Futuro da Indústria Brasileira de Petróleo num Mundo Desafiador

Brazil Oil Industry Future in a Challenging World

PPSA – Pré-Sal Petróleo S.A.

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Key signposts to watch in the global oil market

- **Trade, the global economy, and oil demand.** Are signs of slowing oil demand in 2019 a temporary setback, or a signal of greater risks ahead as economic fears flare?
- **US oil production and exports:** How will the tight oil industry react to stagnating oil prices and pressure from investors who want better returns? How quickly will US crude exports grow?
- **The Vienna Alliance (OPEC +):** Are “temporary” production cuts becoming more permanent? Or will mounting supply disruptions provide the alliance more flexibility?

But first let’s briefly look back……..

In late 2018 IHS Markit was predicting:

Yes "voluntary" supply cut by 1.2 MMb/d

1. Saudi Arabia and allies (OPEC+) would return to active market management
2. Global economic growth will slow in 2019 (3.2% in 2018) Yes to 2.6%
3. US crude production:
   > On annual average basis US production will increase more than 1.0 MMb/d in 2019 and export above 2.5 MMb.d

   Yes, production up 1.2 MMb/d v 2018, exports 2.8 b/d

   > But on month-by-month basis will slow through 1Q-3Q19 because of infrastructure and capital limits

   Yes, no monthly change Nov 2018 – July 2019
4. Oil demand growth will slow in 2019 (1.5 MMb/d in 2018)

   Yes, slowed quite dramatically to ~0.9 MMb/d
5. Dated Brent in 2019 will be below $70/bbl ($71/bbl in 2018)

   Yes, actually looking like ~$64/bbl

IHS Markit

With production growth expect to exceed demand growth stock builds are expected through 2020–21, resulting in lower market prices

World oil (liquids) demand and production, and implied change in global liquids inventories

Source: IHS Markit

Latin American Key Country Storylines

Mexico
- Race against decline
- Energy security

Venezuela
- Regime change ?
- How low ?

Trinidad
- Stabilizing

Colombia
- Race against decline

Guyana*
- 6 billion and growing
- But will it expand east ?

Ecuador
- Will new investment be enough ?

Brazil*
- Pre- salt .. How high ?
- Gaz monetization ?

Peru
- Standstill continues

Bolivia
- Increasingly marginalized

Argentina
Will prices stabilize
Will there be exports ?

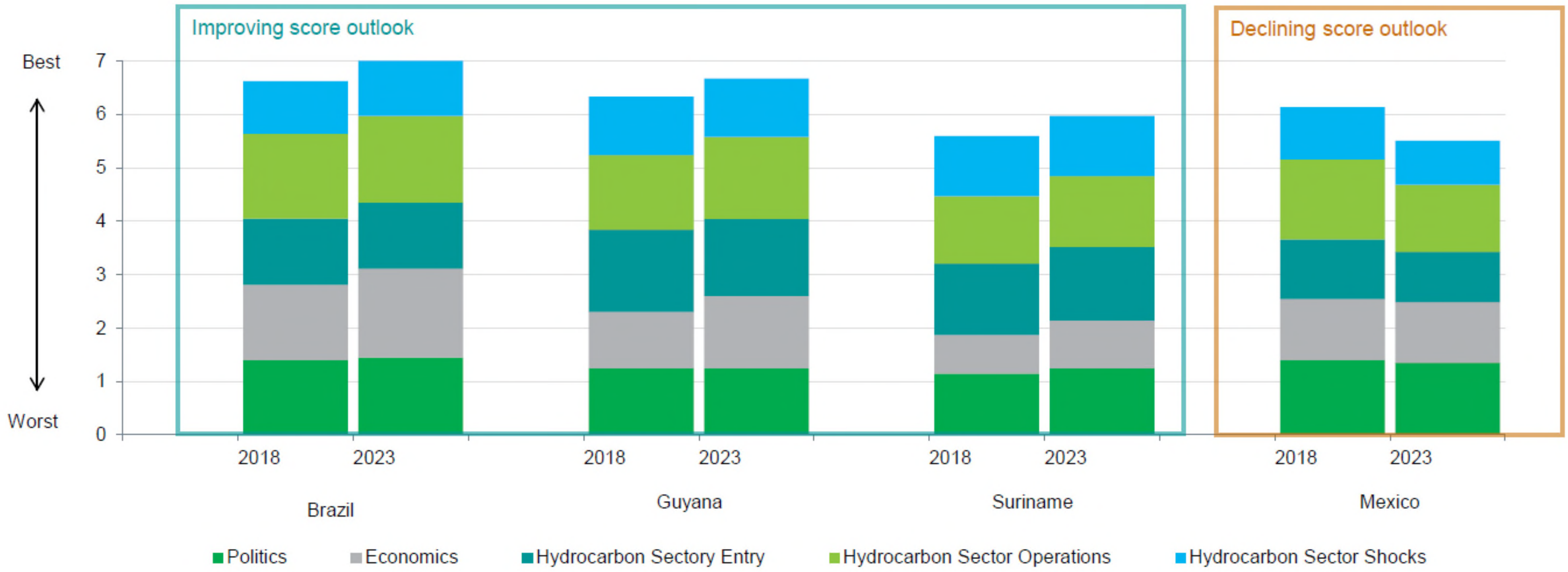
Brazil: The depth and breadth of regulatory reforms approved over the past 2/3 years is unprecedented

Reform	Objective	Implications
Presalt reform	• Approval of a law removing Petrobras's mandatory operatorship of new areas in the presalt polygon with a minimum 30% working interest. • Further presalt opening possible if both houses of Congress approve bill allowing Petrobras to take on partners for the Transfer of Rights areas	• Petrobras retains preferential right to decide which new presalt areas it will operate. Preferential rights regulations add complexity for IOCs. • Potential for increased competition for areas Petrobras opts not to operate
Bid rounds	• Implementation of multiyear bid round calendar • Creation of Open Door regime, under which relinquished areas and unawarded blocks from past bid rounds are made available to companies on a permanent basis.	• More frequent bid rounds and inclusion of more attractive acreage has led to resurgence in IOC interest in Brazil
Local content (LC)	• Remove LC as biddable item in licensing process • Lower LC requirements for new bid rounds and offer IOCs possibility of amending LC terms in contracts awarded in previous rounds	• Reduce probability of project delays and cost escalations • Increase flexibility in procurement decisions • Improve economics of future presalt developments
REPETRO	• Extend special customs regime for the import and export of E&P equipment to 2040 • More items/activities included	• Provide greater stability for existing projects • Improve economics of future presalt developments
Royalty rate reductions	• Lower royalty rates for frontier blocks included in new bid rounds • Possiblity of royalty reduction for incremental production volumes from mature fields	• Royalty reduction incentive could encourage new investment in mature fields in the Campos Basin

Source: IHS Markit

Five-year outlook: Brazil, Guyana, and Suriname make gains as Mexico's competitiveness declines

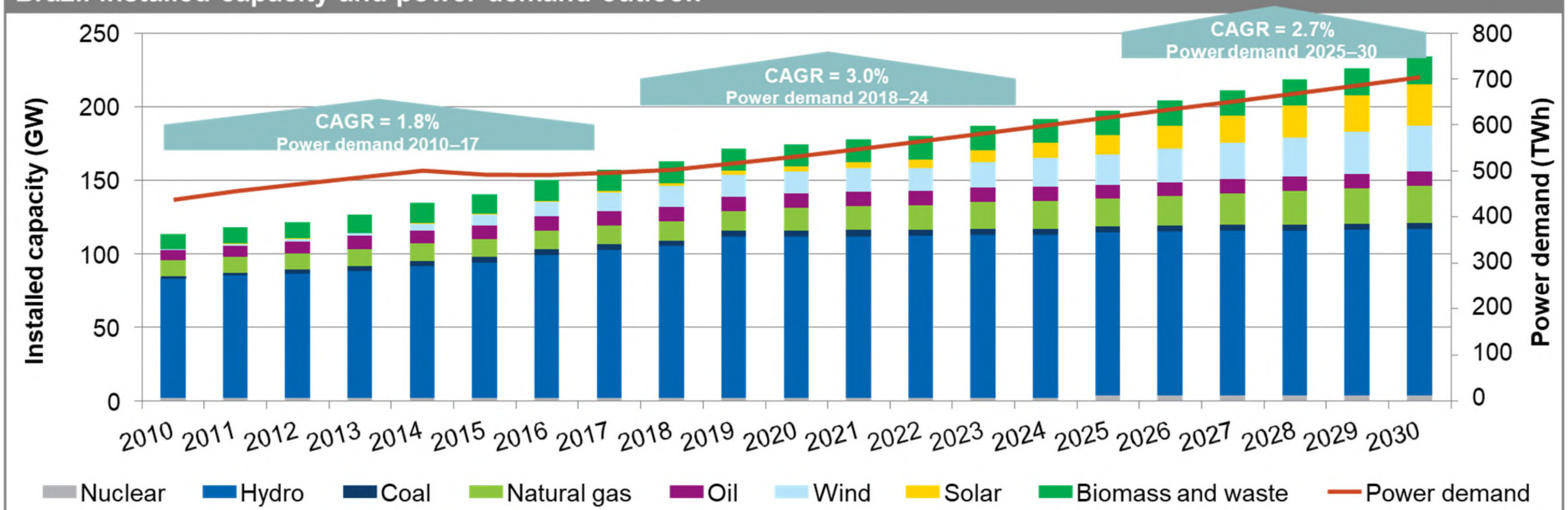
Brazil, Guyana, Suriname, Mexico: Current scores and five-year outlook



Source: IHS Markit Oil and Gas Risk

Challenge 1: In the next decade, Brazil will require nearly 60 GW of new power capacity. Renewables should account for more than half.
What could be the role of gas?

Brazil installed capacity and power demand outlook



Source: IHS Markit, ANEEL, EPE

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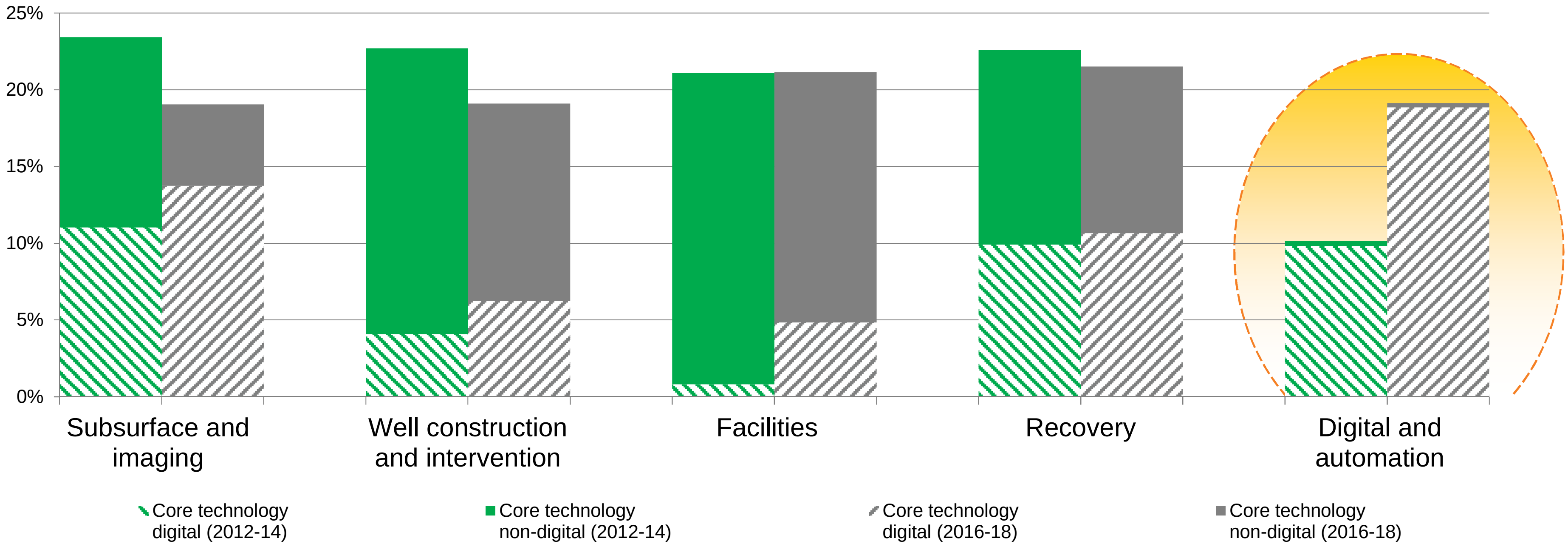
The convergence of gas and power markets will continue to create value and generate business opportunities for gas-fired generation in Brazil. IHS Markit forecasts nearly 1 GW per year of gas-fired plants over 2020–30.

Challenge 2: Will Brazil offer a climate of political and economic stability and transparency that counterbalances geopolitical risk?

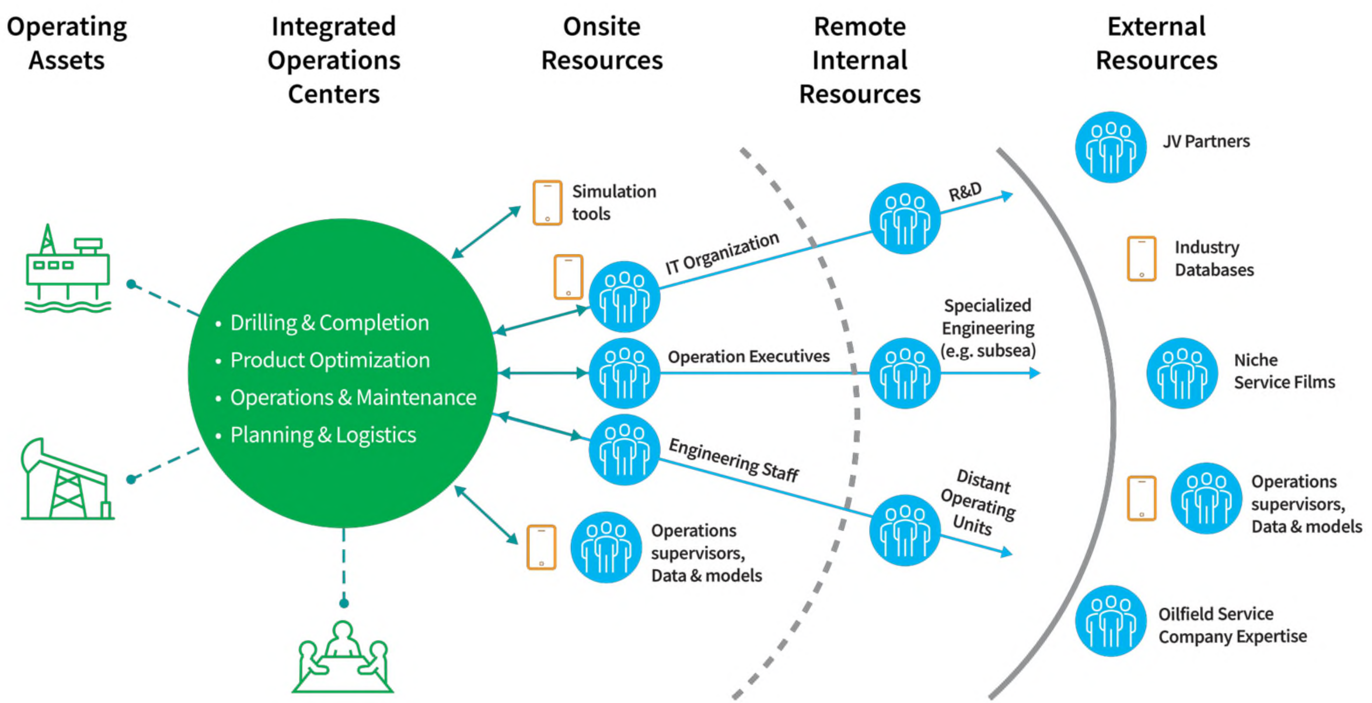
The oil price downturn coupled with outside industry developments is now renewing upstream's embrace of digitalization, across all areas

Digital segments of the main upstream technology categories*



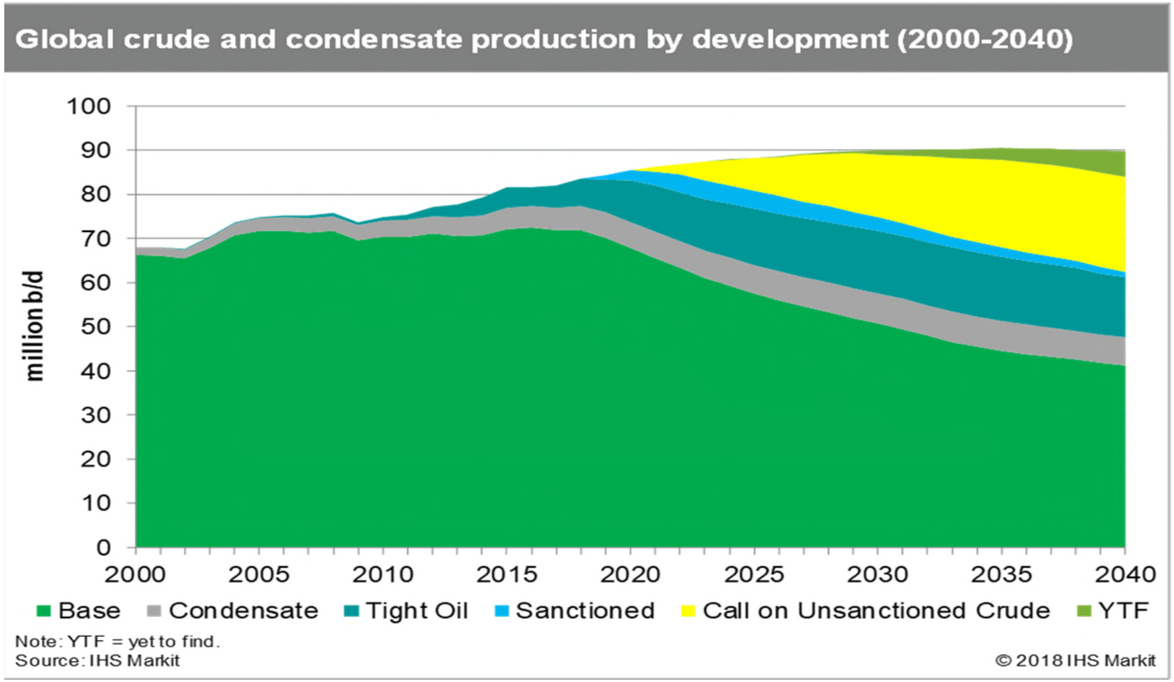
Notes: *806 records of 29 E&P/OFS/EPC firms for 2012–14, and 2355 records of 51 E&P/OFS/EPC firms for 2016–18
Source: IHS Markit

Challenge 3: Can Brazil capture efficiencies from the Digitalization revolution?



Challenge 4: Does Brazil have a competitive supply system?

- Financial market decisions, decarbonization efforts, and the drive for upper quartile performance has placed tight constraints on available risk capital.
- Abundant, discovered but undeveloped resource
  is vulnerable to price and capital.



Global Supply System: abundance of resource but available capital is constrained

…Knowing that financial sector drives the choice of short vs longer cycle investment options

Short-Cycle (6-12 mo)

- US Tight Oil
- Global Crude Inventories
- Spare Production Capacity

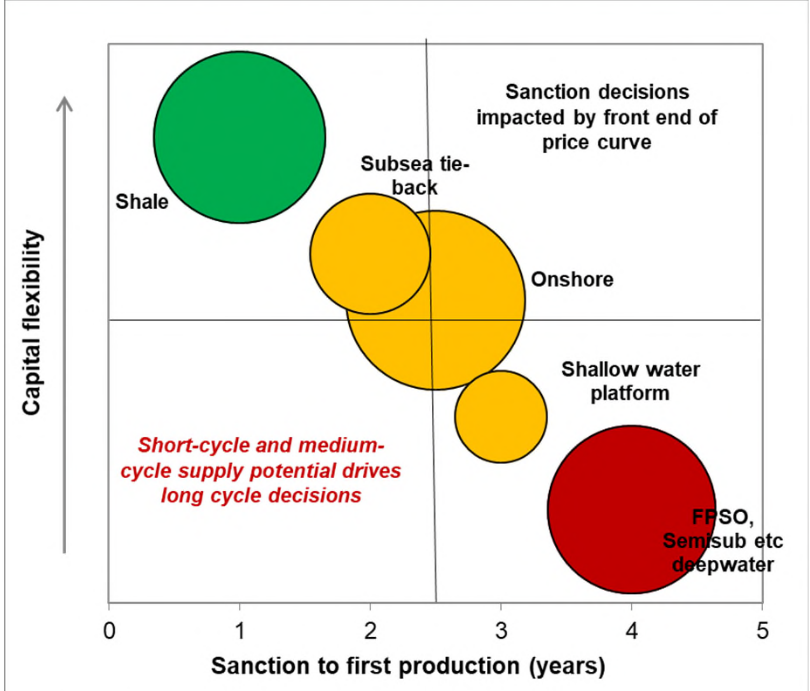
Medium-Cycle (1-3 yrs)

- High-Potential Gulf Projects (Iraq/Iran/Saudi)
- Sustainable Return of Political Barrels (Libya/Nigeria)
- EOR, Tie-backs, Brownfield Expansions

Long-Cycle (3-5 yrs)

- Greenfield Conventional Onshore
- Oil Sands
- Offshore Development (esp. Deepwater)

Illustrative capital flexibility and project cycle times



Note: Bubble size represents unsanctioned volumes through 2023

Thank You!