BOE Report Weekly Round-up

May 2nd, 2025

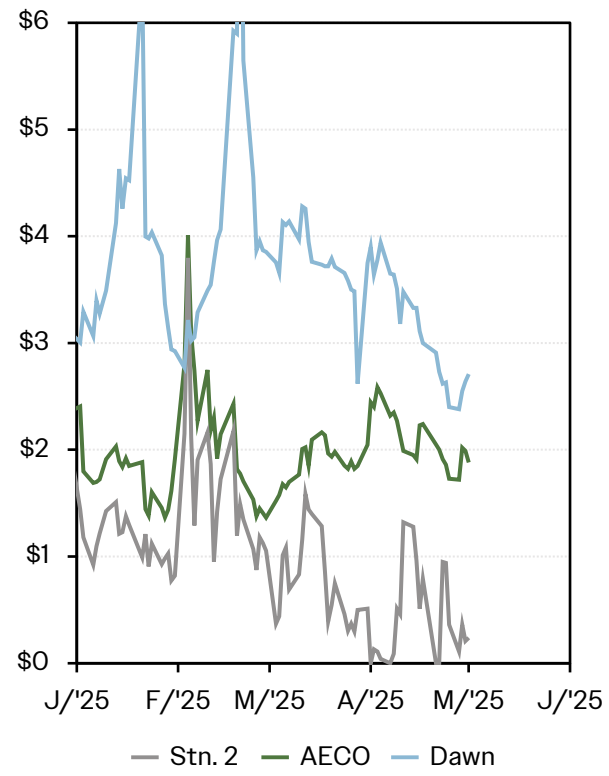
We are pleased to be back after Easter Break. Inside we look at valuing gas producers in an increasingly volatile gas market (which we expect as LNG ramps), what CCUS tax credit uncertainty in the US means for Whitecap Weyburn, Marten Hills waterflood contributions by bench, and the glut of assets currently for sale in the WCSB.

The theme among gas producers certainly seems to be LNG Canada can't come soon enough. ARC curtailed 75MMcf/d of production in Q1 due to low Station 2 prices; Shell is going on one of the longest soaks at Groundbirch as they wait to TIL a massive pad – and last week the bid/ask on Station 2 touched -$50/-$10 per MMBtu. That's negative fifty dollars. While the low-of-day was *a much more reasonable* -$10/MMBtu, the gas market in northeast BC can only be described as "grim". Do we think LNG Canada fixes this? No, not at all. Producers are constantly hungry to fill any incremental processing/egress – as NorthRiver finishes the Gordondale West plant, we're watching Kelt build DUCs to meet their commitment. Big, or small; we expect any egress over the next decade to fill quickly.

On the oil side, both ends of the Charlie Lake have been performing unbelievably well, with Prairie Thunder's northern long-reach multilateral wells all tracking to EURs >220MBbls of oil, and Archer's southern Pipestone 3-mile wells showing peak oil IP_{30} rates consistently exceeding 1,000Bbls/d. Headwater reported improved results at Peace River from their larger-casing wells, along with a successful multilateral test on their Bigstone Cree block. At Peace River, Obsidian's Bluesky tests on their eastern Paramount/Cavalier farm-in block encountered water.

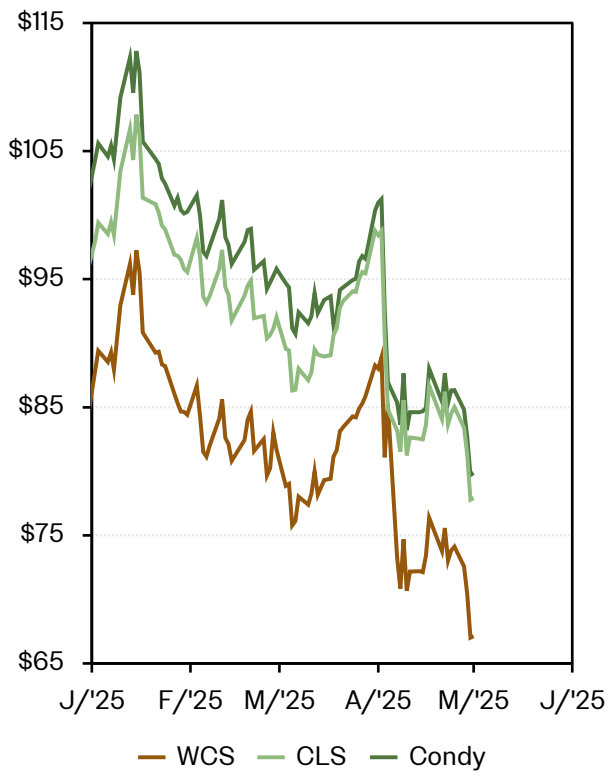
Commodity prices have been relentless in their slow march downwards (see below), which is certainly discouraging; but positive results throughout the basin continue to derisk new well designs and plays that will certainly be "in the money" at one point. On the next page we consider valuing upstream assets probabilistically (i.e. from a range of outcomes perspective) – while we look at a gas producer; these low WTI prices make it applicable to oil E&Ps too.

5-2.1: Gas Price Netbacks by Hub ($/GJ)



Source: NGI, HTM Research, generated May 1st, 2025
Note: Gas netbacks assume Gordondale plantgate, with long-haul tolls assumed at minimum FT-R rates

5-2.2: Spot Alberta Crude Pricing ($/Bbl)



Source: Bloomberg, HTM Research, generated May 1st, 2025
Note: Thursday pricing shown as Bloomberg assessed, and may not be reflective of actual settlement data

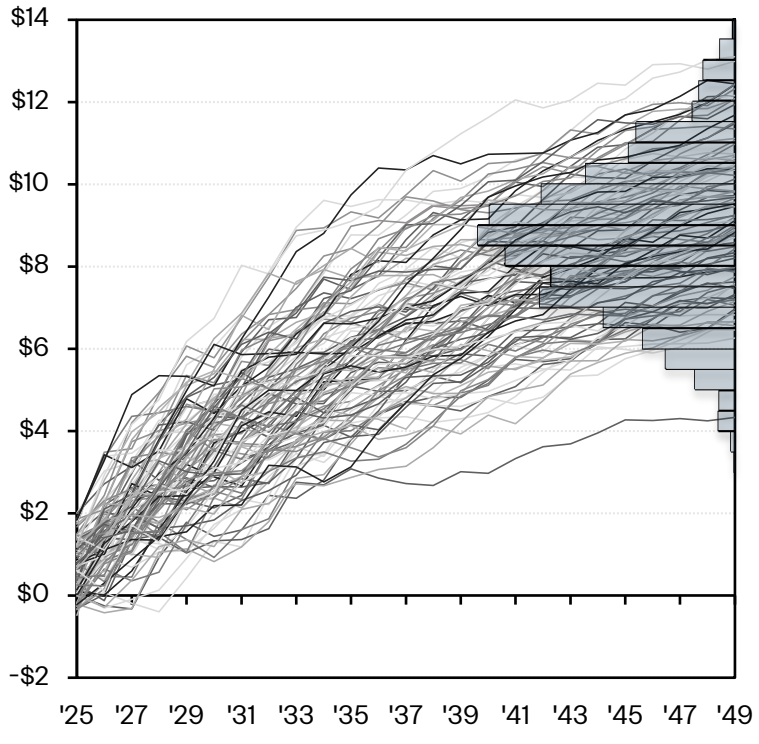
How Can You Value Companies With Increasingly Volatile FFO

As upstream valuations have become attractive compared to long-term averages, we've seen more focus on FFO and FCF multiples – than on NAV and business sustainability. For natural gas producers, we think that's especially wrong, as we expect cashflow volatility to increase in coming years as LNG Canada ramps. So if cashflow is unreliable, and NAV only reflects one pricing outcome – how should upstream gas-weighted E&Ps be valued? We think that more of a probabilistic view should be used as an anchor for short-term movements in multiples and net asset values.

Using Birchcliff as an example – what would they look like if they were valued probabilistically, rather than using a NTM free cashflow multiple. We recognize that the AECO, or NYMEX strip is not going to materialize, but if an entity can continue to operate as a going concern through multiple years of soft commodity prices to capture those few years (or months) of strong prices; the valuation framework should certainly account for that – right! Using NTM free cashflow obscures ratios in a meaningful way. Especially for companies that choose to internalize basis volatility, we think NTM multiples should be used to refine short-term views with range-of-outcome work as an anchor.

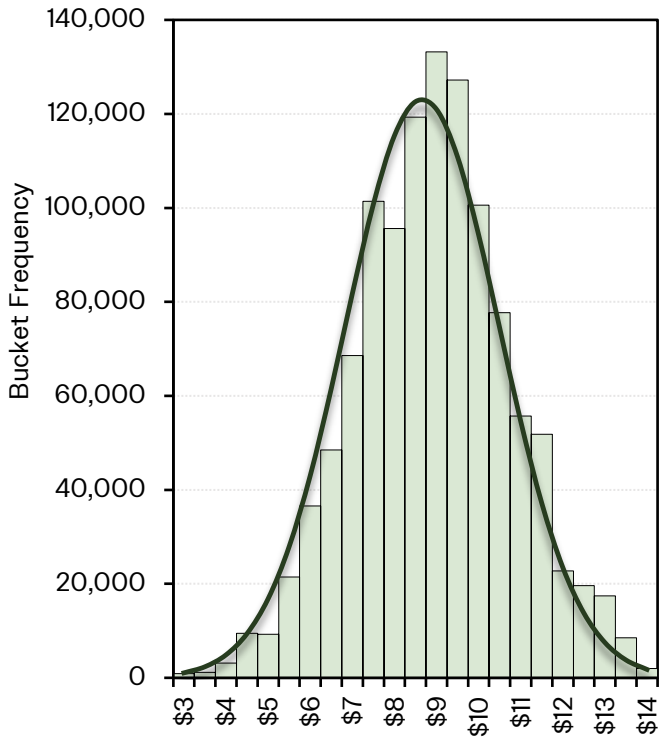
In October, we ran a random walk experiment; taking Birchcliff in 2024, cutting the dividend, keeping leverage flat (debt priced at forward LIBOR), then randomizing AECO, Henry Hub and WTI prices monthly for the next 25 years, with AECO between $1.00-5.00/MMBtu, Henry Hub between US$1.25-$4.50/MMBtu, and WTI between US$50-100/Bbl. We then fed this through our model 1,000,000 times; with annual free cashflow sweeping towards growing production (and subsequent years in the experiment benefitting from the higher production, via OPEX reductions, and higher revenues), though free cashflow was allowed to be negative when necessary to keep production flat. We did not consider infrastructure constraints in this experiment though inflated CAPEX and OPEX by 3% annually, and added random CAPEX spend between $10-50MM annually to represent full-cycle CAPEX. While it's not perfect, we believe it's more representative of the business than using multiples, especially for a strictly unhedged gas producer. Annual FCFPS figures (undiscounted) ranged from -$1.15/sh to $4.61/sh; both the massive down and up years are not reflected in any traditional valuation method. While we appreciate Birchcliff will never be priced like this, we believe it's a useful exercise to calibrate what value is with volatility reflected. We would suggest, as AECO forwards continue to converge on marginal costs, that hedging will become less effective as the margins on offer will be much thinner.

5-2.3: Birchcliff Random Walk Cume FCFPS $PV_{10\%}$



Source: HTM Energy Research, generated October 1st, 2024

5-2.4: FCFPS $PV_{10\%}$ Results and Distribution

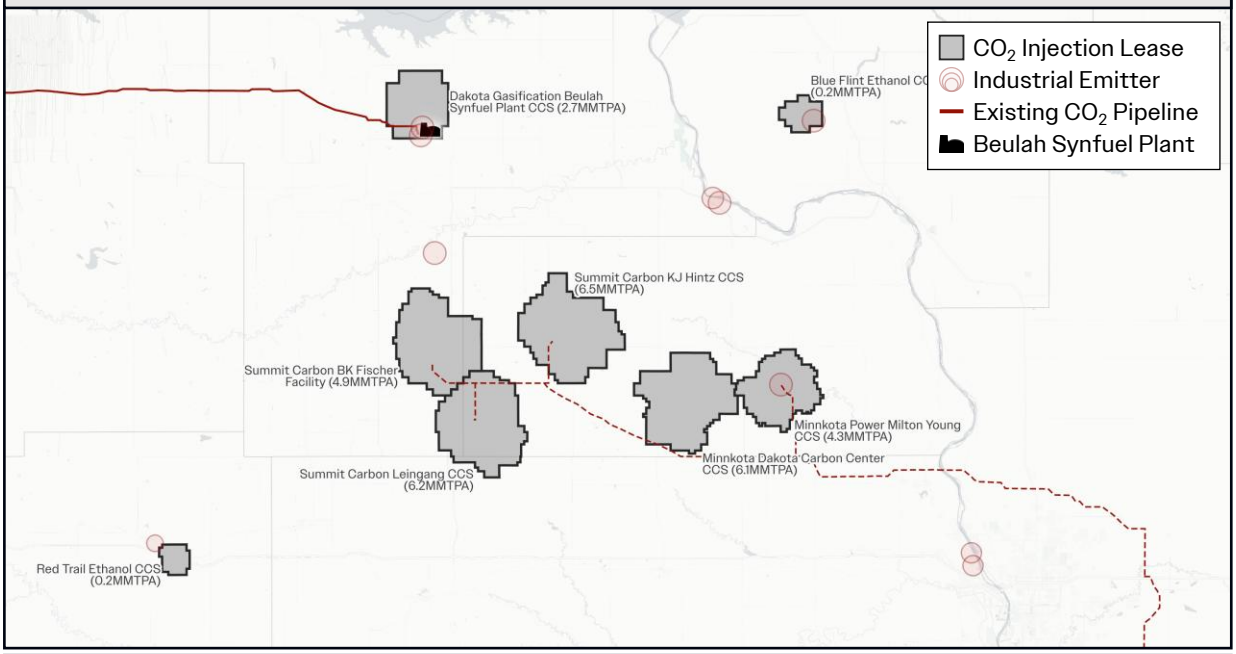


Source: HTM Energy Research, generated October 1st, 2024

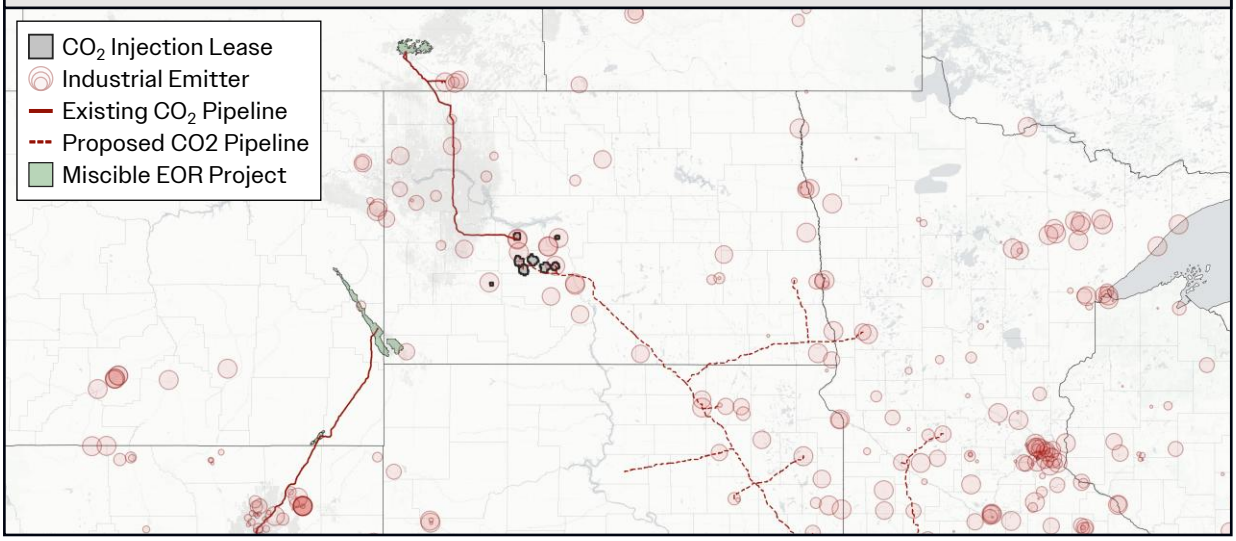
Potential 45Q Repeal Positive for Whitecap

A question we have been asked frequently is, 'how secure is Weyburn's CO_2 supply?' We'd say – not a concern. Not only did Mitsubishi's Bakken Energy JV fail to acquire Dakota Gasification's Synfuel Plant (which would have seen it transformed into a Hydrogen Hub); a bill has recently been introduced in the US that may repeal tax credits for CCUS, which would make Dakota Gasification sequestering their own CO_2 unprofitable over selling it to Whitecap. In 2024, Dakota Gasification began injecting CO_2 from the Beulah plant into 6 of their own injection wells at an annualized rate of ~2MMTPA (licensed capacity of 2.7MMTPA). They earn US$85/T in tax credits for this injection. A repeal of 45Q would make expanding this project uneconomic as there would be no government benefit associated with further injection. On the other hand, while not disclosed, we calculate Whitecap pays Dakota Gasification ~US$30/T for CO_2. Notably, the only reason the Bakken Energy deal fell through, was because Dakota Gasification wanted to take advantage of the 45Q program. Below we show North Dakota sequestration permits in the Beulah area, along with a greater context map of Northern US' existing, and proposed CO_2 trunkline infrastructure and industrial emitters.

5-2.5: Greater Beulah, North Dakota CO2 Sequestration Lease Map



5-2.6: Northern US Industrial Emitter and Carbon Infrastructure Map



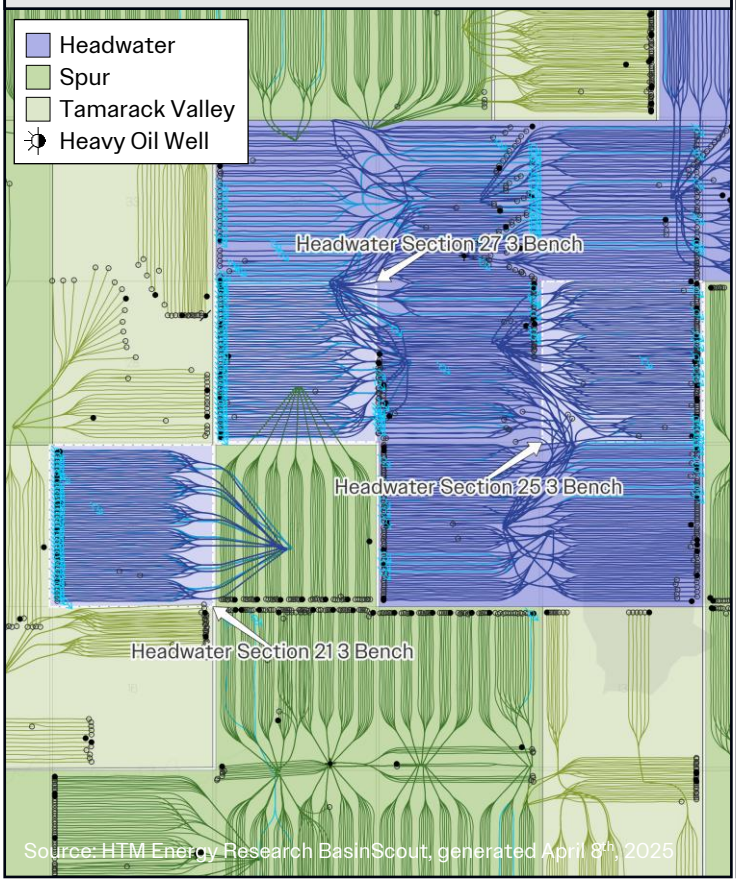
How Much More Does The Core of Marten Hills Have to Give?

Over the past years, we have been hesitant to underwrite full value for Clearwater waterfloods, as we have been concerned that sediment transport to surface caused by water breakthrough in these unconsolidated reservoirs would overwhelm pumping equipment and impair the long-term value of these projects. As Marten Hills now has multiple years of data, we're now more confident in our long-term modelling. This confidence comes at a time when the related equities are closing in on multi-year lows; a potential opportunity for those wanting to own a piece.

Multilaterals on primary solution gas depletion drive see an exponential decline, with no concerns over sand production; though when fluid rates increase in waterflood fields, as producers "recycle" water through the reservoir, the wellbore fluid velocity, we were concerned, would exceed the erosional velocity of the sand in the wellbore, causing large amounts of sand produced. This hasn't been the case thus far – in the southern Marten Hills area, Spur recently increased water injection rates to >1,200Bbls/d and hasn't dealt with any subsequent sand influx. We track the Marten Hills surface battery throughputs like hawks, and over the past 2 years, we haven't seen any major sand dispositions. In the case of Spur's pilot, they've injected close to 2.5MMBbls of water, with injection peaking at 3,500Bbls/d, and they have seen an oil production response of >1,000Bbls/d with water cuts stabilizing at ~15%.

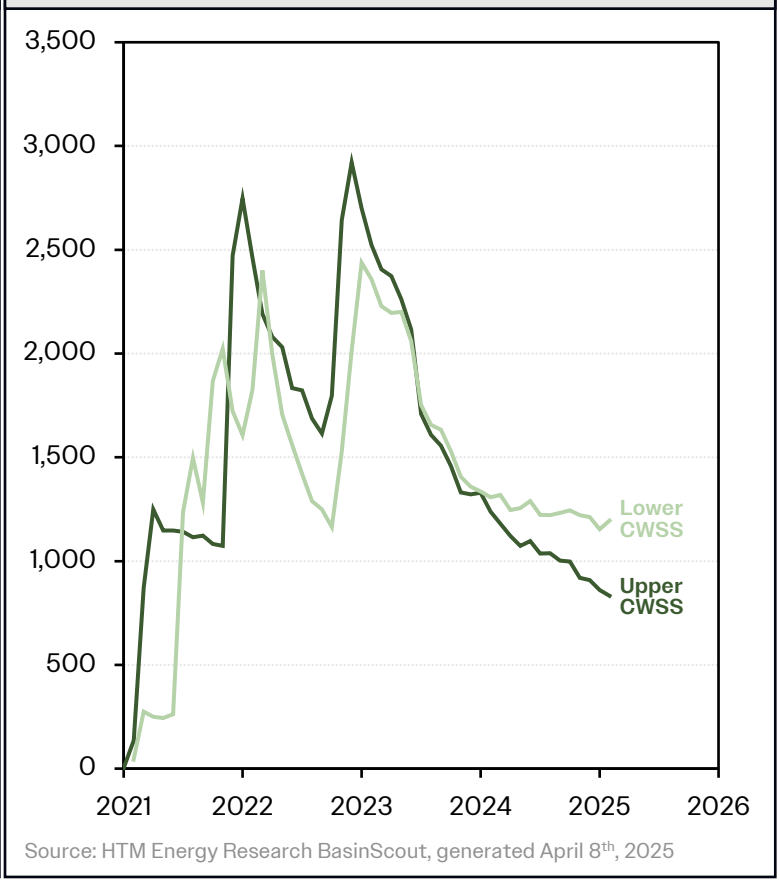
Through time, waterflood response in the core of Marten Hills has been excellent. Our work has continued to flag a lesser contribution from the upper producers in the main Clearwater sandstone for waterflood projects in a three-layer bottom-up configuration. The initial response is noticeable in the lower unit, and less so in the upper unit until 100% voidage replacement (VRR) is reached. For Headwater, they have not injected at high rates like Spur (possibly to be gentle on the reservoir), but as a ~100% cVRR is reached at Marten Hills, we believe there may be continued upside through a sustainably longer production plateau, lower maintenance capital, and higher recoveries. Shown below in figure 5-2.7, while the oil production from the lower interval in the core of Marten Hills has flattened out since injection ramped in 2023, the upper interval for the most part, hasn't. We believe there may be a production response from the upper interval when cumulative voidage replacement closes in on 100%.

5-2.7: Core Marten Hills Waterflood Map



Source: HTM Energy Research BasinScout, generated April 8th, 2025

5-2.8: Marten Hills WF Oil Rates by Bench (Bbls/d)



Source: HTM Energy Research BasinScout, generated April 8th, 2025

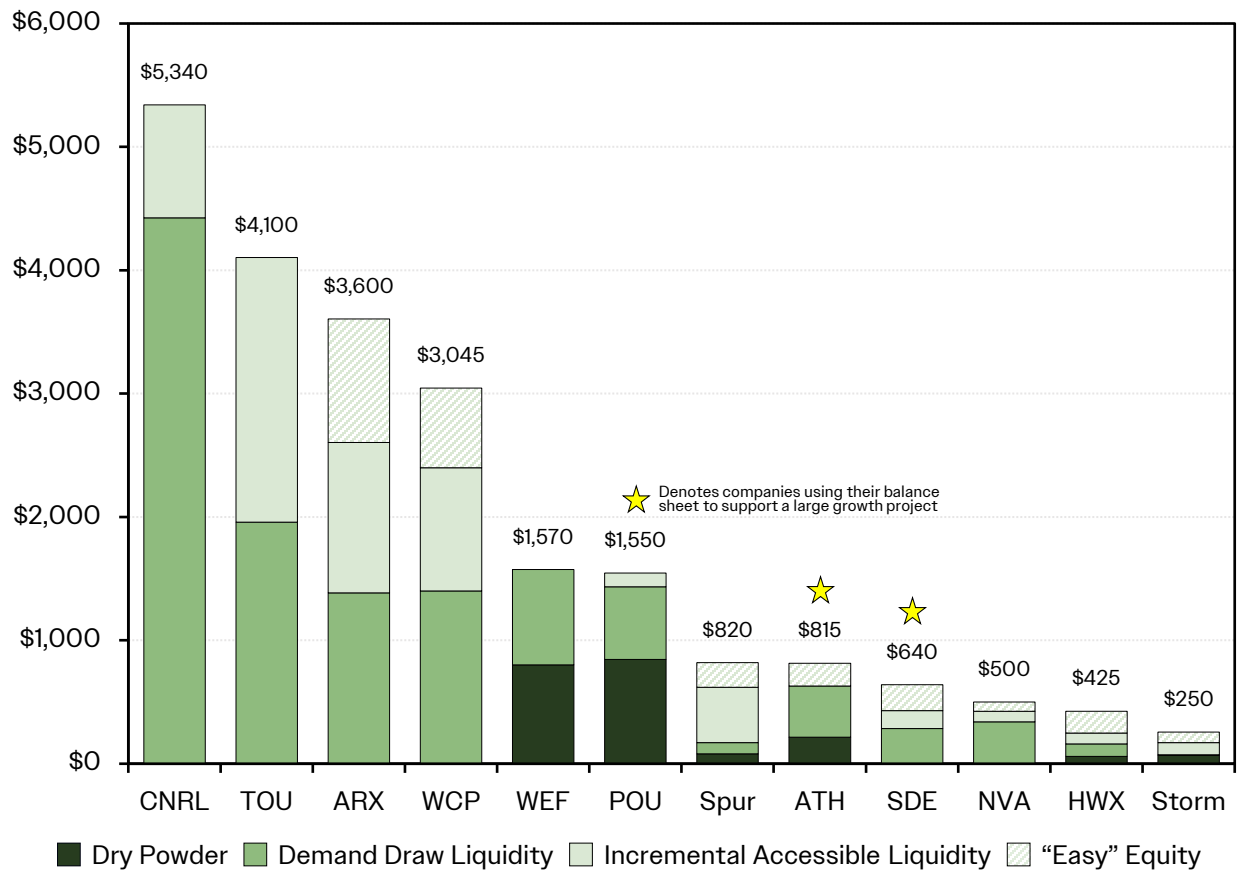
Everything's For Sale, Where's The Capital Coming From?

As we've noted in previous weeks, the upstream asset market is becoming thoroughly saturated – but that hasn't slowed sellers down. In April, we tracked well over 50,000BOE/d of production come to market. From the Montney to the Heavy Oil fairway, companies are looking for monetize assets and core-up their production base. But who's buying? Larger mid-caps that would have traditionally been acquirers have positioned themselves into larger-scale resource plays in recent years, retaining organic development optionality when M&A markets don't offer competitive growth options. We think this makes M&A harder, as buyers can be more selective – compounded by a general lack of M&A capital and transaction urgency. Both sides of the aisle are well capitalized (balance sheets are fine) with commodity prices not quite low enough to catalyze anything major.

Ultimately, we think this means that companies the industry may have marked as 'sellers', will need to become acquirers. This includes E&Ps like Obsidian, and even Kelt. We don't think that shift in mentality has occurred just yet. We were watching Advantage's Progress 50% interest disposition as a sign Kelt has gotten there; but they didn't take it down – which may be a reflection of asset quality rather corporate outlook. We'd watch for historically proficient asset developers switch to acquiring <US$60/Bbl WTI (generally, a good time to buy), as validation of our thesis.

Below we calculate acquisition capital available by party. There is a distinct mismatch between assets companies are hoping to sell; and capital available to buy non-distressed assets. Excluding CNRL through Whitecap, it's only ~$2Bn of "easy" money. While we expect Whitecap will continue to acquire assets; the integration of Veren poses a serious timing quandary for sellers. In fact, we think the fact that Whitecap is the only active acquirer in the Alberta Montney and Kaybob Duvernay is positive for their pro forma positioning in the basin. Given there seems to be no catalyst to induce small-scale M&A; we'd prefer companies that are actively exploring (rather than developing), are extremely long inventory (i.e. under-developed), or have assets that are of extremely high quality.

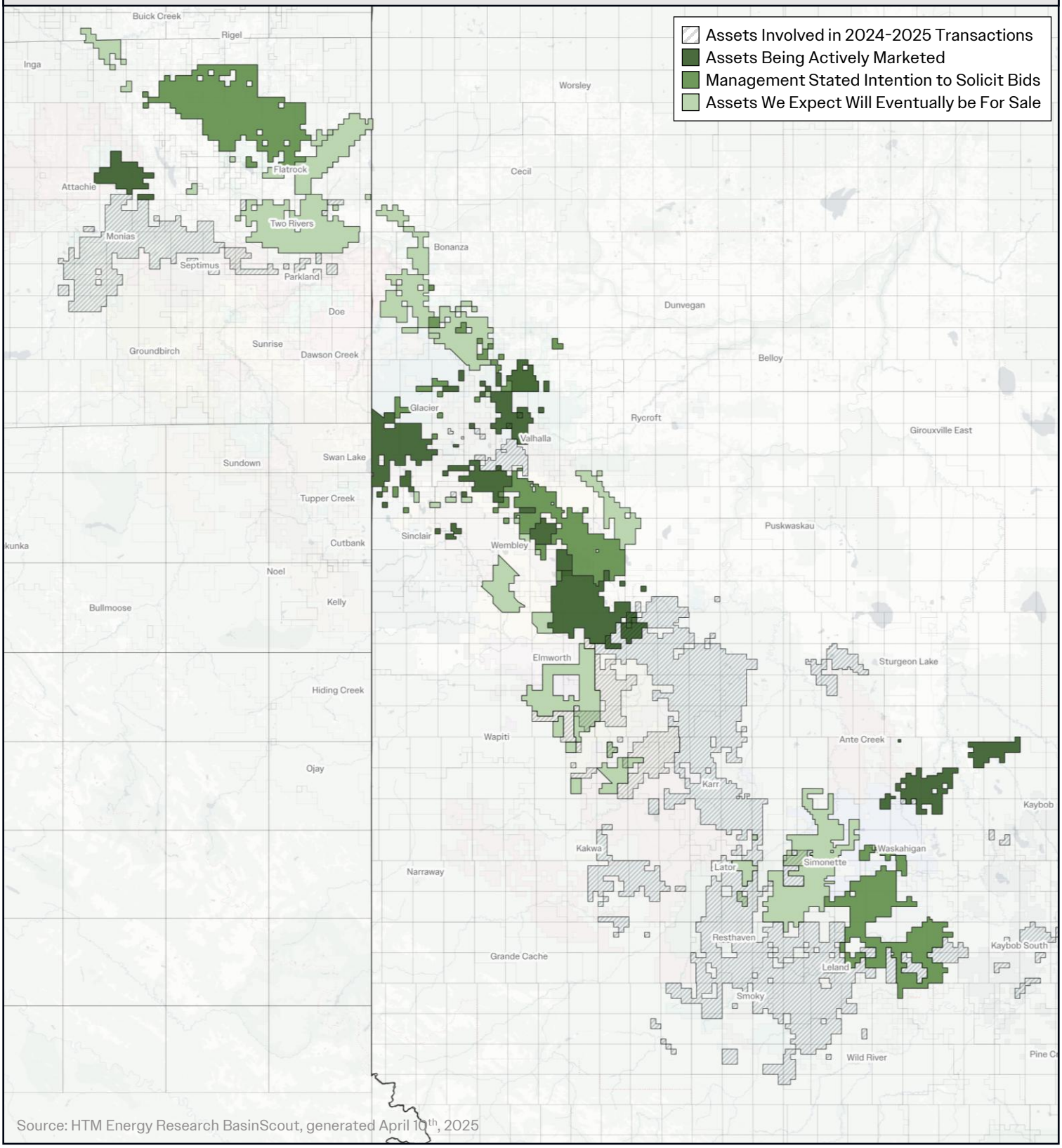
5-2.9: Acquisition Capital Available in the WCSB ($MM)



Source: Bloomberg, Company Reports, FactSet, HTM Energy Research Estimates, generated April 10th, 2025

Majority of the updip side of the Montney is for sale, seeking a transaction soon, or being prepared for sale over the coming years (i.e. Coelacanth, Logan). This makes it easy for any potential buyers to be discerning, if not choosy.

5-2.10: Assets For Sale/Coming to Sale in the Montney



Source: HTM Energy Research BasinScout, generated April 10th, 2025

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