

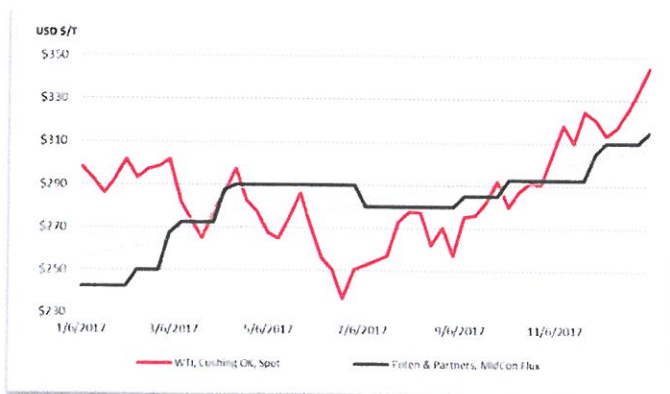


### Shuttered Capacity, Strong Crude Oil Complex Impact Asphalt Shingle Market

Asphalt costs are rising, driven by a series of economic drivers. Bulk asphalt prices increased by more than 35% during 2017, reaching the highest level since August 2015. Crude oil prices hit three-year highs (Exhibit A), and U.S. crude oil inventories hit three-year lows. U.S. asphalt capacity declined by 9%, and alternative uses for asphalt increased at the refinery level.

#### CRUDE OIL

##### Exhibit A: Asphalt Costs and WTI \$/T



Oil markets have responded to OPEC's January 2017 commitment to production cuts of 1.8 million barrels per day. Overall compliance for 2017 was an impressive 106%. Conformity levels increased monthly from 87% in January to more than 130% by year end. The UAE Oil Minister sees a balanced market in 2018, as OPEC extends the accord through December 2018 with continued strong compliance expected.<sup>2</sup> Since August 2017, price of the U.S. benchmark crude (WTI) has increased by \$20 per barrel, a 43% increase. Analysts predict strong crude prices will be supported through the first half of the year. Goldman Sachs forecasts crude oil prices to exceed earlier estimates due to rising demand and strong compliance to OPEC cuts.

The market is seeing "falling inventories and rising geopolitical risk, and that signals higher oil prices," said Rob Thummel, managing director at Tortoise Capital Advisors LLC.<sup>3</sup> U.S. crude oil inventories continue to drop and are well below levels seen at this time last year. In fact, inventories have not been this low since January 2015, supporting WTI valuation.<sup>1</sup> EIA reported on December 29<sup>th</sup> that crude oil inventories dropped to 424.5 million barrels, which is 55 million barrels fewer than the same time in 2016.<sup>4</sup>

#### ASPHALT INVENTORIES AND CAPACITIES

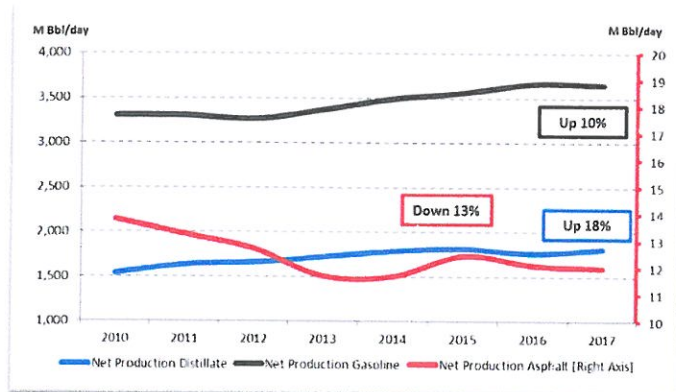
U.S. asphalt inventories reached near the bottom of a four-year range at the end of December, as markets abruptly shifted away from the oversupply seen earlier in the year.<sup>5</sup> U.S. Asphalt production has been curtailed by heavy refinery maintenance, refinery turnarounds, and continued crude oil pipeline shipping restrictions on Enbridge's system.

Unplanned refinery upsets extending to 2+ months in the West, and Midwest reduced production. Additionally, strong pricing for alternative refinery feed asphalt tightened regional supply.<sup>5</sup> January inventories are showing signs of recovery, but will need to rise significantly higher as the 2018 paving season nears.<sup>6</sup>

<sup>1</sup> Argus Crude and Refined Products Outlook (January 10, 2018)  
<sup>2</sup> Argus Americas Asphalt (January 12, 2018)  
<sup>3</sup> Oilprice.com "Can The Oil Price Rally Continue?" (January 14, 2018)  
<sup>4</sup> Polen & Partners, Asphalt Weekly Monitor (January 1-5, 2018)  
<sup>5</sup> Argus Americas Asphalt (January 5, 2018)  
<sup>6</sup> Polen & Partners (January 8-12, 2018)



### Exhibit B: U.S. Refinery Productions

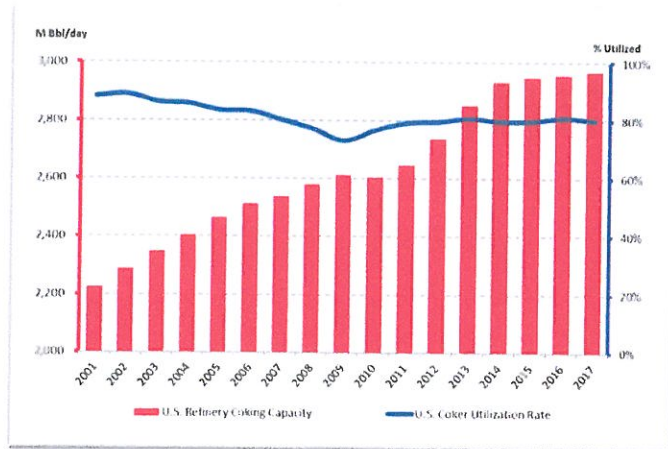


Shuttered capacity tightened the supply environment even further. The closure of Shell's St. Rose topping refinery in December 2017, and the Axion Paulsboro, NJ facility closure earlier in the year, contributed to a 9% drop in total U.S. asphalt capacity (Exhibit B).<sup>5</sup>

Latin America's asphalt production neglected to keep up with road construction and maintenance projects in that region.<sup>2</sup> U.S. Gulf Coast exports have supplied Mexico, Argentina, Panama, and reportedly Guadalupe and West Africa, drawing on domestic production and further straining an already tight supply situation.<sup>5</sup>

### REFINERY ALTERNATIVES

### Exhibit C: U.S. Coking Capacity and Utilization



Record demand for gasoline and diesel pushed asphalt down the value chain for refiners looking to maximize value. While asphalt prices have increased, they still lag exceptionally strong values refiners can realize by exploring alternative uses for asphalt, such as coker feedstock and fuel oil.<sup>2</sup>

To estimate refinery margins, refiners calculate the difference between wholesale petroleum product prices and crude oil prices with a crack spread formula. Refiners will redirect their asphalt inventories to realize economic opportunities therefore, compressing asphalt available to the market.

Asphalt as a coker feedstock has strengthened by \$100/short ton and reflect 12-month highs.<sup>5</sup> Exhibit C shows refinery coking capabilities have significantly increased and are maintaining strength, demonstrating the focus of refiners to engage in alternate asphalt uses. Alternatives continue to put upward pressure on Asphalt prices across U.S. regions, and asphalt availability has been reduced by constrained asphalt production.

As always, we hope that this bulletin has been helpful in planning your business.

Steven Cowan  
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1 Argus Crude and Refined Products Outlook (January 10, 2018)  
2 Argus Americas Asphalt (January 12, 2018)  
3 Oilprice.com "Can The Oil Price Rally Continue?" (January 14, 2018)  
4 Poten & Partners, Asphalt Weekly Monitor (January 1-5, 2018)  
5 Argus Americas Asphalt (January 5, 2018)  
6 Poten & Partners (January 8-12, 2018)