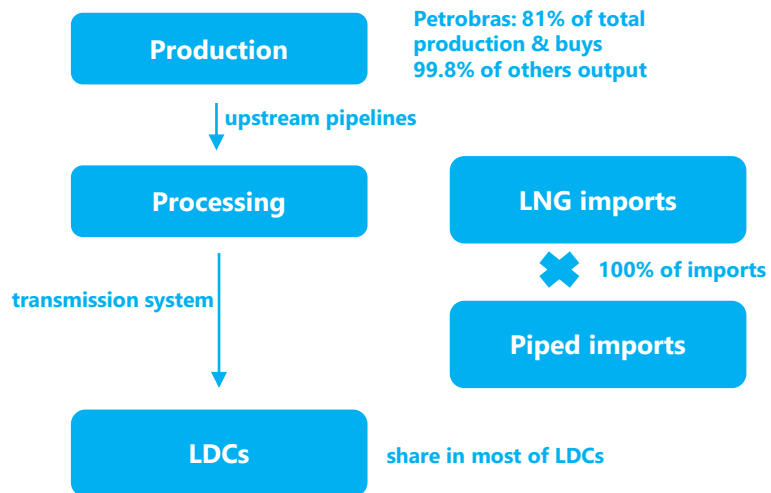
Towards a New Gas Market in Brazil: Insights from European experience

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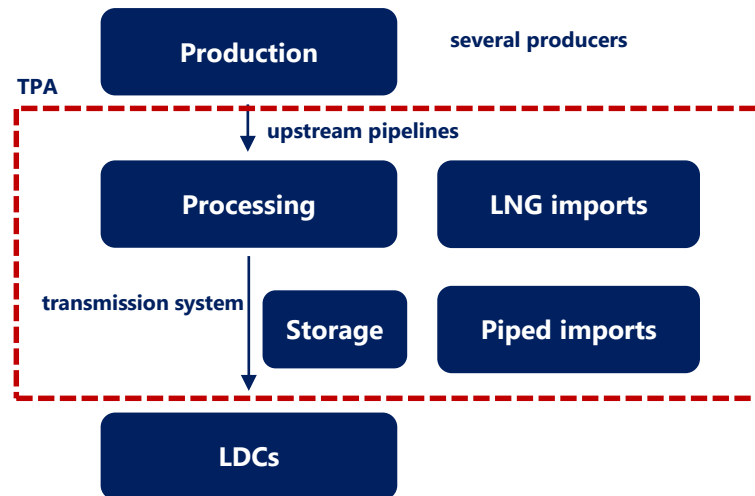
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Novo Mercado de Gás: a new vision of the Brazilian gas market

Vertically integrated model

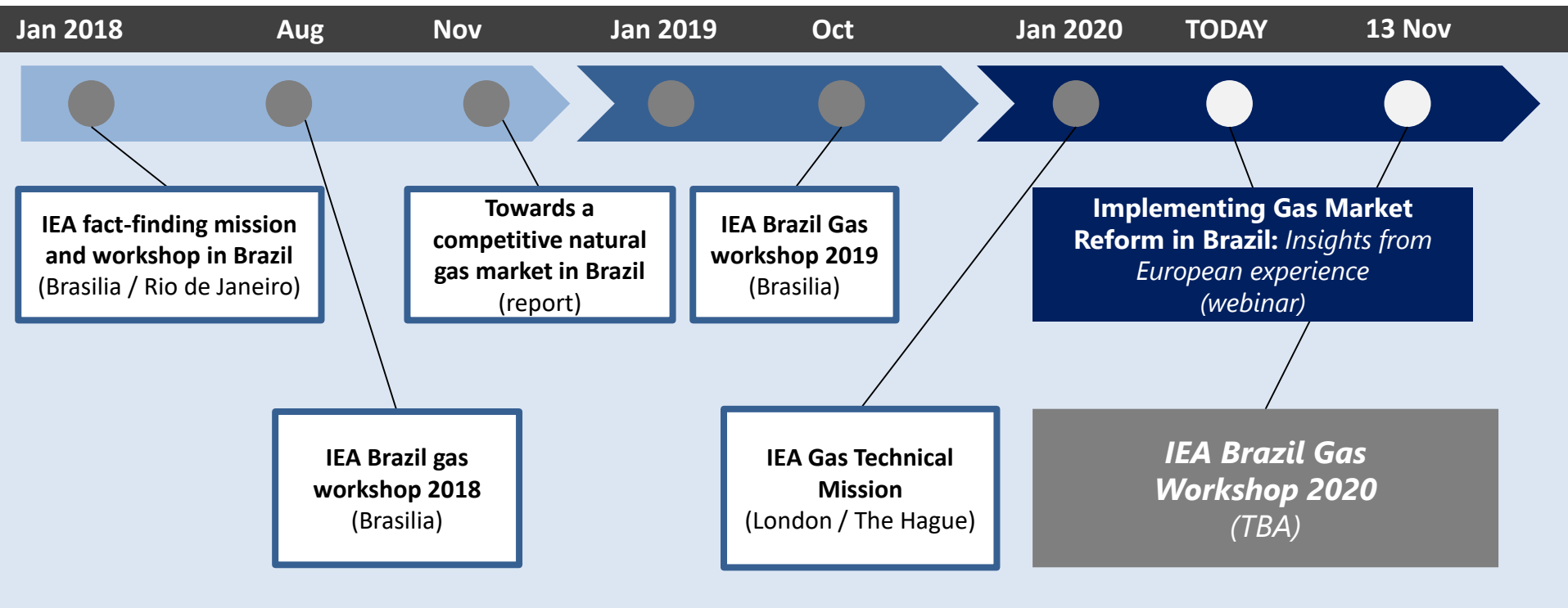


Competitive market



Brazil's gas market is moving from a vertically integrated model to a liberalized, competitive market structure.

Gas market reform dialogue and peer-review process



Bringing decades of European experience in gas markets

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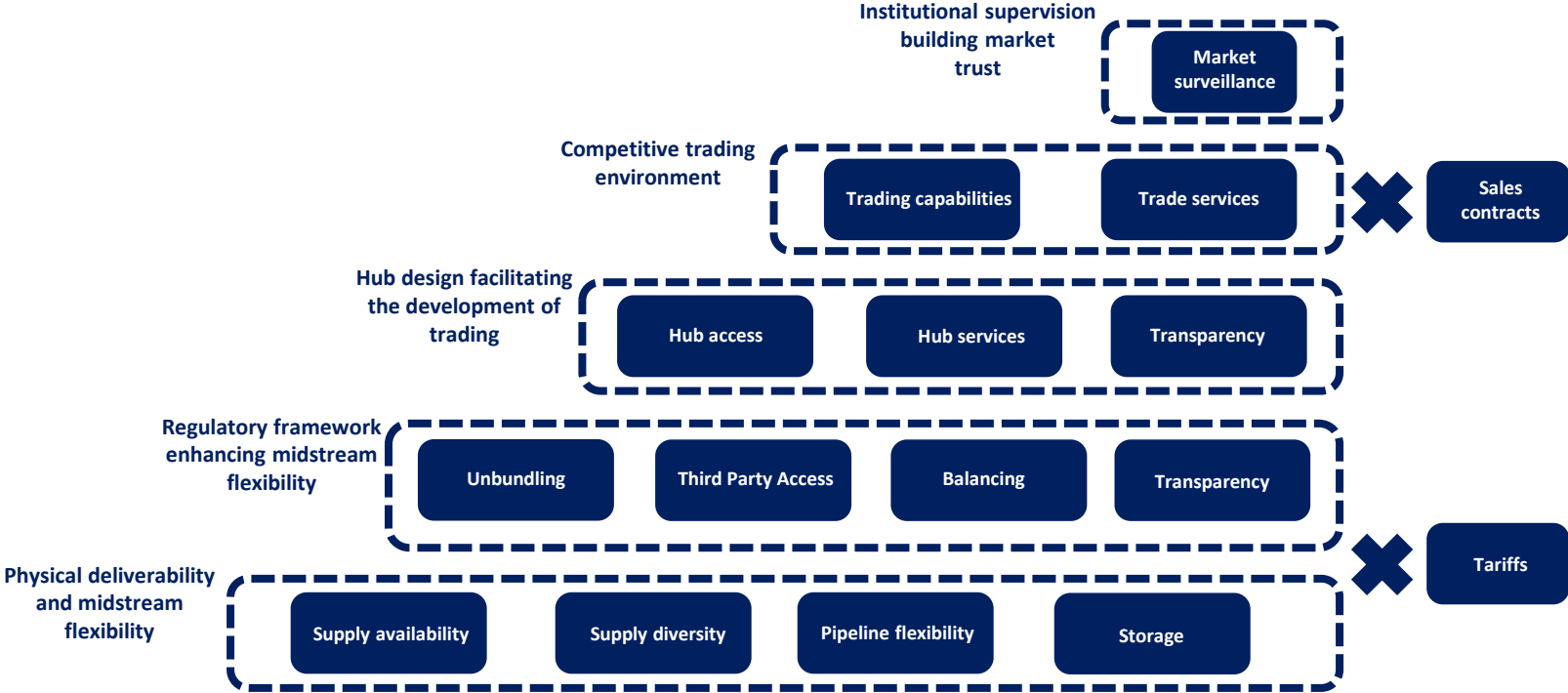
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Insights from European experience

Building bricks of a competitive gas market



A competitive gas market is based on a transmission system providing firm physical deliverability, a regulatory framework enhancing midstream flexibility and a hub design facilitating trade.

Regulatory framework: unbundling

Unbundling options

Ownership Unbundling:

- the TSO owns and manages the network;
- only minority shareholding and dividends allowed;
- no operational control and no voting rights;
- no appointment of administrators.

Independent System Operator:

- energy supply companies still formally own gas transmission networks;
- operation, maintenance, and investment in the grid is managed by an independent company;
- owner is obliged to finance the investments decided upon by the ISO and the Regulator.

Independent Transmission Operator:

- energy supply companies still own and operate gas transmission networks through a subsidiary;
- operation, maintenance, and investment in the grid is done independently from the parent company;
- ITO submits annually an investment plan to the Regulator.

European experience shows that multiple models of unbundling can co-exist.

Regulatory framework: network codes and guiding principles

Network codes and Guidelines

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graph TD; A[Network codes and Guidelines] --> B[Capacity Allocation Congestion Management]; A --> C[Tariffs]; A --> D[Balancing]; A --> E[Transparency Data exchange]; B --- F[Objective, non-discriminatory and transparent third-party access]; C --- F; D --- F; E --- F;
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Capacity Allocation
Congestion Management

Tariffs

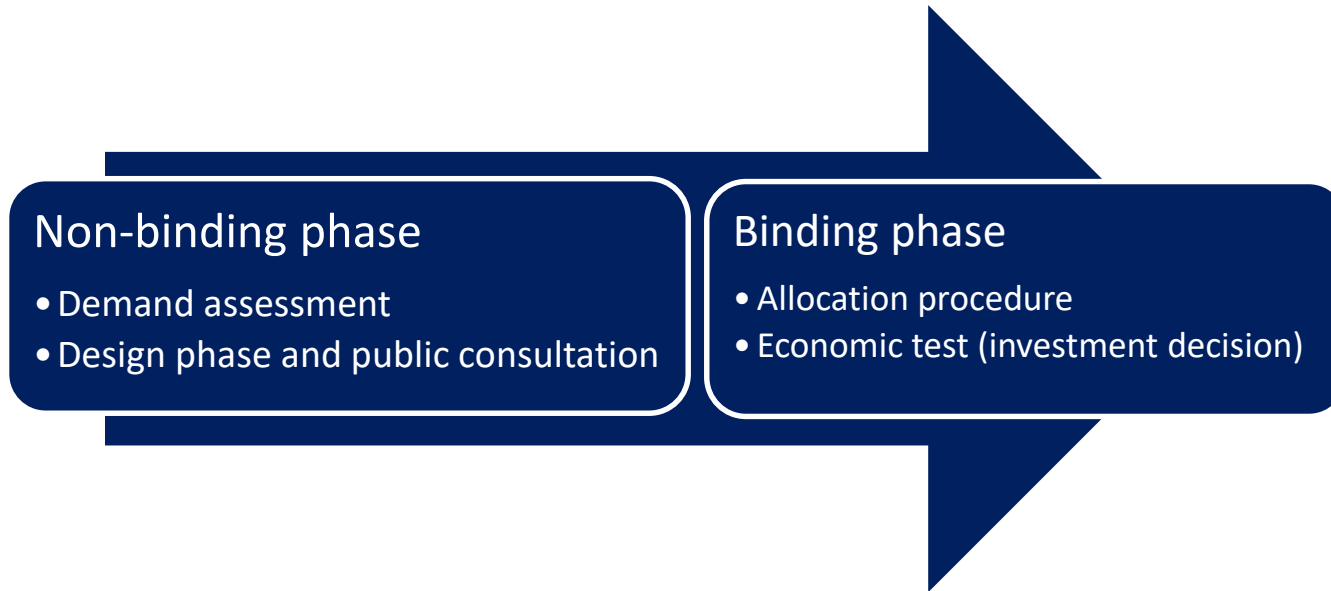
Balancing

Transparency
Data exchange

Objective, non-discriminatory and transparent third-party access

The development and implementation of network codes and guidelines provides the regulatory framework necessary for the well-functioning of a liberalised gas market.

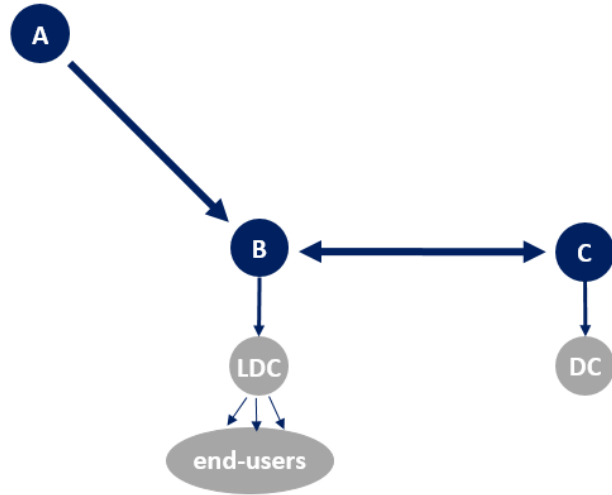
Regulatory framework: developing new gas infrastructure



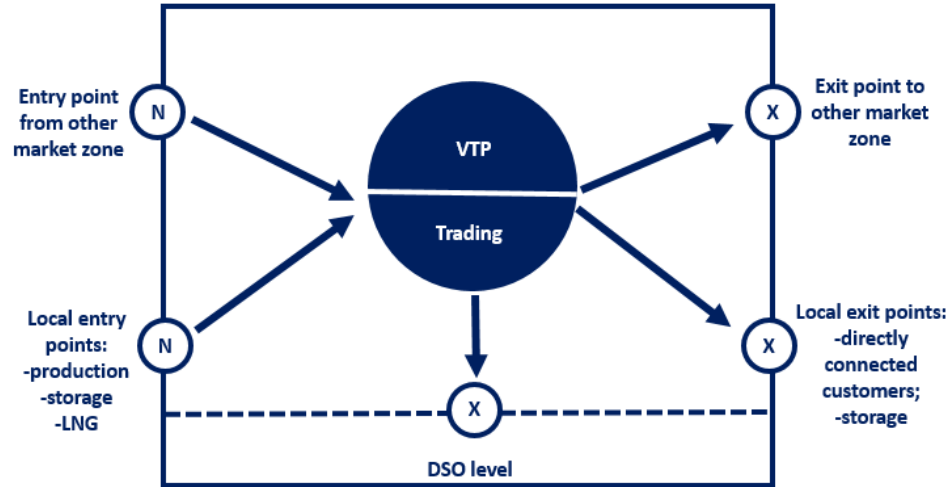
The incremental capacity process adopted in the Europe consists of two main phases: a non-binding phase and a binding phase.

Setting-up a liquid hub

Point-to-point system



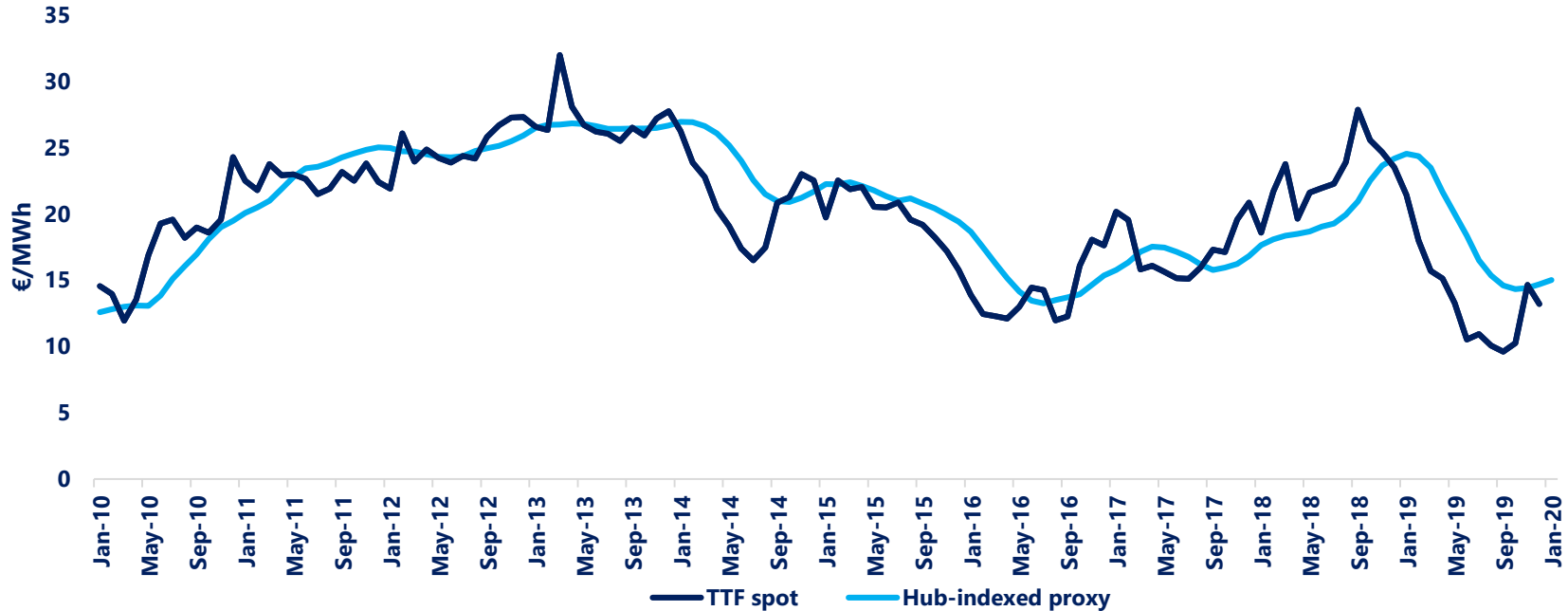
Entry-exit model



An entry-exit model breaks down the contractual and path-rigidities of a point-to-point system by allowing market participants to trade on the virtual hub.

A liquid hub allows for price discovery

Illustrative example of contractual hub-pricing



Contractual spot-indexation reflects market prices, whilst reduces the spot volatility via damping and averaging traded gas contracts.

The role of Distribution System Operators on Gas market opening

European experiences highlight important aspects for a well functioning Distribution market



Clear definitions on
TSO and DSO
categorisation

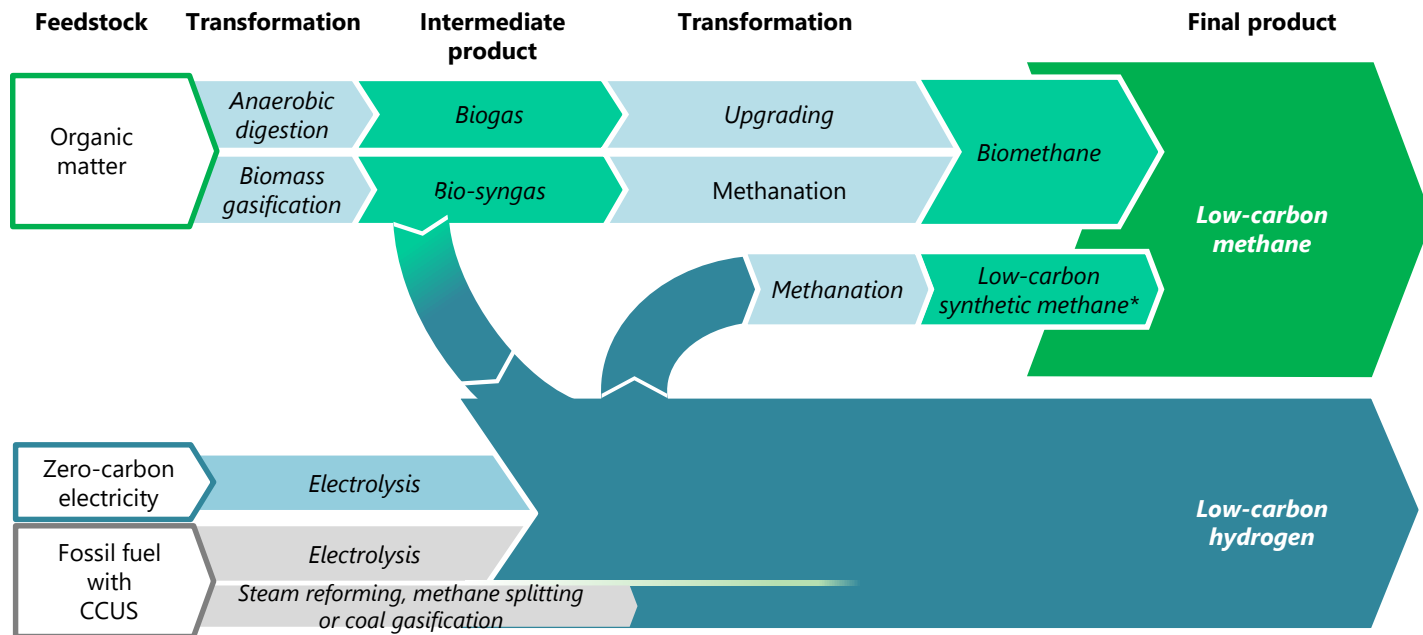
Guaranteeing the
independence of
the DSO from the
vertically integrated
utility

Allowed revenues
and tariff structures
incentivizing
operational
efficiency

Defining strategy
and indicators for
monitoring
performance of gas
retail markets

Gas infrastructure can support low-carbon gases

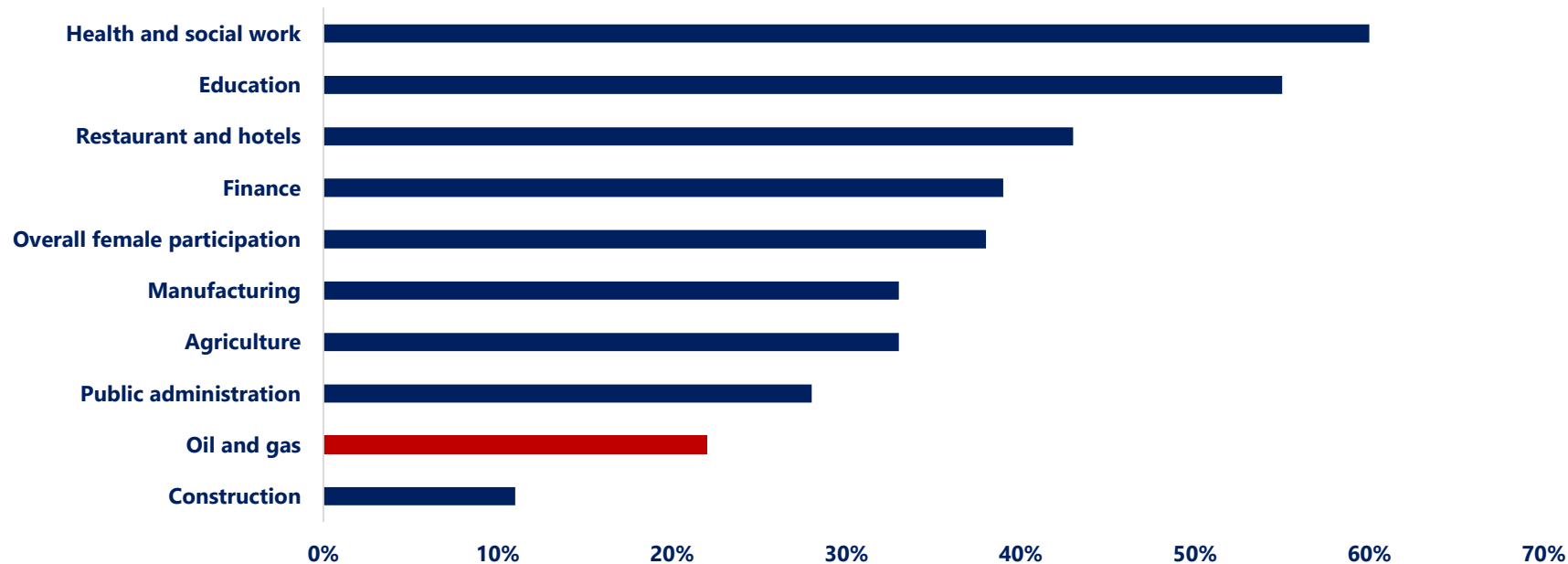
Alternative supply routes to produce low-carbon gases



There are many pathways to produce low-carbon gases. Their deployment could be facilitated by the existing gas infrastructure, leading to a more cost-effective energy transition.

An untapped resource for future energy sector growth

Female employees as a share of the workforce per economic sector



Improving diversity in the oil & gas sector would increase productivity and creative problem-solving, supporting the profound transformation that the energy sector is undergoing.

Final considerations

- **Gas market liberalization is a lengthy and complex process.** While each market has unique challenges and opportunities, **international experiences provides useful guidance.**
- The *Novo Mercado de Gás* **has the potential to address many of the key challenges** that need to be addressed in order to develop **a competitive gas market in Brazil.**
- A **well-designed regulatory framework** for the transmission system, **network codes, clear guidelines** and **continued engagement of all market actors** are needed for a successful transition.
- A well-functioning and competitive gas market **can be the gateway to unlock low-carbon technologies**, as well as providing an opportunity to promote **gender equality and inclusiveness** in the energy sector to capture the benefits of a more diverse workforce.
- **Brazil has all the ingredients for a successful gas market reform** – the IEA will continue to support the Brazilian government as it moves towards implementing the *Novo Mercado de Gás*.

iea

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