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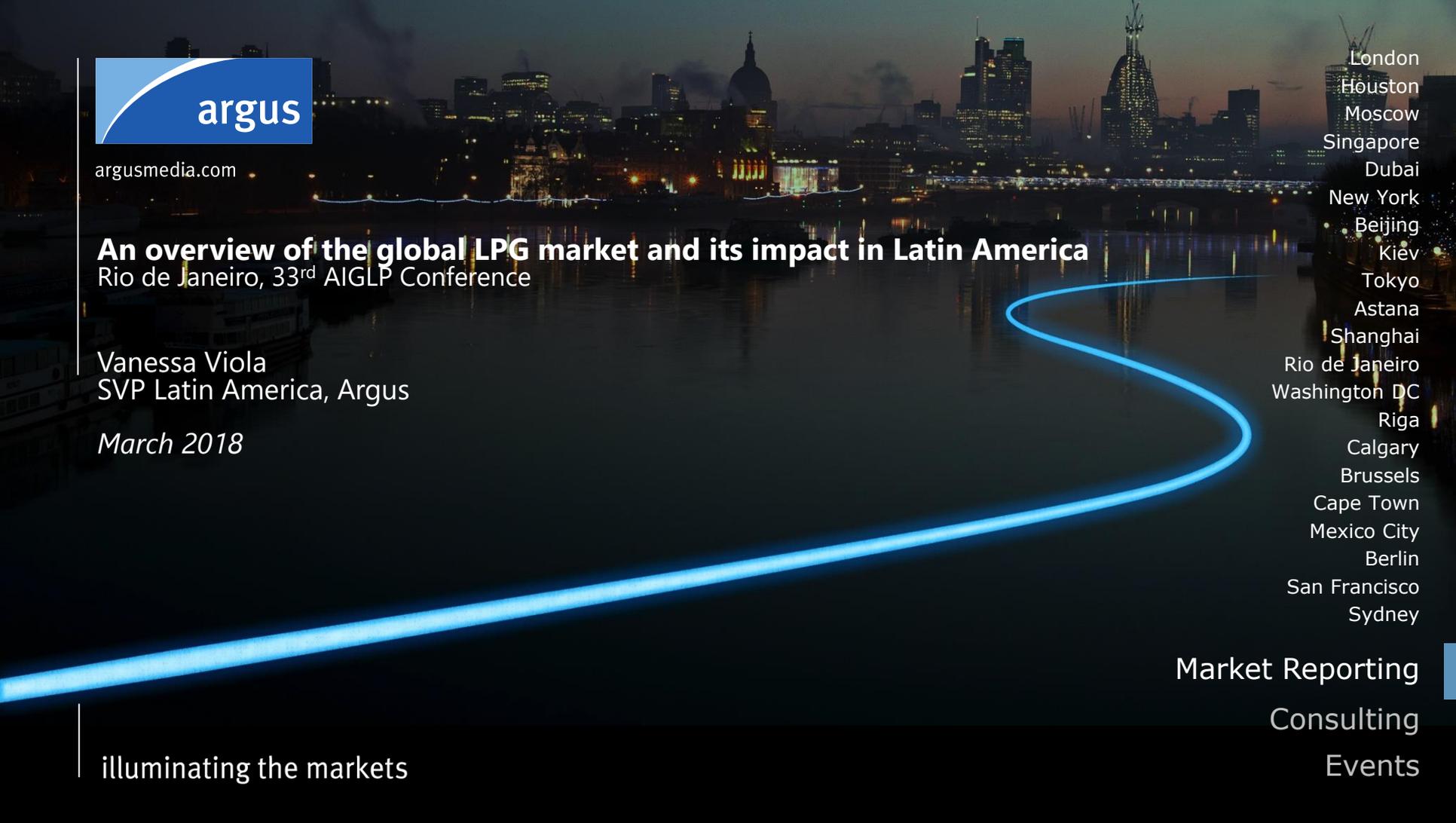
## An overview of the global LPG market and its impact in Latin America

Rio de Janeiro, 33<sup>rd</sup> AIGLP Conference

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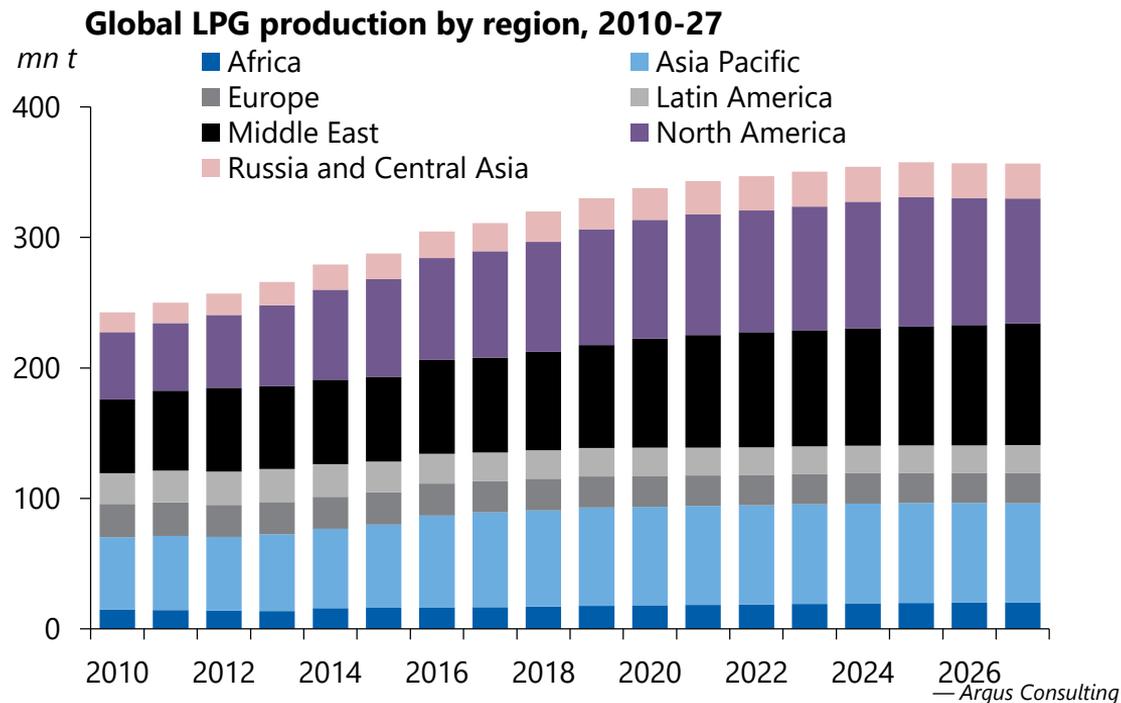


# Agenda

- Global LPG supply/demand trends
- How is the price of LPG set around the world?
- What is the impact of the current oversupply in Latin America?

# Global LPG supply and demand trends

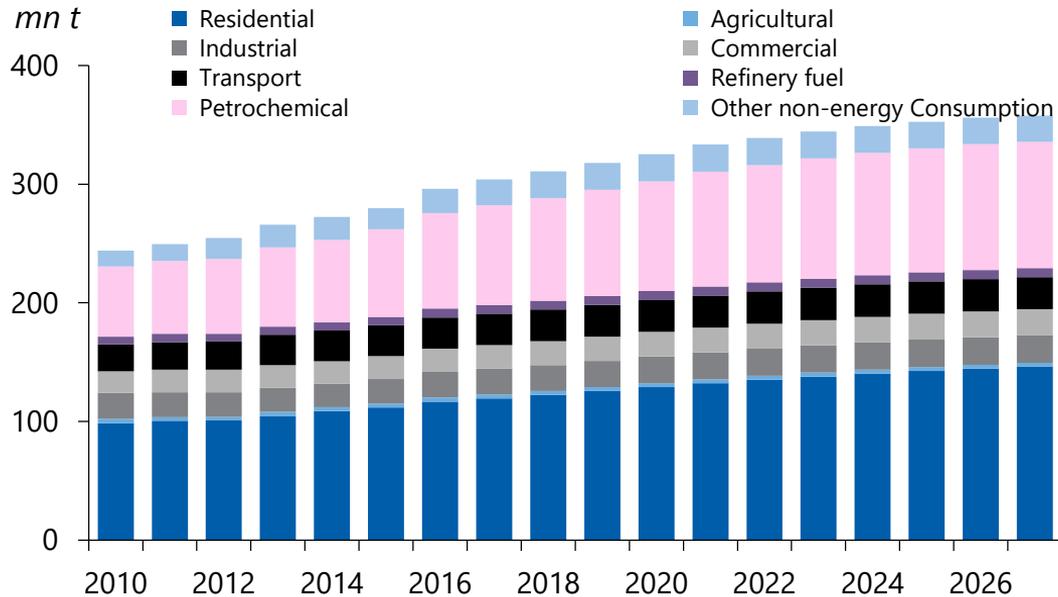
# LPG production will continue to grow until 2025



- US shale will continue to be the market disrupter
- Significant additional production and export availability also expected from other countries
- European and Asian production expected to be flat

# Consumption growth will keep pace with production

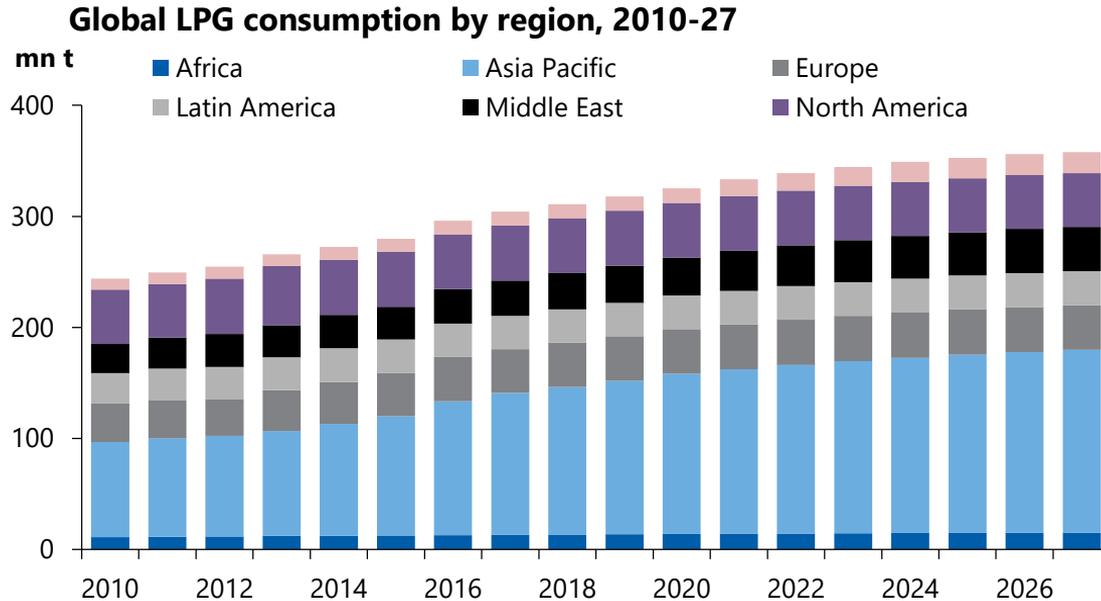
Global LPG consumption by sector, 2010-27



- Incremental consumption will be driven by the petrochemical and residential sector
- Other sectors are likely to remain flat

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# Consumption growth will be driven by Asia

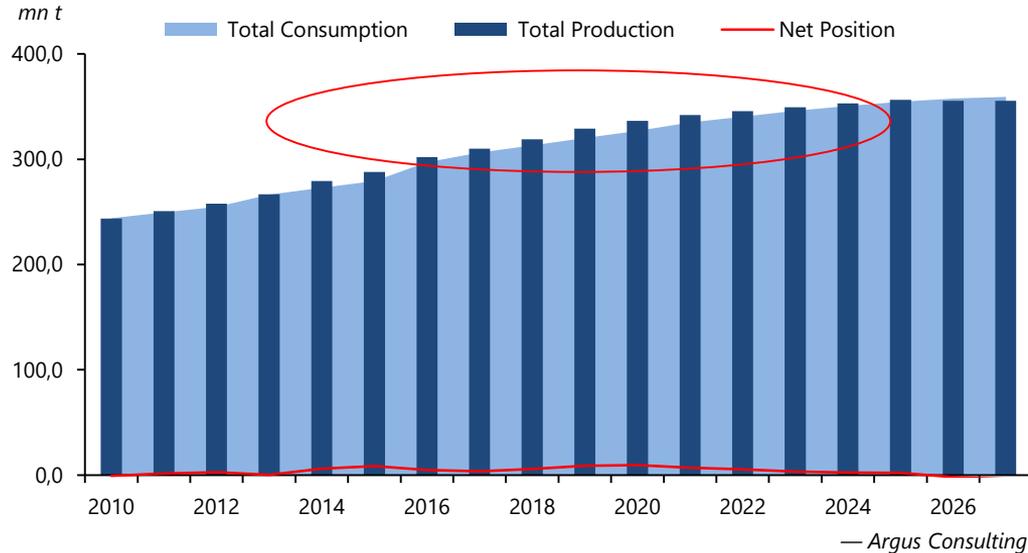


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- Significant growth is forecast in south and southeast Asia due to fuel switching
- Europe is forecast to remain flat – with declining energy markets but some additional demand from the petrochemical sector

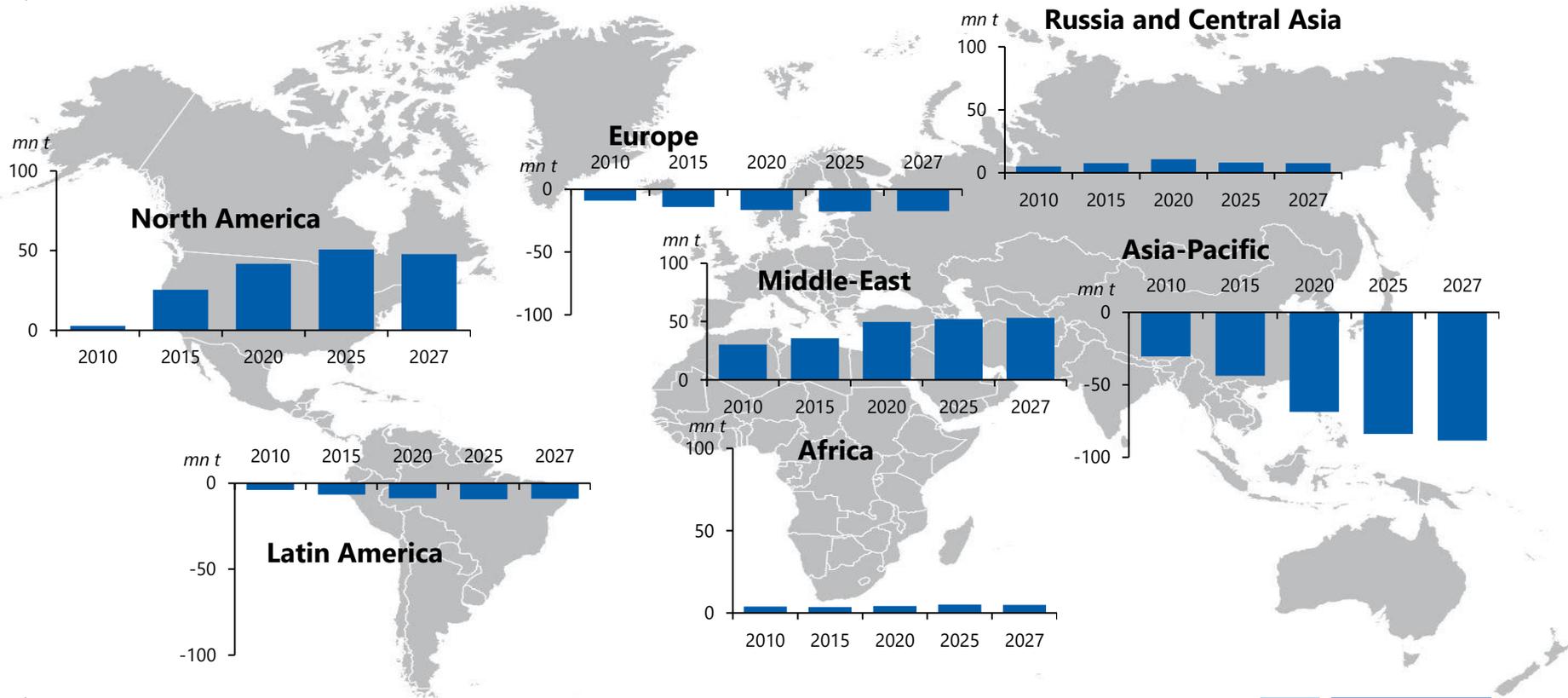
# The next decade will be long LPG

## Global LPG structural balance, 2010-27



- We forecast a net structural long market until 2025
- From 2025 onwards, structural demand should match supply
- Until that time – significant and sustained price differences (arbitrages) between regions should not emerge...

# Regional net positions in LPG will cause some volatility



# How is the price of LPG set globally?

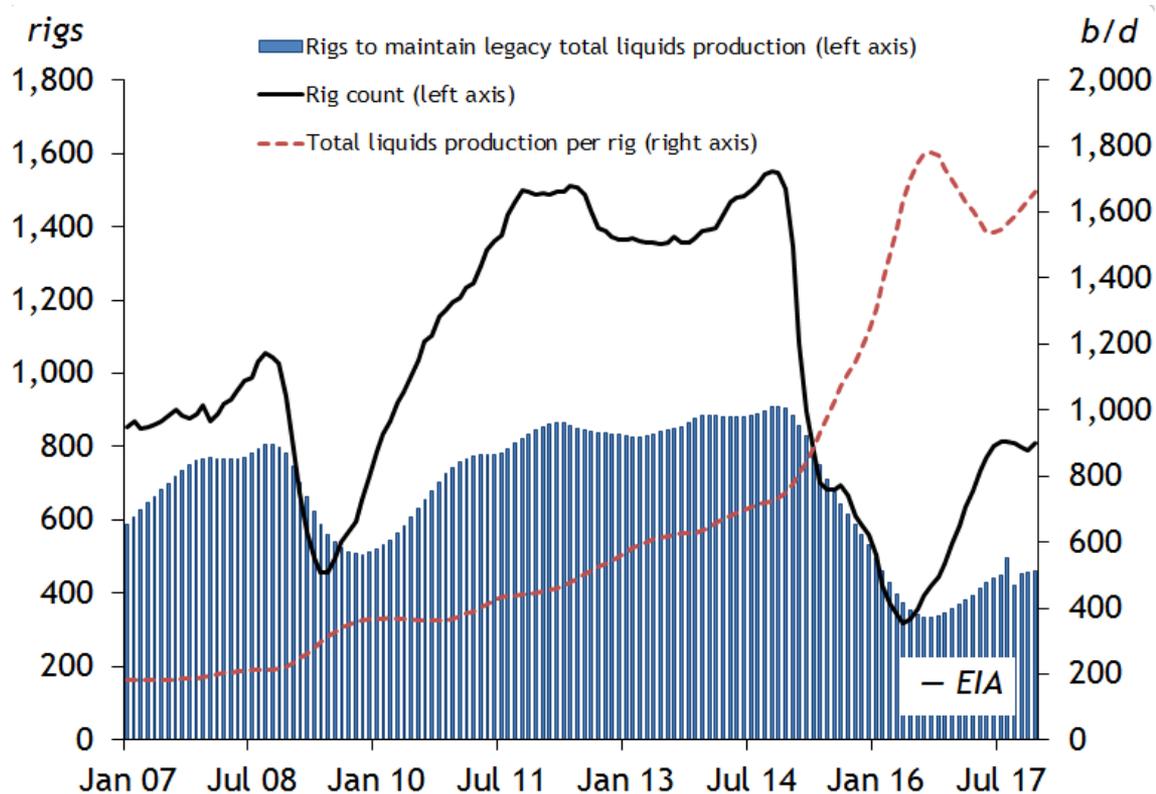
# US shale has reshaped LPG trading flows

2017 vs 2016



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# More US production will hit the market...



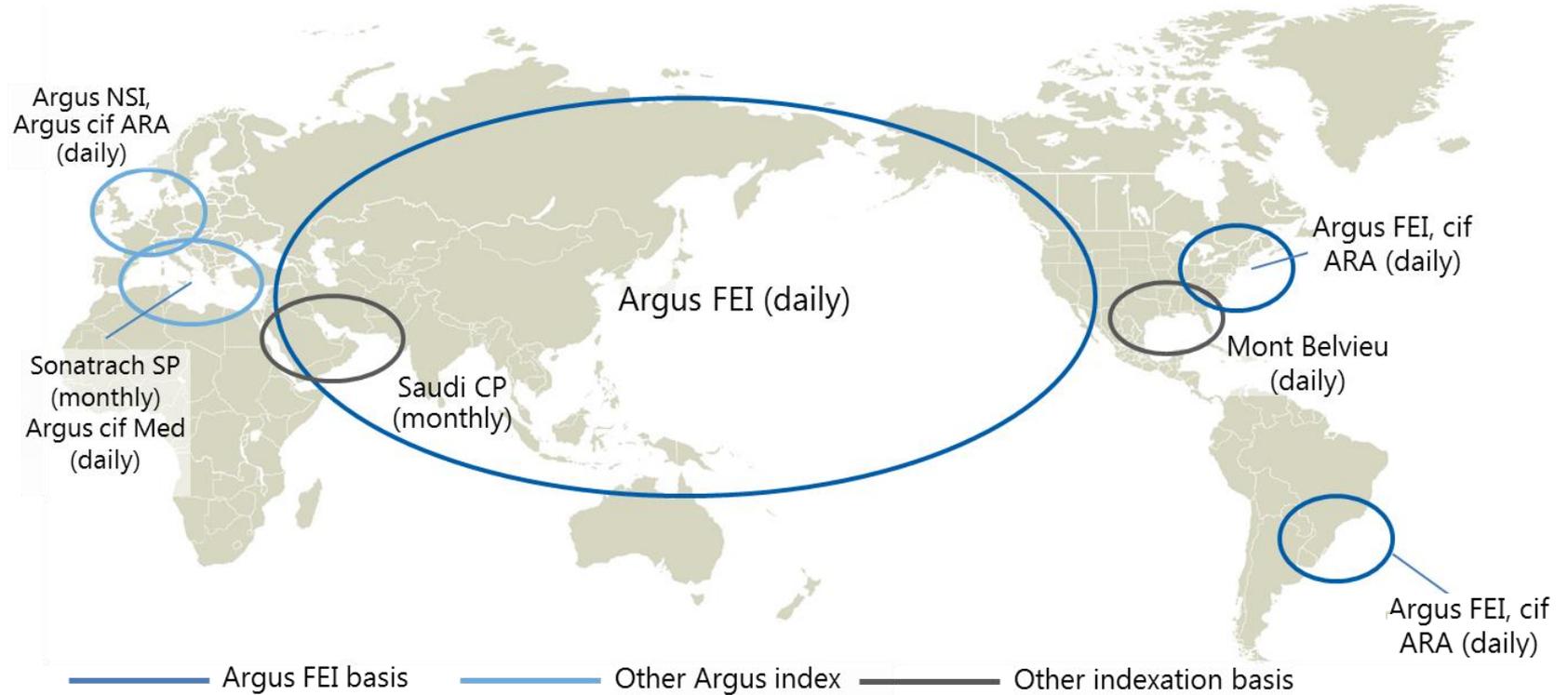
- US shale efficiencies and increasing rig count create an effective crude price ceiling – and are a driver for increased US LPG exports

# Holding US back: Gulf coast basis distorts channel

- North American pricing used to be typically Mont Belvieu or derivative for USGC exports
- Pricing set almost entirely by domestic activity, distorting export economics:
  - Cold snaps
  - Crop drying and agriculture
  - Pipeline constraints
- Mont Belvieu arbitrage opens or closes because storage balances market when seaborne channel does not.



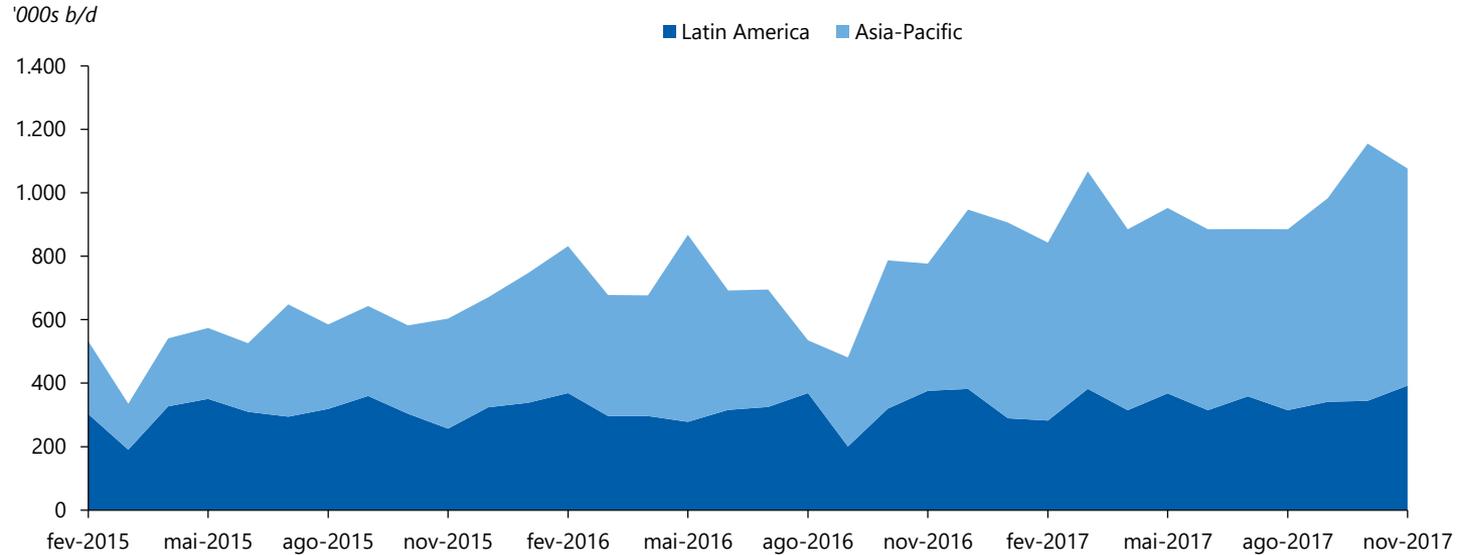
# Delivered pricing, not MB, dominates seaborne LPG



# What is the impact of the current oversupply in Latin America?

# Asia, Europe and LATAM will continue to fight for US LPG

US LPG exports to Asia and Latin America



— EIA

# Pricing cargoes on a cif ARA basis reduces risks



# Conclusions

- The global LPG market will remain oversupplied until at least 2025.
- Production growth will continue to come mostly from the US, whereas Asia will lead the increase in demand.
- Mont Belvieu pricing reflects the domestic supply/demand balance in the US – it is not a good representation of trade in the seaborne market.
- Seaborne markers such as AFEI and Argus CIF ARA are the most solid tools to price imports into Asia, Europe and Latin America.

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