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What is Next for the Oil Market

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Who We Are



STRATAS
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- Global consulting and advisory firm
- Coverage of the energy sector and related industries
- Focused on helping clients achieve tangible results
- Clients include IOCs, NOCs, independents, energy consumers, financial entities and policy-makers
- Research and consulting staff comprises professionals located in key global energy centers
- Combined, our team brings over 500 years of combined energy industry expertise, including
 - Technical (Petroleum Engineers, Geologists, Process Engineers)
 - Economists
 - Political Scientists
 - Financial Analysts



Short-term

#NOTIMPRESSED

The market took a dive after deal announced – OPEC lost expectations game



←
Today

Last several months



Annotated - Key Takeaways

OPEC talks optimistically, but downside price risk is growing

- Comments from the Saudi and Russian oil ministers indicate a nine month extension as the new baseline assumption – but the bar has been raised – **these expectations have cause price fall today**
- The pending Saudi IPO combined with regional conflicts continue to drive the need for higher oil prices in the Kingdom, reinforcing the cut narrative – **not addressed when asked, but obvious input**
- Conflict between GCC states and Iran continues to grow, however, creating tension among deal-makers and making compliance outside of core-OPEC unlikely - **underlying**
- Nigeria/Libyan production return bearish but tenuous; Venezuela collapse could provide offset – **not addressed – market would have loved it as it represents key risk outside of non-compliance**
- Meeting outcome not likely to surprise, but **downside risk remains more than upside risk as market expectations have become more bullish**

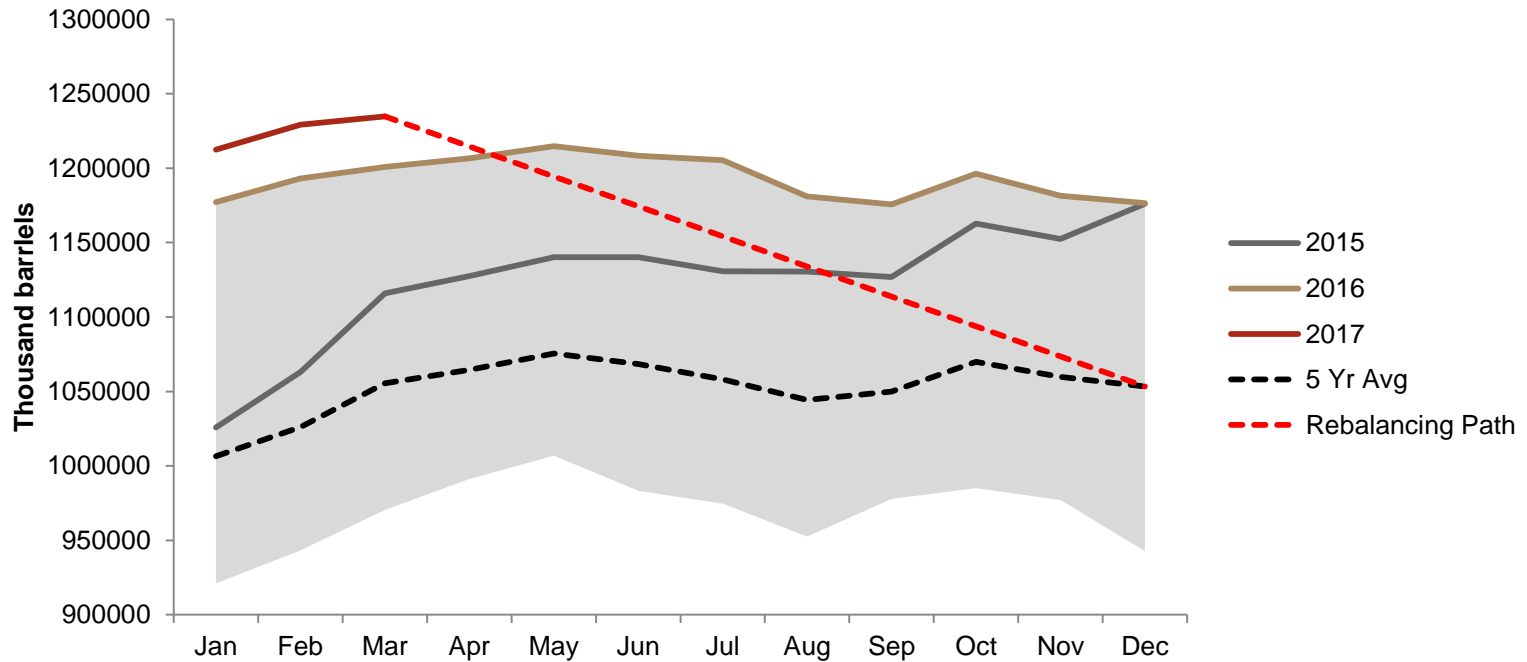
Annotated Conclusions From Preview

Hard to see alternative outcomes, but risks are there

- Nine month extension – now that Iraq is on board – seems all but certain; deeper cuts possible, but will Saudi bear the brunt? – **No change in allocation**
- Stratas analysis supports a need to extend beyond 2017 to balance oil market given current market conditions – **Al-Falih agrees, but what happens in March?**
- Shale cost increases likely to show some support for prices into 2018 if deal holds – **OPEC seeing the same thing, but is it happening fast enough?**
- Supply swings will continue from Libya and less so from Nigeria; Venezuela drop feels inevitable – **big win would have been to cap Nigeria/ Libya – no such luck**
- Allocation will be critical – if Saudi takes on more, their political capital could be eroding – **unclear at this time – no change in allocation**
- Watch Kazakhstan – how will they participate going forward with large production increases slated; we wouldn't expect them to stick to a deal – **no discussion here, but will remain an issue**

Five year stock average goal – can they hit it?

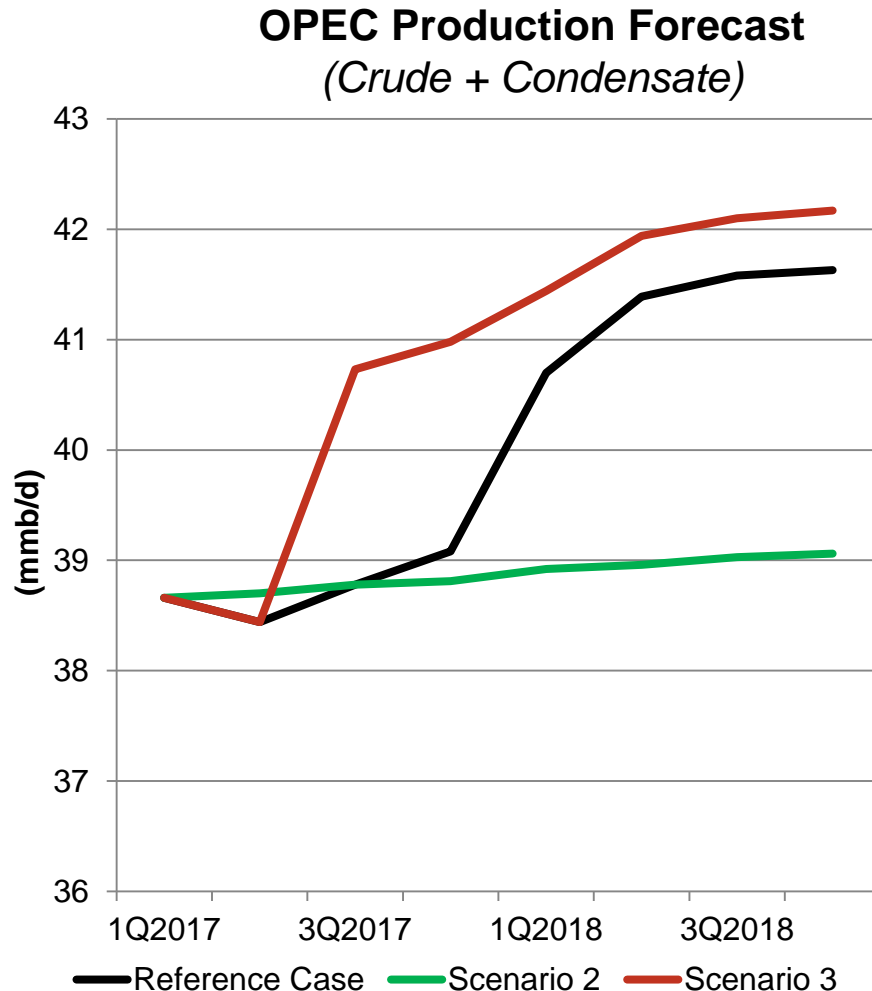
Yup – but it won't be easy



Market needs to draw about 20 million barrels per month, or 650 thousand b/d to get to the target

OPEC Has a Number of Supply Paths

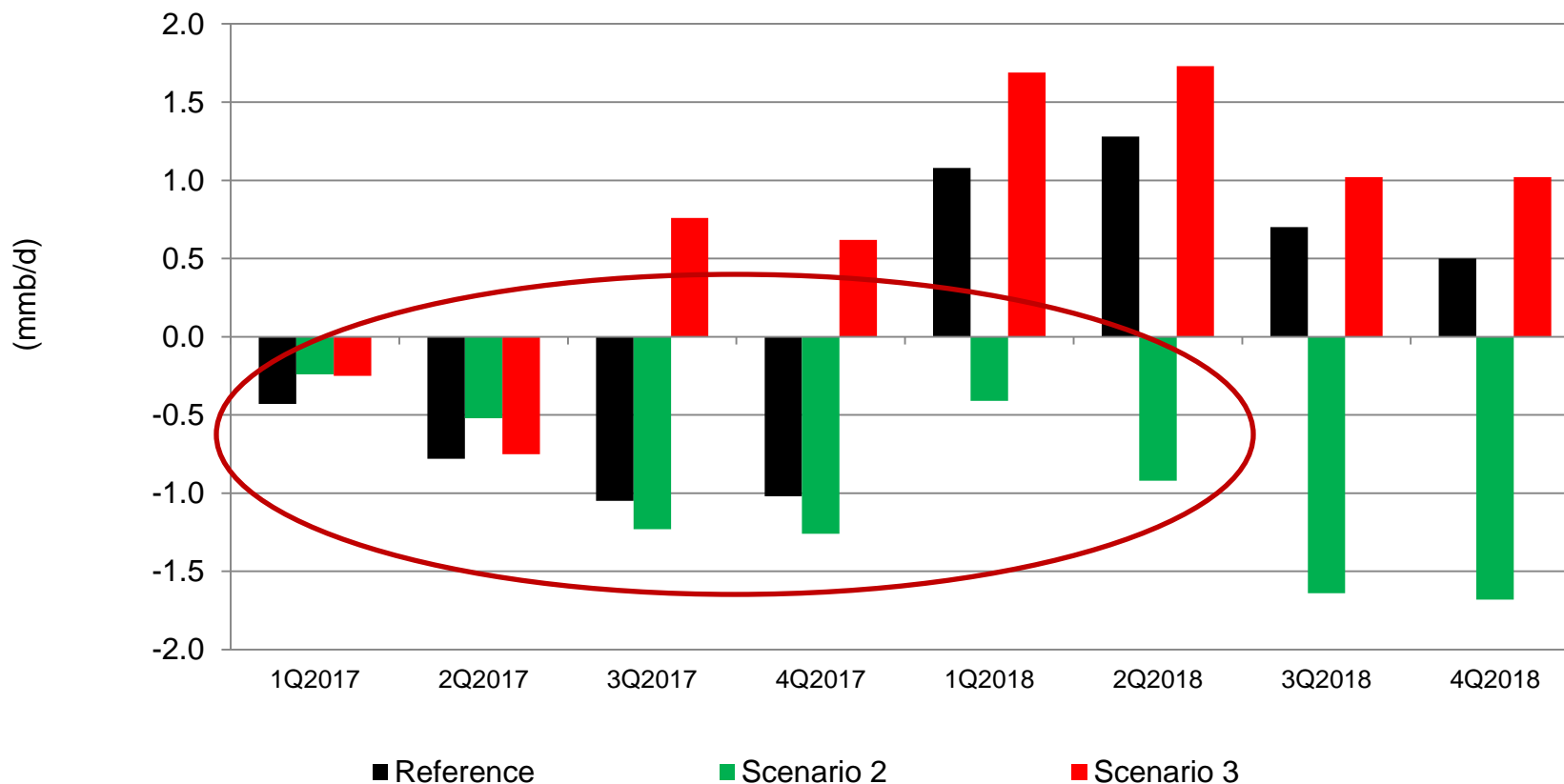
Cut decisions could create a 3 mmb/d supply swing



- **Deal Ends in May:** OPEC ends deal and members instead pursue a market share strategy
- **Deal Ends in December:** OPEC ends deal at the end of 2017 – Saudi production comes back strong
- **OPEC Extends Cuts Through 2018:** with reasonable success at meeting production targets

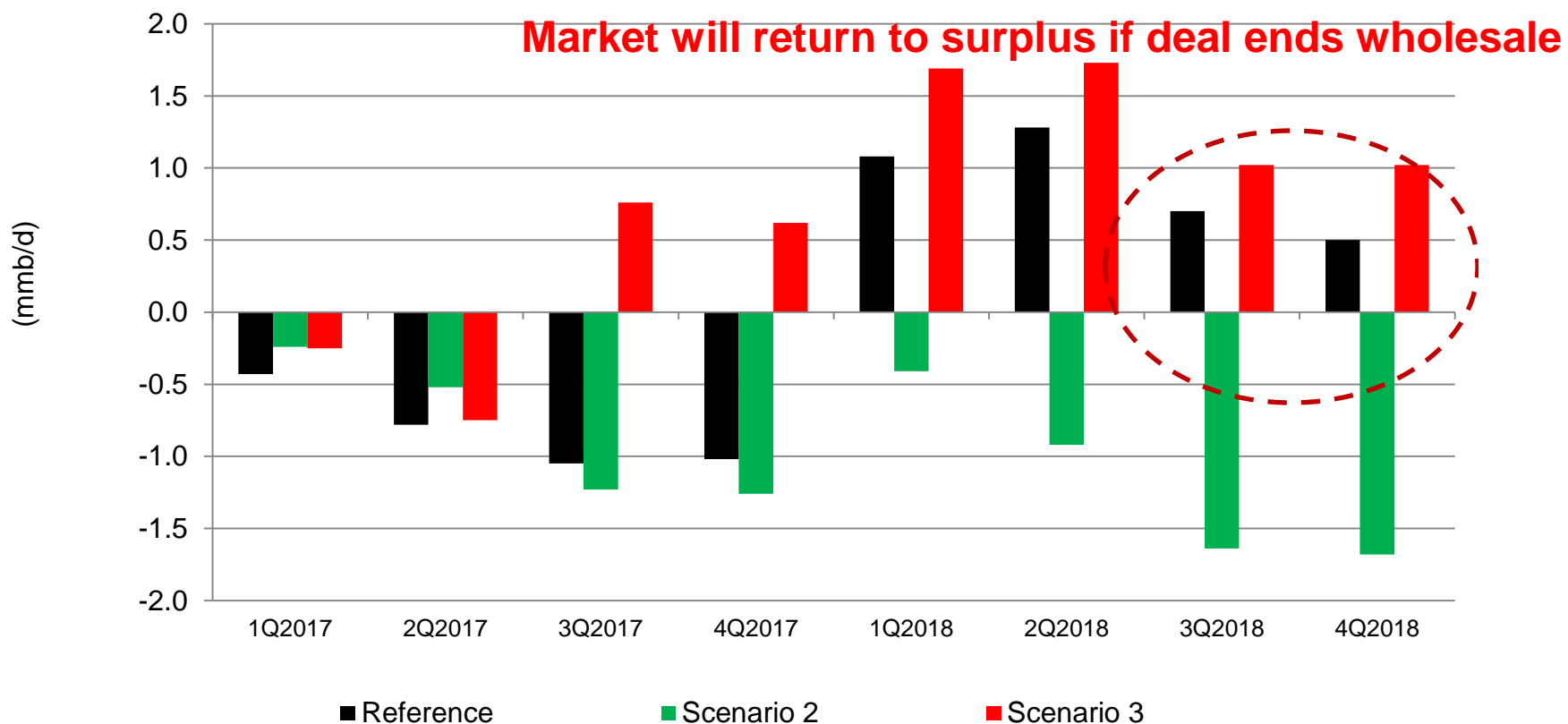
If balances hold, OPEC should hit goal

Third and fourth quarter should supply enough demand to draw stocks to five year average



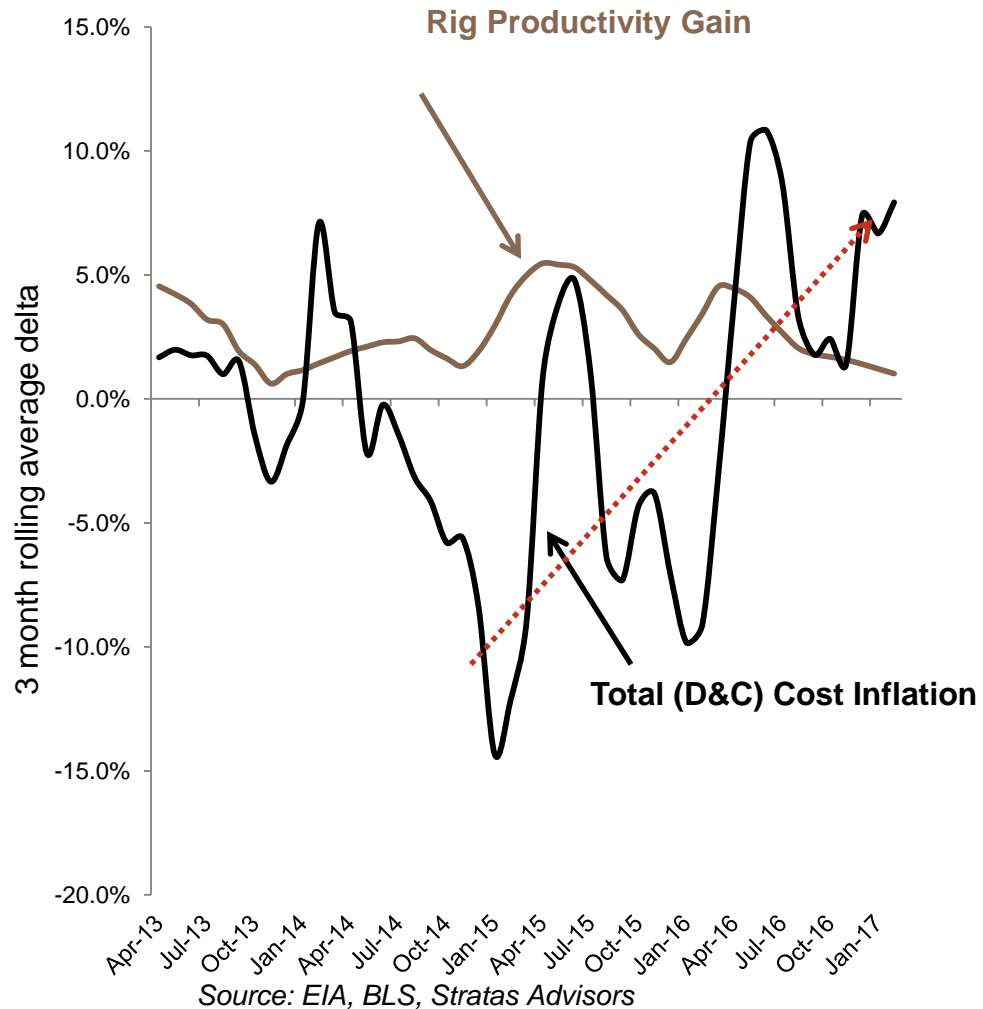
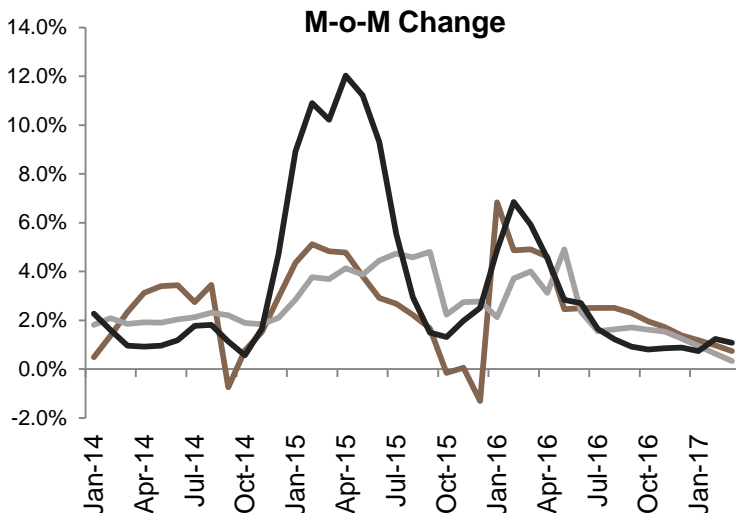
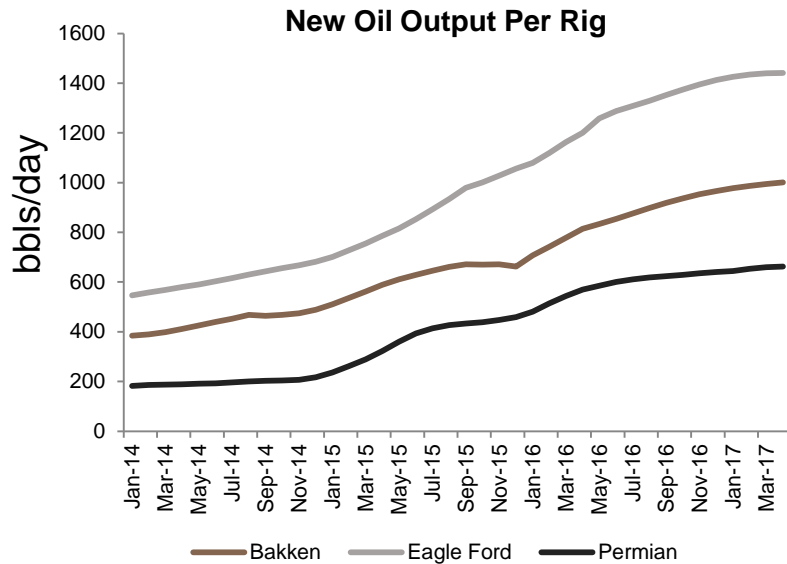
Extension beyond March will be necessary

Even if target is reached by end of year, expect preservation into late 2018



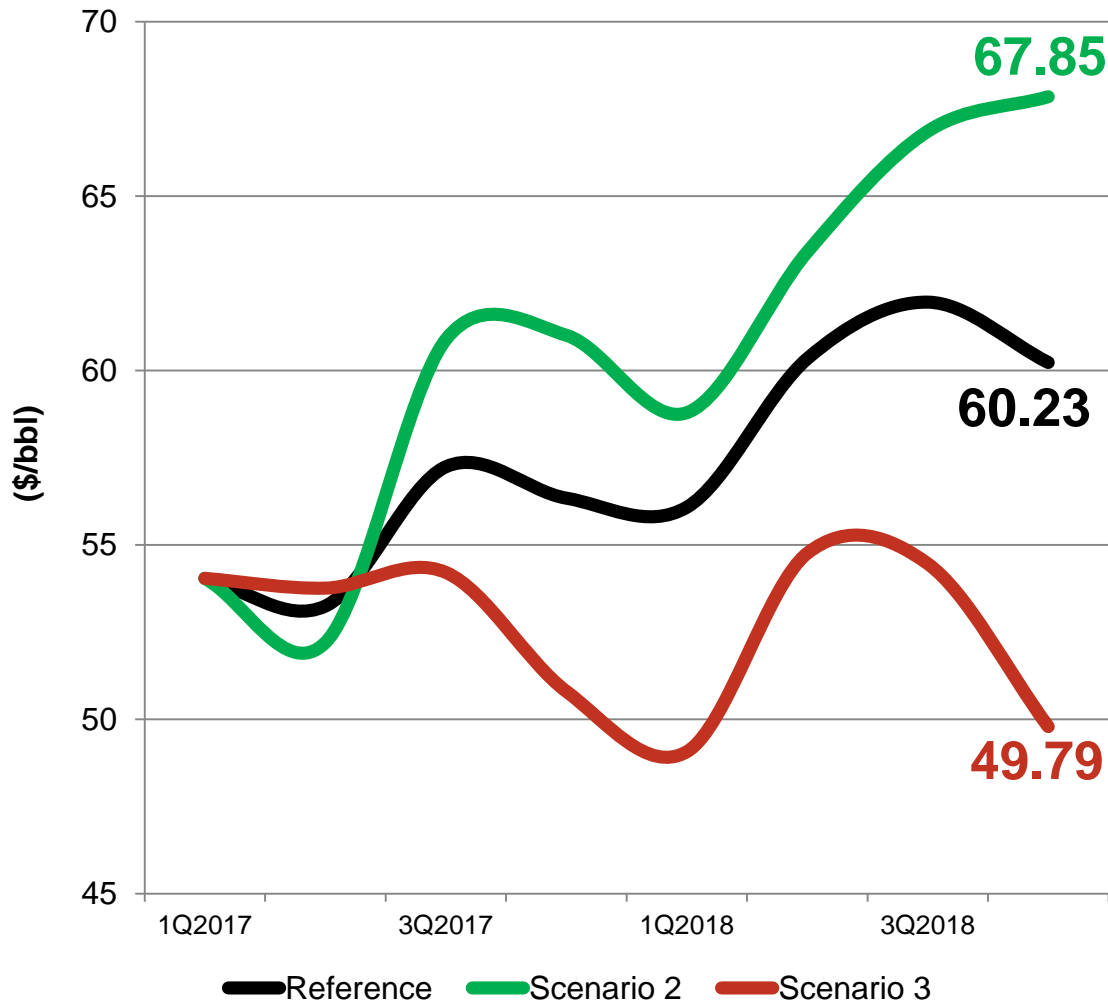
Keep Watching Shale Cost Inflation...

Creating opportunities for OPEC (and justification for extension of deal)



Brent Price Outlook

Green line remains optimistic, as traders will be timid with only 9 month extension



- **Fundamentals will support higher prices, even if traders are looking for more OPEC action**
- **\$60/bbl is still in sight if surprises don't rear their heads...**

Conclusions

Market is unimpressed, but data support upside

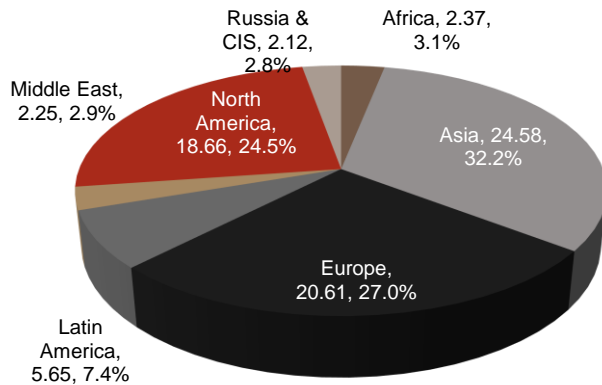
- Stratas continues to support cost inflation narrative – drives constructive price view
- Market has been unimpressed by OPEC behavior, but fundamentals are beginning to accelerate in a positive direction
- Risks about from Nigeria, Libya, non-OPEC (Kazakhstan, Shale) and demand – this will keep traders at bay
- OPEC goal of hitting 5 year stock average by year-end is ambitious but doable within the confines of our scenarios
- Lack of extension beyond March could keep some tepid to enter, but \$60 (and beyond) looks more likely
- Extension is likely as any earlier end likely to push market back into surplus



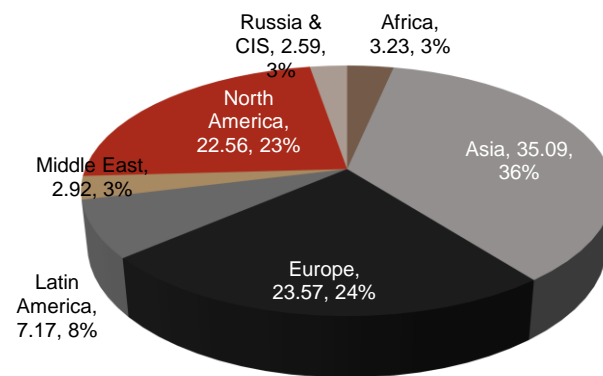
Looking Further Out

GDP Forecast

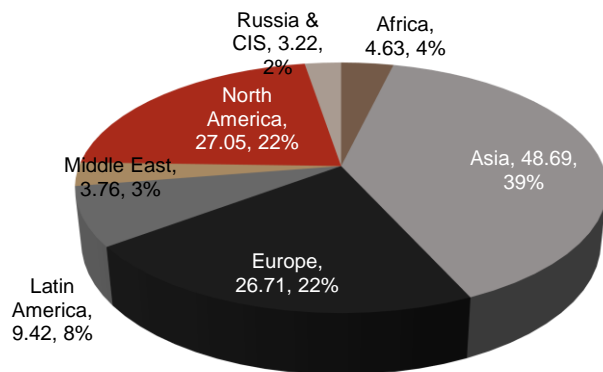
2016 Total GDP: 76.24 trillion USD



2025 Total GDP: 97.13 trillion USD



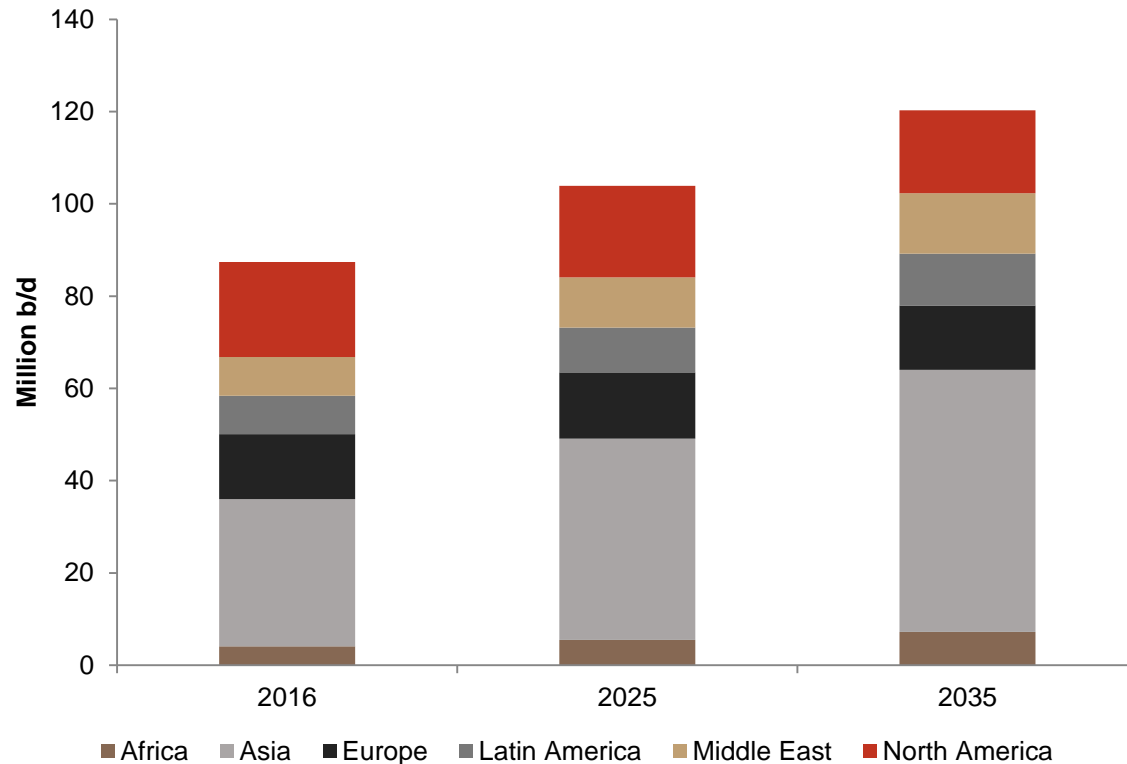
2035 Total GDP: 123.47 trillion USD



- Asia and Africa GDP will double by 2035
- Latin America and Middle East GDP will grow 70% by 2035
- North America and Russia & CIS GDP will grow by 50% by 2035
- Global GDP will grow 60% by 2035

Source: Stratras Advisors , 2010 prices and exchange rates

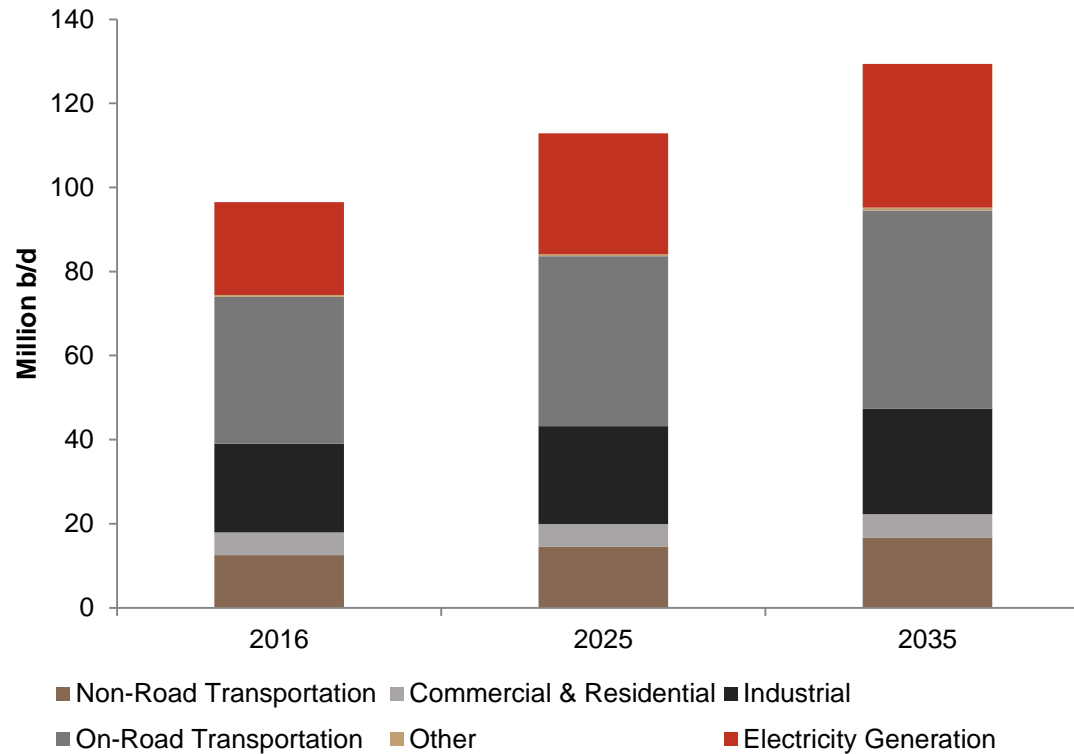
Oil Demand by Region



Source: Stratas Advisors

- Global oil demand is expected to continued to increase
- Asia will represent the overwhelming portion of future demand growth
- Demand in North America and Europe is expected to decline

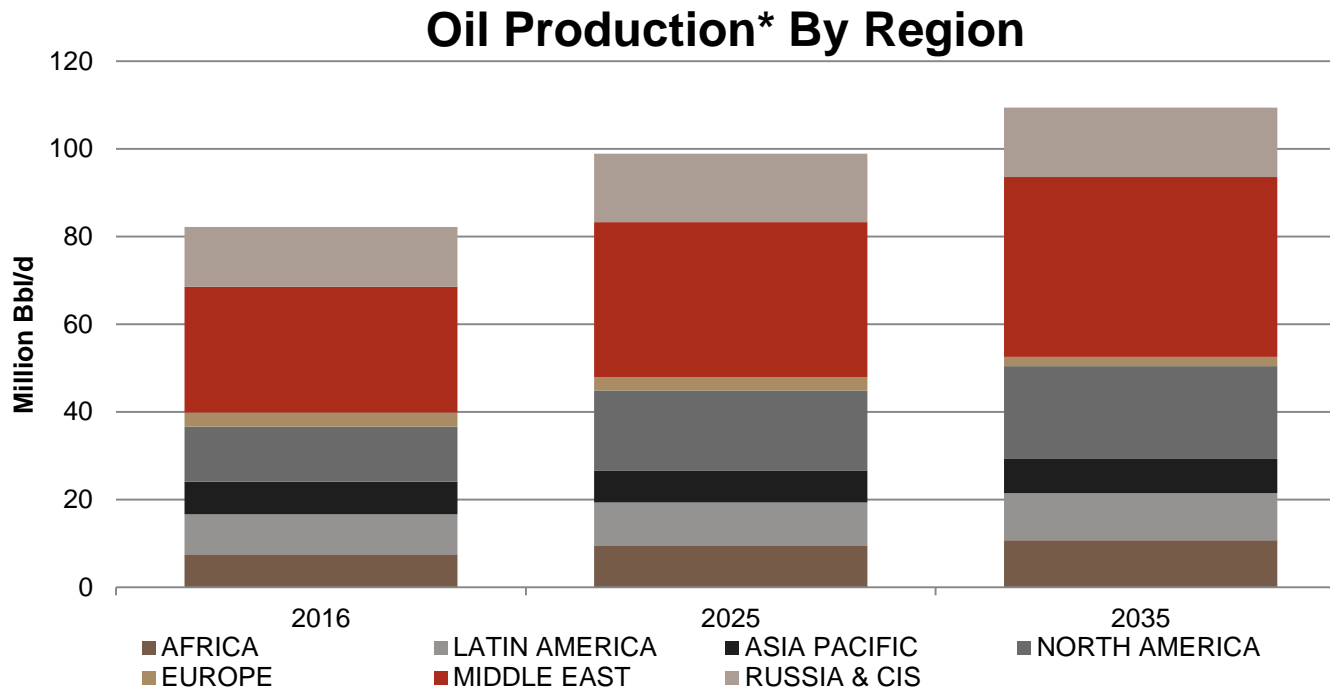
Oil Demand by Sector



Source: Stratas Advisors

- The transportation sector will represent an increasing portion of overall oil demand
- Furthermore, the bulk of incremental demand will stem from the transportation sector

Oil Production

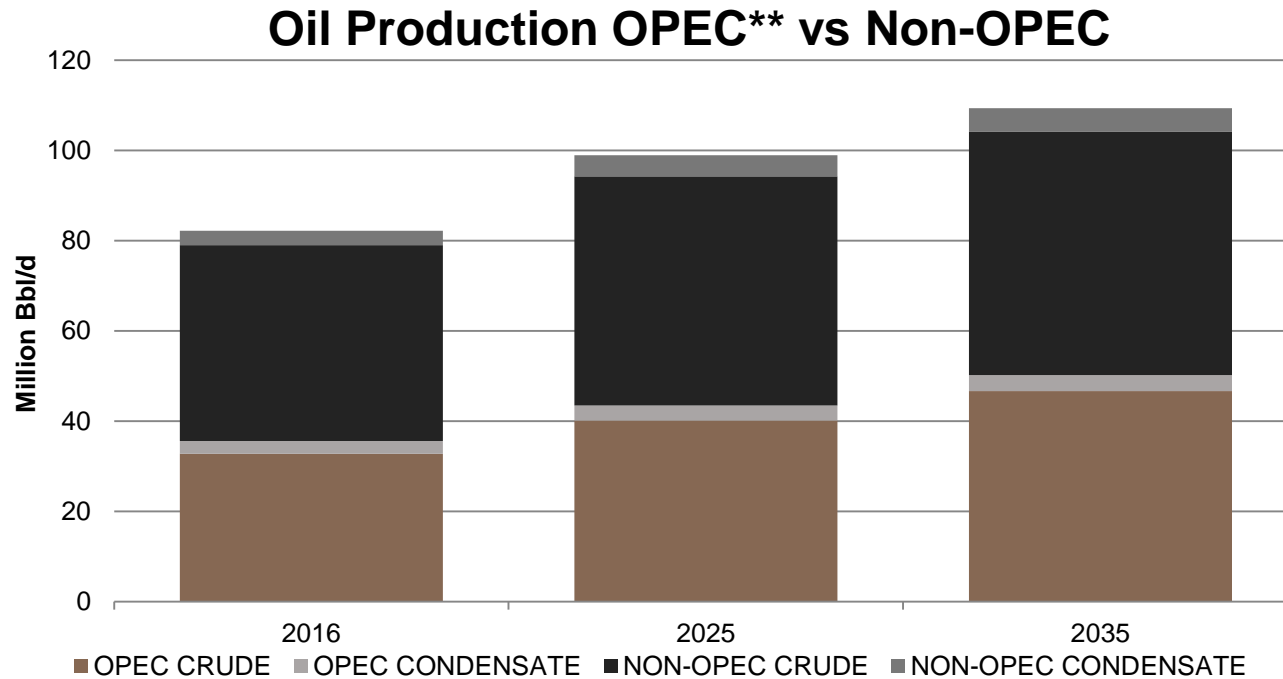


Source: Stratas Advisors

*: Oil Production Include Crude Oil and Field Condensate

- North American production is forecasted to increase substantially during the next 20 years – increasing from 12.6 MMBPD to 21.2 MMBPD
- Production from the Middle East will increase even more – from 28.7 MMBPD to nearly 41.0 MMBPD

Oil Production

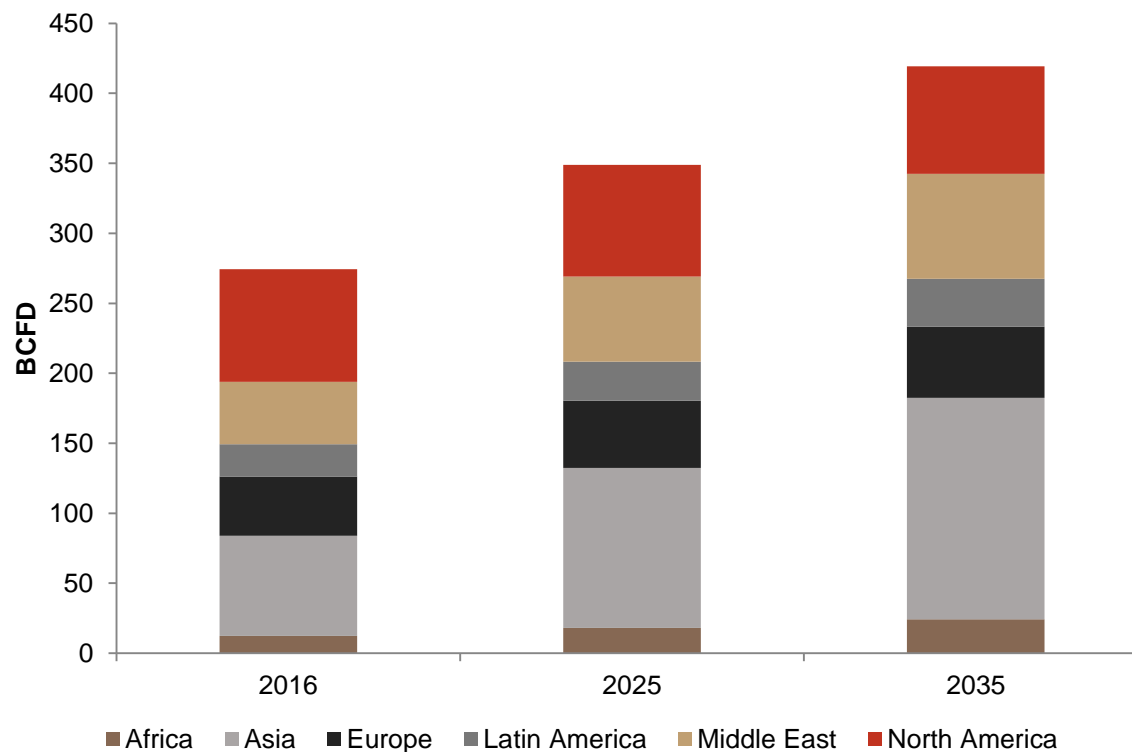


** : OPEC Group: Algeria, Angola, Libya, Nigeria, Gabon, Ecuador, Venezuela, Iran, Iraq, Kuwait, Qatar, Saudi Arabia, UAE

Source: *Stratas Advisors*

- OPEC will continue to play an important role over the next 20 years
- OPEC's share of production will increase from around 40% to 43%

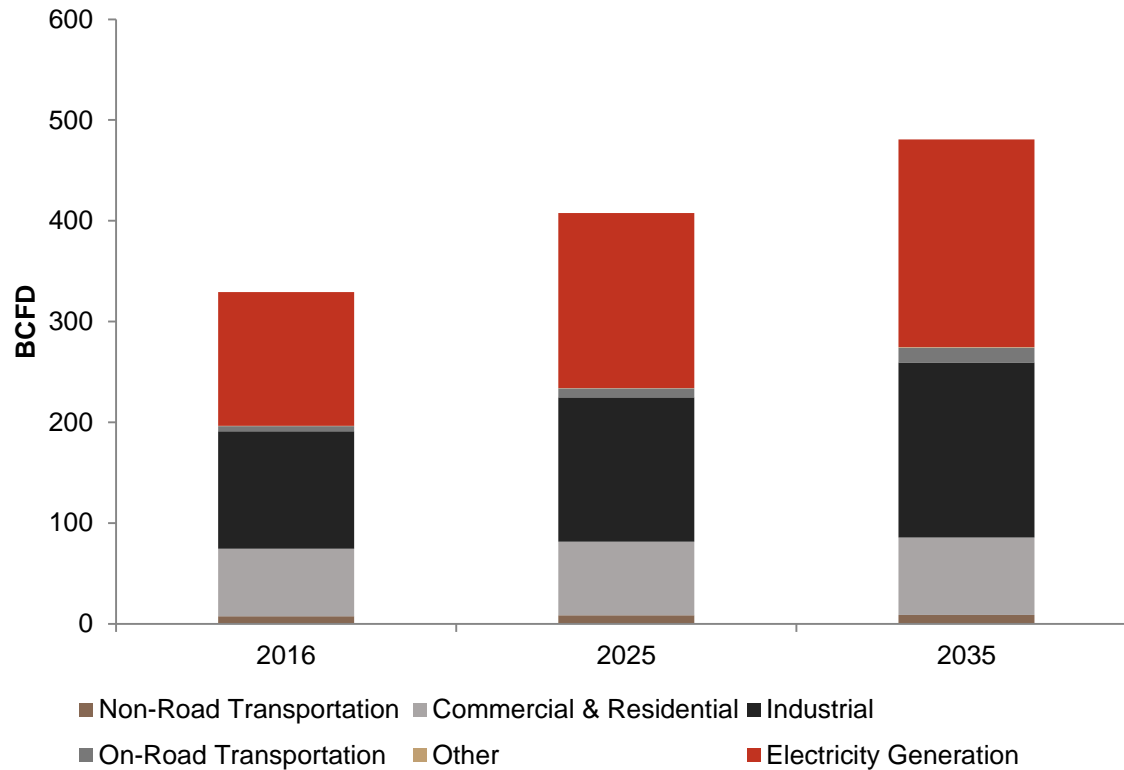
Natural Gas Demand by Region



Source: Stratas Advisors

- Global demand for natural gas is expected to continued to increase
- Asia will represent the overwhelming portion of future demand growth

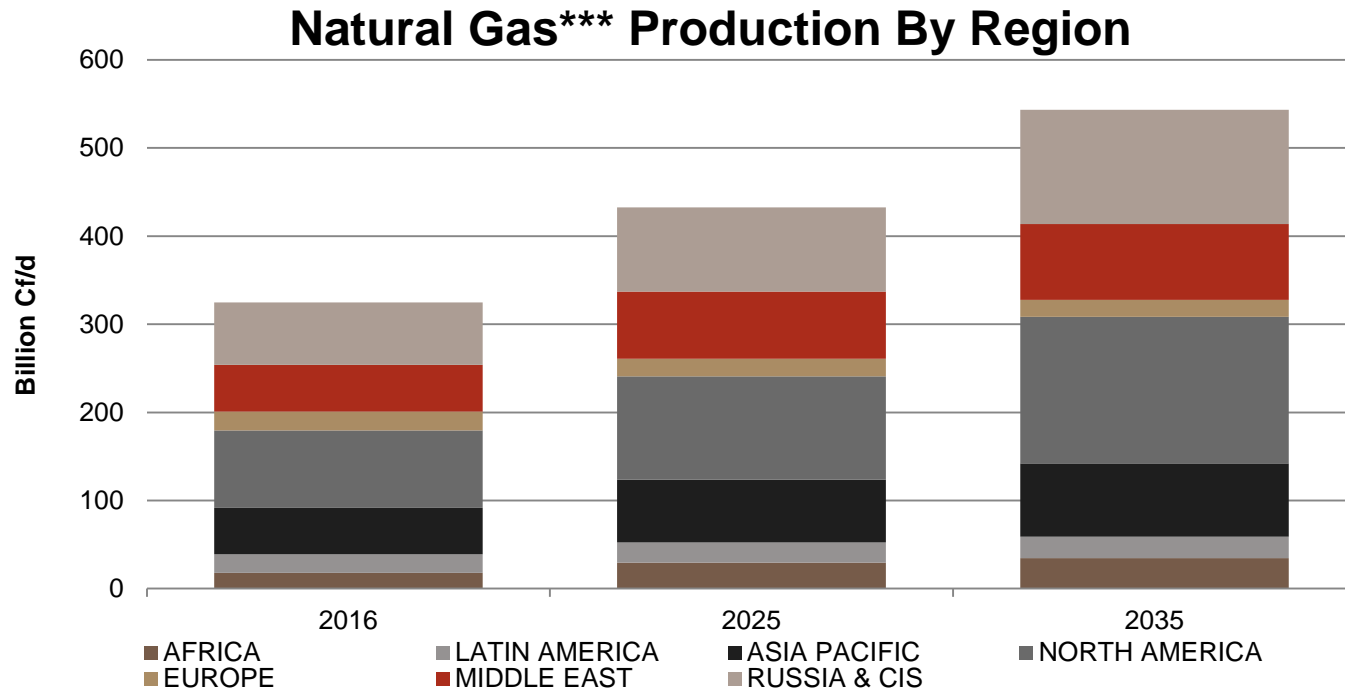
Natural Gas Demand by Sector



Source: Stratas Advisors

- The bulk of future demand growth will come from the industrial and electricity generation sectors
- Demand associated with electricity generation will increase by 55%

Natural Gas Production



***: Marketed Dry Natural Gas Production

Source: Stratas Advisors

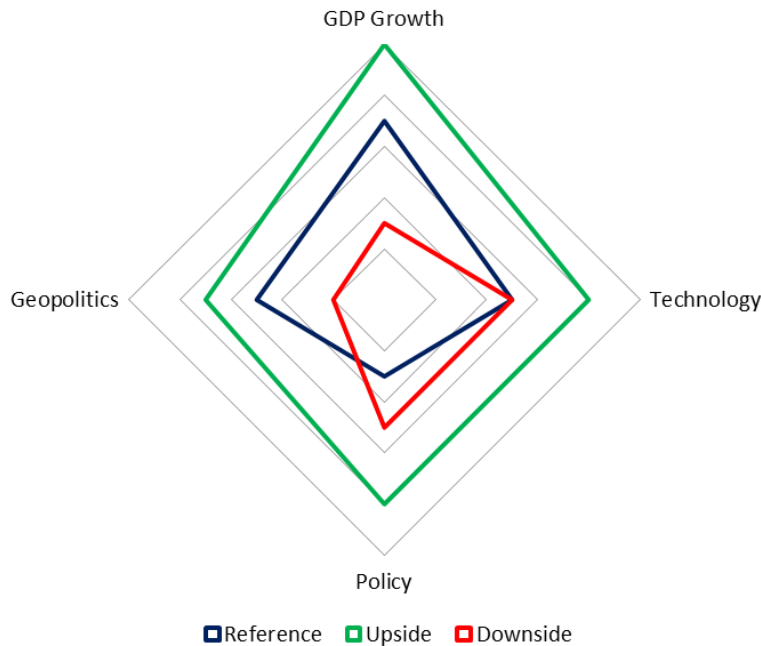
- The bulk of future supply will come from North America and Russia & CIS
- Production from North America is forecasted to nearly double over the next 20 years

Scenario Narratives

- **Upside Case: Shifting to a New Global Framework**
 - Technology / carbon reduction focus
- **Reference Case: Muddling Through**
 - Business as usual / focus on efficiency
- **Downside Case: Breakdown into Multi-Polarization**
 - Energy Security Focus

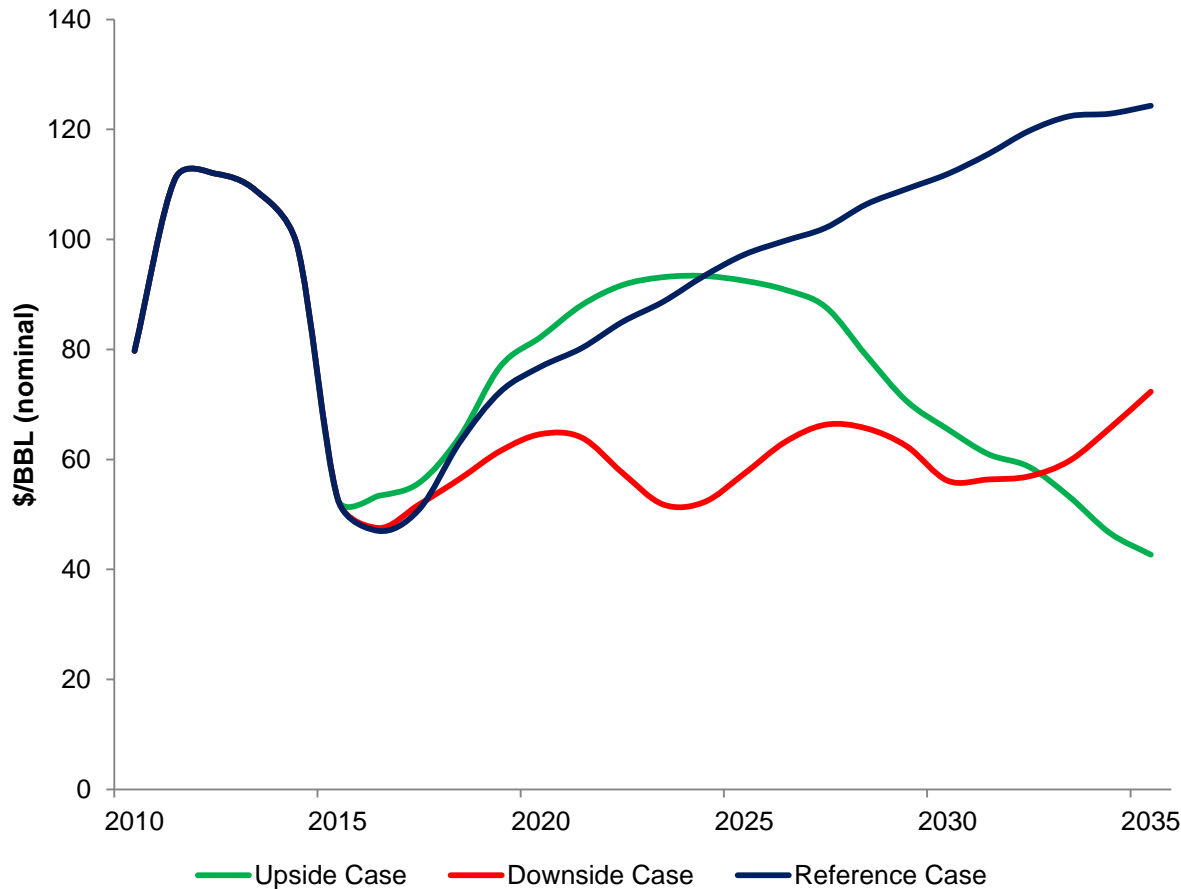
Scenario Inputs

Relative Impact of Factors



Factor	Reference	Upside	Downside
GDP Growth	Moderate	Strong	Weak
Technology penetration	Power-focused; efficiency gains strong but new tech minimal on transportation	Aggressive penetration of renewables and EVs; strong efficiency gains	Moderate, but based on energy security, not carbon
Geopolitical stability	Regional conflicts	Focus on global cooperation	Trade wars, conflict ridden
Policy	Limited meaningful action; some countries take action	Widespread carbon-reduction focus	Energy-security focused

Oil Price Outlook – Brent Crude

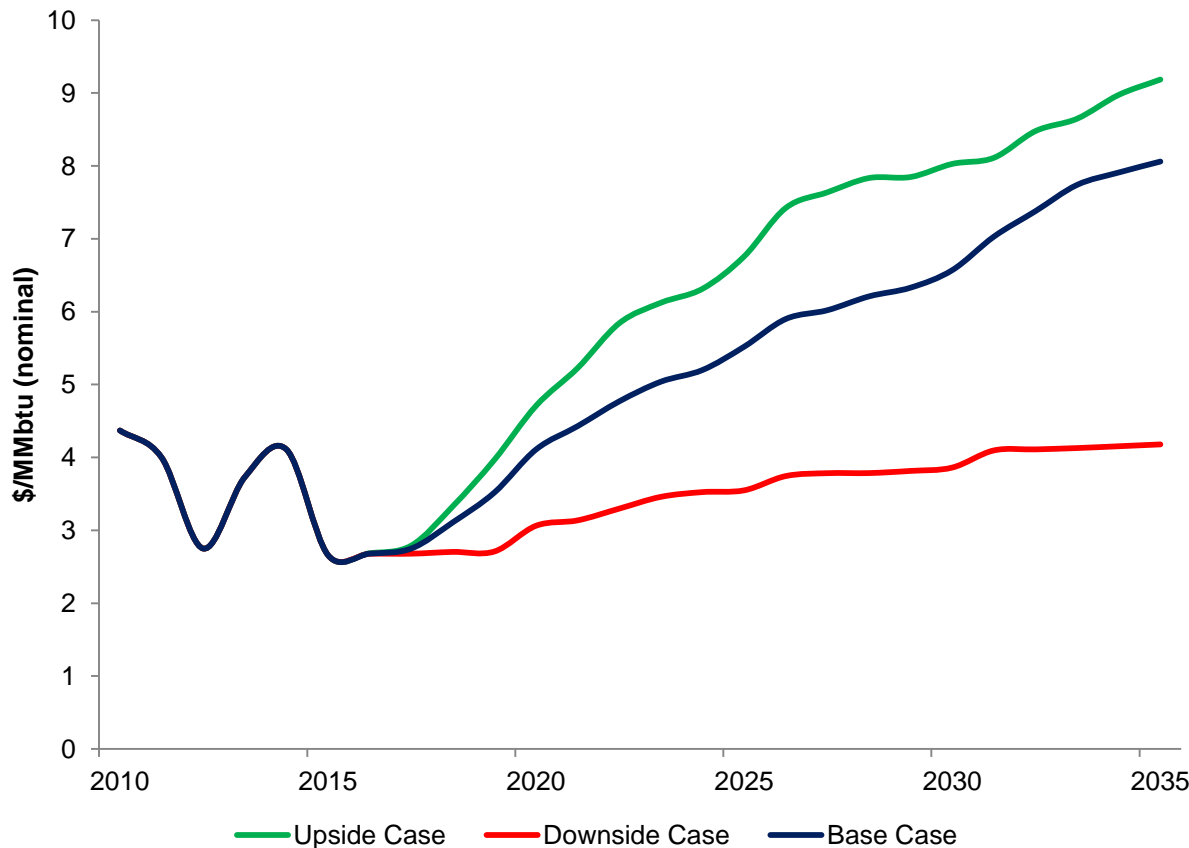


Business as usual – increasing demand with cost inflation

Demand weak; price oscillates as OPEC invests to suppress new investment and gain share

Demand pops on strong growth, but wanes as fracking spreads and world moves away from CO₂

Natural Gas Price Outlook – Henry Hub



Strong gas demand as world becomes more CO2 focused; price increases temper as fracking spreads

Exports drive greater demand – both through LNG and pipeline – setting marginal price

Price remains US centric as trade is stymied and carbon reduction remains of minimal concern

Key Takeaways

- The US energy sector is becoming more integrated with and dependent on the rest of the world
- Sustaining and growing exports are becoming essential across the oil & gas value chain
- Crude exports will play a limited role – upstream sector will be increasingly dependent on US refiners' ability to export products
- Natural gas production will be partially dependent on the exports of NGLs – however...
- ...domestic demand for natural gas, as well as demand associated with connected markets will continue to grow

Strategic Implications

- Exposure to crude oil has mid-term upside – but significant downside risks because of deteriorating structural conditions
- Exposure to natural gas has less upside – but limited downside because of positive factors, including...
- ...regulations, growing demand and a shrinking threat of substitution (coal, nuclear)

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