



*NY Energy Forum November, 2011*

# PADD 2 Crude Oil Market Dynamics

Today's Market & Five Year Forward View

Katherine Spector

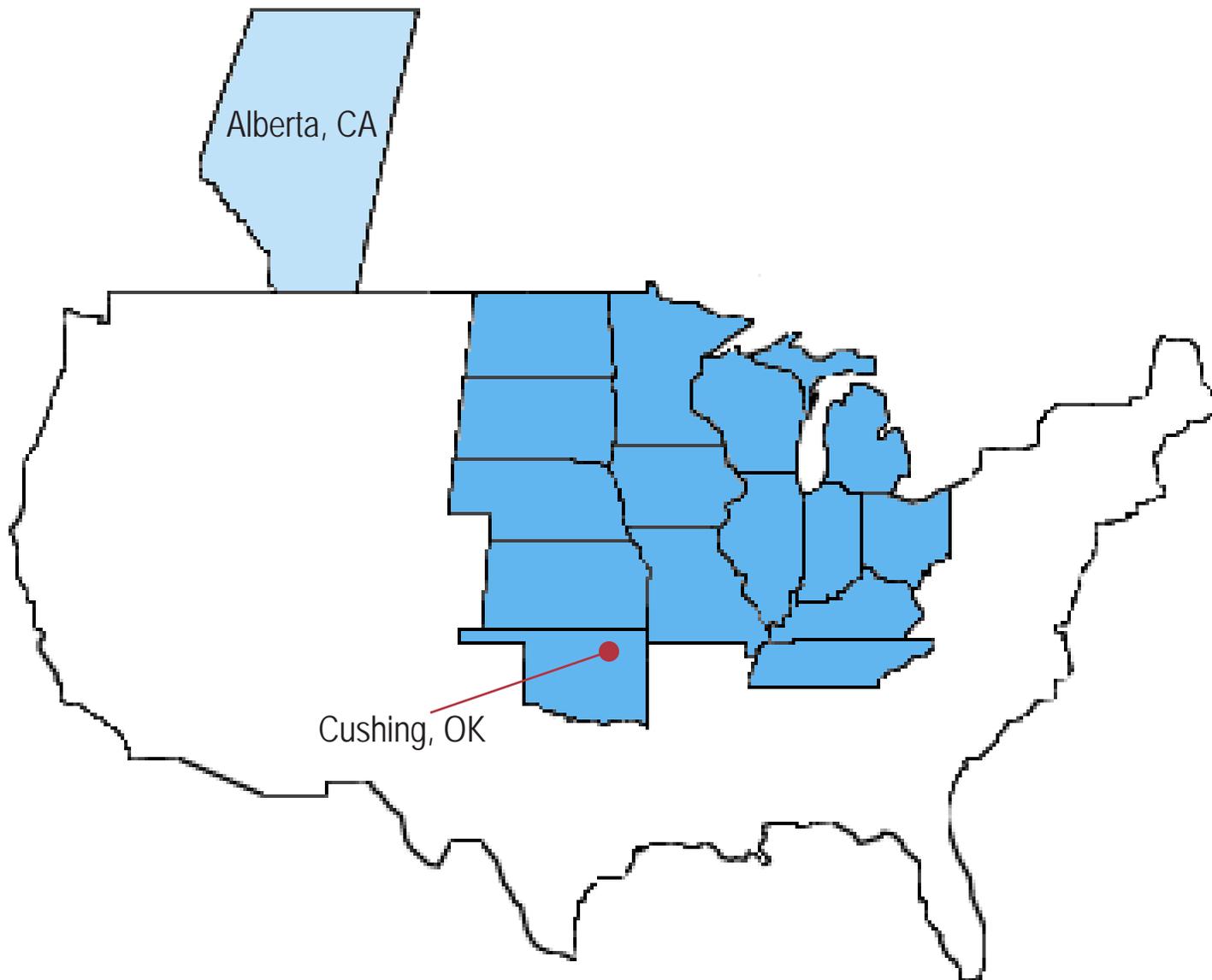
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# PADD 2 Historically, Now, & In the Future

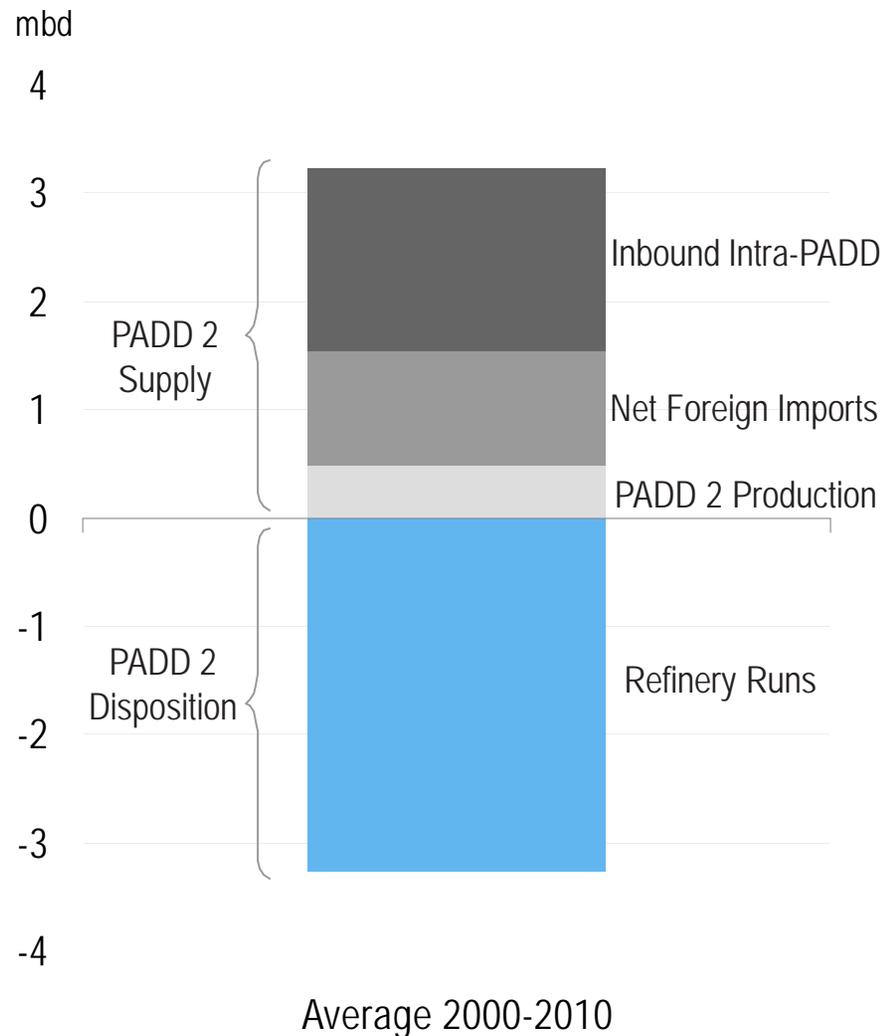
- How we got here
- Recent new information
- Looking five years ahead

# (Where Is PADD 2 Again?)



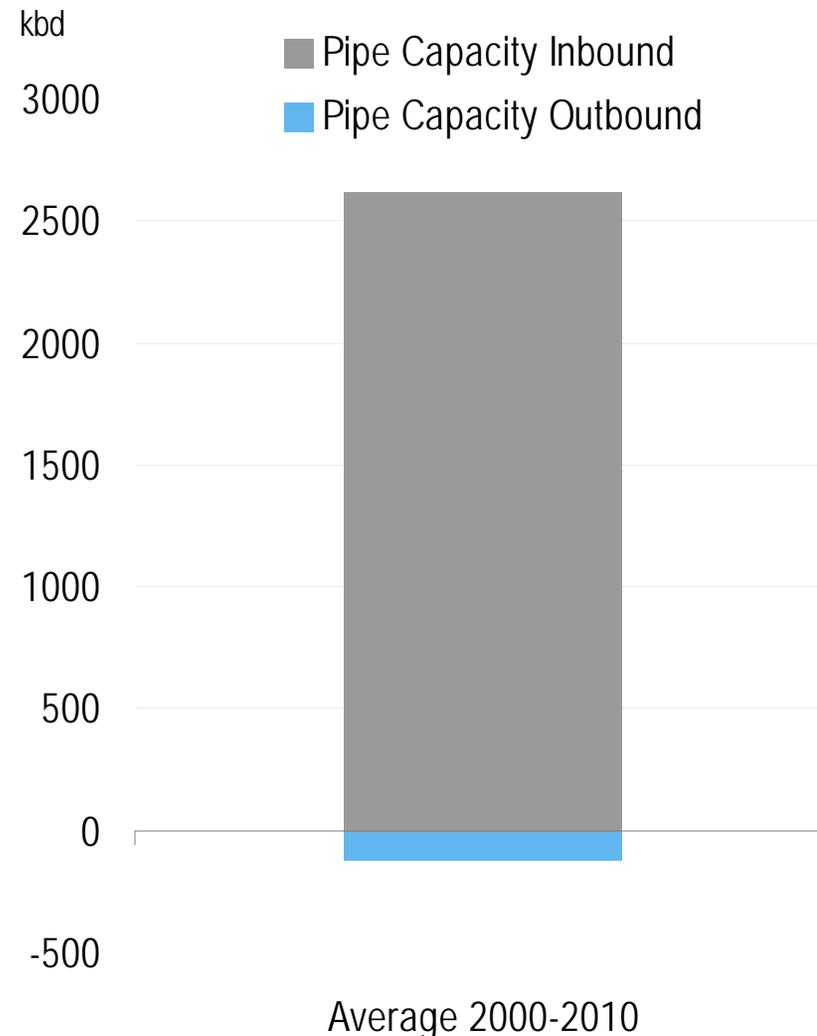
# Historically, PADD 2 Was a Taker of Crude

Other PADDs Fed >50% of P2 Refinery Needs



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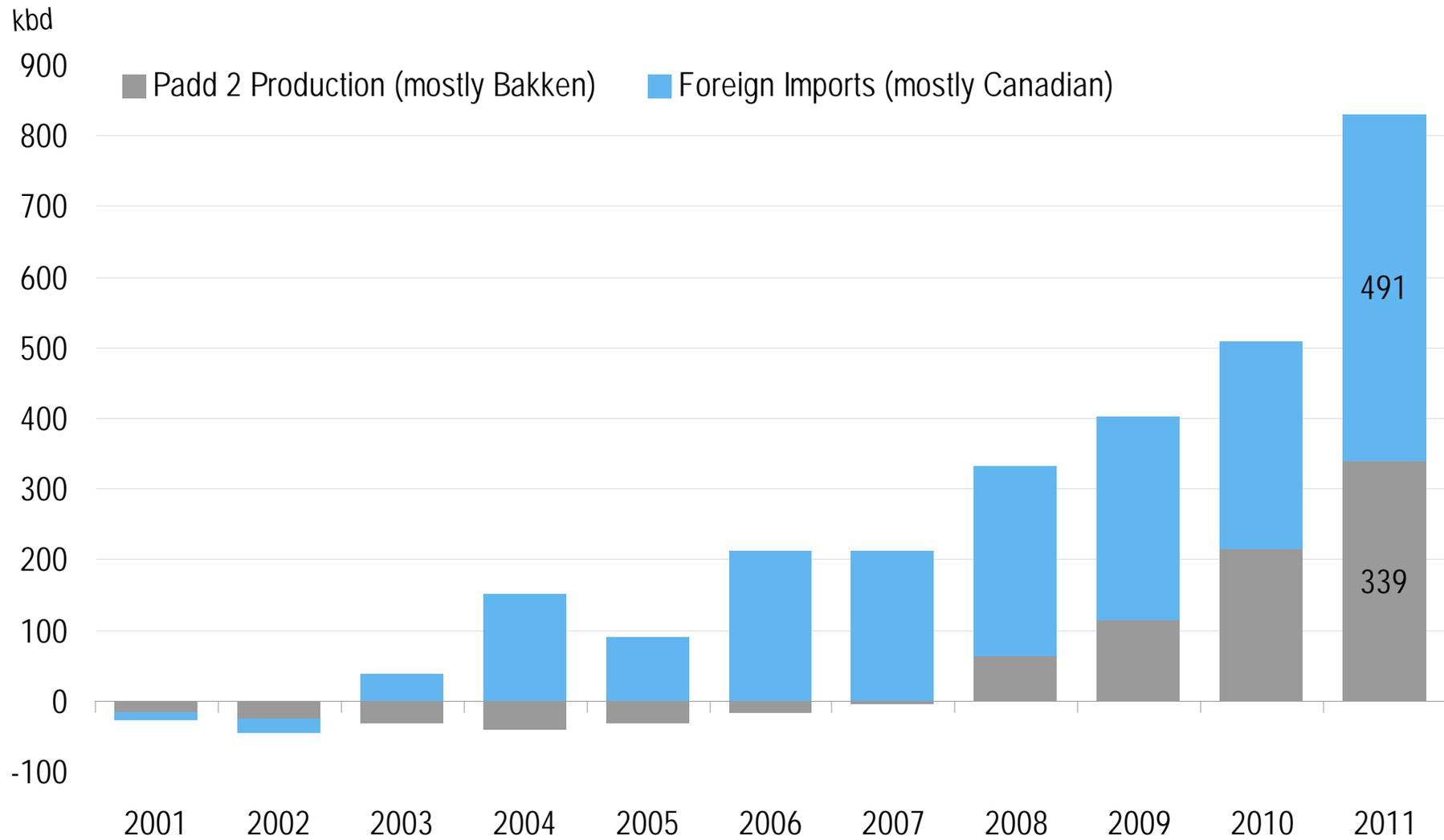
So Pipelines Flowed Into PADD 2, Not Out



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# But Quite Suddenly, PADD 2 Supply Took Off

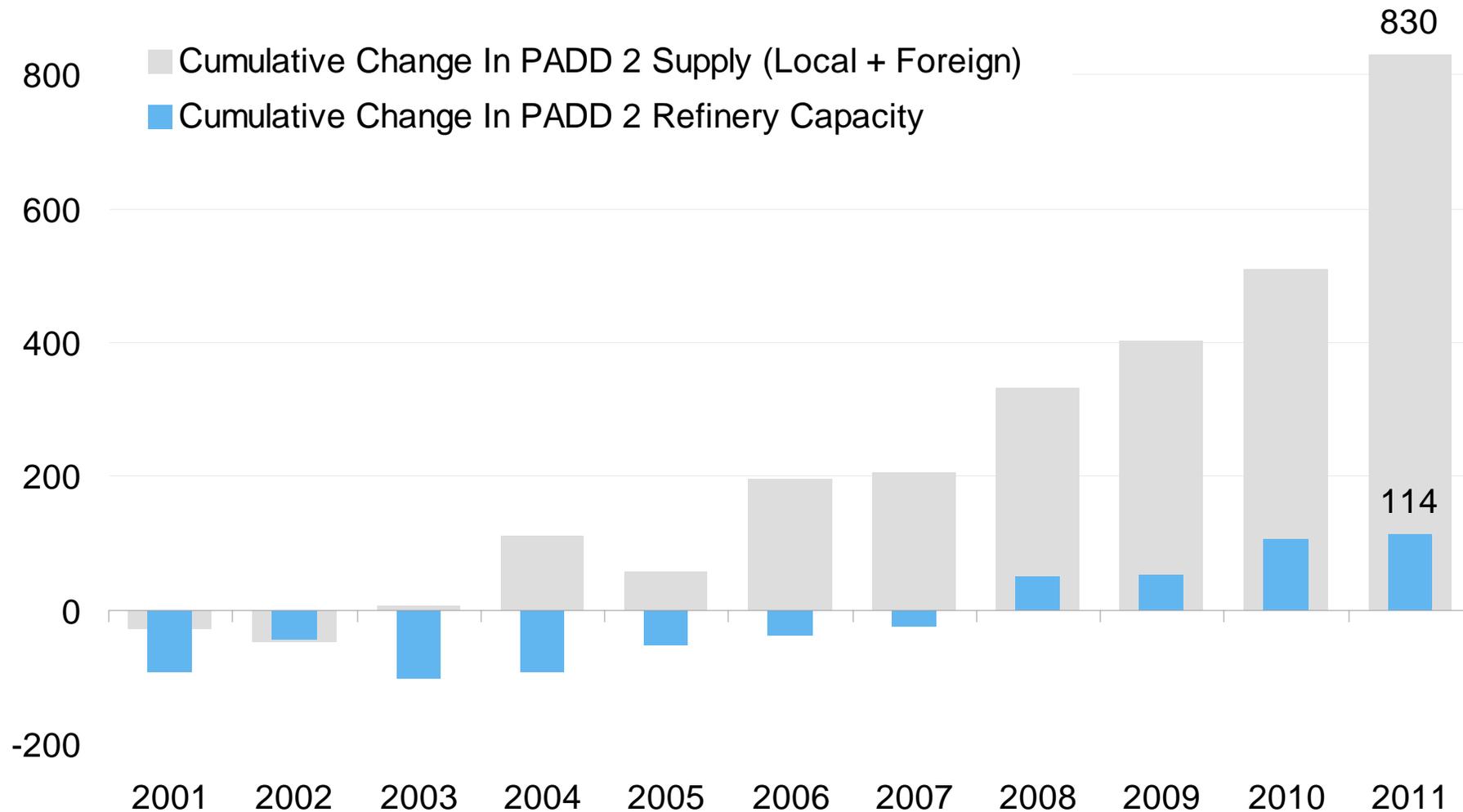
Cumulative Supply Growth Into PADD 2: Thanks To Alberta & The US Bakken



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# PADD 2 Demand (Refinery Use)... Didn't

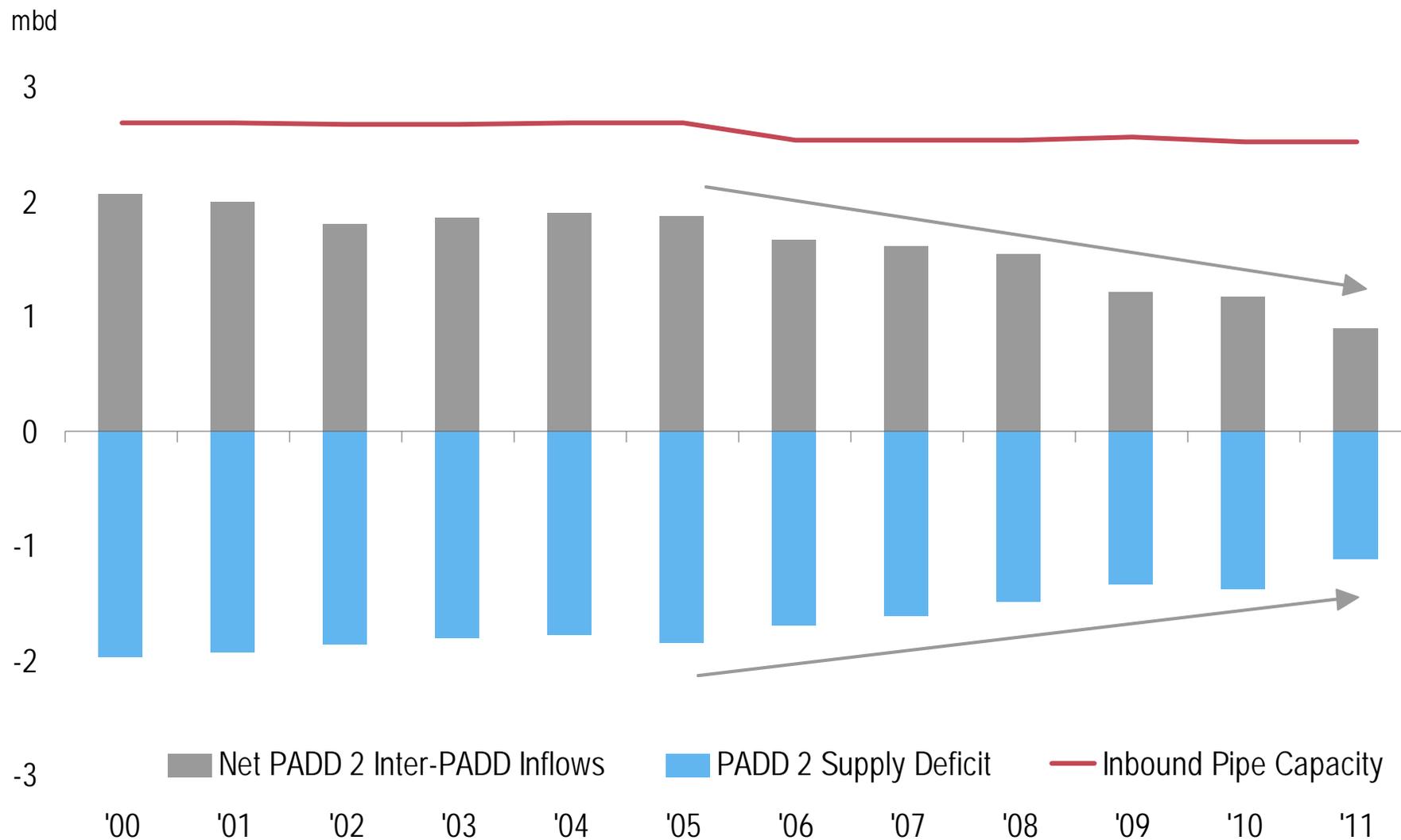
Cumulative Supply Growth Into PADD 2 Versus Regional Refinery Capacity Growth  
 kbd



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# Inter-PADD Flows From PADD 3 Were Displaced

Net PADD 2 Inter-PADD Inflows Versus PADD 2 Supply Deficit

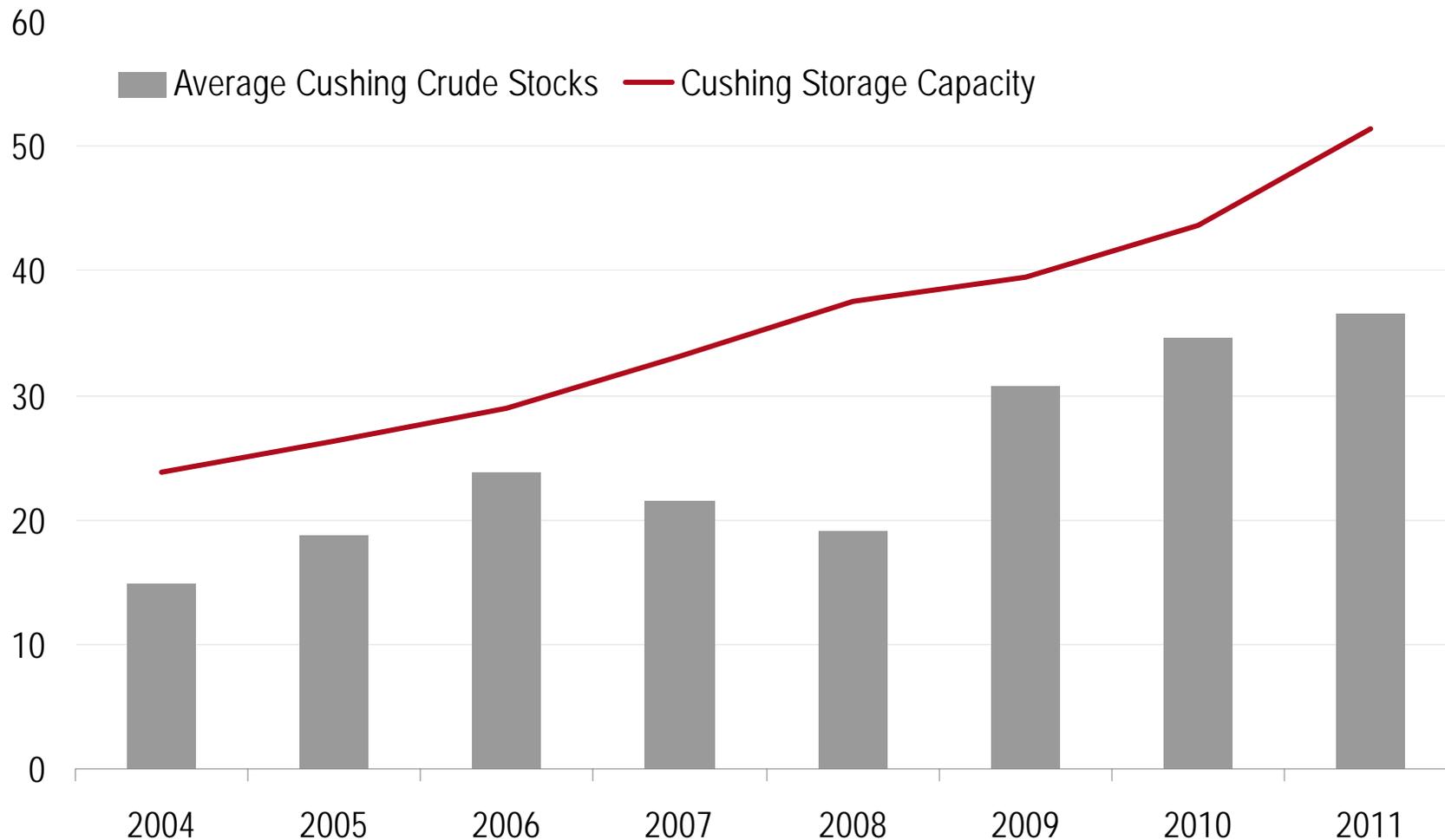


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# But Cushing Inventories Still Climbed (Storage Capacity Did, Too)

Net PADD 2 Inter-PADD Inflows Versus PADD 2 Supply Deficit

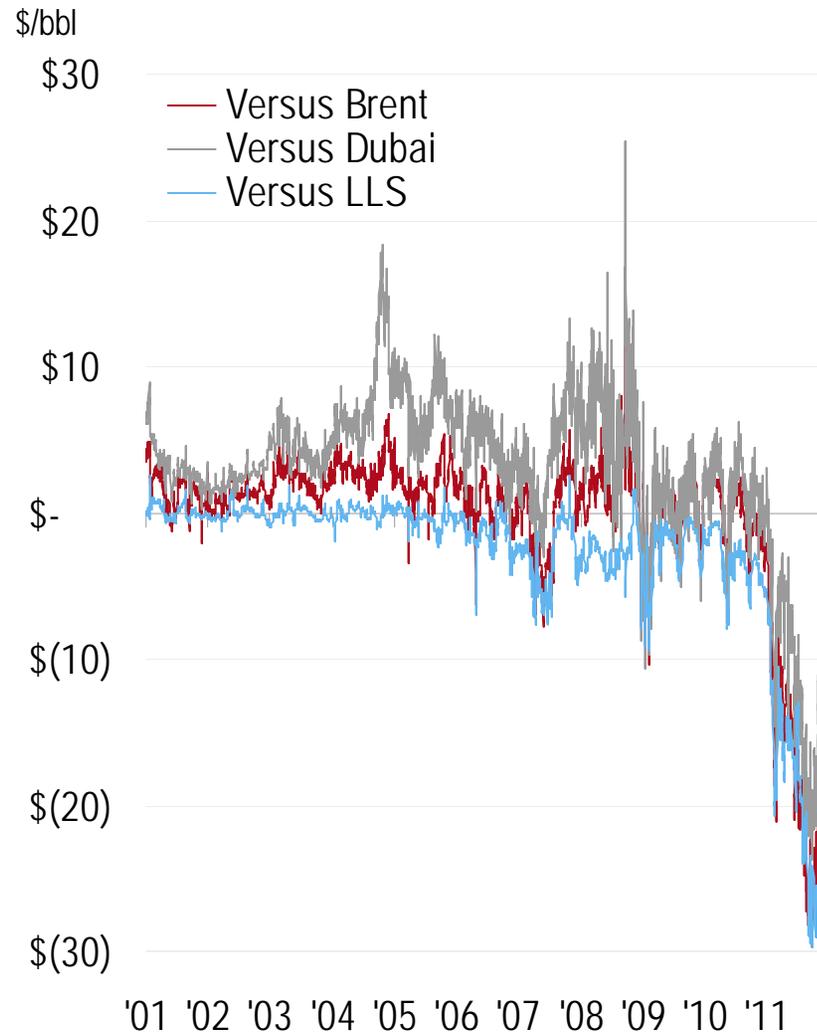
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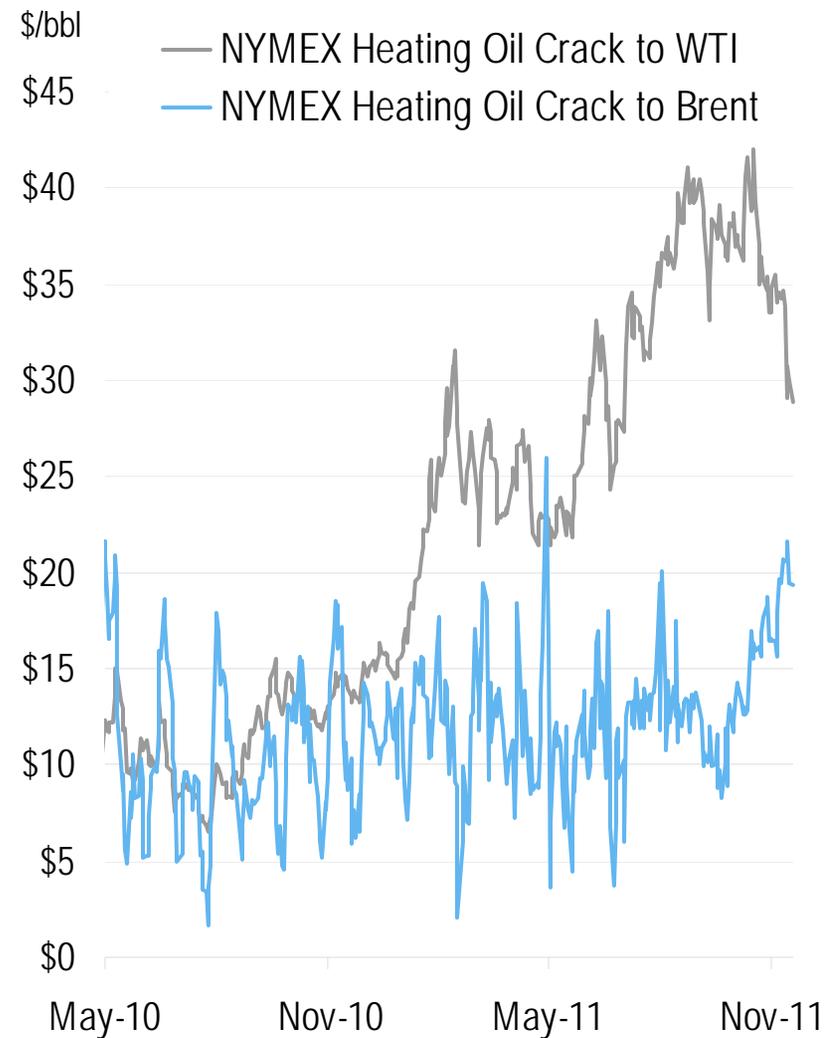
# WTI Parted Ways With Global Oil Markets

WTI Weakened Vs Almost Every Other Crude...



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... And Versus Refined Products Too

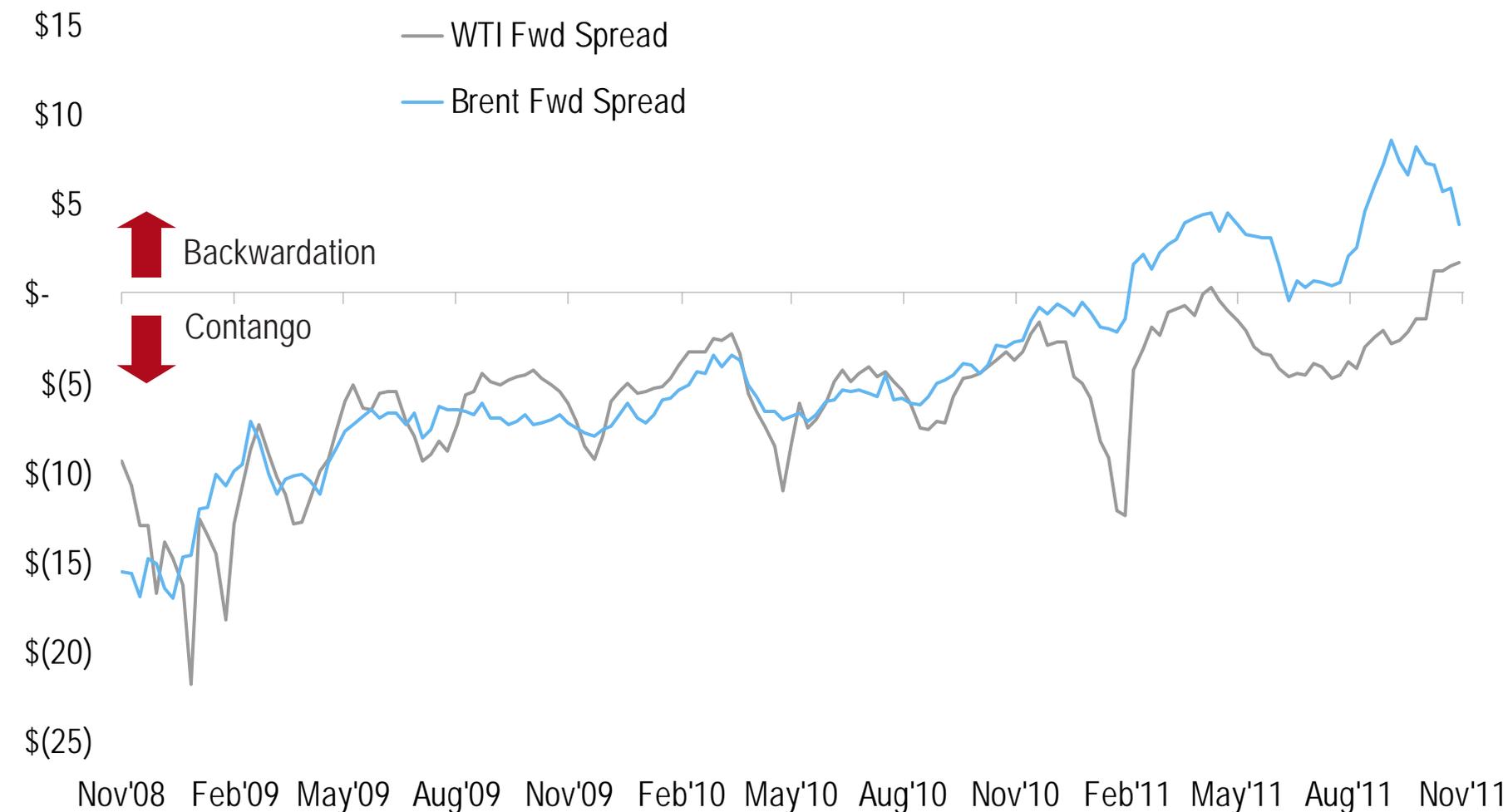


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# WTI Times Spreads Were Also Pressured (As One Would Expect Given Inventories)

## Brent Sees Backwardation First

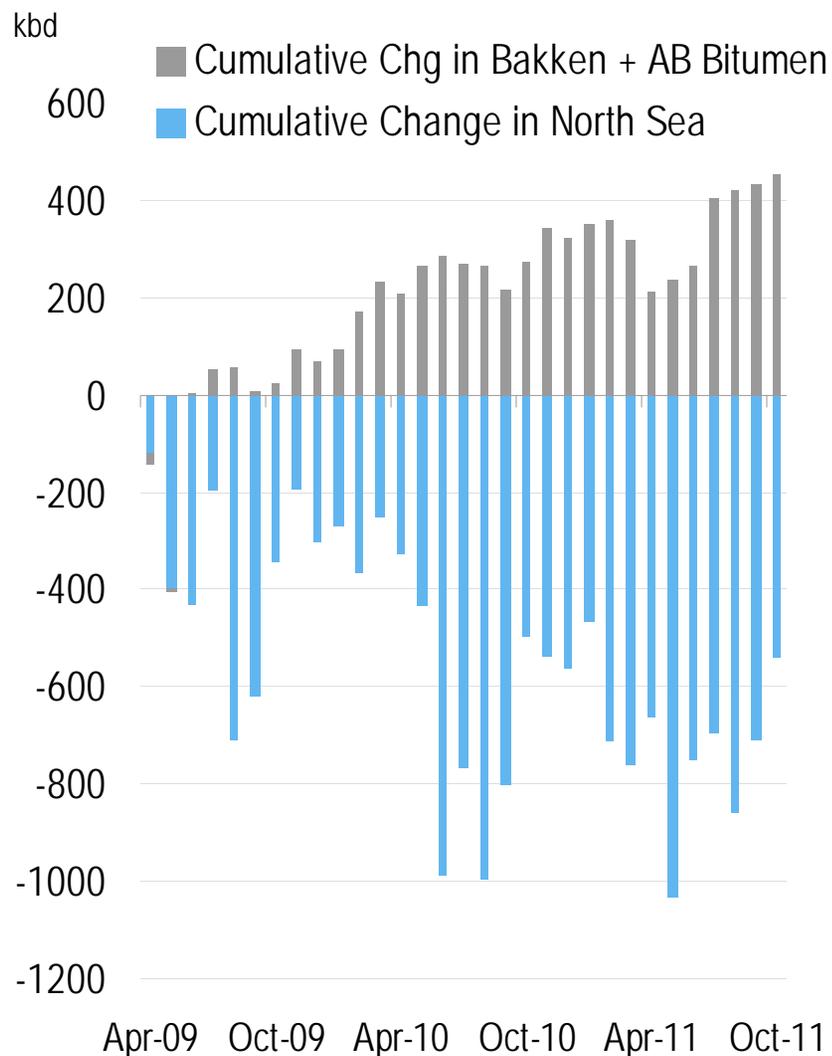
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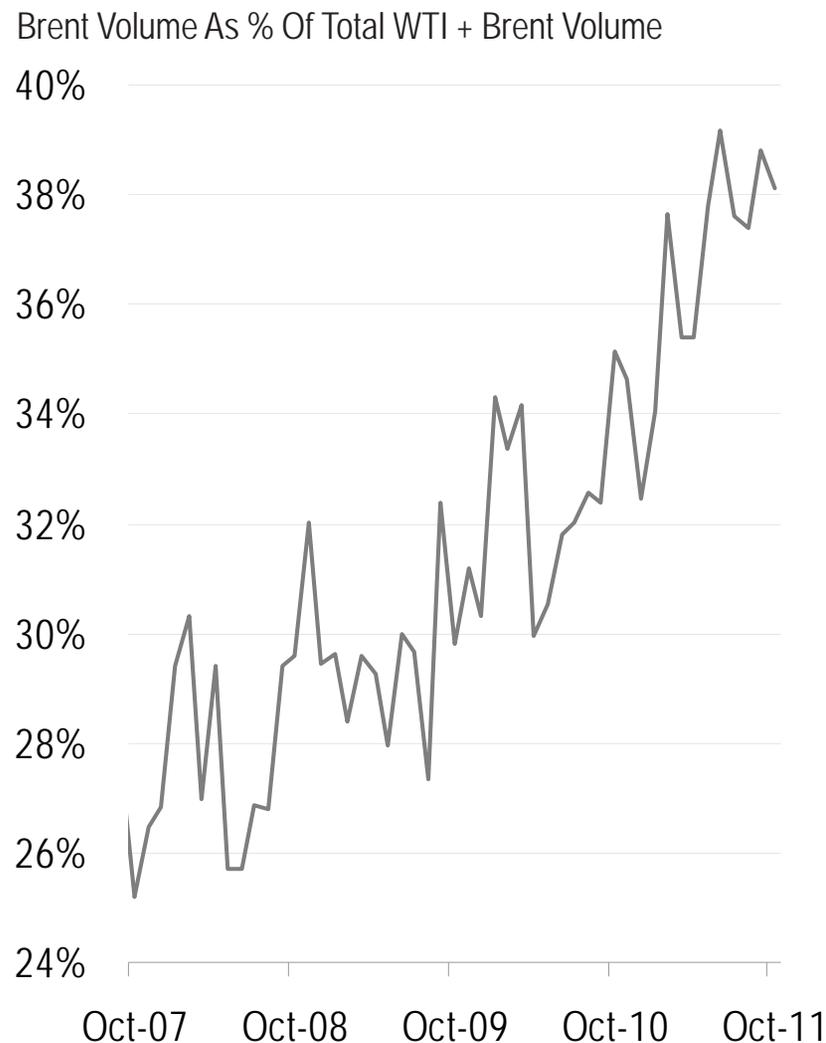
# Brent Has Issues Too, But Still Attracted Volumes

## North Sea Production Only Going One Way



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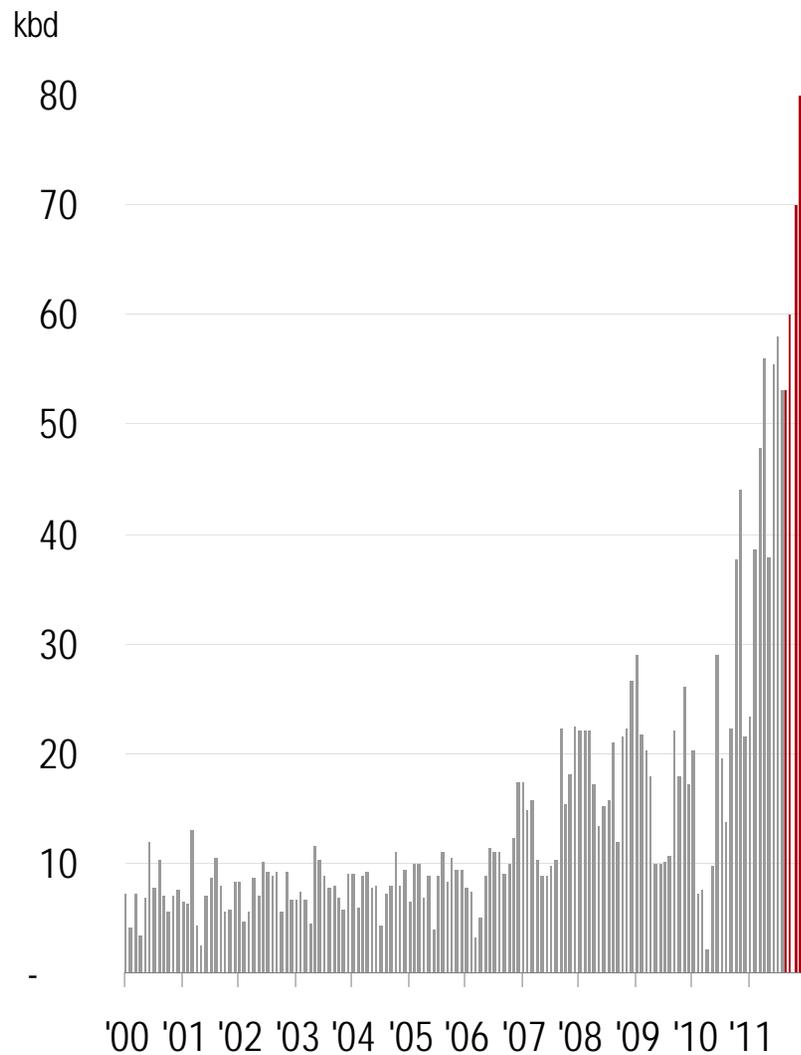
## But Even So Trading Volumes Shifted To Brent



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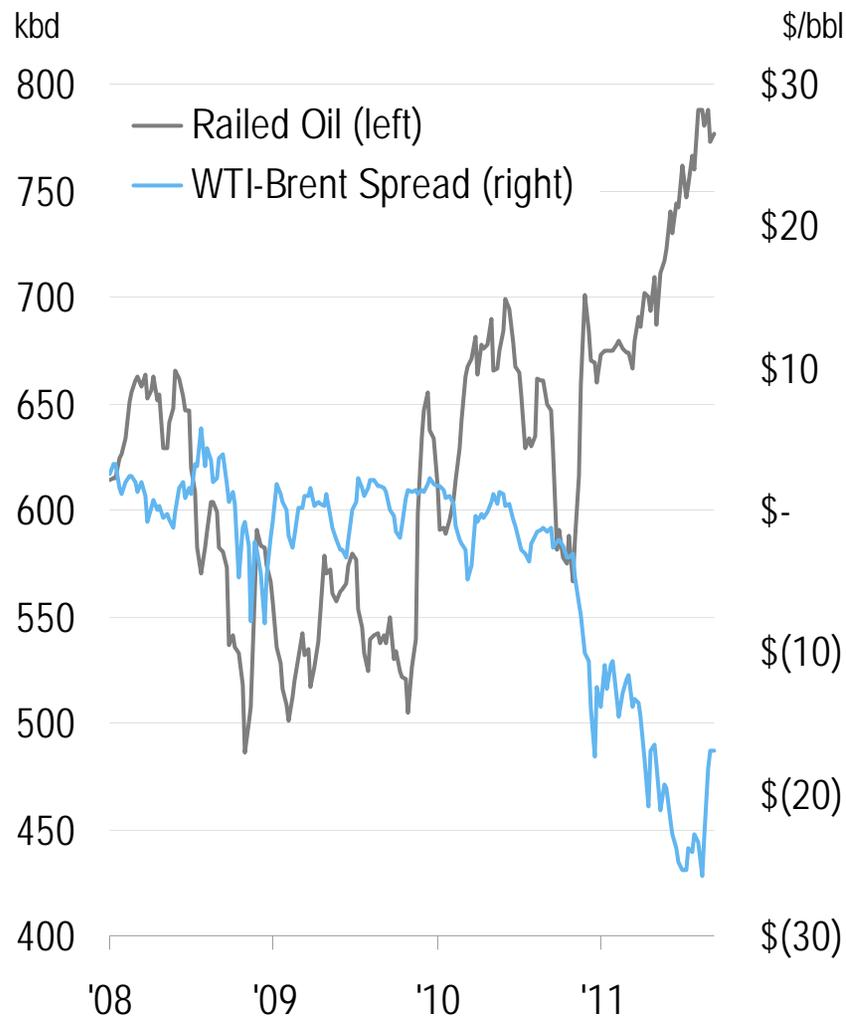
# But Wait! The Market Responds to Dislocation

## Ex-PADD 2 Barge Volumes Ramp Up



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## Railed Volumes Also Rise...

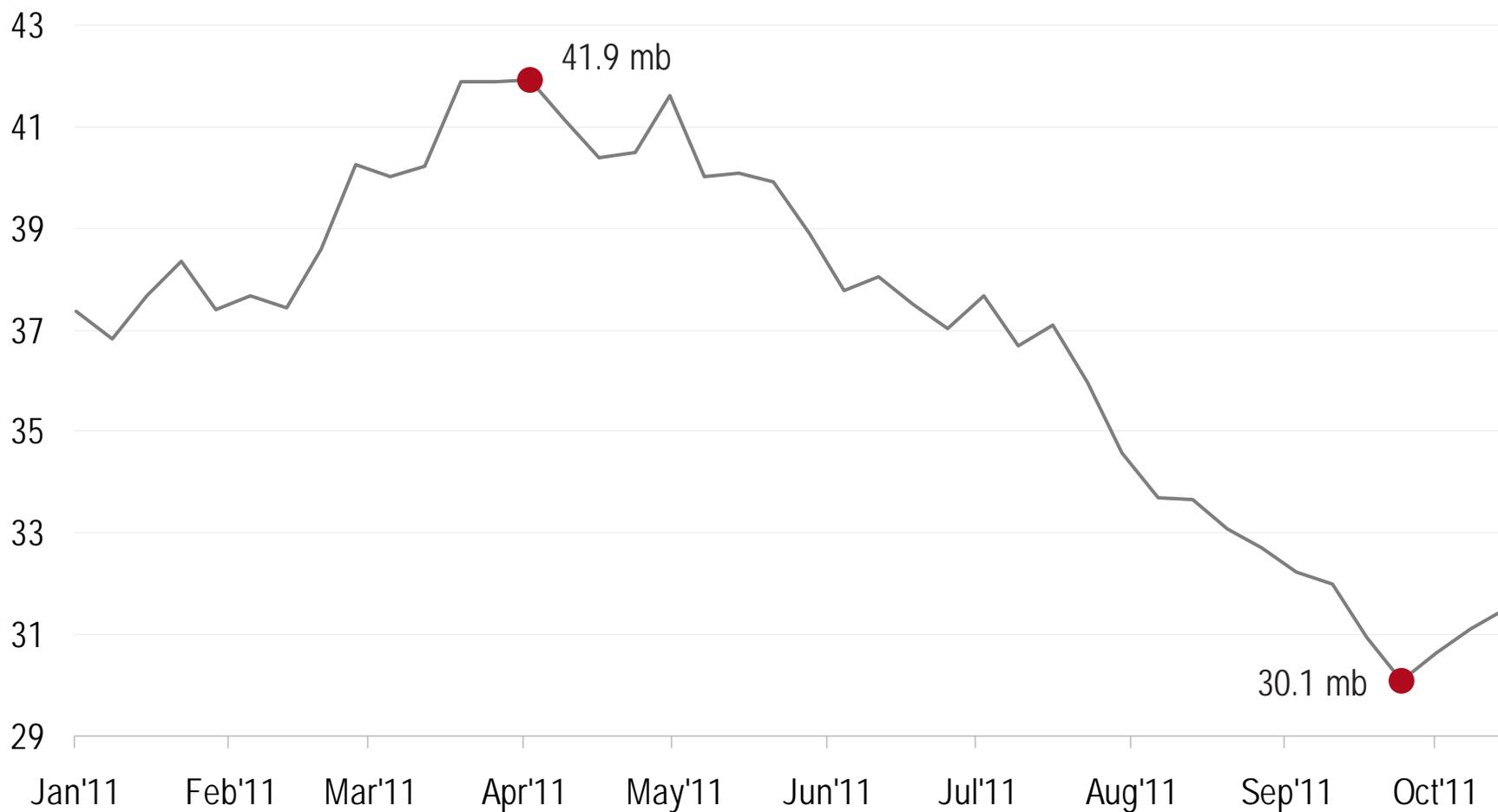


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# Cushing Crude Inventories Fell Accordingly

Cushing Inventories Fall Nearly 12 mb From Early April Peak

million bbl

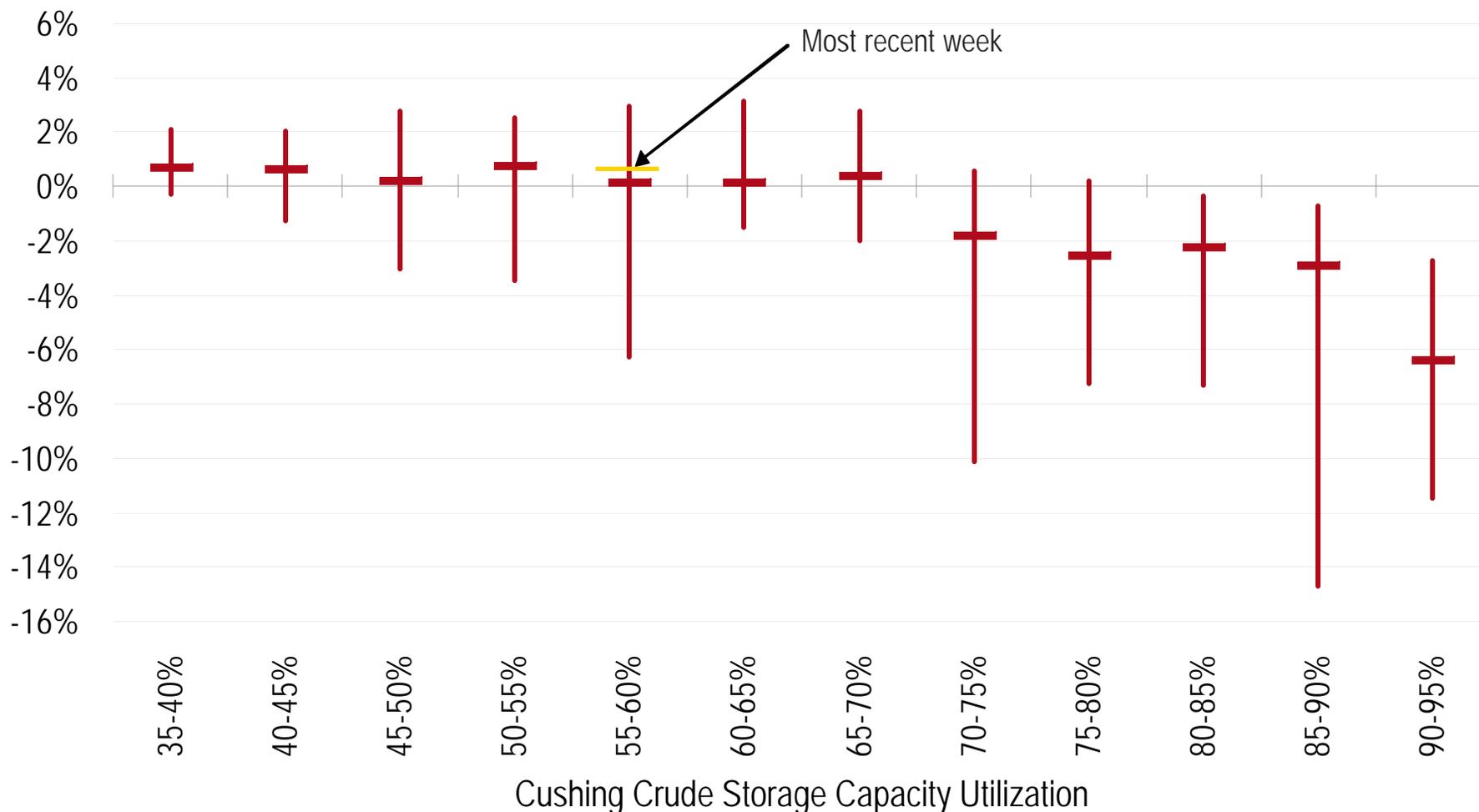


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# WTI Spreads Rallied; Brent Premium Eased

## Historical WTI Spreads At Cushing Storage Capacity Utilizations (Range & Average)

Mo.2-Mo.4 As % of Flat Price



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# But Pipeline Capacity Is Ultimately Still Needed

Contender #1: Transcanada's Keystone Project — Down But Not Out

- **Phase 3:** Cushing, OK to Houston/Port Arthur, TX — **DELAYED**

- **Phase 2:** Steele City, NB to Cushing, OK — **COMPLETED** Feb'11



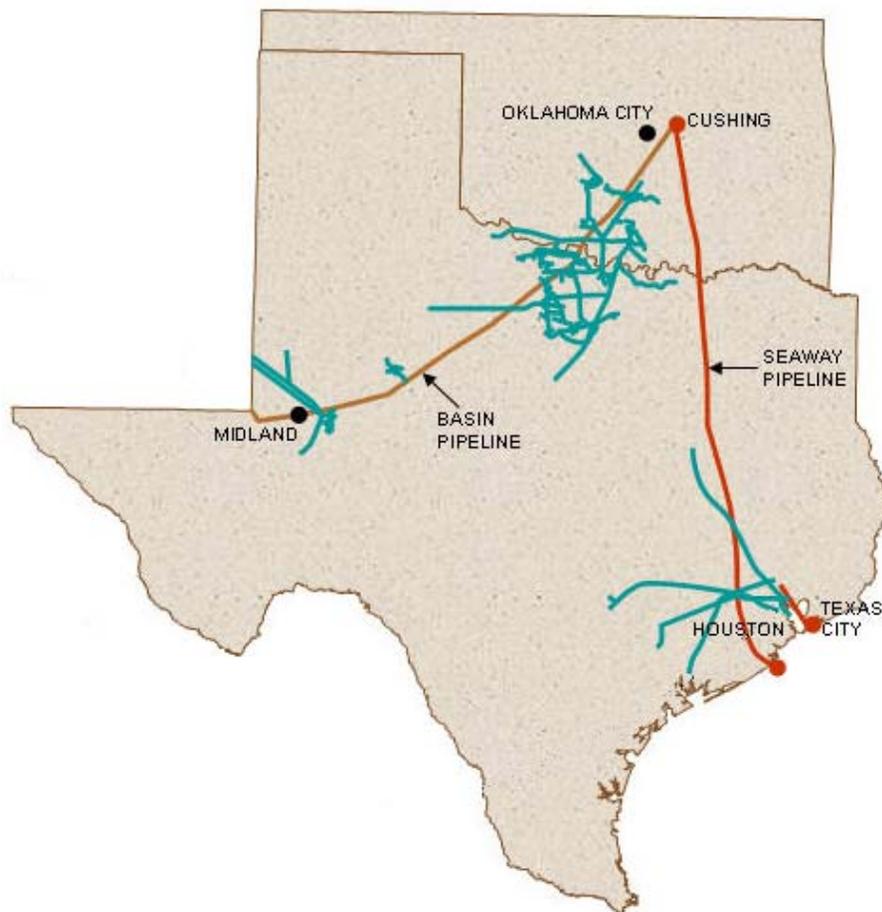
- **Phase 1:** Hardisty, AB to Steele City, NB, Patoka/Wood River, IL — **COMPLETED** Jun'10

- **Phase 4:** Hardisty, AB to Steele City — **DELAYED**

# Pipeline Capacity Prospects Cont'd

## Enbridge/Enterprise Seaway Reversal:

- Estimated 150 kbd online 2Q'12, 400 kbd ultimate capacity mid-2013



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## Enbridge/Enterprise Wrangler:

- Estimated online mid-2013, 800 kbd ultimate capacity

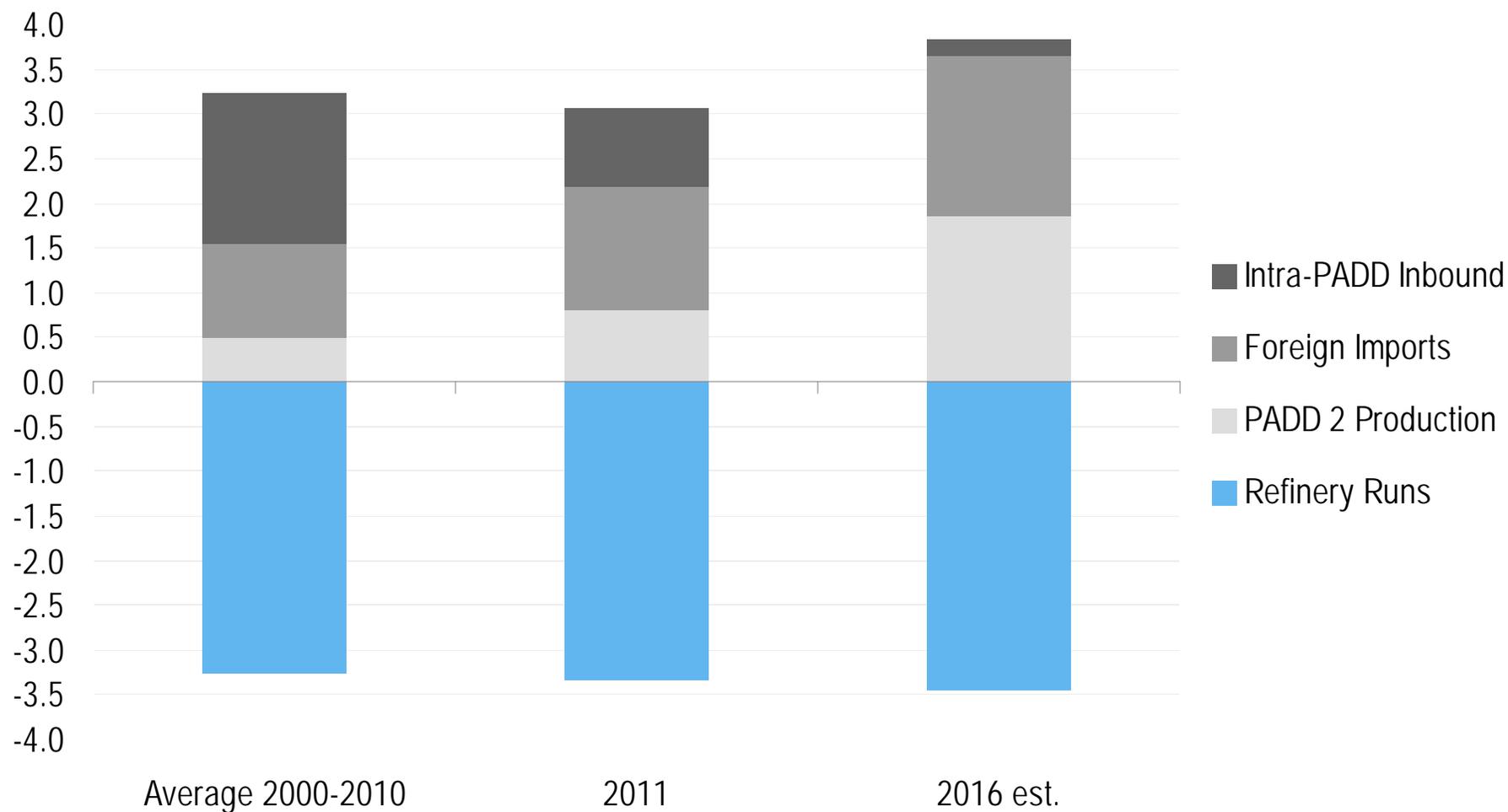


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# So Where Does This Leave Us?

PADD 2 Production & Canadian Imports Will Displace More USG Crude

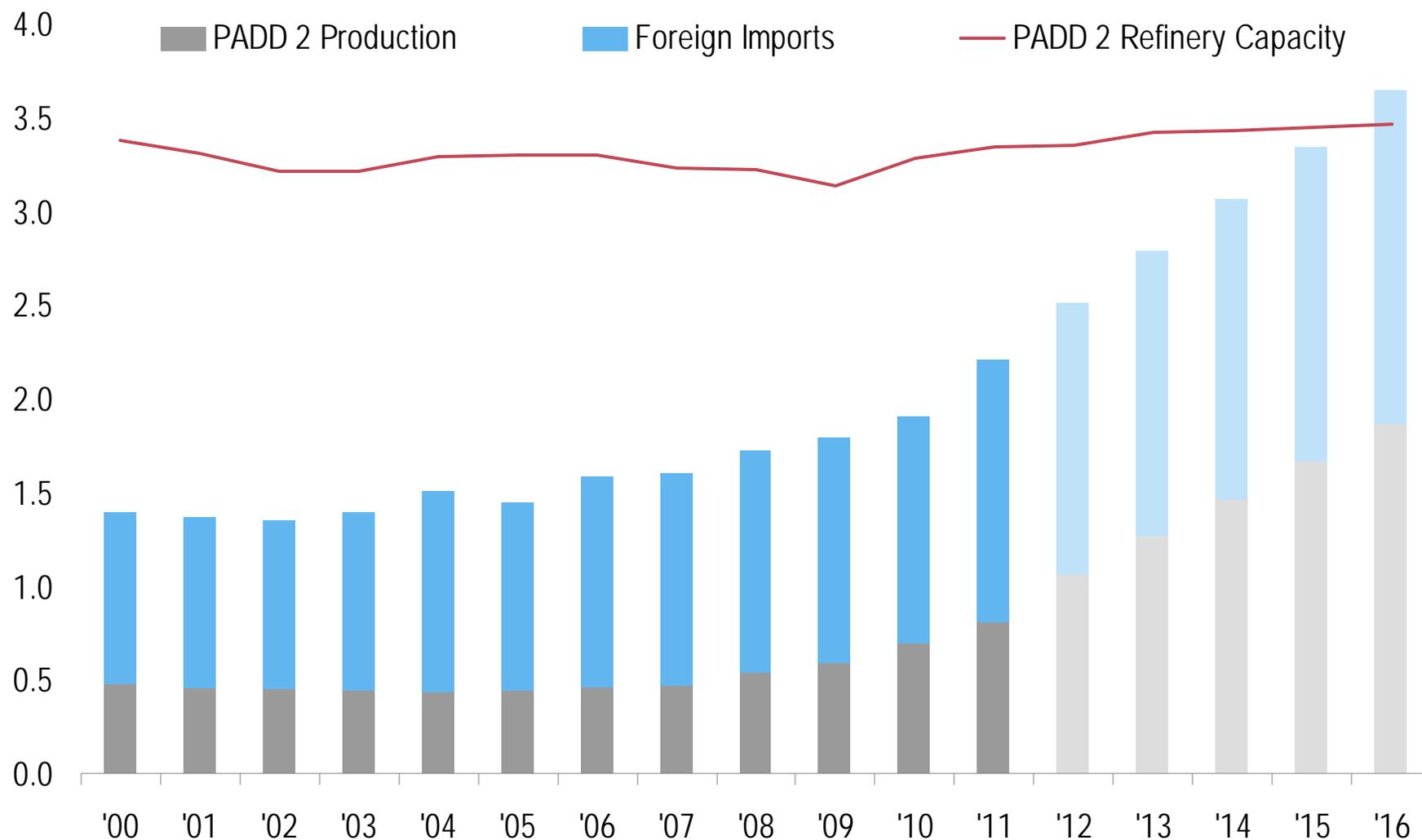
mbd



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# PADD 2 May Not Need Any PADD 3 Crude At All...

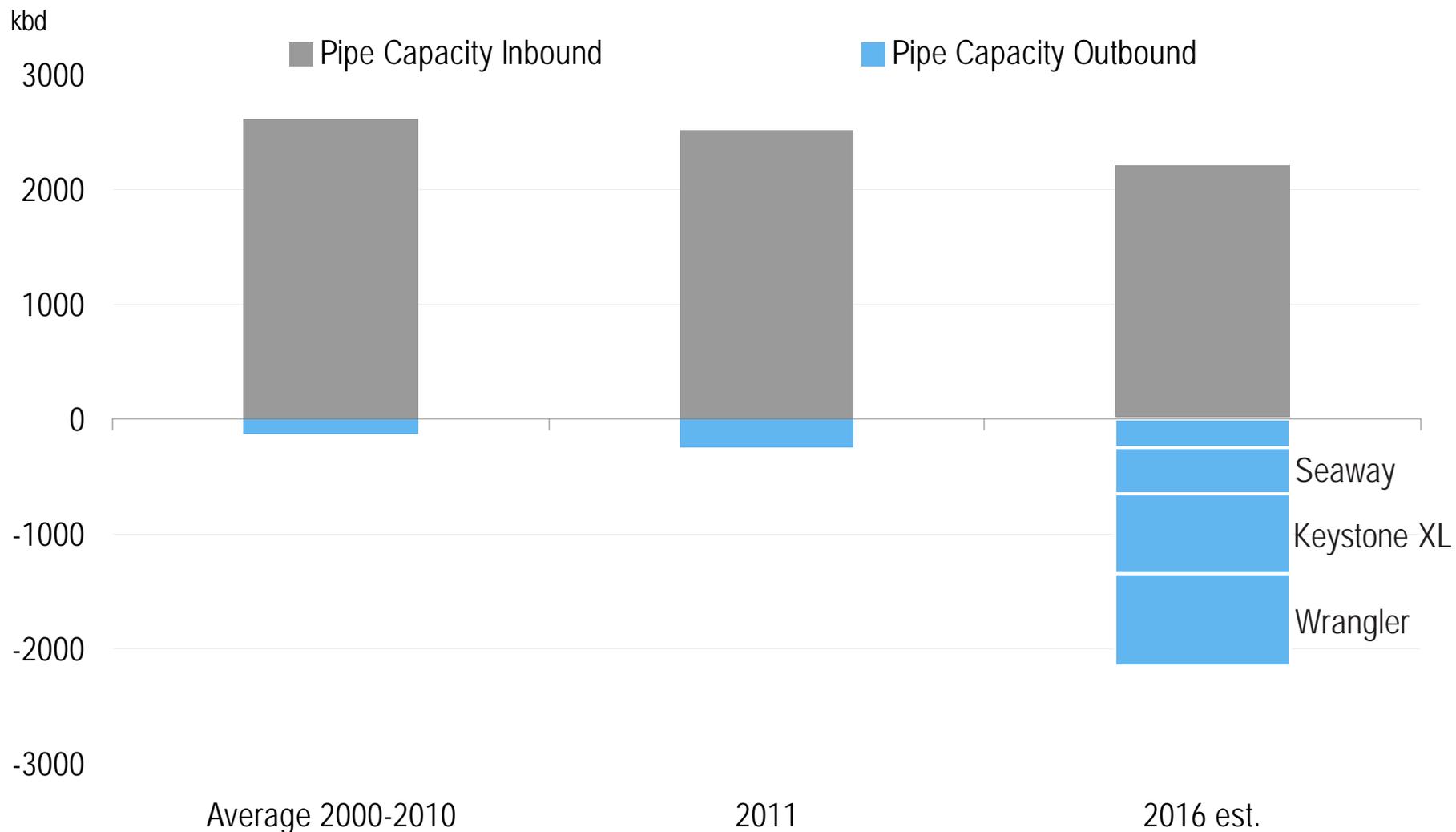
Regional PADD 2 Crude Supply Versus Refinery Capacity



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# How Would Those Pipeline Additions Stack Up?

PADD 2 Pipeline Capacity: Inbound Versus Outbound

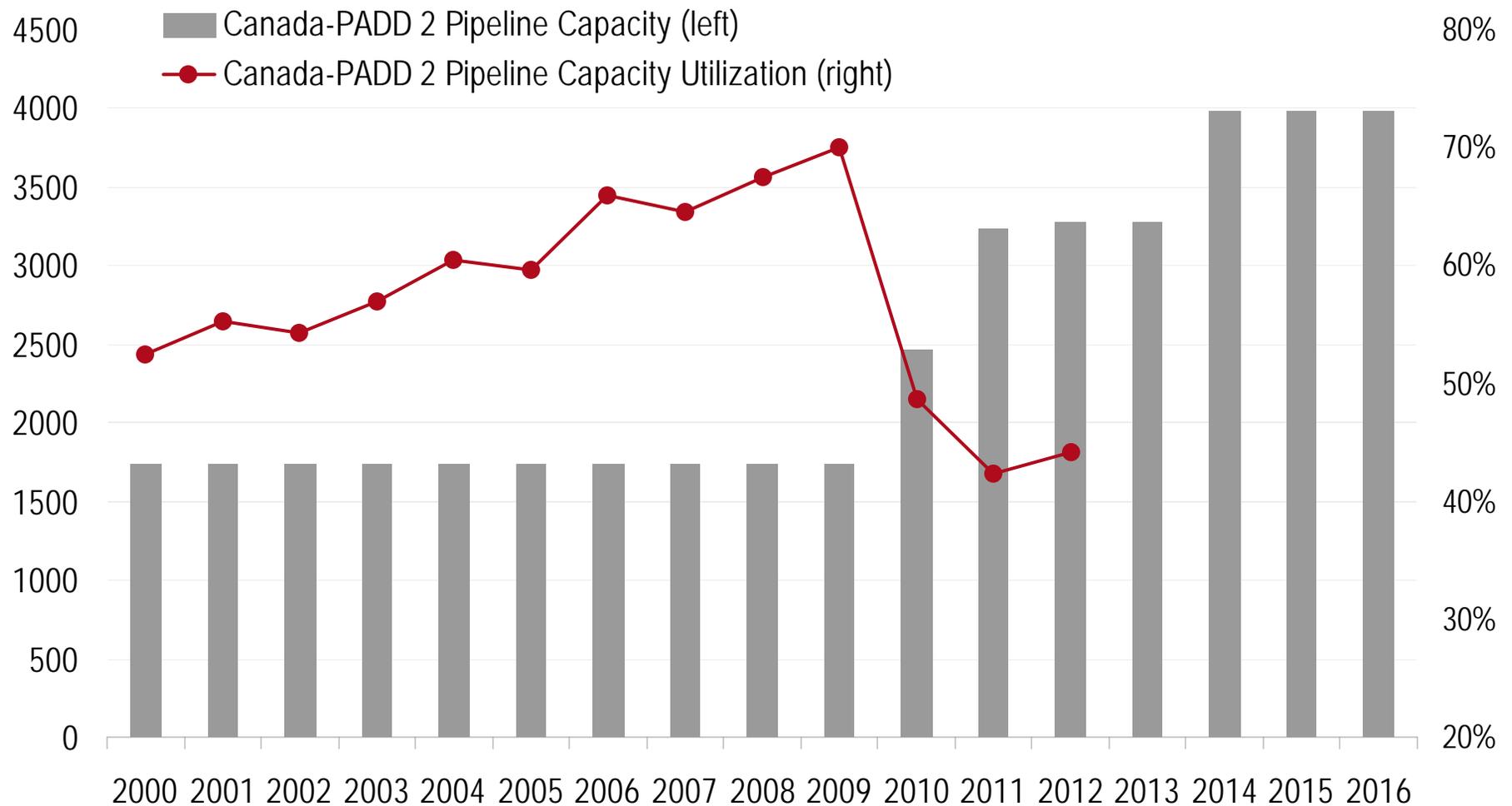


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# Canada-PADD 2 Pipeline Capacity Not An Issue

## PADD 2 Pipeline Capacity: Inbound Versus Outbound

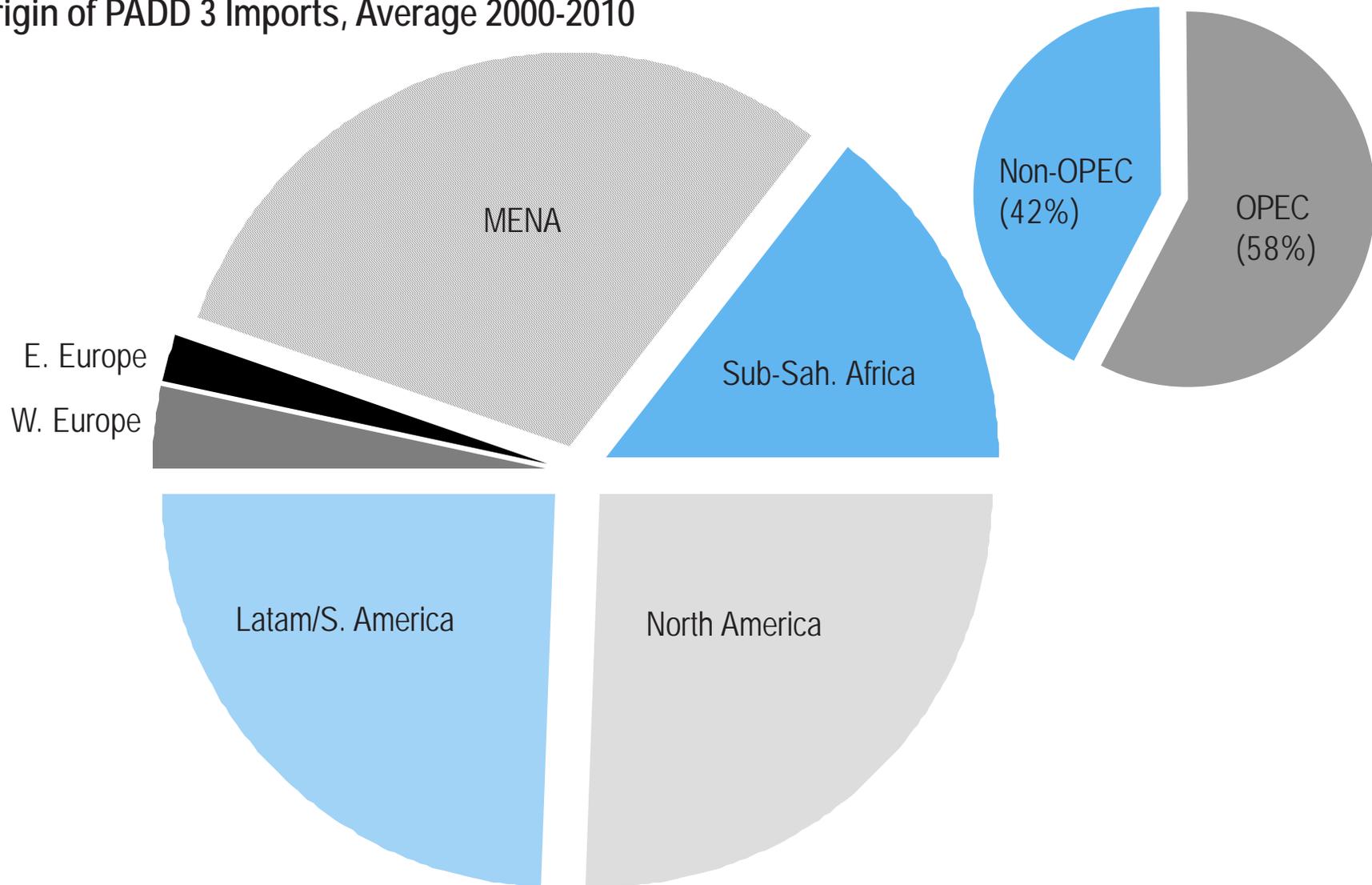
kbd



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# What PADD 3 Imports Could Be Displaced?

Origin of PADD 3 Imports, Average 2000-2010



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## Other Odds & Ends...

- **A greenfield refinery in PADD 2?**

Dakota Oil Processing is planning a (small) 20 kbd refinery in North Dakota geared towards supplying diesel to support Bakken production (rigs, trucks).

- **Could Canada focus attention west?**

Proposed pipeline capacity from Edmonton to the West Coast includes Enbridge Gateway project, KinderMorgan's Northern Leg of the Trans Mountain system, and other TMX expansions. Canada currently exports just ~50 kbd to Asia.

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