October 30th 2019

The Penn State Energy Marketing Association

Market Update

This Issue

A newly founded student organization

The Mission of the Penn State Energy Marketing Association is to establish an intellectual forum where likeminded individuals shall discuss, share, engage in, and debate content related to energy marketing for the purpose of acquiring industry fluidity and augmenting personal marketability.

Bridging the gap

Energy marketing is unique in that it brings together engineers and students of business-minded backgrounds for a common purpose. The Penn State Energy Marketing Association embraces this notion and is excited to establish an academically diverse forum.

Skill development

The Penn State Energy Marketing Association seeks to acquire industry knowledge and skills above and beyond what is taught in a college curriculum. PSEMA accomplishes this by hosting guest speakers, receiving special presentations from its corporate partners, and mutually sharing information in an academic forum setting.

About

The Penn State Energy Marketing Association's *Market Update* is a monthly publication containing price forecasts for crude oil and natural gas as well as updates on the status of renewables, economic events, and equities relating to the energy industry. It is co-authored by PSEMA members, and each segment is overseen by its respective Commodity Director:

Director of Oil:	Mickey Hopkins
Director of Natural Gas:	Steve Ennis
Director of Economy:	Daniel Heinlein
Director of Renewables:	Anthony Garcia
Director of Equities:	Robbie Epstein

Co-Presidents Daniel Heinlein, Anthony Grider and Vice President Christina Cuppari serve as the Executive Editors.

Contributors

The following PSEMA members contributed to this edition of *Market Update*:

Crude Oil: *Compiled by Mickey Hopkins and assisted by Shaylen Amin*

Natural Gas: *Compiled by Steven Ennis and assisted by Seamus Gibbons and John Staropoli*

Renewables: *Compiled by Anthony Garcia*

Economy: *No section this issue*

Equities: *Compiled by Robbie Epstein and assisted by Vincent Bufanio*

Comments from the President

The Penn State Energy Marketing Association is excited to publish the our first newsletter of the 2018-2019 year. We are always excited for the new school year to start. Each new year provides the opportunity for students to explore and learn more about energy markets and careers in the energy realm. Now is a chance for students of all ages, from freshmen to seniors, to push themselves to become better every day. All executive board members of PSEMA are here to aid and assist students in everything from questions from school to career prep. We pride ourselves on our collaborative, open-door policy which seeks to make our organization a safe place for anyone to come for the purpose of self-growth.

Market Update *is published every month and its price forecasts target for the upcoming monthly period. "Current" data pertains to values taken from various reputable news outlets. The Penn State Energy Marketing Association is a fairly new undergraduate student organization and we welcome any opportunity to collaborate with likeminded individuals and organizations. If you have any ideas that could improve our monthly newsletter or simply are interested in furthering the mission of PSEMA, please contact us at PennStateEMA@gmail.com or at PennStateEMA.com*

- Daniel Heinlein
Co-President

Market Overview

Segment Benchmarks

- **WTI:** $55.02
- **Brent:** $60.22
- **Natural Gas:** $2.684
- **S&P500:** 3,046.77
- **Dow Jones:** 27,186.69
- **Nasdaq:** 8,303.98
- **US 10-Yr:** 1.77%
- **OVX:** 34.36
- **VIX:** 12.33
- **EUR - USD:** $1.11530

Overall Market Effect:
The lasting dialog of the past year has been the escalating trade war between the United States and China. Over the course of the past 12 months, this storyline has been a true headwind for financial markets around the world.

Earlier today, the Federal Open Market Committee has voted to lower the fed funds rate by 25 basis points to a rate between 1.50% – 1.75%. The reason why the fed has decided to lower the rate is because of the everlasting fear in global markets of an impending recession. There have been mixed signals in the US economy for quite some time now. Weakening global demand, rising trade-policy uncertainty and a slowdown in inflation have all been a result of the trade war between China and the United States thus far. Domestic investment, business spending and hiring have all been down while consumer spending and the housing market has been on the rise. These facts further paint the picture of the current confused state of the US economy and markets.

Moving forward, these rate cuts should entice investment to increase across the US and encourage growth in the market system. If this earnings season proves to be positive, we should expect the holiday earnings season to be strong as well, and therefor stock markets to pick back up and reach for new highs.

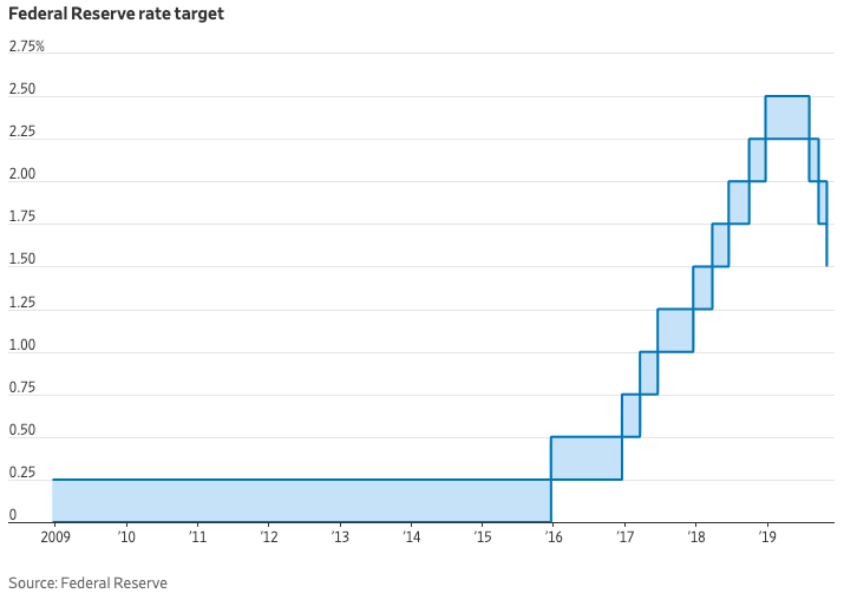
- Daniel Heinlein

Economy

October 30th, 2019

Today, the Federal Open Market Committee has voted to lower the federal-funds rate 25 basis points for a third time this year to a cushion between 1.50 – 1.75%. The federal-funds rate is the interest rate that banks in the United States charge for overnight loans to each other. The Fed has raised rates 4 times in 2018, and has now lowered it 3 times since July.

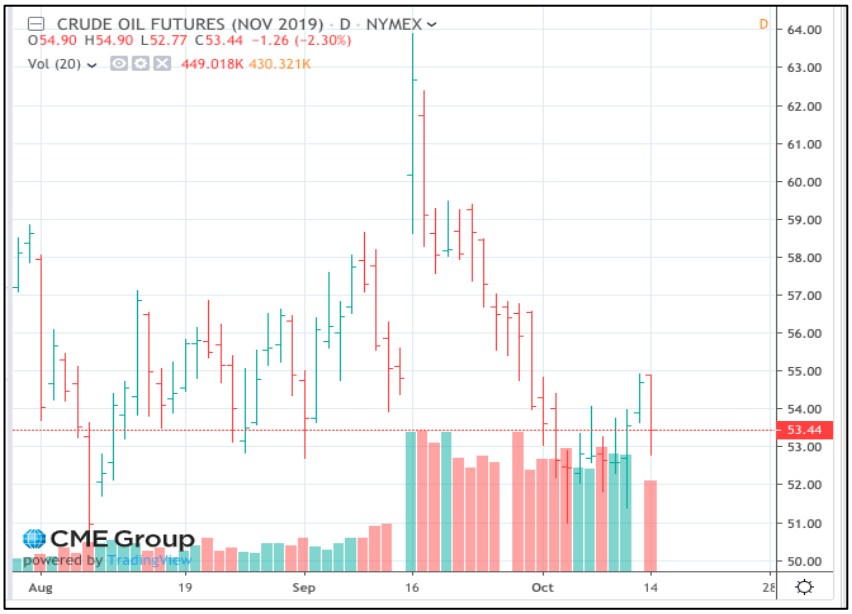
The Fed officials named three reasons this afternoon for the rate cut: weakening global growth, rising trade-policy uncertainty and a slowdown in inflation. Much of the three reasons for the rate cut has stemmed from the ever-lasing Chinese Trade War happenings that started in May of last year. Because of this trade war, there has been growing anxiety among the street of an impending recession here in the US. Domestic investment, business spending and hiring has been slowing, while consumer spending and the housing market has been on the rising, portraying a mixed US economy.



Crude Oil

October 30th, 2019

Crude Oil



West Texas Intermediate Crude Oil futures currently sit at $53.44 a barrel. Prices have gone down recently due to bearish news concerning US and China trade relations. It was reported that Chinese officials want trade negotiations to resume before Chinese President Xi Jinping agrees to sign any early-stage deal with President Trump. In addition to this news, Chinese imports fell 8.5% from September last year, adding to bearish Chinese economic news that affects perceived demand for oil.

Crude Oil

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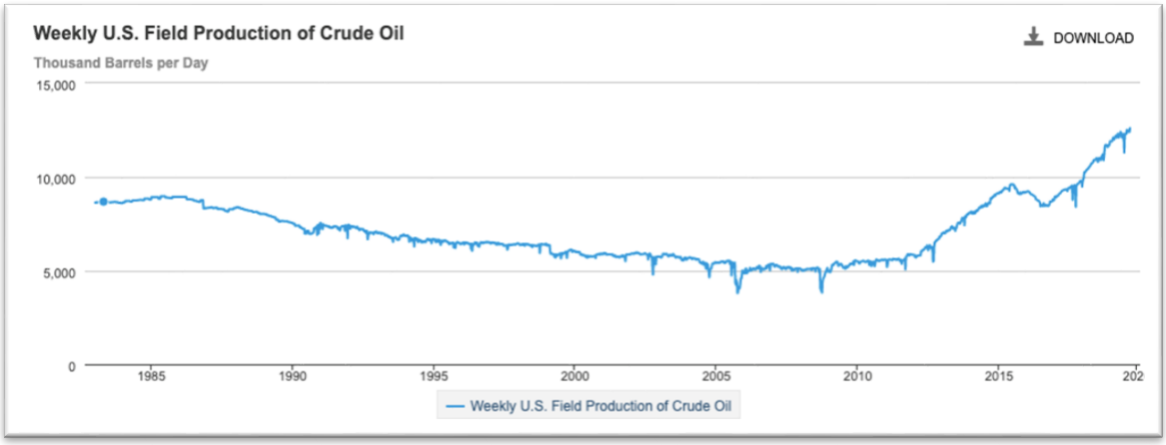
Crude Oil



US crude production hit record highs of 12,500 barrels per day in late August, and has maintained similar levels throughout September and October but refinery operation capacity has gone down in the past weeks. This shows an overabundance of supply for the amount of current demand. Both OPEC and IEA have cut their growth forecasts for oil and I think the price will stay within the $50 to $54 per barrel in the next month due to bearish demand news and abundant supply.

Crude Oil

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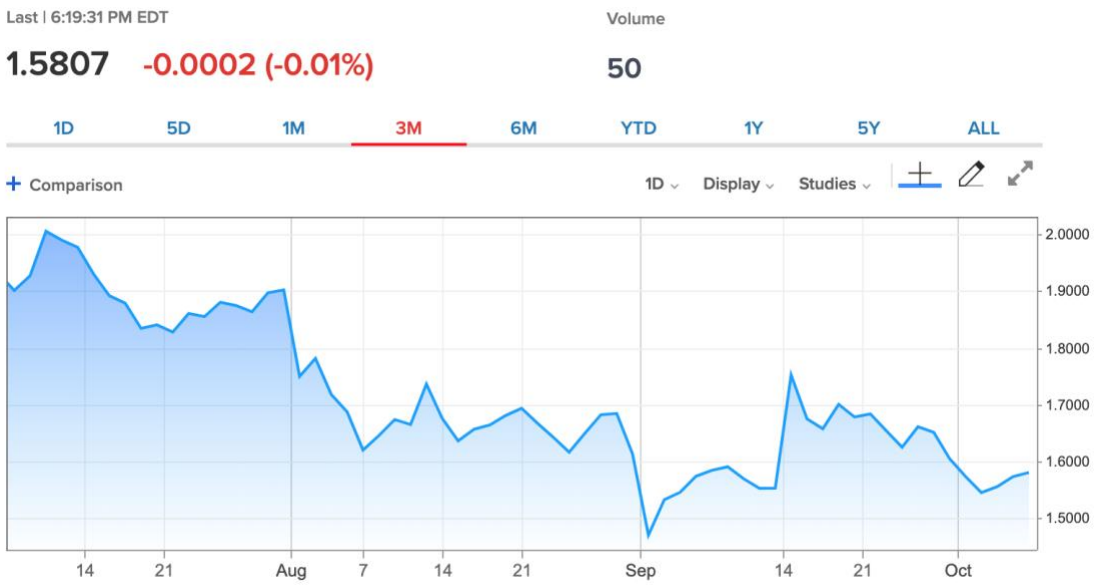
RBOB Gasoline

As summer driving season settles down, RBOB's price has slowly declined. After the Saudi Arabian drone attacks in mid-September, a mild price hike was seen up to fifty percent of RBOB's summer high. However, as cheaper winter gas blends start to phase in (higher butane blending), it is expected that minor price increases will be seen in the coming thirty days.



Crude Oil

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Figure 1: NYMEX RBOB 3 month snapshot as of October 8.

Thirty Day Snapshot:

Planned refinery maintenance tends to occur during October, which leads to supply drops in the United States and increased imports. Peak hurricane season is still in full swing (until late October), which increases uncertainty pertaining to unplanned refinery outages. This, in combination with said planned refinery turnaround season, will lead to a slight increase in RBOB gas pricing.

Natural Gas

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Natural Gas

The Henry Hub spot price averaged $2.56/MMBtu in September. This was a $0.34/MMBtu increase from August. The U.S. Energy Information Administration (EIA) forecasts Henry Hub prices to average $2.43/MMBtu in the fourth quarter of 2019. This a decrease of more than $1/MMBtu from fourth quarter 2018. U.S. Natural Gas prices have fallen due to strong supply growth, which have enabled gas inventories to surpass the April-October injection averages.

Source:

https://www.eia.gov/outlooks/steo/report/natgas.php

Last Friday, October 4th, the Bureau of Labor Statistics released its monthly employment situation summary. The United States economy added 136,000 new jobs as unemployment fell to its lowest point in 50 years, 3.5%. September marked the 125th straight month of economic expansion in the United States. The Federal Reserve Board meets later this month. The Chicago Mercantile Exchange, as of October 11th, puts the chance of a 25-basis point cut in the federal funds rate at 67%. This is down from 87% earlier in the week. This drop comes as the President meets with China's top negotiator

Natural Gas

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Vice Premier Liu Hu at the White House on Friday. The hope is that the two can come to an agreement that will allow both sides to avoid the upcoming tariff increase to 30% from 25% scheduled by the U.S. for next Tuesday Oct. 15th. The recent negotiations have had an overall bullish effect on the markets.

According to the National Weather Service, the long-range temperature outlook for the United States shows a high probability for above-average temperatures across the South and Mid-Atlantic regions and an equal or slightly increased chance of below average temperatures in the West and Plains. With the large population in the east likely experiencing a mild fall season, demand will not be as great.

Source:

https://www.cpc.ncep.noaa.gov/products/predictions/long_range/lead14/off15_temp.gif

Duke Energy, one of the nation's leading power generators, has pledged to achieve net zero carbon emissions by 2050. Part of this transition process will include an increase in natural gas fired plants in the interim as they move away from coal. With the addition of these plants and other infrastructure, an increase in natural gas demand is likely. Although the 2050 zero carbon date may not effect monthly or yearly demand, the natural gas industry is a clear winner in the move off of coal.

Source:

https://news.duke-energy.com/releases/duke-energy-aims-to-achieve-net-zero-carbon-emissions-by-2050

Summary:

The U.S. EIA's forecasted inventory for the end of October is 3,792 bcf, which is 2% above the five-year average and 17% above October 2018. With U.S. economic growth still largely hinging on a trade deal with China, the increase in natural gas storage paired with mild fall temperatures will lead to a bear market for natural gas in terms of both demand and price.

Equities

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EXXON (XOM)

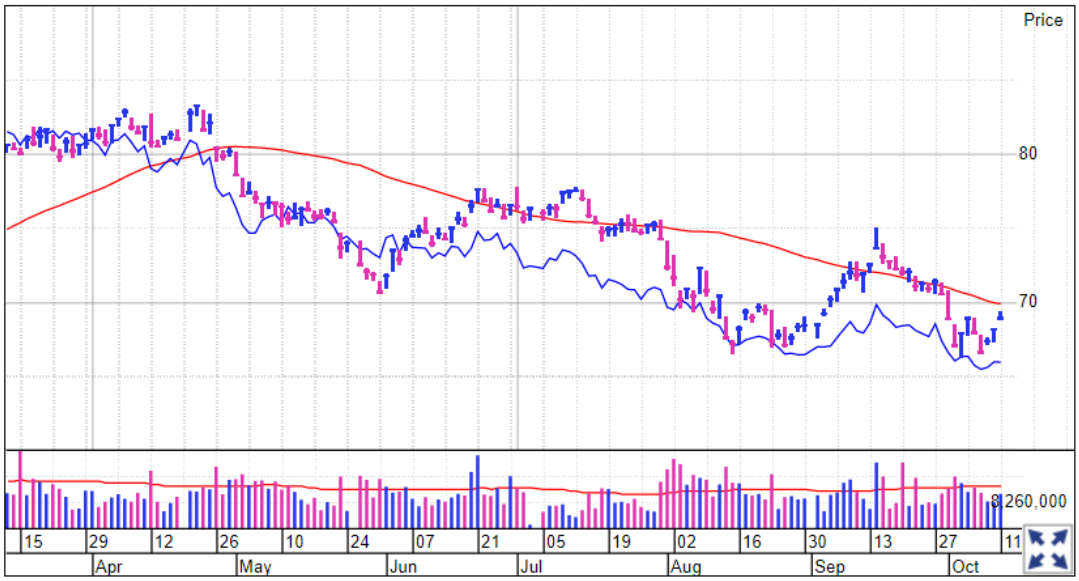
Coverage: Robert Epstein and Vincent Bufanio

Company Overview

Exxon Mobil is the 2nd largest oil and gas company trailing Shell. Exxon produced 3.8 million net oil-equivalent barrels per day in 2018. Currently, they are focusing on their exploration, production, transportation and sale of crude oil, natural gas and petroleum. Their liquid output grew more than 3% in fiscal year 2018.

Equity Signal:

$68.98 0.73 ↑ 1.07%



Equities

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Notes:

- Global trade talks and regulations are taking steps in the right direction
- When looking a comparable statistics between EXXON and BP; Exxon has a 0.12 debt to equity ratio vs BP's 0.44. That will allow them to continuously fund their projects even in today's volatile market.
- Exxon currently has a lower dividend yield than BP which shows that their investors and themselves are confident for their future growth. They are committed to investing up to **$35 Billion** a year through 2025 to get production back on track.
- Production fell 6% between 2015 and 2018
- They are continuing to make investments to on shore drilling within the United States and investments in Russia.

Summary:

Taking into account our research, we would say Exxon would be a smart investment. It is currently at its low since 2016 and we believe it will have consistent growth in the years to come. It will continue to have a 4.6% dividend yield and will have the capital to maintain its newfound projects beyond the ones that were highlighted in this research.

Recommendation: Buy

Renewables

October 30th, 2019

U.S. solar developer's tariff loophole is closed

The Trump administration closed a tariff loophole for imported solar panels on October 4th. Solar energy developers were using the tariff exemption for bifacial solar panels from the time the exemption was granted in June of 2019. The bifacial panels are unique in that they can generate electricity from both sides of the panel. This design led to increase yields on solar projects and increased the overall output that solar developers could generate from a site. The panels had been imported from foreign countries where they can be purchased by U.S. solar companies to be implemented for domestic solar projects. Prior to the tariff being rescinded, it was economically beneficial for solar developers to purchase the bi-facial panels from foreign countries rather than buy solar panels made in the United States. The tariffs are projected to lower the use of the bi-facial panels in the United States for now. Though, solar developers do predict that the technological advancements for solar energy will continue into the future.

Source: Eckhouse, B., Martin, C., & Natter, A. (2019, October 4). Trump Kills a Tariff Loophole in Latest Blow to Renewable Energy. Retrieved from https://www.bloomberg.com/news/articles/2019-10-04/trump-yanks-exemption-that-solar-was-relying-on-to-duck-tariffs

Renewable energy surpasses fossil fuel generation in United Kingdom

The United Kingdom produced more energy from renewable sources than coal and natural gas over the third fiscal quarter. This is the first time in the history of the United Kingdom that solar, biomass, and wind energy have out produced fossil fuels. Of all energy generation in the U.K, renewables make up 40% while fossil fuels produce 39% of all energy generated. Though the energy generation values are similar, there has been a dramatic change in renewable output over the past decade. The increase in renewable energy generation can be credited to offshore windfarms built in 2019. A few years ago, fossil fuels made up 80% of all energy generation in the United Kingdom. Of all of the renewable sources wind energy makes up 20% of British energy. Over the next decade it is projected that the U.K.'s offshore wind industry will grow by more than 5x the current output. The reason for the increase is due to a reduction in offshore wind pricing. The current price is at an all-time low and will continue to decrease as the industry advances in production techniques. The United Kingdom is pairing the low prices of wind with an agenda to lower the emissions of the country. By 2025, all coal plants in the United Kingdom are scheduled to be shut down. This is part of an attempt to reduce greenhouse gas emissions. This move will only increase the capacity of renewable energy within the United Kingdom for the foreseeable future.

Source: Ambrose, J. (2019, October 13). Renewable electricity overtakes fossil fuels in UK for first time. Retrieved from https://www.theguardian.com/business/2019/oct/14/renewable-electricity-overtakes-fossil-fuels-in-uk-for-first-time

The EIA projects that renewables will produce nearly half of world's electricity by 2050

As of 2018, 28% of the world's electricity was produced by renewable sources. This number is projected to rise by 2050, with solar and hydropower seeing the largest share of the increase.

U.S. coal production is down 30%

Electrical generation companies across the United States are reducing their use of coal. In replacement of coal, there has been an increase in the use of natural gas and renewable energy.