Development of the Long-term Policy for Trading of the Federal Union's Government's Oil and Gas – Workshop 2

Background for day 2

December 2018

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Five main parameters can be used to determine the trading strategy selected

Marketing structure	Outsourced to operator	Outsourced to marketer/ price mechanism	Outsourced to marketer/ alignment of incentives	JV	In-house
Transaction point	**OIL** FPSO	Interim storage / Ship to ship		Conv. tanker	Customer
	GAS FPSO	Processing plant		Distribution	Customer
Logistics	Outsource to operator		Contract/Toll		Built & operate
Value pool	Asset based		Physical volume own & third-party		Financials & derivatives
Commodity	Primary product (oil, gas)				Secondary product (oil product, power, chemical, LPG)
	Royalty in value				

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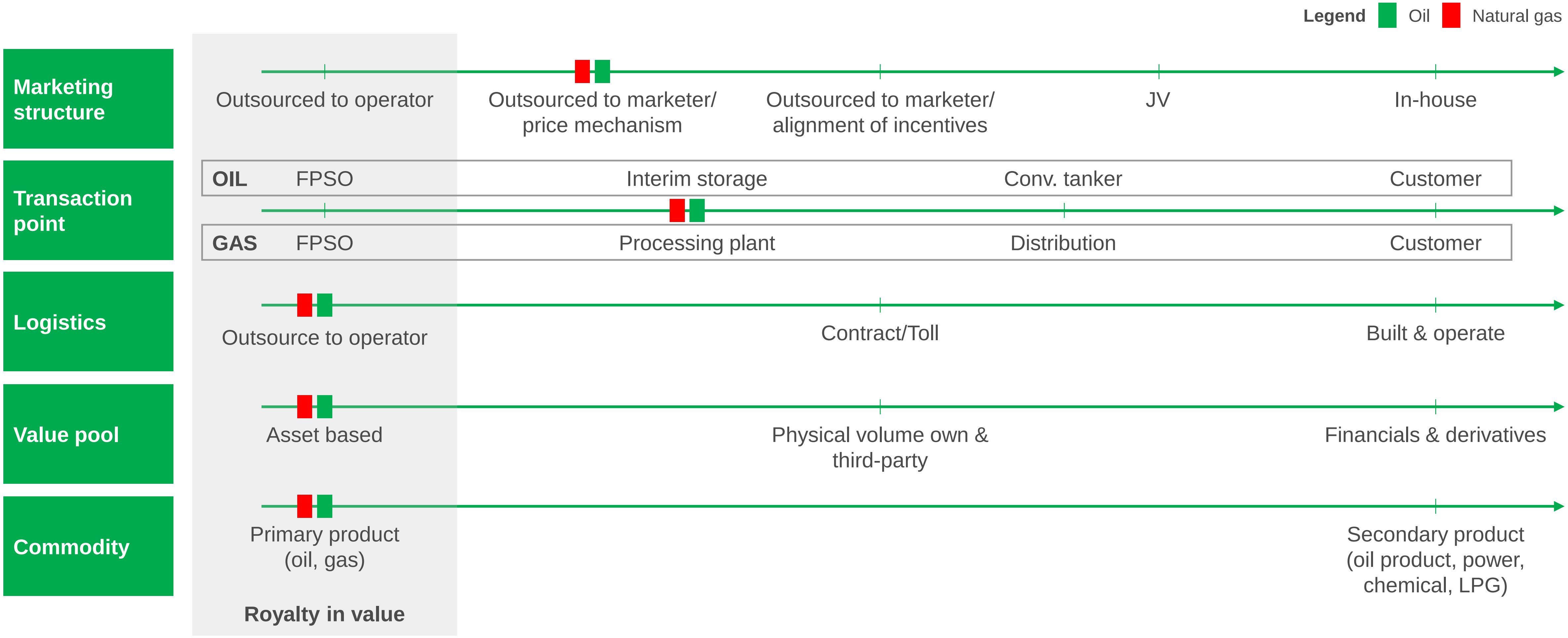
Mexico has launched its first tender for the marketing of its oil in kind in 2017



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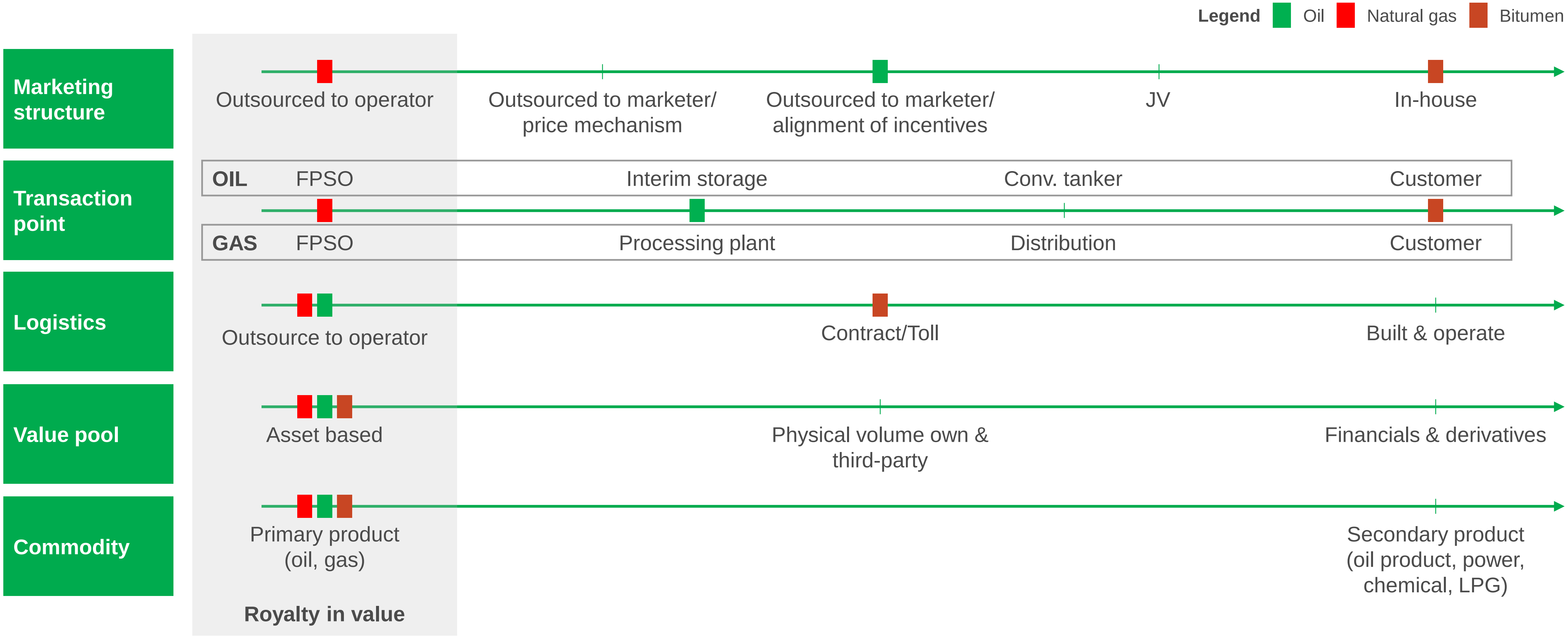
In Alberta, regular crude is outsourced to marketing agents while purchased bitumen is marketed directly

Alberta Petroleum Marketing Commission



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Petoro's model follows closely to the one developed by Alberta for its conventional oil

petoro

Legend Oil Natural gas

Marketing structure

Outsourced to operator — Outsourced to marketer/ price mechanism — Outsourced to marketer/ alignment of incentives — JV — In-house

Transaction point

OIL	FPSO	Interim storage	Conv. tanker	Customer
GAS	FPSO	Processing plant	Distribution	Customer

Logistics

Outsource to operator — Contract/Toll — Built & operate

Value pool

Asset based — Physical volume own & third-party — Financials & derivatives

Commodity

Primary product (oil, gas) — Secondary product (oil product, power, chemical, LPG)

Royalty in value

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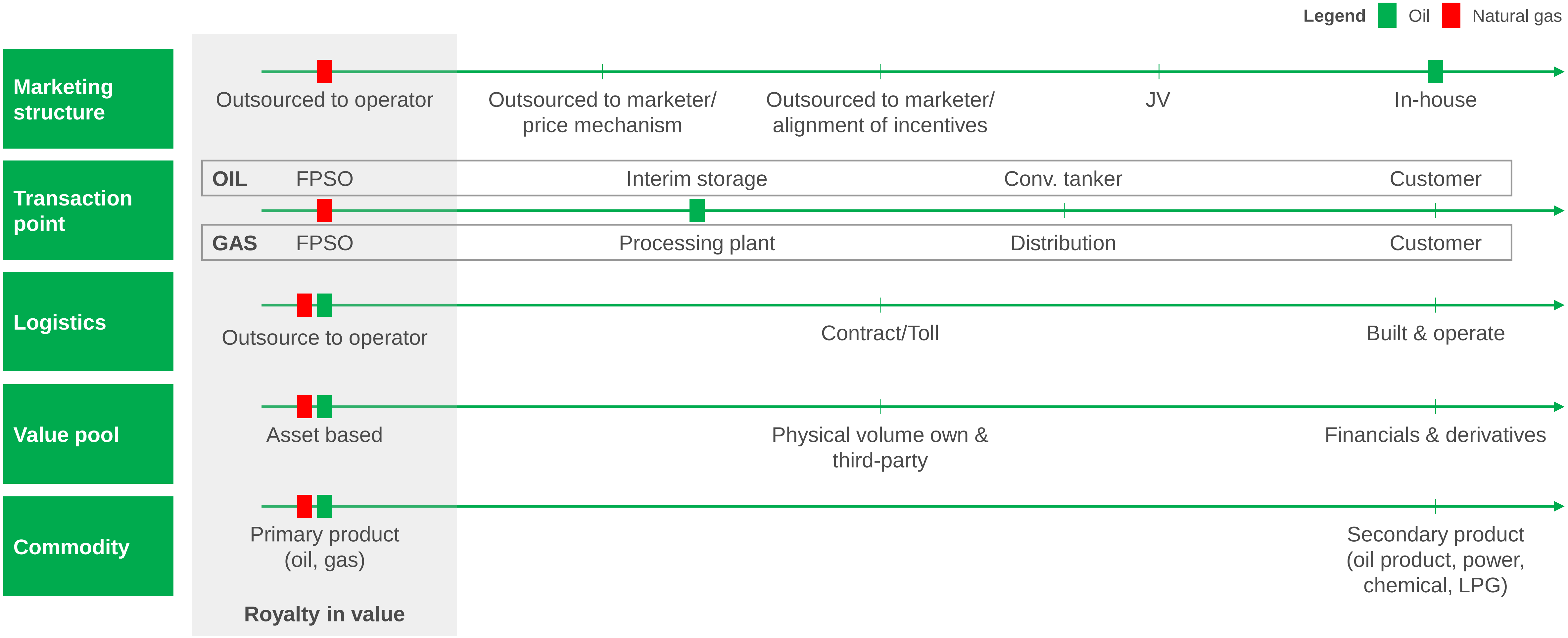
Alaska Department of Natural Resources (DNR) sells 95% of its oil under long term contract with local refineries



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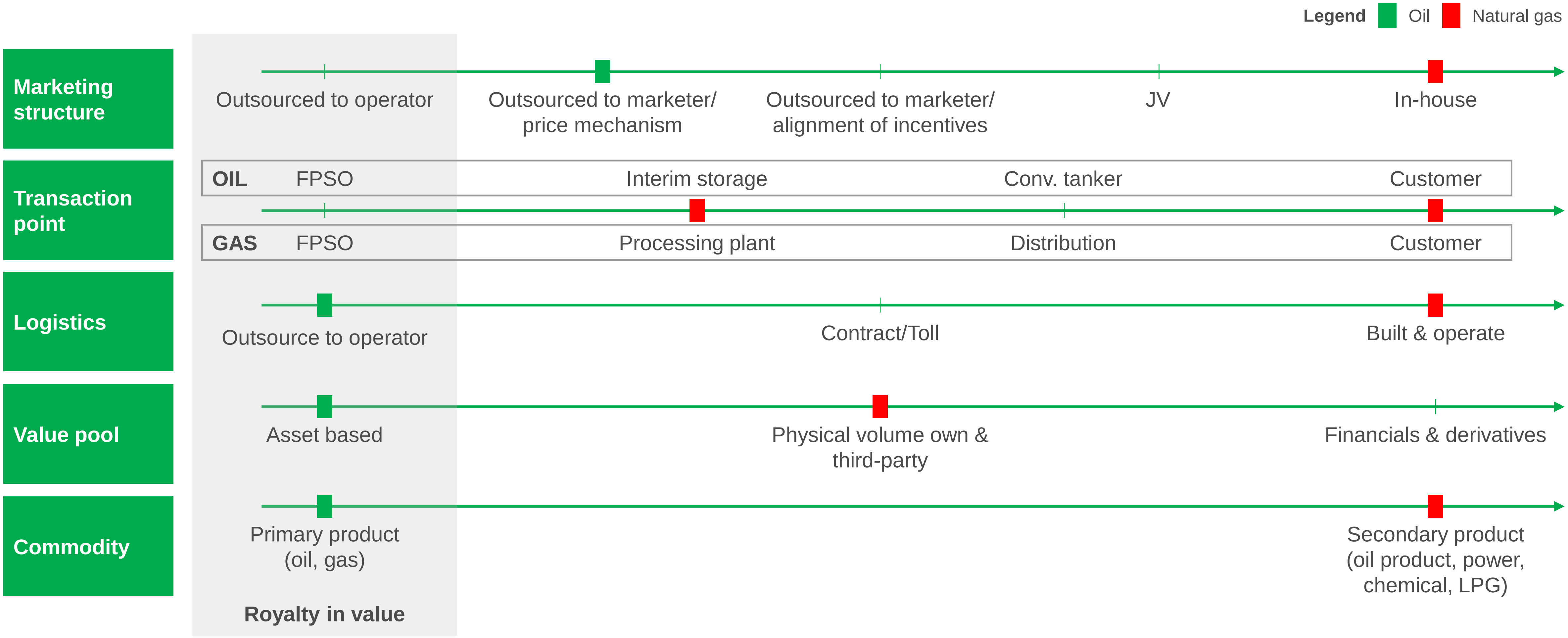
Ghana outsource its oil to marketers but has the responsibilities for transportation and marketing of gas located offshore

GNPC



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Best practices offered from the jurisdiction analysis

Different models are selected based on the conditions of the domestic market and the philosophy pursued

- Most jurisdiction are selecting different models for the different commodities
- Separate agreements and separate tender processes for oil and for natural gas have been observed for most of the jurisdictions

Transaction are pursued at a point of sufficient liquidity; alternatively alignment of incentive is pursued

- The establishment of a liquid index has sometimes been pursued in parallel
- Marketing capabilities and downstream position are sometime developed to ensure reliable and price-competitive off-take, the transaction point is selected such as they can maximize the number offers
- When liquidity can not be reached, the contract pursues alignment of incentives between governments and marketers

Jurisdictions try to diversify the marketing of its production stream to enable auditing

- In a number of arrangements, a small percentage of the commodity is traded directly so that performance can be evaluated
- Royalty is also received in value and value is compared with revenue realized from direct trading or through the agent, administration costs should be assigned to the revenue achieved in kind

The type of program selected depends on the scale of that program, the philosophy of the

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We can envisage the Royalty in Kind program in Brazil pursuing two divergent philosophies

A **Value driven**	B **Energy policy driven**
Program solely focus on enhancing revenue for the government in the most efficient way • Focusing on the $ revenue and the **near-term/direct cash flow** • KeePing A **Low Market Intervention** • **Minimizing** the need to expand **government organization**	Program focus on enhancing revenue while incorporating strategic industry objectives • Accounting for the direct as well as the **indirect $** generated • **Active involvement** in market/infrastructure development • Enhancing **transparency** and **liquidity** in the market • Incentivizing **local industry**

The Royalty in Kind is most often used to avoid controversy over how to value oil and gas with the operator/participants

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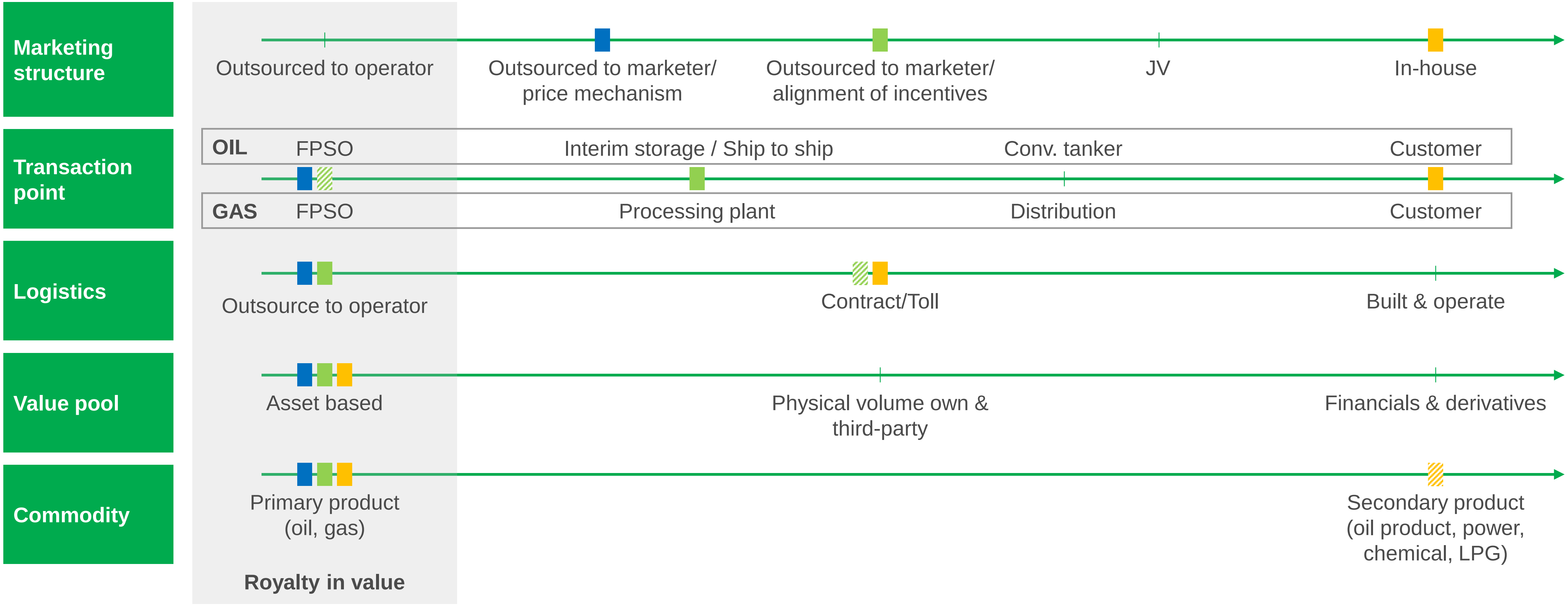
We suggest evaluating three types of models for Brazil: two following a “Value Driven” philosophy, one following a “Policy Driven” philosophy

Legend Status-quo continuum Pool system Value chain optimizer



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Describing further the models for **oil** and their applicability to Brazil

Oil model	Other jurisdictions which apply the model		Trading framework	Downstream involvement considerations
"Status-quo continuum"	CNH Comisión Nacional de Hidrocarburos *Mexico*	GNPC *Ghana*	• Establishing arrangements through bids or direct negotiations with marketers for periods of 3 to 5 years • Marketers would bid on a differential to the ANP reference price	• No downstream involvement
"Pool system"	Alberta Petroleum Marketing Commission *Alberta, Canada - conventional oil*	petoro *Norway*	• **Sharing of revenue and costs** based on volumetric production split, with marketer receiving marketing fee • Evaluating the results on a per barrel basis to the revenue incurring from the oil royalty • Small volume percentage would be market directly on export parity basis to local refiners	• PPSA would facilitate transaction at point of highest liquidity through: > A position in the Shuttle Tanker > Incorporating new delivery point in bidding conditions • Alternative technology development could also eliminate the need for PPSA involvement
"Value chain optimizer"	Alberta Petroleum Marketing Commission *Alberta, Canada – bitumen*	*Nigeria*	• **Direct marketing** of the refined products with retailers in the local and international market • Possible **Offshore Processing Agreement** (OPAs) and **Refined Product Exchange Agreement** (RPEAs) as well as term and spot contracts	• Long term contracting of Shuttle Tankers and/or Regular Vessels • Downstream joint ventures and crude storage positions in various markets

Note: Ultra-low-sulfur diesel 1) Refined Product Exchange Agreement (RPEAs) could also be part of the agreement

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Describing further the models for **natural gas** and their applicability to Brazil

Gas model	Other jurisdictions which apply the model	Trading framework	Downstream involvement considerations
"Status-quo continuum"	CNH Comisión Nacional de Hidrocarburos *Mexico*	• Establishing arrangements through bids or direct negotiations with marketers for periods of 3 to 5 years • Marketers would bid on a differential to the ANP reference price	• No downstream involvement
"Pool system"	petoro *Norway*	• **Sharing of revenue and costs** based on volumetric production split, with marketer receiving marketing fee • Evaluating the results on a per mmbtu basis to the revenue incurring from the direct negotiation and vice verse • Small volume percentage would be market directly to wholesale customers	• PPSA would facilitate transaction at point of highest liquidity through: > Long term ToP position in a new pipeline or, > Incorporating new delivery point in bidding conditions
"Value chain optimizer"	GNPC *Ghana*	• **Direct marketing** of the natural gas with whole-sale consumers • **Organization of bids and auction for baseload** demand	• High involvement in the development of monetization options in terms of contracting framework, demand creation • Contracting position throughout the value chain of gas up to the wholesale

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