

BIZTALKS · OIL & GAS

The heavy-barrel readiness test

Are U.S. refineries prepared for Venezuela's return?

EXECUTIVE PERSPECTIVE · SEPTEMBER 2026

Research cut-off: 29 September 2026

The decision: Capacity is not the whole question.

“ Venezuelan barrels are returning to a U.S. refining system with the right hardware concentrated in the Gulf Coast, but little operating slack and large differences between individual plants.

The winners will not be the refineries that can merely receive heavy crude. They will be those that can repeatedly decide which grade, blend and operating plan creates value as assays, sanctions, logistics, unit constraints and product markets change.

A governed process-twin layer can make that question continuously answerable by connecting IT and OT data with assays, planning models and unit simulations.

A. At a glance

The opening is real. The absorption challenge is refinery-specific.

630 kb/d

U.S. net imports from Venezuela in June 2026, versus 200 kb/d in January. [\[1\]](#)

96.5%

Gulf Coast refinery utilization in the week ending 18 September 2026, leaving near-zero operating headroom. [\[2\]](#)

57.7%

PADD III share of U.S. coking capacity (1,481,871 b/cd) as of 1 January 2026. [\[3\]](#)

1.16 mb/d

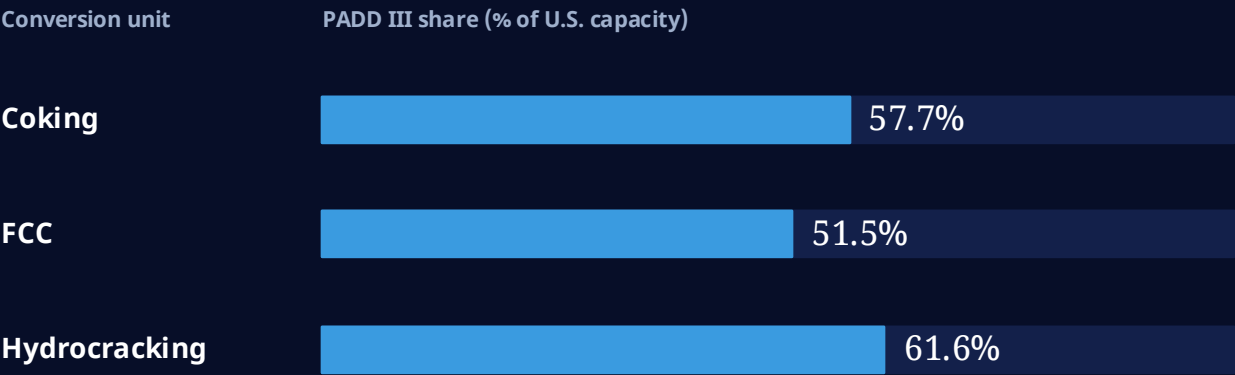
IEA estimate of Venezuelan crude supply in August 2026. [\[4\]](#)



B. What the evidence says

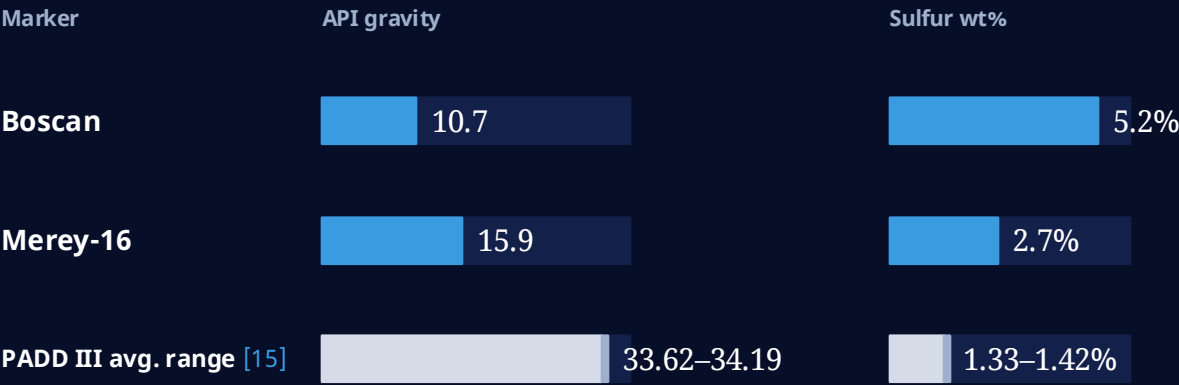
The hardware exists. The headroom does not.

Where the hardware sits



PADD III share of U.S. capacity, 1 January 2026. Unit: percent and b/cd. Source: EIA Table 8. [3]

The quality gap



Historic grade markers compared with the January-June 2026 PADD III input range. Units: degrees API and sulfur wt%. Current cargo assays remain essential. [6][15]

C. Implications and scenarios

Three scenarios. One readiness discipline (2026–2030)

These are qualitative planning scenarios, not probability-weighted forecasts.

01

Selective return

Venezuelan supply and U.S. authorization remain uneven. Cargoes concentrate among approved operators and refineries with demonstrated heavy-sour capability. The process twin screens each opportunity quickly across eligibility, delivered quality, blend options, constrained-unit impacts and substitute-crude netback.

Policy eligibility

Cargo assay

Fast screening

02

Managed reactivation

Production, diluent access and export reliability improve gradually. Gulf Coast refiners gain a recurring heavy-barrel source. Value moves from one-off evaluation to a repeatable crude-to-margin process connecting trading, planning, scheduling, laboratory and plant data.

Repeatable workflow

Model alignment

Plan to actual

03

Accelerated but variable growth

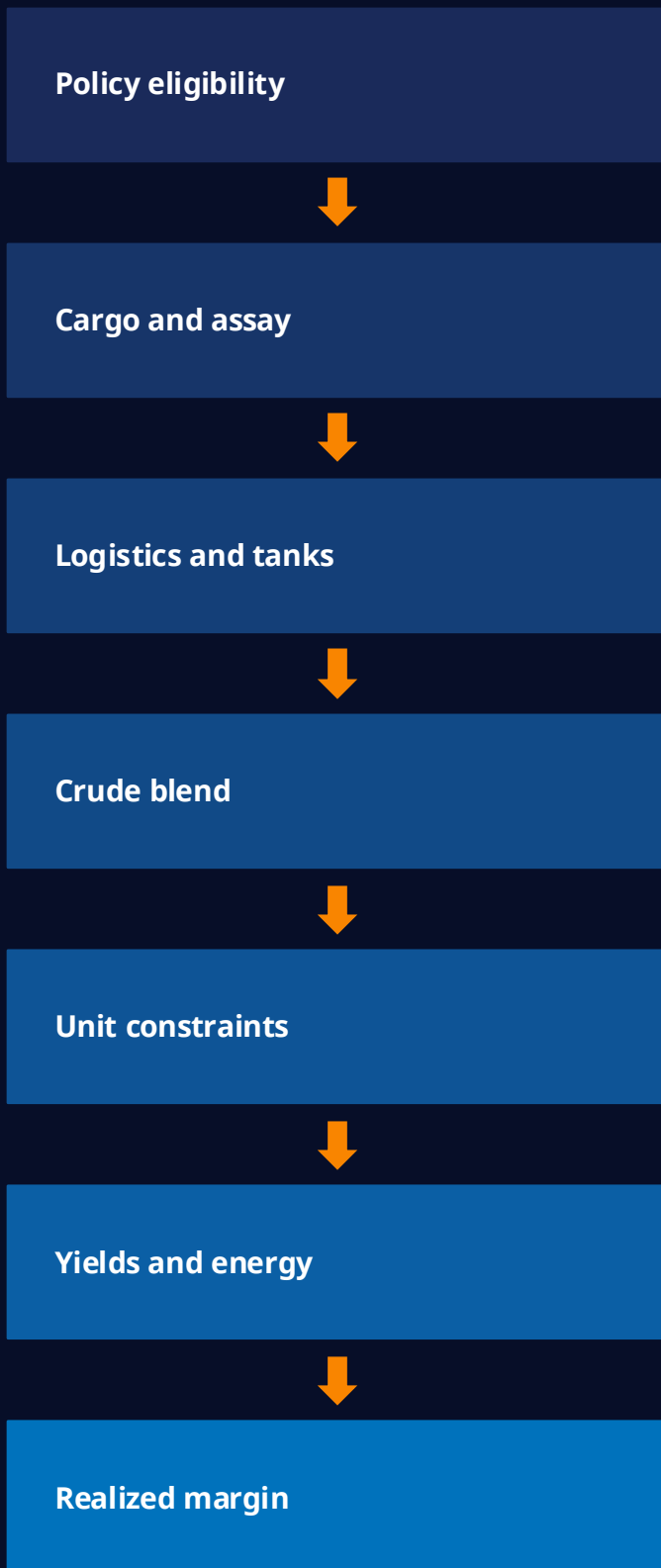
Volumes rise faster than assay consistency, logistics and operating windows. Cokers, hydrotreaters, hydrogen, sulfur recovery, tankage, docks and maintenance become binding. Advantage comes from orchestrating multiple models and decisions at operating speed.

Constraint orchestration

Logistics

Operating speed

From cargo to realized margin



Each handoff is owned by a different function and often modeled in a different system. When those views remain disconnected, a refinery can be technically capable yet commercially slow.

D. NTT DATA point of view

Make refinery readiness a living decision product

NTT DATA proposes a governed process-twin platform to connect the IT and OT estate, orchestrate engineering and planning models, and make scenario analysis accessible to authorized users without removing engineering accountability. [16][17][18]



01

Trusted refinery context

Create one governed representation of the commercial opportunity and the current plant state.

- Crude contracts and prices
- Assay and laboratory data
- Inventories and movements
- Historian and control signals

02

Model federation

Connect the models that turn a barrel specification into an operating and economic view.

- Assay and blend models
- LP and scheduling
- Unit simulations and soft sensors
- Energy
- Hydrogen and asset health

03

Scenario orchestration

Compare cargoes, blends, targets and disruptions under explicit business and plant constraints.

- Sanctions and counterparties
- Logistics and tank limits
- Unit operating windows
- Alternative-crude comparison

04

Decision experience

Give each role a shared scenario with the assumptions and authority appropriate to its decision.

- Trading and supply views
- Planner and scheduler views
- Engineering and operations views
- Executive decision trace

05

Governance and learning

Keep models trusted, decisions accountable and future scenarios better informed by actual performance.

- Cybersecurity and access
- Human approval gates
- Model validation and drift
- Plan-to-actual reconciliation



E. What leaders should do

Five moves for refinery and commercial leaders

Questions for the boardroom

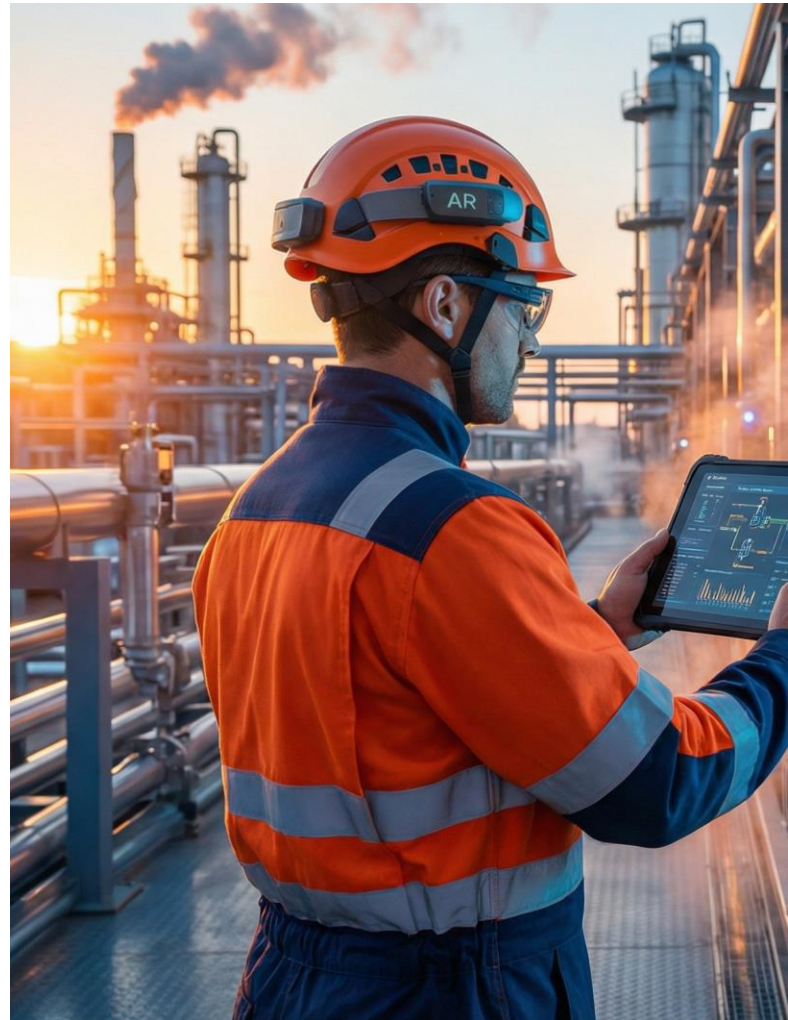
Which refineries create value from which Venezuelan grades under today's constraints?

Where does value disappear: price, blending, conversion, hydrogen, energy, reliability, products or policy?

How long does cargo opportunity to operations-approved scenario take?

Can commercial, planning and operations see the same assumptions and expected yield?

Are we funding another isolated model, or a governed decision system?



Start with one refinery, two representative Venezuelan assays and one alternative crude.

Prove the decision chain from cargo screening through plan-to-actual reconciliation before expanding the twin federation.



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