Tortoise℠

Tortoise Talk

Energy update

Fourth quarter 2019

Tortoise

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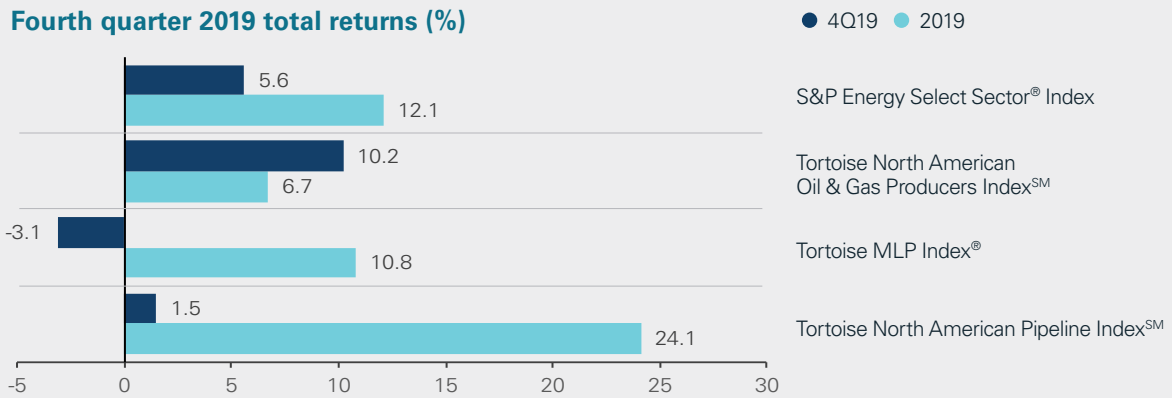
The broader energy sector, as represented by the S&P Energy Select Sector® Index, finished the fourth quarter in positive territory, returning 5.6%, bringing 2019 performance to 12.1%. We think one of the key catalysts for 2020 is the energy evolution that is underway globally. Energy demand is growing worldwide, particularly from electrification in emerging countries. This increasing demand needs to be met with lower-carbon supply in order to decrease global carbon emissions. For this to happen, natural gas and renewables must take market share from coal for electricity generation. Additionally, U.S. midstream energy is playing a big role, exporting cheap and lower carbon energy to the rest of the world, increasing the need for critical infrastructure to support these exports.



As of 12/31/2019. Source: Bloomberg. It is not possible to invest directly in an index. Please see index definitions on disclaimer page.
Past performance is no guarantee of future results.

Upstream

The Tortoise North American Oil and Gas Producers Index℠ returned 10.2% in the fourth quarter, bringing 2019 performance to 6.7%. Oil markets experienced some much needed stability in the fourth quarter after a tumultuous third quarter. With trade tensions easing and the global economy not showing any signs of a slowdown, demand growth is currently expected to improve in 2020, which should bring worldwide supply and demand into better balance. Crude oil prices, represented by West Texas Intermediate (WTI), began the quarter at $53.62 per barrel and troughed quickly thereafter at $52.45 on Saudi claims of minimal disruption to production after the attacks on the Saudi Aramco processing facilities at Abqaiq and Khurais. Prices trended upward throughout the rest of the quarter following a successful Organization of Petroleum Exporting Countries (OPEC) meeting and peaked at $61.72 on Dec. 27, 2019 before ending the quarter at $61.06.

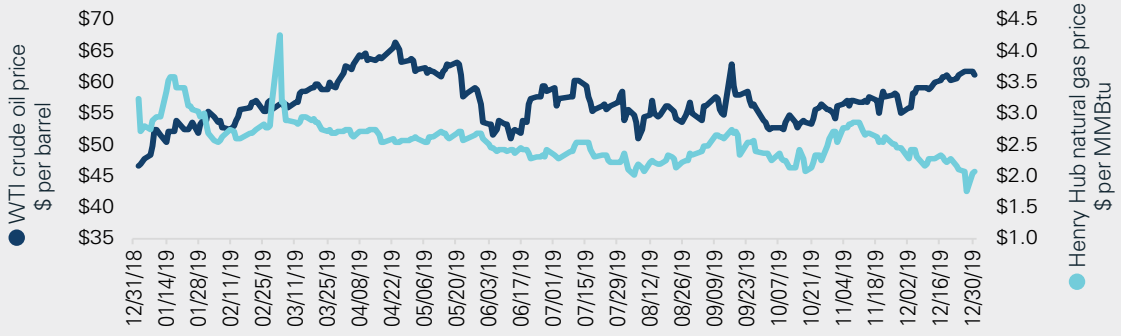
U.S. crude oil production growth is expected to broadly moderate in 2020 and 2021 as compared to the rapid growth over the past two years. Specifically, U.S. crude oil production is projected to average 13.3 million barrels per day (MMbbl/d) in 2020 and 13.7 MMbbl/d in 2021[1]. U.S. upstream companies are facing increased pressure from investors to exhibit capital discipline and rein in production growth in favor of higher free cash flow generation and return of capital to shareholders. Nonetheless, with multiple years of tremendous production growth, propelled by the U.S. shale revolution, the U.S. became a net exporter of oil and petroleum products for the first time in recent history in September 2019 with net exports projected to grow into 2020 and beyond[1]. Rising U.S. energy exports of liquids and natural gas are expected to positively affect the U.S. trade deficit and will ultimately help reduce global CO_2 emissions as lower-carbon energy sources, along with renewables, take market share from coal.

OPEC and their Non-OPEC partners (OPEC+) announced in December a clear goal of establishing a floor for crude prices through the seasonally weaker first quarter. OPEC+ members agreed to an incremental 0.5 MMbbl/d cut to the existing agreement taking the official cut to 1.7 MMbbl/d for the first quarter of 2020. In addition, Saudi Arabia agreed to continue its over-compliance of 0.4 MMbbl/d, implying a new commitment level of 2.1 MMbbl/d of cuts. Saudi Arabia is focused on stabilizing crude oil prices following the recent Saudi Aramco initial public offering. While the deal was not extended, OPEC+ did set a date for an extraordinary meeting to be held in early March 2020 to determine the need for additional cuts. Emphasis will likely be placed upon improved compliance from various OPEC members with poor historical compliance (Iraq, Nigeria and UAE).

Natural gas demand has remained robust supported by record levels of domestic power burn, increased exports to Mexico and record liquefied natural gas (LNG) exports driven by the startup of three new liquefaction and export facilities (Elba Island, Cameron LNG, Freeport LNG). However, surging natural gas supply more than offset strong demand, resulting in an elevated pace of inventory builds and pricing pressure through much of the fourth quarter. Natural gas prices, represented by Henry Hub opened the quarter at $2.37 per million British thermal units (MMBtu), peaked at $2.87 on Oct. 8, 2019 with colder than average weather in the Midwest, before trading down below $2.00 to trough at $1.75 on Dec. 27, 2019 and ended the year at $2.09 per MMBtu.

Persistently low natural gas prices have prompted natural gas producers to rein in capex budgets and drilling programs in 2020. While natural gas production is expected to continue growing, the pace of supply growth is set to slow measurably, with production expected to average 93.7 billion cubic feet per day (Bcf/d) in 2020 after averaging 92.1 Bcf/d in 2019[2]. The backdrop of slowing production growth and strong domestic and export demand paints a future picture of improving natural gas fundamentals in the future. The second wave of LNG export facilities, led by final investment decisions (FIDs) made to Exxon's Golden Pass and Venture Global's Calcasieu Pass LNG export facilities in 2019, will provide another meaningful catalyst for natural gas export demand growth from 2022 to 2025.

Crude oil & natural gas prices



As of 12/31/2019. Source: Bloomberg. Note: MMBtu = million British thermal units

Spotlight: U.S. exports supplying low-cost, lower carbon energy to the rest of the world

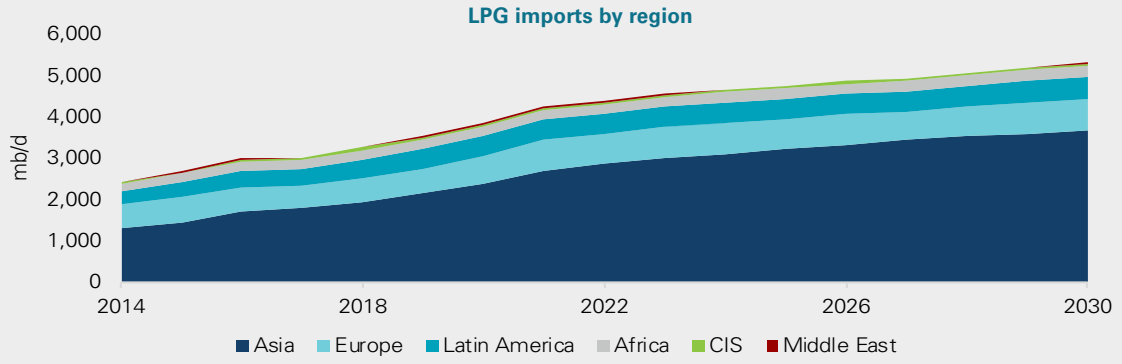
The U.S. shale revolution has driven unprecedented growth in hydrocarbon production over the past decade. Liquids rich natural gas supply growth in the Marcellus and Permian basins along with the buildout of natural gas liquid (NGL) processing and transportation infrastructure led to a veritable wave of liquefied petroleum gas or LPG, commonly referred to as propane and butane. This supply represented approximately 75% of incremental worldwide LPG growth from 2013-2018[1]. This rapid increase in the supply of U.S. LPGs overwhelmed stable domestic retail (residential heating, cooking, power generation and industrial use) and petrochemical demand. As a result, U.S. LPG exports have experienced massive growth, increasing from an average of approximately 330 mb/d in 2013 to an average of 1.2 MMb/d in 2018[2]. Despite the considerable buildout of Northeast and Gulf Coast LPG export capacity over the past five years, current U.S. LPG export terminals are operating at utilization rates above 90%, constraining export volumes. The addition of new, low-cost brownfield capacity expansions on the Gulf Coast, including Enterprise Products Partners' (EPD) Houston terminal in late 2019 and Targa Resources Corporation's (TRGP) Galena Park terminal in 2020, will provide relief to capacity issues in the medium to long term, allowing further growth in U.S. LPG export volumes.

Strong worldwide demand growth for LPG is expected to persist with total worldwide demand for LPG imports projected to grow approximately 1.8 MMb/d to 5.3 MMb/d by 2030[3]. Europe is expected to see a strong uptick in LPG imports through the mid-2020s with a number of petrochemical facilities coming online in the next few years, although demand growth will continue to be driven predominately by Asia.

Asian petrochemical demand will represent the largest portion of demand growth with LPG import demand boosted by a wave of new petrochemical facility construction in China and South Korea. The current U.S.-China trade war is not anticipated to have a large effect on demand growth as China is able to source alternate volumes from other sources in the Middle East, Canada and Australia until the trade war concludes. The expectation is for Asian LPG imports to grow approximately 6% per year through 2030[3].

India and Indonesia will continue to drive Asian retail demand growth as infrastructure and social investment lead to increased adoption of cleaner energy sources. In particular, the Pradhan Mantri Ujjwala Yojana social welfare program in India connected 72 million homes to LPG infrastructure since 2016. This effort combats the estimated 1.5 million premature deaths per year in the south east Asia region due to household air pollution from the use of wood for cooking and heating[4].

Expectations of increased U.S. LPG exports underpinned by strong supply and demand fundamentals highlights a transitioning U.S. narrative from "supply push" to "demand pull" for cleaner U.S. energy around the world. U.S. midstream companies with integrated value chain systems and coastal export capabilities will maintain the most leverage to this transition and are expected to benefit accordingly.



[1] EPD (Enterprise), December 2019
[2] EIA Petroleum Supply Monthly, December 2019
[3] IHS, June 2019
[4] World Health Organization, April 2018

Midstream

Midstream energy performance lagged broader energy in the fourth quarter with the Tortoise North American Pipeline Index℠ return of 1.5% and the Tortoise MLP Index® return of -3.1%, bringing 2019 performance to 24.1% and 10.8%, respectively. The sharp contrast in midstream index performance is due to midstream companies structured as C-Corporations outperforming those structured as MLPs. C-Corporations benefitted in several ways versus MLPs, including stronger corporate governance, broad market index inclusion for some companies, lack of K-1s and a more certain corporate structure. Contributing to broad midstream underperformance were concerns regarding a slowdown in U.S. production growth, political rhetoric regarding proposed fracking bans from Democratic candidates and tax loss selling. Gathering and processing companies in particular suffered following lower natural gas and natural gas liquids (NGLs) pricing and the 'going concern' language introduced into Chesapeake Energy's (CHK) fourth quarter filing. These items drove negative sentiment and raised questions related to producer financial health, counterparty risk and exposure to drilling slowdowns. However, the U.S. has seen tremendous production growth in recent years and we believe a more moderate pace of growth is healthy for the midstream sector through the reduction in growth capital expenditures and reduced risk of takeaway capacity overbuild.

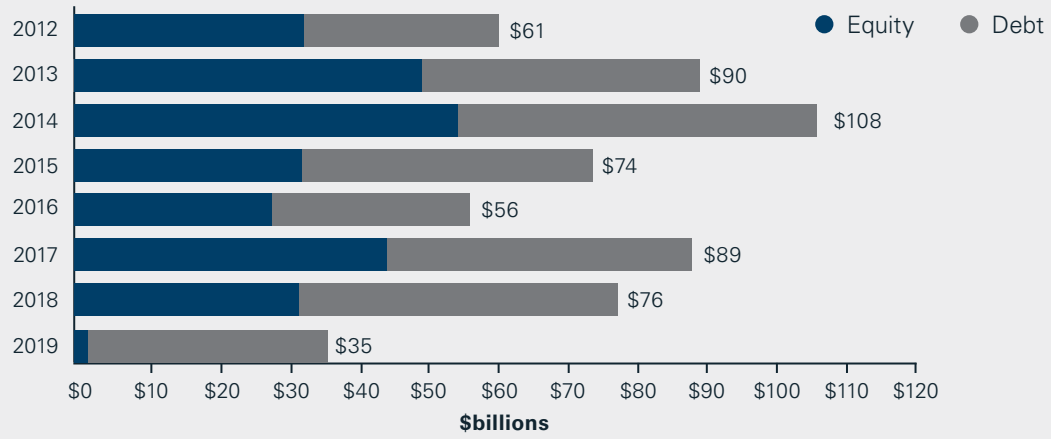
DCP Midstream LP (DCP), Hess Midstream Partners LP (HESM) and Noble Midstream Partners LP (NBLX) became the latest MLPs to announce the elimination of Incentive Distribution Rights (IDRs) in the fourth quarter. As the era of simplification comes to a close, the results have advanced the midstream sector, in our view, and accomplished widespread cost of capital and corporate governance improvements. There has been an industry-wide shift to higher distribution coverage and self-funding the equity portion of capital expenditure programs. With the expected moderation in U.S. production growth, midstream companies are now shifting focus toward executing on delivering value through the return of capital to shareholders in the form of debt reduction, sustainable yields and distribution growth, and potential stock buybacks. A particular emphasis on the generation of free cash flow yields comparable to other S&P 500 sectors continues to emerge, achieved through the sale of non-core assets and the reduction of growth capital expenditures.

Interest in publicly-traded midstream companies and assets, from both public and private entities, has remained elevated, highlighting their strategic value and attractive valuations. Recently announced/closed transactions include Energy Transfer's (ET) acquisition of SemGroup Corp (SEMG), DTE Energy's (DTE) acquisition of a natural gas gathering system in the Haynesville Shale and Pembina Pipeline Corp's (PPL CN) acquisition of Kinder Morgan Canada and the Cochin pipeline.

Capital Markets

Capital markets activity slowed during the fourth quarter with MLPs and other pipeline companies raising approximately $4.5 billion in total capital, with nearly all of the issuance in debt. This brings the total capital raised for the full year 2019 to approximately $34.7 billion, significantly lower than the previous year. As expected, alternative options for capital and self-funding projects continued to trend higher.

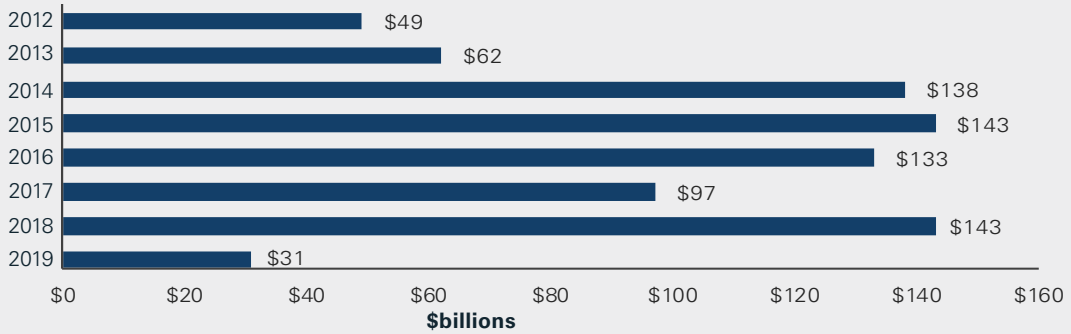
MLP and pipeline company debt & equity offerings



Source: Company filings. As of 12/31/2019. Includes equity issued to sponsors.

Merger and acquisition activity among MLPs and other pipeline companies in the last quarter of the year was driven by simplification transactions with DCP, HESM and NBLX totaling $4.8 billion. This brought the year's announced transactions to $31.3 billion. This is significantly below the previous year when many large simplification transactions were announced. This year's activity was driven by three large transactions. In addition to Energy Transfer's acquisition of SemGroup Corp. valued at approximately $5.1 billion, MPLX purchased Andeavor Logistics for approximately $13.5 billion and Pembina Pipeline Corporation acquired two businesses from Kinder Morgan for a combined value of approximately $4.4 billion.

Announced MLP and pipeline company acquisitions



Source: Company filings. As of 12/31/2019. Includes MLP and pipeline corporations, including transactions between MLPs.

Downstream

Heavy spring and fall turnarounds in preparation for the International Maritime Organization's Jan. 1, 2020 implementation of sulfur reduction regulations on the shipping industry (IMO 2020), unplanned refinery outages and the closure of the largest refining complex on the east coast led to challenges in 2019. We expect that in 2020, U.S. refinery utilization and throughput will exhibit strong growth as U.S. refiners are well positioned to take advantage of higher distillate pricing and more heavily discounted medium-heavy sour crude oils as they have the flexibility versus international refiners to use a wide range of crude oil feedstocks.

Overall liquids production growth surpassed current levels of domestic NGL demand in 2019. As a result, prices of NGL products, which are used as feedstock in petrochemical facilities, remained challenged. We expect that as production moderates and new petrochemical projects come online in 2020, inventories will draw down and support prices.

Renewables

The solar industry is set to install 13 gigawatts (GWs) of capacity in the U.S. in 2019, the second highest annual installation on record. Much of the activity has been concentrated in the southwest and southeast, with Florida and Texas ranking behind California in year-to-date installations. Signed solar PPA prices range from $18-35 megawatts/hour, putting solar on par with new gas generation and competitive with the operating costs of existing coal plants. Costs continue to decline, as evidenced by the 12% decline year-over-year in the third quarter 2019 to $0.95/watt for utility-scale projects[3]. On the policy front, the investment tax credit (ITC) is set to phase down for projects that began construction at the end of 2019. We continue to monitor efforts to extend the ITC as we enter 2020, but do not view an extension as necessary given anticipated continued cost declines.

According to the most current available data, wind installations totaled 1,927 megawatts (MWs) in the third quarter of 2019, reaching a total installed capacity of more than 100,000 MW across the U.S. with an additional 46,500 MW of capacity currently under construction or in advanced development. Nineteen states now have more than 1,000 MW under construction or advanced development. Texas hosts 19% of the total development pipeline, followed by Wyoming (11%), Oklahoma (7%), Iowa, (6%), and Virginia (6%). It is also important to have offtake agreements in place. Currently, 44% of capacity in the pipeline has a Power Purchase Agreement (PPA) in place, while 28% is utility-owned and 6% has a hedge contract[4]. New developments are largely being driven by corporate customers who have signed 64% of capacity contracted in the third quarter. Turbine technology continues to improve with 22% of new turbines installed year-to-date rated between 3.4 MW and 3.6 MW in size[4].

Concluding thoughts

As we enter a new decade we are optimistic across the energy sector where we expect supply and demand will find better balance and companies will shine a brighter light on their cash flow as they return it to shareholders. Our long-term outlook is built around worldwide electricity demand doubling by 2050. In our view, natural gas and renewables need to replace coal in power generation. This is the fastest and most economical way to lower global CO_2 emissions and improve living standards for people around the globe.

[1] Energy Information Administration, Short-Term Outlook, January 2020
[2] BTU Analytics
[3] Wood Mackenzie, power and renewables, December 2019
[4] AWEA July-September 2019

About Tortoise

Tortoise invests in essential assets – those assets and services that are indispensable to the economy and society. With a steady wins approach and a long-term perspective, Tortoise strives to make a positive impact on clients and communities. For more information, please visit **www.tortoiseadvisors.com**.

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