Alerian

MLP Primer:
A guide for both new and experienced investors

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Alerian

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// Introduction

Welcome to Alerian's MLP University! We congratulate you on your willingness to do your own research and educate yourself about the investment opportunities and challenges involved with this asset class. The learning curve for MLPs may be long, but it is not steep and we've organized the information to be easily digestible.

The designation MLP stands for Master Limited Partnership, an advantageous tax structure that allows MLPs, like all partnerships, to pay no federal taxes at the company level. This is one reason that MLPs can pay out distributions noticeably higher than those of traditional C corporations. MLPs are still public companies and their shares (called units) trade on the major stock exchanges.

An investment in energy MLPs is an investment in North America's continued use of transportable energy over the next several decades. MLPs (and the broader category of energy infrastructure companies) own the pipelines, storage tanks, and processing facilities that bring energy from the wellhead to America's doorstep. While still related to the energy industry, most MLP business lines do not have direct exposure to commodity price fluctuations. Their businesses function primarily on a set fee per volume or fee for service basis; in short, the business model is simply price multiplied by volume.

The prices (or tariffs) that MLPs can charge are determined either by negotiated contracts or are federally regulated. Typically, tariffs increase each year by a measure linked to inflation. On the volume side, energy demand in North America is fairly inelastic as people continue to drive their cars and heat their homes. If the US becomes the swing producer of oil or natural gas, MLPs will also process, move, and store those volumes on their way to the global economy.

As with any investment, there are risks associated with MLPs. Dramatic moves in commodity prices can influence the supply/demand balance and even minor changes influence market sentiments. As a high-yield investment, MLPs may also be subject to changes in interest rates. While Congress created MLPs, the energy business remains highly regulated and MLP investors would do well to remain aware of any permitting or environmental changes. Finally, the potential for renewable forms of energy to replace hydrocarbon-based energy is both the largest and least immediate risk to any energy MLP investment.

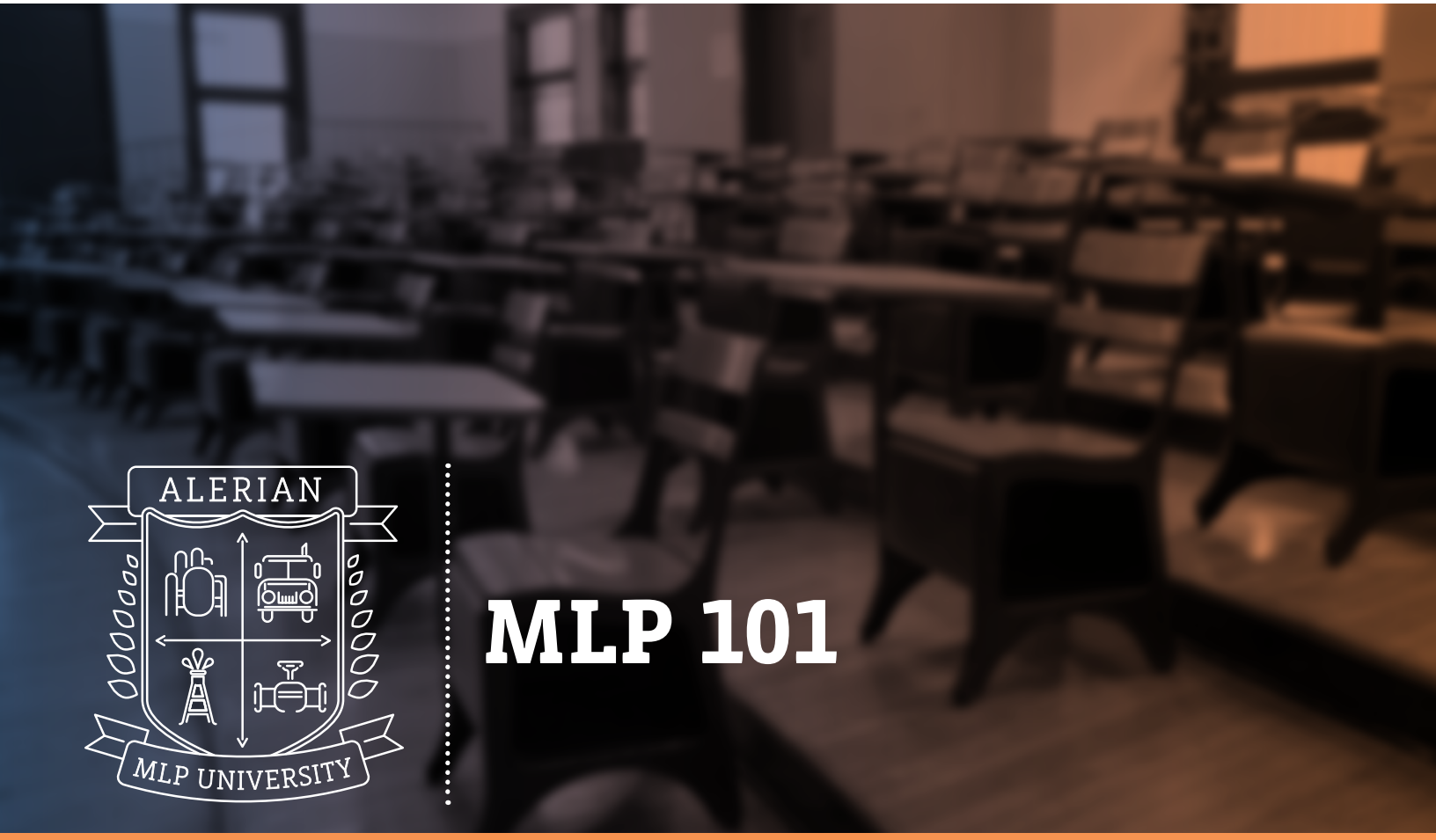
This document is your guide to an in-depth understanding of MLPs and energy infrastructure. An investment in this asset class is an investment in the future of North American energy infrastructure.

MLP 101 is designed for those who are starting from the beginning, those who would like a refresher, or simply those who (rightly) insist on a solid foundation before moving forward. Just like freshman year, you'll find topics like history and economics. We've also detailed the basic investment thesis and business model as well.

MLP 201 goes into further detail and gets to the heart of MLP investing. This section is for those investors wanting to have a firm grasp on MLP economics before investing. We explain the nuances of the various company structures, the implications of governmental support and regulatory red tape, and how the world's evolving energy economy impacts MLPs. Additionally, these sections explore difficult subjects like tax implications and valuation metrics.

Applied MLPs is designed for those investors who have decided to invest. The theoretical complications listed in MLP 201 have day-to-day impacts on real portfolios. This section walks through each MLP access product, explaining the pros and cons as well as exploring which goals might be met by each.

Finally, this is a living document. Please send us any feedback and address any additional questions to index@alerian.com, and we'd be happy to help.



MLP 101

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The Very Basics

MLP stands for Master Limited Partnership. Most people think of MLPs as energy pipeline companies with an advantageous tax structure, which is an extreme simplification, but not untrue. All partnerships in the US, including MLPs, pay no income tax at the partnership (or company) level. Unlike most partnerships, MLPs are public companies, trading on the major stock exchanges and filing documents such as 10-Ks, 10-Qs, and reports of material changes with the Securities and Exchange Commission (SEC).

The Four Basic MLP Businesses

1. Transportation
Just like it sounds, transportation MLPs move energy commodities like oil and natural gas from one place to another. Most North American energy travels through a pipeline, but it can also move via truck, railcar, or ship. Transportation MLPs are the cornerstone of the asset class.

2. Processing
Processing encompasses any business that transforms the raw product into a useable form. It could involve removing impurities like water and dirt, as well as separating raw energy into pipeline-quality natural gas and natural gas liquids (NGLs), which are used as heating fuels and industrial feedstocks.

3. Storage
There are tanks, wells, and other storage facilities both above and below ground. They provide flexibility to the energy economy, so there is propane available for winter heating, gasoline for summer driving, and jet fuel for the holidays.

4. Production and Mining
This encompasses both exploration (searching for energy underground in its various raw forms) and production (bringing it to the surface). This includes crude oil, natural gas, coal, and frac sand.

How is an MLP different than a traditional corporation?

Most notably, by limiting themselves to handling natural resources and minerals, MLPs do not pay federal income tax at the entity level. This means that they can pay out more of their earnings to investors. Corporations, on the other hand, do pay federal income tax.

MLPs are also governed differently from regular corporations. Companies such as Exxon, Apple, and Ford are primarily owned by shareholders. Founders may own significant amounts of stock, but decisions are made by management teams as well as by shareholders at an annual meeting where major issues are decided by voting. A shareholder has one vote per share owned, and either a majority or a plurality of votes may be required for particular decisions. Most MLPs, on the other hand, are governed by their general partner.

MLPs generally have two classes of owners, the general partner (GP) and the limited partner (LP). The general partner interest of an MLP is typically owned by a major energy company, an investment fund, or the direct management of the MLP. The GP controls the operations and management of the MLP and typically owns a small portion of the LP. Limited partners (aka people who own units) own the remainder of the partnership but have a limited role in its operations and management. Legally, the general partner has no fiduciary duty to make decisions that will benefit LP unitholders; although what benefits the GP typically benefits the LP.

How MLPs Make Money

MLPs typically operate toll road or fee-based business models. Just as the company that owns the toll road makes a set fee per mile driven, regardless of the cost of the car, MLPs earn a set fee for each barrel of oil, cubic foot of natural gas, or ton of coal that is processed, transported, or stored, regardless of the cost of the hydrocarbon. (At Alerian, we call this the Honda Civic/Aston Martin example, named for the cars driven by two of our founders.) This is because MLPs typically do not own the oil or gas, just as the toll road does not own any cars. MLPs generally sign long-term contracts (5 to 50 years in length) with their customers, which makes for a very stable business.

Extending this example, the MLP revenue equation is fairly simple. It's just price multiplied by volume. On the price side, a federal agency sets the fee charged by interstate liquids pipelines, and the fee increases with inflation. On the volume side, energy demand in the US is fairly inelastic and only expected to increase by 5% from 2016 through 2040[1]. Translated to an annual basis, this growth is relatively flat.

A small number of MLPs are Production and Mining companies. Typically, these MLPs own either coal mines or older, more mature oil and gas wells that are still producing energy. Profits depend on how much energy they produce and the prices for which it can be sold, exposing them to fluctuations in commodity prices.

[1] EIA Annual Energy Outlook, 2017. https://www.eia.gov/outlooks/aeo/

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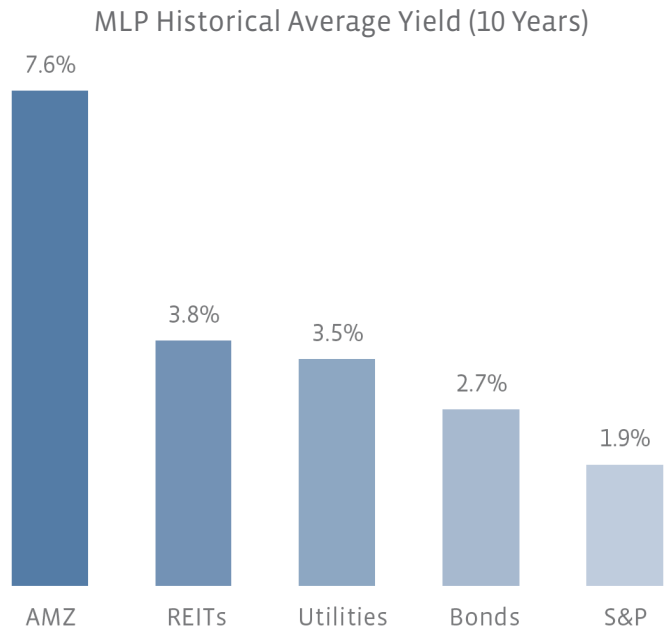


Source: Alerian as of December 29, 2017

How Investors Make Money With MLPs

If you own a stock, there are two ways to make money.

1. The price of the stock increases and you can sell it for more than you bought it. Formally, this is known as price appreciation.

2. The stock pays you dividends. MLP dividends are called distributions because of the partnership structure, and the amount of distributions relative to the share price is known as yield.

The historical average yield of MLPs over the past 10 years has been around 7%, which means that if you invested $100, on average, you would be paid $7 each year. As a comparison, Utilities and Real Estate Investment Trusts (REITs), which are asset classes known for their income potential, have about a 4% yield. The S&P 500 has around a 2% yield.

It is worth noting that MLP distributions are not guaranteed and vary depending on the MLP. Unlike REITs, which must distribute a certain percentage of their cash flow each quarter, the partnership agreements of individual MLPs determine the level of distributions. Traditionally, MLPs pay out between 80%-100% of their cash flow.

History of MLPs

In 1981, Apache Corporation created the first MLP, Apache Petroleum Company (APC). By combining the interests of 33 oil and gas programs into one and having Apache Corporation acting as a grand boss, APC could combine the disparate interests and operate them more efficiently. As APC was traded on both the New York Stock Exchange and the Midwest Exchange, investors were easily able to buy and sell these interests just like shares of stock, rather than waiting for the sale of the whole business to realize their profits.

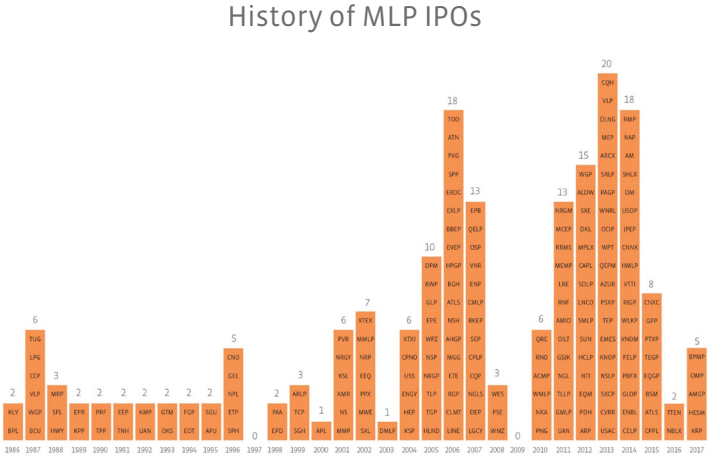
Other oil and gas MLPs soon followed. As did real estate MLPs. And throughout the 1980s, more and more businesses became involved until there were cable TV MLPs, hotel MLPs, amusement park MLPs, and even the Boston Celtics became an MLP. Soon, the government noticed (after all, it was losing out on taxes!), and Congress worried that every corporation, especially Exxon, would become an MLP.

Congress passed the Tax Reform Act of 1986, and President Ronald Reagan signed it on the South Lawn of the White House. In addition to eliminating several other tax shelters, it defined the structure of the modern MLP.

Section 7704 of the Revenue Act of 1987 limited which businesses could be MLPs, delineating that an MLP must earn at least 90% of its gross income from qualifying sources, which were strictly defined as the transportation, processing, storage, and production of natural resources and minerals.

Any MLPs that had other kinds of income could remain MLPs, but in the past 30 years, most have gone private or converted to other structures.

With the turn of the millennium, MLPs began to own ships for the seaborne transportation of energy resources as well as the storage tanks and bobtail trucks necessary for propane distribution. Several coal companies also became MLPs, and in 2006, after a long hiatus, the upstream MLP returned (only to decline during the 2014-2015 commodity downturn). In 2012 and 2013, more non-traditional MLPs came to market. Now, there are refining, marketing, and frac sand MLPs.



Source: Alerian as of December 29, 2017

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The Pipeline Business, Explained

The modern pipeline network in the United States had its roots in the outbreak of World War II. Before the war, the East Coast was the largest consumer of energy in the country. Refined products (such as gasoline, diesel, and jet fuel) were delivered from the Gulf Coast refineries via tankers. Tankers also carried raw crude oil from the Middle East. However, once the US became involved in the war, German submarines began sinking these tankers. Together, the government and the petroleum industry invented and built pipelines that could cover long distances and transport large amounts of oil. This network subsequently fueled the economic boom that followed the war, and many of those original pipelines are still in service today[2].

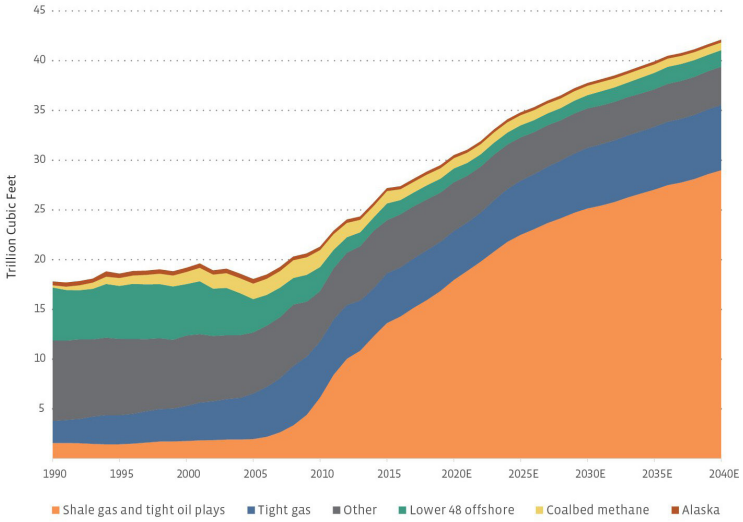
There are both large diameter trunklines that function like interstates (instead of being four lanes wide, they are often 42" in diameter, or large enough for a child to stand inside), as well as smaller delivery lines which connect the large pipelines to each small town. Product traveling through trunklines is fungible—the customer will receive product on the other end that is the same quality as that which was sent, but they won't be the exact same molecules. It is as if someone sent $100 to a college student through a bank. That student will not get the exact same $100 bill as his or her benefactor sent, but the student doesn't care because $100 is $100. Money is fungible. However, smaller delivery lines operate on a batch system, where the exact same molecules are delivered as were shipped. In this case, our lucky college student gets a couple dozen cookies, and the ones delivered are the exact same cookies his or her parents baked, not cookies that some other people made.

Energy Renaissance

Throughout history, technological advances have completely changed people, countries, and humankind. In the past decade, smartphones have dramatically changed the personal lives of financial professionals. Similarly, fire, steel, gunpowder, manufacturing, steam engines, and electricity have shifted the course of industry. The technological advances impacting North American energy aren't quite on that level, but they are close.

The new technologies this time are horizontal drilling and hydraulic fracturing. The combination makes it possible to profitably produce the large reserves of crude oil, natural gas, and NGLs trapped between layers of North American shale rock. Horizontal drilling was developed in the first half of the 20th century, and the first commercial applications of hydraulic fracturing took place in 1949. The natural gas industry began large scale application of these technologies in the early 2000s. After seeing such success, oil producers began applying the same technologies to oil wells in the late 2000s and have seen similar results.

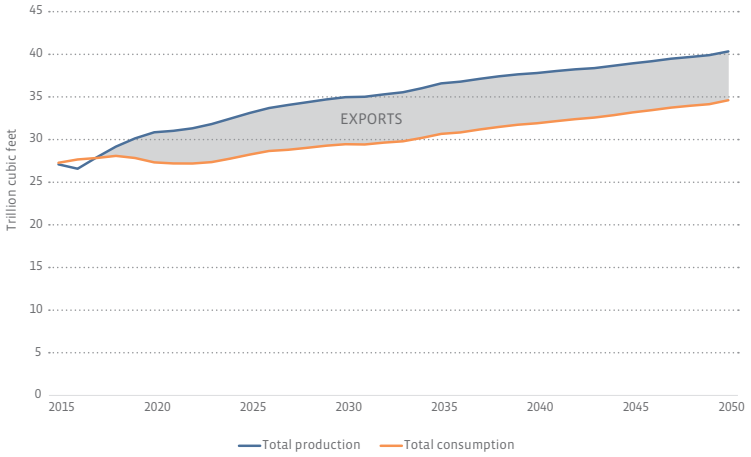
Shale Gas and Tight Oil Plays Projected to Dominate Dry Natural Gas Production Growth



Source: EIA

The term "energy renaissance" refers to the overwhelming production growth in energy resources that has occurred and is expected to continue, with the potential for the US to be net energy independent by the 2020 to 2030 timeframe (estimates vary).

US to Become Net Exporter of Natural Gas



Source: EIA

[2] Source: Pipeline 101 http://www.pipeline101.com/reports/Notes.pdf

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Energy Economics

In the early 2000s, much of the energy industry was focused on peak oil and the ways the industry and our society would have to shift in response. While producers knew that oil still existed, accessing it in a cost-effective way was still difficult. Experts forecasted that expensive and complex recovery methods would be needed to continue to produce even a modest number of barrels. By the mid-2000s, the natural gas shale revolution began as drilling technologies and methods had improved, making recovery cheaper. Such methods were then applied to oil wells several years later, and by 2012, lack of supply soon became surplus supply. As supply rose, prices fell and politicians then spoke of the US becoming energy independent and a net energy exporter.

The sharp increase in US natural gas supply has led many companies to build liquefaction plants where the natural gas can be cooled and pressurized to a liquid form. This liquefied natural gas (LNG) can then be loaded onto ships for export.

The trend of switching from coal to natural gas for power generation has achieved considerable momentum. While coal has historically been the largest source of power generation in the US, natural gas power plants are now more economical to build, maintain, and operate.

Industrial demand for natural gas has also grown considerably, with multinational corporations moving their petrochemical operations to the United States to take advantage of cheap natural gas.

Midstream MLPs are building the infrastructure to connect new areas of supply and new areas of demand. They build the pipelines to LNG plants, natural-gas-fired power plants, and necessary storage facilities.

What This Means for MLPs

Traditionally, MLPs are not the companies engaging in horizontal drilling or hydraulic fracturing. They are not (generally) the industrial firms taking advantage of inexpensive natural gas, or the exporters who will directly benefit from international demand. Only very rarely are MLPs the companies chasing the gold rush and taking risks to strike gold and get wealthy. Instead, MLPs are typically selling blue jeans, canned beans, and shovels. There may be hundreds and hundreds of new wells being drilled and not every operator will strike it rich, but the MLP that provides transportation, processing, and storage facilities for a large portion of the operators has reduced the concentration of risk and benefits broadly from US energy production.

A 2017 American Petroleum Institute study[3] quantified just how much energy infrastructure would be needed in the US from 2017 through 2035. In the study's base case, $742 billion would be required for oil and gas infrastructure investment, which equates to approximately $40 billion per year. For the MLP asset class, which had a total market capitalization of just under $400 billion at the end of 2017, that's significant growth.

Risks

Every company who has ever hired a lawyer and published anything has been told that they must have a list of risks, warnings, and disclaimers 87 pages long. Even if you don't like reading fine print, PLEASE still read this. While some of these risks may be unlikely to occur, they could impact your expected total return.

Commodity Price Sensitivity – Since MLPs typically do not own the oil and gas they transport, the business performance of MLPs is not directly connected with the price of oil or gas. However, there are indirect connections between the price of energy and the performance of MLPs. If commodity prices are very low, upstream companies will drill less and demand will fall for gathering and other pipelines and facilities. If commodity prices are very high, consumers will use less, creating less demand for oil and gas to be transported. Additionally, investor psychology may connect MLPs with the broader energy sector and commodity prices beyond what the underlying business models would otherwise indicate.

Interest Rate Risk – Because many investors have historically owned MLPs for yield, they have been perceived to trade similar to yield instruments such as bonds or yield asset classes like Utilities and REITs. The yield spread represents the difference in yield between a government note (typically the 10-Year Treasury) and the yield of a stock or asset class, like MLPs. Since a promise from the US government is considered (relatively) risk-free, the spread represents the additional risk that an investor is willing to take in exchange for a higher return (or yield). If interest rates increase, it means the yield on government notes has increased. If the same spread were added to the now-higher government note, then an MLP would have a higher yield, which also means the MLP equity price would fall, assuming the same distribution paid. This reflects the inverse relationship between price and yield. Over the past three decades, MLPs have benefited from a trend of declining interest rates and have shown no day-to-day correlation with rates. Historically, MLP unit prices initially tend to respond unfavorably to the announcement of increases in interest rates, as when that happens, nearly everything that pays dividends falls in price. Over the long term, inflation-adjusted tariffs and dividend growth for MLPs has largely mitigated this effect.

[3] Source: http://www.api.org/news-policy-and-issues/energy-infrastructure/oil-gas-infrastructure-study-2017

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For further explanation, please see Alerian's white paper on How MLPs Respond in a Rising Interest Rate Environment.
Legislative Risk – It's hard to predict the government's actions, but MLP investors have heightened concerns that the beneficial MLP tax structure could be abolished, given the history of governmental treatment of pass-through structures. Most MLP industry analysts, together with Alerian, view a change in the MLP tax status as unlikely, given this restriction. While the partnership structure does mean that the government forgoes tax revenue, the $1 billion annually (a number provided by Congress itself[4]) is a drop in the bucket compared to the deficit.

A reduction in the federal corporate tax rate would not directly impact MLPs as they do not pay federal income taxes. However, such a reduction could impact the number of new MLPs as the comparative benefit of the structure diminishes.

On another note, a great deal of political rhetoric has been focused around the potential for US net energy independence. Given the critical infrastructure role MLPs would play in such a development, logically, members of Congress are unlikely to pass legislation that would hurt MLPs and slow the process. However, political strategy is complicated and people (even members of Congress) do not always act rationally.

Environmental Risk – Some pipelines in major transportation corridors were constructed in the 1950s and 1960s. An aging pipeline system as well as high-profile oil spills and gas leaks have increased investor concerns regarding transportation safety. Pipelines are by far the safest form of transportation for oil and natural gas. They are 34 times safer than road transportation when compared on the basis of incidents and serious incidents per billion ton miles per year. The number of spills per 1,000 miles has dropped by 60% in the past ten years, and the number of barrels released has dropped 42%[5]. These improved metrics are due to increased maintenance and new technology enabling more frequent and accurate monitoring of pipelines.

Renewable Energy – The potential for renewable forms of energy (solar, wind, hydraulic) to replace hydrocarbon-based energy is both the largest and least immediate risk to energy infrastructure MLPs. Such a technological breakthrough is likely many years away, and it will also take many years to fully implement. However, if the next form of energy is transported in a gaseous or liquid form, it is highly likely that existing steel pipelines and storage facilities can be converted. For instance, liquid hydrogen could easily be moved by our current infrastructure.

Permitting Risks – The permitting process for a new pipeline involves federal and state government approvals and permits, as well as environmental impact studies and potentially eminent domain complications. Each state has its own regulations, and pipelines often pass through many states. Should an approval not be granted (or conditionally granted), a pipeline may need to be rerouted, which is an expensive and time-consuming necessity. It is at this stage that community and environmental protesters often delay the timeline. Any delays or cost overruns in the permitting process may make the project less profitable, as well as potentially preventing the pipeline from being built, resulting in lost sunk costs for the company.

[4] The Joint Committee on Taxation publication entitled Estimates of Federal Tax Expenditures for Fiscal Years 2016-2020. https://www.jct.gov/publications.html?func=select&id=5

[5] Trench, Cheryl. 'Improving Liquid Pipeline Safety: Signposts from the Record.' API Pipeline Conference. 17 April 2012.

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The Creation and Definition of the Modern MLP

The modern MLP structure was created by an act of Congress. Almost three decades ago, Congress passed the Tax Reform Act of 1986, signed by President Ronald Reagan on the South Lawn of the White House. In addition to eliminating a number of tax shelters, it defined the structure of the modern MLP. Congress limited the scope of MLPs via Section 7704(d) of the Internal Revenue Code, part of the Revenue Act of 1987. To maintain pass-through status and pay no entity-level tax, a publicly traded partnership must derive at least 90% of its income from qualifying sources. As it currently stands, Section 7704(d)(1)(e), the relevant section for energy MLPs, defines qualifying income as follows:

(A) interest, (B) dividends, (C) real property rents, (D) gain from the sale or other disposition of real property (including property described in section 1221(a)(1)), (E) income and gains derived from the exploration, development, mining or production, processing, refining, transportation (including pipelines transporting gas, oil, or products thereof), or the marketing of any mineral or natural resource (including fertilizer, geothermal energy, and timber), or industrial source carbon dioxide, or the transportation or storage of any fuel described in subsection (b), (c), (d), or (e) of section 6426, or any alcohol fuel defined in section 6426(b)(4)(A) or any biodiesel fuel as defined in section 40A(d)(1), (F) any gain from the sale or disposition of a capital asset (or property described in section 1231(b)) held for the production of income described in any of the foregoing subparagraphs, and (G) in the case of a partnership described in the second sentence of section 7704(c)(3), income and gains from commodities (not described in section 1221(a)(1)) or futures, forwards, and options with respect to commodities. Section 7704(d)(4) provides that "qualifying income" also includes any income that would qualify under section 851(b)(2)(A) or section 856(c)(2).

Any pre-1986 MLP that had other kinds of income was given a grandfather clause and allowed to continue to use the structure, but most have gone private or converted to another structure.

The Evolution and Expansion of MLPs

If a company is thinking about forming an MLP or an existing MLP is wondering if a certain type of business would generate qualifying income, a private letter ruling may be requested from the IRS. When issued, private letter rulings (PLRs) are public documents that can provide insight into the reasoning of the IRS. A PLR cannot be used as precedent and applies only to the MLP requesting it. The IRS redacts the company's name and some specifics from the PLR.

Natural resources were originally designated as oil, gas, petroleum products, coal, timber, and any other depletable natural resource defined in Section 613 of the federal tax code. In 2008, newly issued PLRs more broadly interpreted the definition of natural resources for the first time since 1987 to include limited alternative fuels businesses, specifically the transportation and storage of ethanol, biodiesel, and liquefied hydrogen. Since then, the scope of PLRs has broadened and the number issued has significantly increased.

In 2013, there were 29 PLRS issued, many of which covered businesses and products ancillary to the drilling process and traditional midstream activities. The IRS began interpreting the law to include assisting in the hydraulic fracturing process via fluids handling, waste treatment and disposal, and mining and processing of sand and ceramic proppants.

In 2017, following a review period by the IRS, new guiding regulations were issued detailing and clarifying what was originally spelled out in the tax code. Namely, that there is no exclusive list of activities, but extended processing and manufacturing are not included. The intention is that raw natural resources may only be refined into a traditionally saleable form, but that processing beyond that point (for instance, petrochemical manufacturing) is not a qualifying activity. PLRs will still be needed, but not likely to the same extent seen in 2013.

Shale Revolution

Shale is a type of geological formation found in sedimentary rocks. It can be hard to imagine what the rock beneath us looks like, however above-ground rock formations can provide excellent (and breathtaking) evidence of how the rocks in a particular area have developed. Imagine the layers seen in the image below, but on a larger scale, miles underground.

Source: Photograph by an Alerian employee during a drive through Utah.

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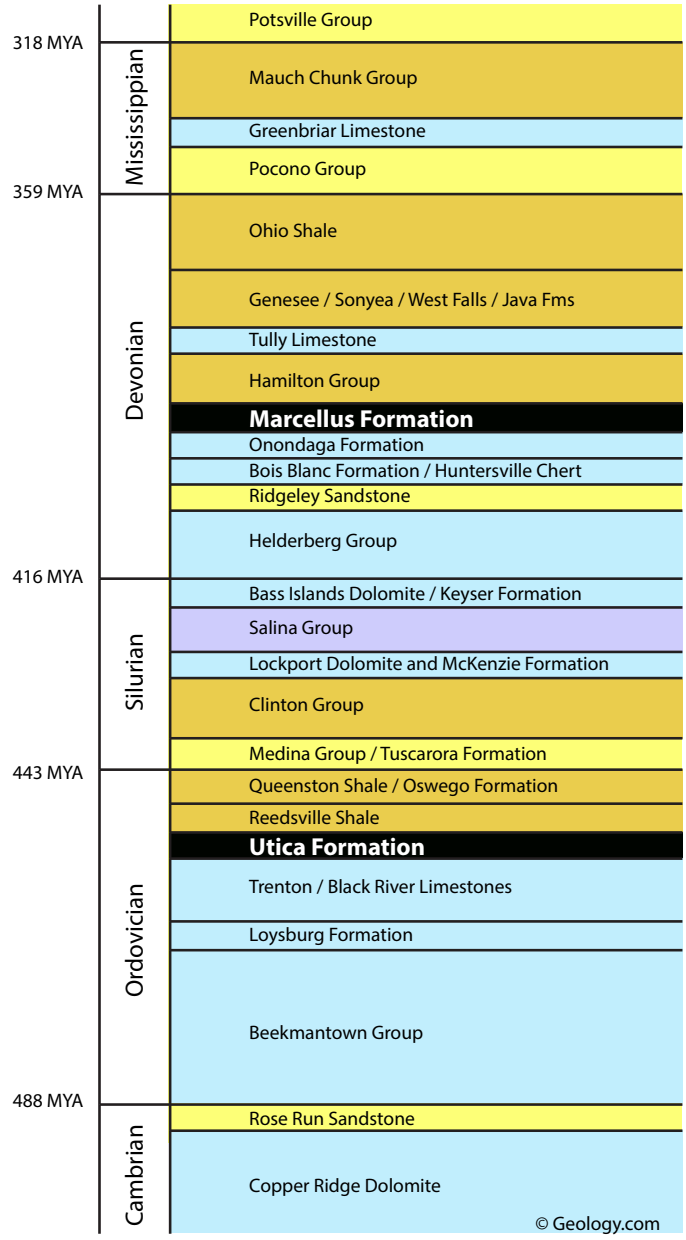
When the media refers to natural gas plays such as the Marcellus and Utica Shales in Ohio and Pennsylvania, they are referring to a specific layer of rock formed at a particular time in history. The amount and type of natural resources found in that layer will depend on what sort of life form, water, or lack of water existed during that period in time. Notice how the Marcellus formation sits above the Utica formation.



Source: geology.com

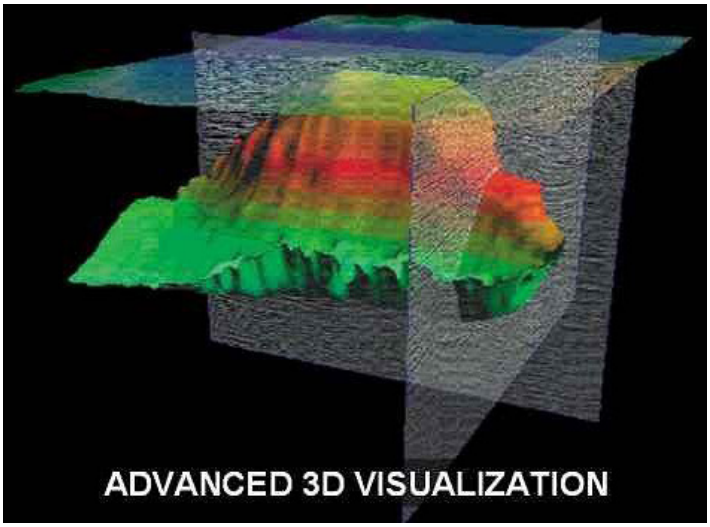
For many decades, producers drilled for oil and gas in rock formations such as carbonates, sandstones, and siltstones. These formations, known as conventional formations, have multiple porous zones that allow the oil and gas to flow naturally through the rock. This ability of rocks to allow fluids to flow is known as permeability.

Conventional formations have higher permeability than unconventional formations like shale rock. Vertical drilling, which involves drilling a pipe straight into the ground, worked for many years on conventional formations because once the drill bit hit a particular area, the high permeability would allow for the hydrocarbons to be extracted easily. For quite some time, the energy industry has known that oil and gas existed in shale. But because shale rock is not as permeable, using old techniques with vertical drilling did not make it economically feasible to recover resources because it would only capture a limited amount.

Three technologies combined together truly changed the game for extracting shale resources:

1. 3D seismic imaging
2. horizontal drilling
3. hydraulic fracturing

While seismic imaging in 3D may be the least well known component of the shale revolution, it is the primary driver of success rates. Seismic technology uses acoustic energy, vibrations, and reflected signals to determine the location and density of rock formations. Think of it like an underground map. While considerably more expensive than 2D seismic imaging, 3D seismic imaging results in fewer dry holes and more productive wells.



Source: geomore.com/seismic

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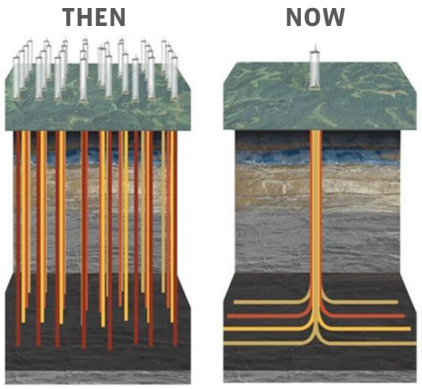
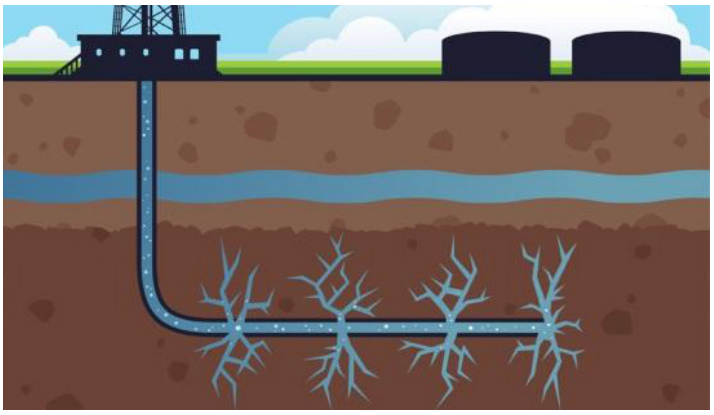
Horizontal drilling is another technology that has drastically improved the success rate and economic viability of shale drilling. Instead of drilling many vertical wells on the surface to fully explore a reservoir, horizontal drilling allows the operator to drill a single vertical well, and then manipulate the drill bit underground to cover a much larger area. Multiple horizontal wells can be maintained from a single drill pad, lowering construction costs and minimizing the impact to the environment.

After the well is drilled and lined with casing, a second technique called hydraulic fracturing is used, often in conjunction with horizontal drilling. Hydraulic fracturing describes the process in which a mixture of water, sand, and other chemicals is pumped into a well at a very high pressure to break up delicate shale rock. Think of a Butterfinger candy bar, but instead of candy and air, there are rocks and hydrocarbons. The highly pressurized mixture lets a driller open all those tiny pockets. The water is then removed, and the remaining sand props open the rock, allowing hydrocarbons to flow freely to the surface.

In short, 3D seismic drilling tells producers where to drill, horizontal drilling increases the amount of area drilled, and hydraulic fracturing solves the issue of low permeability.

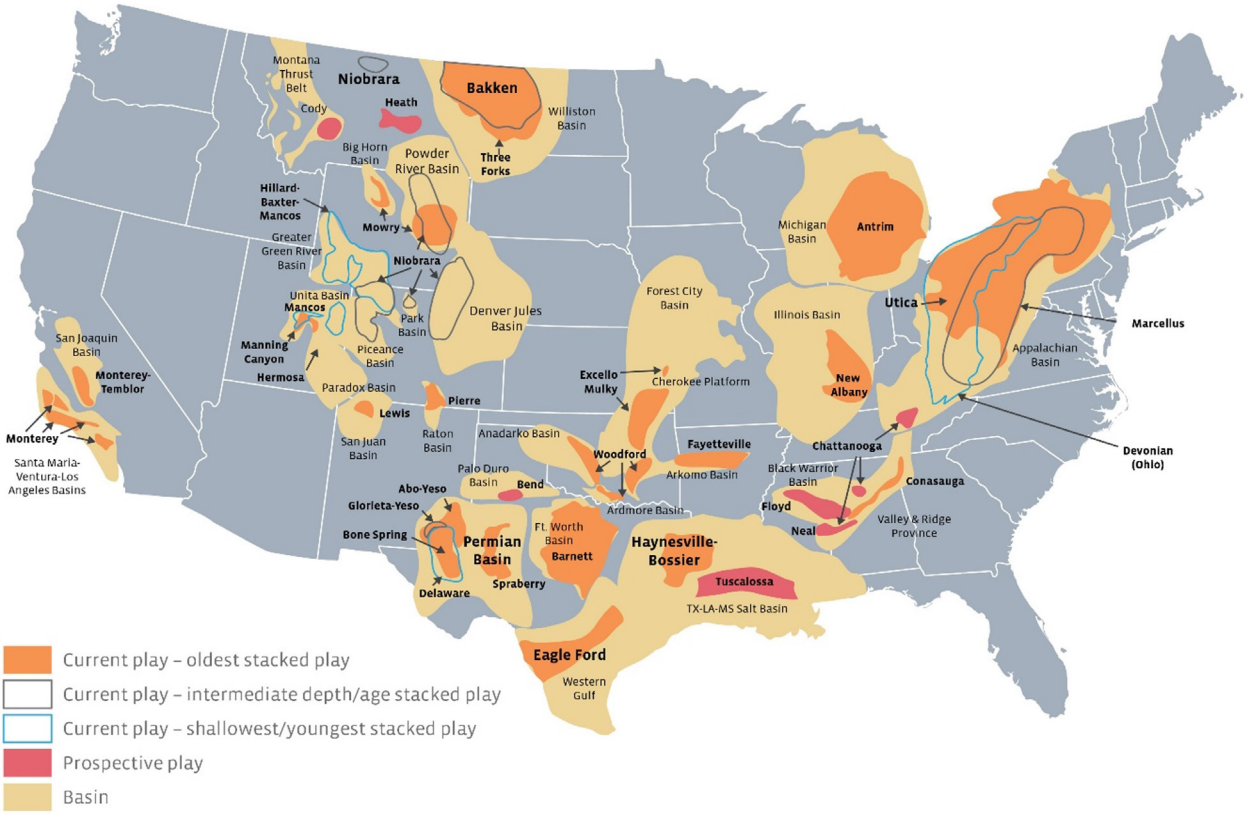


Vertical Drilling[6] Horizontal Drilling



Hydraulic Fracturing

The map below shows some of the major natural gas, crude oil, and NGL plays in the United States.



Source: National Energy Board, US Energy Information Administration

[6] Ohio Oil and Gas Association. September 30, 2013.

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The General Partner – Limited Partner Relationship

MLPs generally have two classes of owners, the general partner and limited partners. The GP controls the operations and typically owns a 2% equity interest along with incentive distribution rights (IDRs). A pure-play GP typically owns only the 2% interest in the MLP as well as IDRs; however, a GP is not prohibited from owning and operating assets or owning additional LP interests.

Just like a corporation may have thousands or millions of shareholders, MLPs also have thousands of unitholders. They provide capital to the company but have no role in the partnership's operation or management. In traditional corporations, the management team and board of directors have a fiduciary duty to shareholders. However, MLP partnership agreements specifically state that no fiduciary duty is owed to unitholders and no unitholder vote is necessary to approve major changes, something for which MLPs have frequently received criticism. While unitholders may have no legal recourse on the grounds of fiduciary duty, the GP/LP structure is designed to align the interests of all parties. This is the basis for IDRs, which will be explained later in more detail. Essentially, as the distribution to unitholders increases and surpasses target levels, the GP is also monetarily rewarded. For the LP unitholder, partnership agreements mandate that MLPs pay out nearly all available cash, providing significant current income. Additionally, minimum quarterly distributions (MQDs) are written into the partnership agreement.

In addition to the tax benefits, this two-tier structure is the reason many companies that generate qualifying income prefer the MLP structure. Both the GP and the LP can raise capital for projects, allowing for greater flexibility in financing. Additionally, a corporate sponsor may sell an integral asset to the MLP to realize the value of the asset while still maintaining control. Refining companies with daughter MLPs frequently do this with pipelines and storage facilities that supply and support the refining process. The LP unitholders benefit from the growth visibility provided by these drop downs.

Not all MLPs are structured as an LP with a GP. Some LPs have a GP but no IDRs, while others have no GP at all.

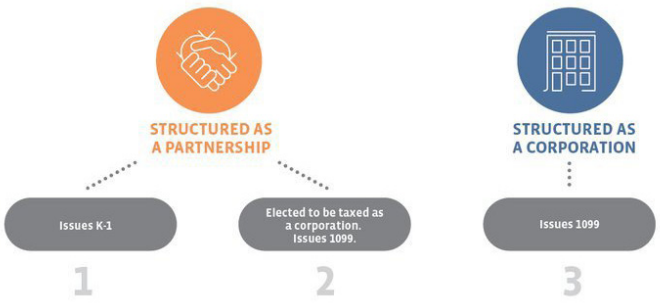
Publicly Traded MLP GPs

The number of public GPs waxes and wanes over the years. Originally, GPs were privately owned only by the MLP sponsor and management teams, but investors clamored to participate and private equity sponsors were looking for alternative exit strategies. For instance, from 2004-2006 there with 11 IPOs of MLP GPs, but following the financial crisis, yield spreads between LPs and GPs narrowed significantly. As financing became more expensive, LPs began to acquire their GPs, eliminating the IDR structure and lowering their cost of capital. Then, in 2010, the MLP GP IPO market reopened but this time, some GPs were structured or elected to be taxed as C corporations to remove the complication of a K-1 for investors. Later, following the commodity slump in 2014-2016, MLPs that still had a GP began to explore various ways to lower their cost of capital. In some cases, IDRs were bought in while the GP remaining trading. In other cases, the GP became a simple tracking stock for the LP. And in still others, reversing the trend, the GP bought in the LP, and the entire company became a C corporation.

As a result, there are now three basic types of publicly-traded MLP GPs:

1. Formed and taxed as a partnership. Issues a K-1.
2. Formed as a partnership but elects to be taxed as a corporation. Issues a 1099.
3. Formed and taxed as a corporation. Issues a 1099.

MLP GPs May Be Structured One of Three Ways



Many investors want K-1s about as badly as they want bed bugs and some investors looking to own MLPs in a retirement account worry about UBIT. When GPs were considering their IPOs, they listened to these concerns and now many GPs are either structured as a corporation or taxed as one. This way, they can issue the familiar Form 1099 to investors at the end of each year.

Finally, governance should also be considered. The partnership structure has looser governance requirements and may allow the general partner to retain the level of control that it desires after going public.

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Incentive Distribution Rights (IDRs)

The general partner's board of directors dictates the amount of the LP distribution. While the GP may benefit from MLP distribution increases through its LP stake, over the long term, the largest portion of its cash flow is derived from its ownership of IDRs. When a GP owns IDRs, it will increasingly benefit from successive distribution increases. Owning IDRs incentivizes the GP to grow the LP distributions by entitling GPs to receive a higher percentage (generally up to 50%) of incremental cash distributions when the distribution to LP unitholders reaches certain thresholds.

This works very similarly to income tax brackets in the United States. IDRs typically begin with the GP receiving 2% of the total cash flow, equal to its LP equity interest. When the distribution increases to the next tier, the GP will begin to receive a higher percentage of the cash flows above that point, say 15%. Typically, the highest tier is a 50/50 split of incremental cash flow. The cash received also increases when the number of LP units outstanding increases. While the GP technically has no legal fiduciary duty to the LP, there is an alignment of interests between GPs and LPs, in that both want to see LP distributions grow steadily over time. As the LP moves into the higher IDR splits, publicly traded GPs are often awarded premium valuations and have significantly lower yields than their corresponding MLPs.

Sample IDR Tiers

	Unitholders	General Partner
Minimum Quarterly Distribution	98%	2%
First Target Distribution	98%	2%
Second Target Distribution	85%	15%
Third Target Distribution	75%	25%
Thereafter	50%	50%

Source: Alerian

As mentioned above, should the MLP experience lower cash flows for a temporary period, the GP may forgo a certain portion of its cash flow from IDRs or its share of LP units. In this way, the GP is encouraged to grow the MLP sustainably.

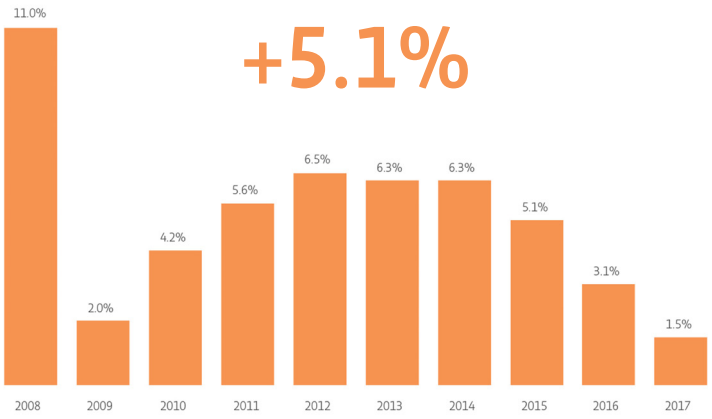
An MLP with a GP and IDR structure can also have a higher cost of equity, as the return on an acquisition or project must compensate both the LP and the GP. For this reason, several MLPs have bought back the IDRs or merged with their GP to provide higher growth rates for their LP unitholders.

The Importance of Distributions

Stable distributions have historically been a hallmark of the MLP space. MLP distributions are not guaranteed and depend on each partnership's ability to generate adequate cash flow. Unlike Real Estate Investment Trusts (REITs) that must distribute a certain percentage of their cash flow each quarter in order to retain their tax-advantaged designations, MLPs have no such requirements. Like REITs, MLPs pay no taxes at the entity level, so they can distribute much more of their cash flow for investors.

Typically, the partnership agreements of individual MLPs determine how cash distributions will be made to GPs and LPs. Generally speaking, partnership agreements mandate that the MLP distribute all of its distributable cash flow (DCF), less a discretionary reserve determined by the GP, to unitholders within 45 days after the end of a quarter. Traditionally, MLP discretionary reserves are small, so MLP payout ratios are higher than those of C corporations, even Utilities.

Average Annual Distribution Growth (10 Years)



Represents weighted average annual distribution growth of the Alerian MLP Index. Source: Alerian as of December 29, 2017.

Over the past decade, MLPs have raised their distributions by 6.0% on an annualized basis. This predictability and growth has garnered MLPs premium valuations as compared to the broader equity market. When an MLP is going through financial difficulties, it can free up cash flow by reducing or eliminating its distribution. There are some other options for an MLP with a general partner. A GP can elect to give back or delay distributions on its subordinated units, it can forego IDRs for a period of time, or even forego distributions on its LP units.

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Variable Distribution MLPs

While many investors have come to associate stable and growing distributions with MLPs in general, the mandate to maintain and grow the distribution is delineated in each individual partnership agreement. Within the past decade, some MLPs have gone public without a clause in the partnership agreement mandating conventional MQDs. These MLPs pay out 100% of cash flow, resulting in varying levels of distributions each quarter. Often, this is due to the business the MLP operates. The majority of variable distribution MLPs have business models that are directly exposed to commodity prices, which greatly affects the amount of DCF available to pay out to unitholders. For example, these businesses may be nitrogen fertilizer plants or refining facilities. Investors who prefer variable distribution MLPs often are interested in the expected total return or thematic play offered by these companies. Variable distribution MLP investors necessarily do not require the consistency that has historically been a hallmark of the MLP space.

Understanding MLP Cash Flows and Financial Reporting

An occasional criticism of MLPs is that they are a Ponzi scheme. For the most part, they are continually raising capital and continually increasing distributions, both hallmarks of a classic Ponzi scheme. However, in a Ponzi scheme, new money raised is paid to existing investors, and the whole effort depends on ever increasing numbers of new investors.

While MLPs do pay out the majority of their incoming cash flow to investors, they strive to retain an adequate amount of cash for day-to-day operations. In order to build new projects or acquire a new asset, they have historically relied on the debt and equity markets for financing. That said, we are starting to see some MLPs retain cash to fund growth projects, instead of issuing equity. This shift towards self-funding is just beginning.

When the new asset comes online, the increased cash flows will then translate into increased distributions. This instills capital discipline into MLP management teams, as each time they access capital, they will be assessed on the success of their previous projects. In a worst case scenario where MLPs are unable to access the capital markets, the entire structure does not crash like a Ponzi scheme. As long as energy demand remains consistent, MLPs will continue to own stable assets that generate cash flow. The only difference is that their growth outlook is tempered. In other words, investors will receive income (yield) but lower growth (total return).

The other way this criticism appears is in regards to MLP income statements. When it comes to MLPs, investors, analysts, and management teams all look past the more common earnings metrics and focus instead on distributable cash flow (DCF). While earnings are still priceless for journalists, asset allocations, and top-down investing, they become markedly less useful when it comes to business models which require significant capital investment. To the unaware observer, a company that looks like it is distributing more cash than it is earning would be a very risky if not entirely foolhardy investment. However, earnings (as reported in quarterly statements) are standardized and determined by accountants, so there are often differences between an accountant's earnings measures and the actual cash coming in the door. These accounting differences can make it seem like MLPs are engaged in dangerous business practices. The main culprit is non-cash depreciation contained in the Depreciation, Depletion, and Amortization (DD&A) accounting line item.

On the income statement, depreciation spreads the cost of an investment (such as a processing plant, pipeline, or even a truck) over its useful life. Accelerated depreciation, used by most MLPs, allows greater deductions in the early years of an asset's life. However, neither of these represents an actual cash outflow. Depreciation can be very high for MLPs as many grow organically by continuously laying miles of pipe in the ground and adding additional storage tanks and compressor stations. Once in service, however, these assets immediately begin generating cash flows with minimal maintenance expenses. Most MLP investors prefer to focus on these actual cash flows rather than earnings metrics that don't affect the distribution.

Similar to how REITs define their cash flow from operations as funds from operations (FFO), MLPs use DCF as the primary measure of cash available to distribute to unitholders or to fund growth. DCF is considered a non-GAAP financial measure. Investors should understand that the definition and calculation of DCF may vary among partnerships, as ultimately, each MLP determines its definition of DCF in its partnership agreement. Unfortunately, there is no standard measure or definition of DCF. This means that the Financial Accounting Standards Board (FASB), the body for setting accounting standards, has not outlined a standard definition and calculation for DCF. The calculation of DCF is typically the following:

DCF = net income (+) depreciation, depletion, and amortization (-) cash interest expense (-) maintenance capital expenditures (+/-) other non-cash items.

Net income, often referred to as the "bottom line," is a standardized measure of performance implemented by the FASB. DD&A includes the non-cash depreciation mentioned earlier and is removed from the cash calculation. Cash interest expense, however, is a very real cash outlay. Maintenance capital expenditures, those costs required to maintain the operating capacity or revenues of an existing

asset, are also included as these are regular cash expenses necessary to sustain the business. Other miscellaneous non-cash expenses (such as unrealized gains or losses on hedges) are reversed.

All in, as MLPs are continually investing in new assets, they are frequently taking advantage of accelerated depreciation accounting rules. Deducting non-cash depreciation in the calculation of earnings can create the illusion that MLPs are distributing more than they earn, something which can startle and dismay an inexperienced MLP investor. As such, earnings per unit is not a useful measure when examining the financial health of a growing MLP.

Tax Efficiency and Accounting with MLP Investing

As mentioned previously, MLPs pay no taxes at the entity level if 90% or more of their income is from qualifying sources. Due to the tax efficiency of the structure, MLPs have a lower cost of capital as compared to traditional C corporations. The pass-through nature of a partnership means the items on an MLP's income statement flow through and are proportionately allocated to the end investor.

To explain in further detail, a unitholder's cost basis is adjusted upward by the amount of partnership income allocated to that unitholder and adjusted downward by the amount of cash distributions (or actual payments) received. For most MLPs, cash distributions exceed allocated income, and the difference between distributed cash and allocated income is treated as "return of capital" to the unitholder and reduces the unitholder's basis in the units. Typically, 70%-100% of MLP distributions are considered tax-deferred return of capital, with the remaining portion taxed at ordinary income rates in the current year.

As long as the investor's adjusted basis remains above zero, taxes on the return of capital portion of the distribution are deferred until sale of units. If an investor's basis reaches zero, then future cash distributions will be taxed as capital gains in the current year. Upon sale of the MLP, the gain resulting from basis reductions is recaptured and taxed at ordinary income rates and any remaining gain is taxed at capital gain rates for investments held greater than one year.

An MLP's tax pass-through status applies at both a federal and a state level. An MLP unitholder is responsible for paying state income taxes on the portion of income allocated to the unitholder for each individual state in which the MLP operates. For companies that have networks of pipelines reaching across America, this can mean a considerable number of additional filings for the investor. In most cases, however, unless the unitholder owns a large position, the share of allocated income is small and the unitholder may not have to file in some states due to minimum income limits. Additionally, some states, such as Texas and Wyoming, do not have state income taxes.

If an investor is looking to own an MLP in a tax-advantaged account such as an IRA, partnership income (not cash distributions) may be considered unrelated business taxable income (UBTI) and subject to unrelated business income tax (UBIT), if UBTI exceeds $1,000 in a year. The custodian of the IRA is responsible for filing IRS Form 990T and paying the taxes.

From an estate planning perspective, if units are passed along to heirs, upon death of the unitholder, the basis is "stepped up" to the fair market value of units on the date of death and the gain resulting from basis reductions is not taxed.

MLP Business Models

In MLP 101, the pipeline business was thoroughly examined and explained. That is perhaps the most accessible and popular of the energy businesses that MLPs operate, but they are involved in a much larger swath of the energy value chain. Indeed, perhaps the only businesses in which they are not involved are retail sales and power generation.

Production & Mining – These MLPs typically focus on acquiring assets that are already proven and producing oil or natural gas. They will often target older wells that have predictable decline curves and long reserve lives. However, the natural decline curve, over time, will reduce the cash flows to investors unless the MLP drills new wells or acquires new assets. Occasionally, these MLPs will use techniques such as water flooding to increase the output of a well. These businesses can be more sensitive to commodity prices, although many will use hedging contracts to lock in current prices and reduce their exposure. This also provides better income visibility to investors.

Gathering & Processing – Before the hydrocarbons enter either a mainline or trunkline, they need to be gathered and processed. Gathering refers to the process of connecting wells to major pipelines through a series of small diameter pipelines, and processing is the removal of potential contaminants (including NGLs, which may actually be quite valuable) so that the gas can meet purity standards for pipeline transmission.

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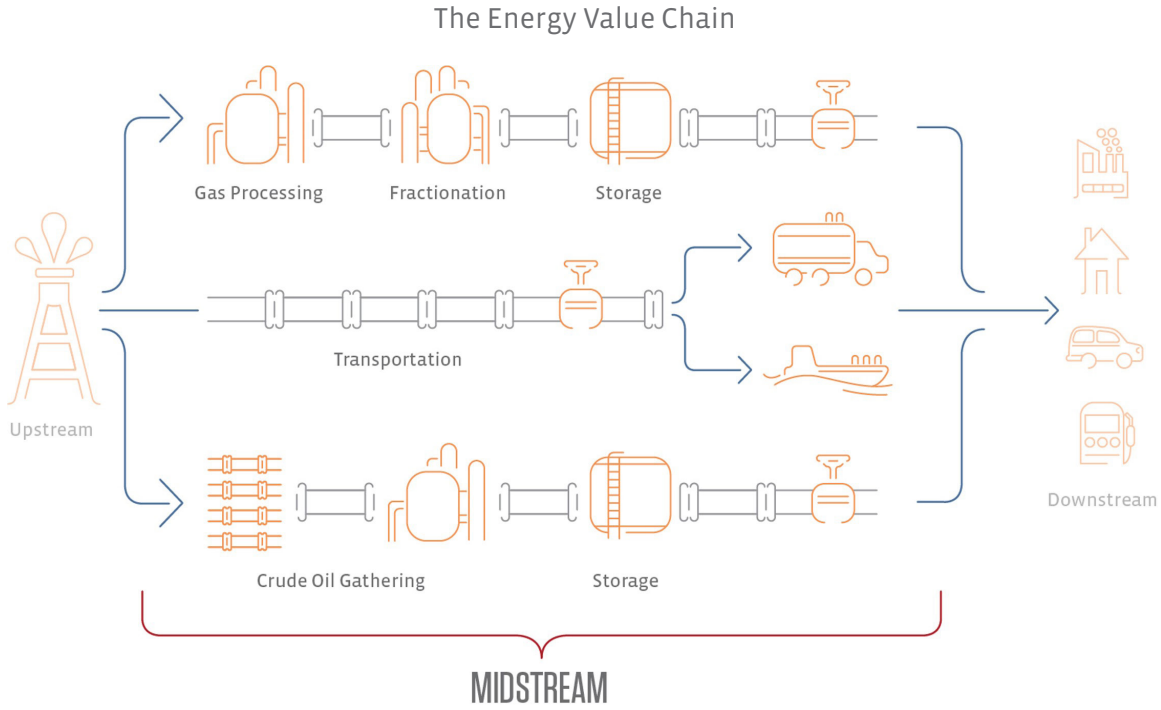

Gathering and processing MLPs focus on obtaining fee-based revenues by charging upstream companies a set fee for every cubic foot of natural gas or barrel of oil that is gathered or processed. The contract often includes a minimum volume commitment or acreage dedication, which provides further stability to the MLP. Occasionally, some MLPs will have different compensation structures, which may include payment in the form of keep-whole contracts, which allow the MLPs to keep the extracted NGLs and sell them to third parties at market prices. Another contract structure is percent of proceeds (colloquially known as POP), in which the processor is paid by retaining a percentage of any processed natural gas or NGLs. As keep-whole and POP contract structures expose the MLP to volatility in commodity prices, the vast majority of MLPs have moved (or attempted to move) their compensation structure to purely fee-based.

Fractionation – At a fractionation facility, NGLs are separated into their individual usable components of ethane, propane, butane, isobutene, and natural gasoline. Ethane is primarily used as a feedstock, or input, into petrochemical plants to make ethylene, which is used to make plastics (primarily plastic bags) and other chemical products (such as solvents and adhesives). Propane by itself can be used as a heating fuel or used as a feedstock to make propylene, which can be used in the manufacturing of textiles or plastics (such as headlights, eyeglasses, foam bedding, and water bottles). In general, ethane and propane make up the bulk of the NGL stream, ranging from 55%-85%. Butane, isobutane, and natural gasoline are used to produce motor gasoline. Butane is the primary component of lighter fluid and can be used as a feedstock to make butadiene, which is used in creating synthetic rubber.

The majority of fractionation is done on a fee-for-service basis. However, the amount of fees earned depends on the amount of volumes fractionated, which in turn depends on something called the frac spread. Essentially, the frac spread is a measure of the reverse of the adage, the whole is greater than the sum of its parts. With NGLs, the sum of the parts is worth more than the whole. Some NGLs must be removed for the natural gas stream to meet purity standards, but often they are only removed for additional profitability. The frac spread is the difference between the value of the NGLs if removed, and the value of the NGLs if they are left in the natural gas stream and sold at the same price as the natural gas. Ethane rejection is the industry term for when ethane prices are so low that is more worthwhile to leave it in the natural gas stream than to extract it for sale as a petrochemical feedstock.

The high cost of NGL handling, storage, and transportation additionally factors into the volumes of NGLs that will be fractionated. In order for the hydrocarbons to remain liquids, they must be kept under high pressure or cooled to very low temperatures. Additionally, any gaseous NGLs are heavier than air and flammable, requiring increased safety measures. NGL storage typically takes place in underground caverns for these reasons, but the smaller amounts stored above ground require insulated tanks and thicker steel.

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Transportation – Transportation MLPs are the bread and butter of the sector. The toll-road business model is the most well-known and most frequently referenced, perhaps because it is one of the simplest to understand. Interstate liquids pipelines earn money on a Price x Volume model. On the price side, these FERC-regulated pipelines increase the tariff they charge by PPI + 1.23% every July 1. The volume part of the equation is dependent on America's use of energy. Decreases due to energy efficiency standards are matched and exceeded by increases due to population growth.

Interstate natural gas pipelines operate a different fee-based business model. Customers contract for these pipelines in much the same way that apartments are rented, but instead of year-long leases, interstate natural gas pipeline contracts are often for 5 to 20 years. Like a lease, customers are obligated to pay regardless of whether they use the space or not. Additional fees are charged when a customer needs to inject or withdraw hydrocarbons to meet demand spikes or oversupply. Think of it as if the apartment building had mandatory valet parking for a set fee each time. The length and terms of these contracts allow the pipeline company to earn the rate of return necessary to break ground on new construction. MLPs have historically avoided building speculative projects, given the capital intensity of pipelines in particular. Building "on spec" would not be consistent with the intention of MLPs to pay consistent and growing distributions.

Marine transportation MLPs own tankers and carriers of crude oil, refined petroleum products, and liquefied natural gas. They may travel via rivers within the US or across oceans. As marine transportation contracts are relatively short-term in comparison to pipeline contracts, the business tends to be more sensitive to moves in commodity prices.

Storage – Natural gas that is not immediately required for electricity generation or heating is stored until needed. The same is true of crude oil waiting to be refined and refined products (such as gasoline, diesel, and jet fuel) waiting to be consumed. Storage facilities operate a fee-based business model similar to interstate natural gas pipelines, with contract lengths generally ranging from one to five years. Storage tanks for crude oil and refined products may also have inflation escalators.

MLPs are not involved in retail sales of energy; MLPs typically do not own gas stations, electricity generation, or local utility companies. However, under Section 7704, MLPs may lease out real estate to gas stations and supply them with fuel, although they may not own or operate them.

Pipeline Permitting

Natural Gas Pipelines

According to the Natural Gas Act, companies that would like to build an interstate natural gas pipeline must obtain a "Certificate of Public Convenience and Necessity" from the Federal Energy Regulatory Commission (FERC) before beginning a project. This is a multi-step process.

1. Pre-Filing and Environmental Review. Pre-filing involves notifying all stakeholders of the proposed project and offering a medium for said stakeholders to voice concerns related to the project. This phase also includes a study of the potential project site. This process begins about seven to eight months before the application for the actual certificate is filed.
2. Application for FERC Certificate. This is the beginning of the formal process. Applicants must turn in lots of data on the project, such as construction plans, route maps, schedules, and more.
3. Environmental Review. An official study is carried out on how the project will impact the environment. The public is then given an opportunity to comment on the results of the study. After this, the FERC will consider the comments and issue formal approval or denial of the project.

The formal process takes about a year. However, this timeline is not yet guaranteed. In April 2018, FERC requested stakeholder input on its current policies to review and authorize interstate natural gas pipelines, particularly related to the transparency, timing, and predictability of its certification process. It is unclear how FERC's review and authorization process may change, if at all.

Petroleum Pipelines

The permitting of oil pipelines is not subject to FERC regulation. While companies constructing oil pipelines are required to obtain federal permits such as those described under the Clean Water and Clean Air Acts, state approvals are the only governmental authorizations required for oil pipeline construction projects to move forward. At first blush, this may seem like an advantage for oil pipelines, and it's true that it could be a less cumbersome process depending on the pipeline's path. Many would agree it's easier to acquire permits to build a pipeline from Texas to Oklahoma than from Pennsylvania to New York, for example. However, dealing with landowner issues in multiple states isn't easy. If a landowner doesn't agree to the path of a pipeline and eminent domain authority does not exist in that landowner's state, then the oil pipeline could be forced to take an expensive re-route. This is one of the primary advantages parties seeking to build natural gas pipelines have over those building oil pipelines, FERC approval includes federal eminent domain.

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Pipeline Regulation

In the United States, interstate liquids pipelines are regulated by the Federal Energy Regulatory Committee (FERC). Unlike the antagonistic relationship most utilities have with their regulators regarding pricing, the FERC focuses on the safe and efficient transportation of energy throughout America. The FERC mandates that tariffs on all interstate liquids pipelines increase by PPI + 1.23% every July 1. This methodology will be in place until 2020, as the FERC reviews the PPI escalator every five years.

FERC Escalator History

1995–1999	PPI -1.0%
2000–2004	PPI
2005–2009	PPI +1.3%
2010–2014	PPI +2.65%
2015–2019	PPI +1.23%

Source: FERC

For interstate natural gas pipelines, the FERC enforces the Natural Gas Act, which mandates that the rates charged must be "just and reasonable". This is determined by calculating the pipeline company's cost of service, plus a return on their investment. In March 2018, FERC announced that MLPs would no longer be able to include an income tax allowance in their cost of service.

Intrastate pipelines are regulated by the states themselves. The most famous state regulatory agency is The Railroad Commission of Texas (a legacy name that may be changed in the coming years). Again, regulatory agencies typically work with MLPs to maintain standards of safety and maintenance.

Canada

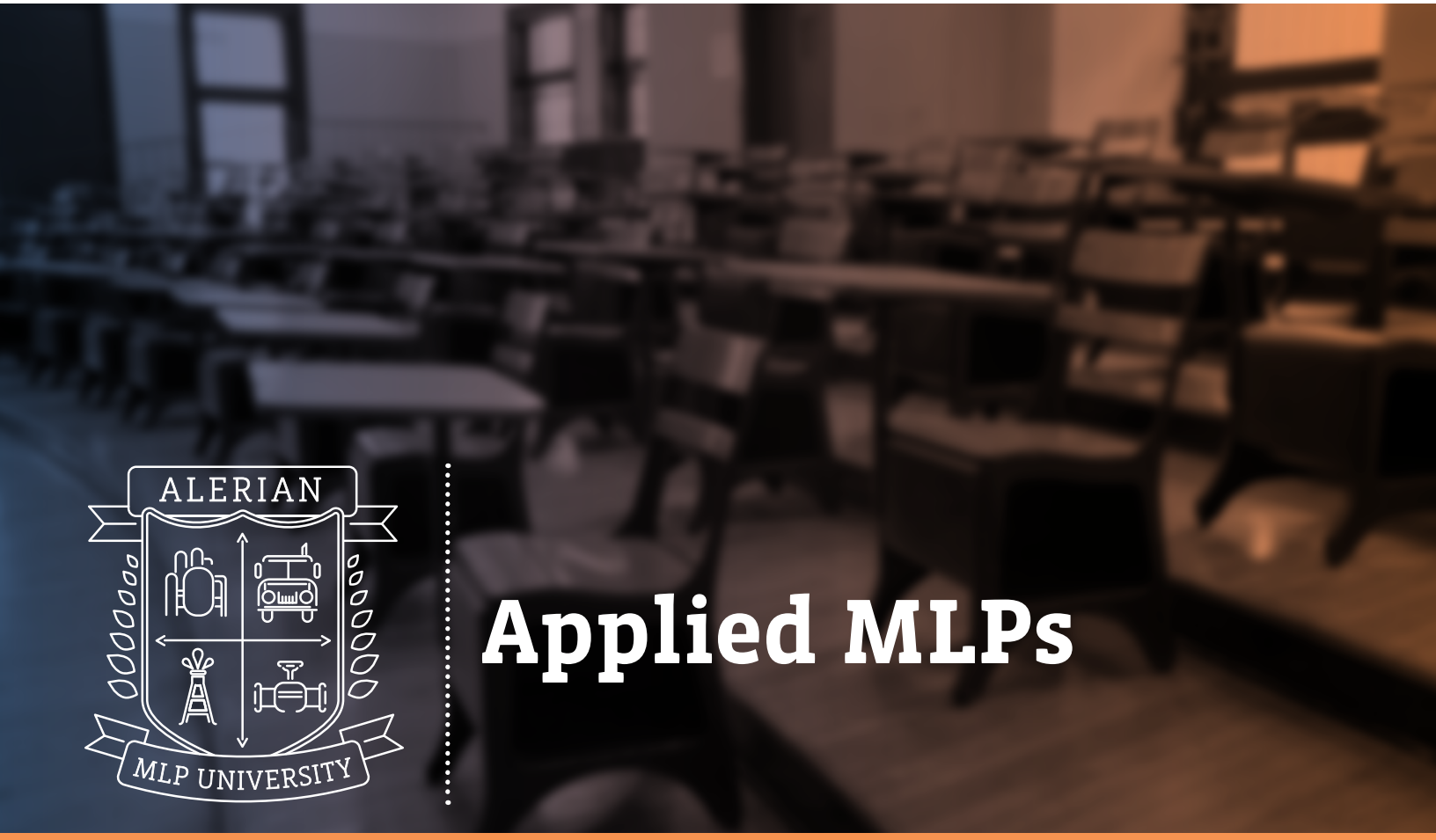
Headquartered in Calgary, Alberta, the National Energy Board (NEB) regulates the interprovincial oil, gas, and utilities industries in Canada. It does not create energy policy; it merely regulates construction, operation, and tariffs, and includes the energy-related functions that the EPA would provide in the United States.

While there is no FERC-equivalent escalator in Canada, the NEB regulates tariffs in such a way as to ensure the company can recover its initial investment and earn a reasonable return while also maintaining and expanding the pipeline systems. Canadian pipeline companies may only charge a toll that has first been approved by the NEB. This process typically includes review and negotiation of the terms and conditions of pipeline access and the responsibilities of both parties.

Until the mid-1990s, all toll regulation was based on a cost-of-service model, but as that process is costly, time-consuming, and often belligerent and adversarial, alternatives are being developed. Some of these include a uniform rate of return (based on the interest rate of Canadian bonds plus a risk premium) as well as multi-year negotiated settlements between the shippers and the pipeline companies. In the case of negotiated settlements, the NEB still has final authority on the approval process. Less often, an incentive regulation will be used so that both parties share in the benefits of improved performance. Smaller diameter pipelines are subject to a more relaxed, complaint-based system. Tolls can be fixed or market-driven—there is no standard method.

Valuation

The most common valuation metrics for MLPs are price to distributable cash flow (P/DCF), enterprise value to EBITDA (EV/EBITDA), yield spread to the 10-year Treasury, and the dividend discount model. Generally, price to earnings (P/E) is not used. MLPs invest so heavily in hard assets that depreciation accounting can occasionally make their earnings appear negative, while their cash flows continue to be stable and growing. For this reason, a multi-stage DCF discount model is preferred over all others. Since DCF is a measure of the cash flow available to be paid out to investors every quarter, it is a much more accurate reflection of the health and sustainability of an MLP.



Applied MLPs

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MLPs in Your Portfolio

So, you've reached this point in the MLP University, and you may have decided that MLPs are the investment for you. You've read about the business models, you've gotten comfortable with the risks, and you think they could be a good addition to your portfolio. Now what?

The first thing to do is decide how much of your portfolio to allocate to MLPs. Some investors do have outsized MLP allocations and have done very well over the past decade; however, MLPs are equities, and they are at-risk investments. Many investors use MLPs in their equity income sleeve, their real asset sleeve, or their energy or equity growth sleeve. In Alerian's conversations with investors over the years, we've seen a typical allocation of 3%-6%, although depending on the portfolio's objective, we've also seen 10%-15%.

Buying Individual MLPs

One of the lines that we repeat over and over is, "For a US taxable investor that is comfortable filing K-1s and state taxes and building a diversified portfolio, s/he will always be better off buying individual MLPs directly." "Always" isn't a word financial folks use very often. To break that down, we mean an investor who is taxed in the US and is investing in a taxable account (not an IRA, 401(k), or other tax-advantaged vehicle). Also, that investor is willing to receive and file K-1s (as opposed to 1099s) as well as filing any associated state taxes. Or, the investor is willing to pay an accountant to do so on her behalf. Also, the investor is willing to do the work of researching and choosing individual MLPs and taking on the associated risks with security selection and portfolio construction. If all those constraints are not a problem, the most tax-efficient way to access the asset class (and incidentally, pay the lowest fees) is to buy MLPs directly.

MLPs can be more tax-efficient investments than many other stocks due to their features associated with distributions. From an estate planning perspective, if units are passed along to heirs, upon death of the unitholder, the basis is "stepped up" to the fair market value of units on the date of transfer, thereby eliminating a taxable liability associated with the reduction of the original unitholder's cost basis.

Of course, once investors have decided to buy individual MLPs, there is the question of which MLP(s) to buy. As an indexing and market intelligence firm, our desire is to equip investors to make informed decisions about MLPs and energy infrastructure. To maintain objectivity, we do not make stock picks, and Alerian employees hold no individual MLP positions. However, after years of following the space, we have these recommendations for investors looking to put together a portfolio of MLPs.

Management Teams – Consider the management team of the MLP. Solid management teams are those that have led the company to build new projects on time and on budget, that have been effective and efficient stewards of investor capital, and who work well together and have excellent relationships with their customers, investors, and other industry stakeholders. They also admit when they are wrong and have a deep bench of talent.

Asset Footprint – Like Warren Buffet's moat, those MLPs which already own land and rights of way in growth areas benefit from their established position by being able to expand their position without excessive political or regulatory headwinds. Additionally, MLPs which own a diversity of assets along the energy value chain can clip multiple coupons along the way while also realizing cost savings. MLPs with basin diversity have a natural hedge against continually changing supply and demand flows.

Capital Markets Access – MLPs need access to capital to build or acquire assets. For these expansion projects and acquisitions to generate a positive return, this capital must come at a cost below the expected return of the asset. MLPs with a bigger footprint, greater margin for error, and lower business risk tend to have better and cheaper access to capital. Likewise, those MLPs with an investment grade credit rating or access to alternative sources of capital (such as a GP sponsor, DRIP, or PIPEs), will also have more capital flexibility.

Sponsor – Most sponsors fall into one of three buckets: publicly traded energy or utility companies, private equity firms, and management. A sponsor can give an MLP access to a multi-year growth story through dropdowns and can also provide support if an MLP runs into difficulty. However, having a sponsor that owns IDRs can also raise the cost of equity for an MLP, making expansion projects and acquisitions less accretive.

Growth Opportunities – Obviously, all investors would like to own companies that continue to expand their asset footprint. Organic growth projects tend to generate a higher internal rate of return (IRR) than acquisitions, so MLPs with a larger backlog of projects relative to their current size are likely to have more visibility to distribution growth.

Financial Metrics – MLPs with low leverage ratios or high coverage ratios have bigger margins of error in terms of execution risk, as well as unforeseen macroeconomic issues (including severe weather and commodity price movements).

// Applied MLPs

Size – Larger MLPs can more easily access the capital markets and are more likely to get investment grade ratings, have higher trading liquidity, and reach a broader investor group. However, it also takes bigger projects, built or acquired, to move the distribution needle.

With some MLPs, investors have the option of buying the individual MLP or its general partner. GPs typically manage the partnership's operations, receive IDRs, and maintain an ownership stake in the MLP. Through ownership of IDRs, several MLP founders, such as Rich Kinder and the late Dan Duncan, became billionaires. The current phase of GP offerings has seen sponsors elect the C corporation structure; some are even tracking stocks for the MLP. Rather than receiving a potentially complicated Schedule K-1, C corporation investors receive a simple Form 1099. For investors interested in direct MLP ownership but unable or unwilling to receive a K-1, the C corporation GP can be an attractive option. When deciding, investors are urged to consider the relative valuations of the GP and LP, the growth opportunities available to the LP and the implications for the IDRs, and the capital discipline and financial stewardship of the management team.

Active versus Passive

Although this will vary by investor, the next thing to decide is MLP investment philosophy in regards to active versus passive management. While this decision is germane to any sector, there are a few things unique to the MLP space. Advocates of passive investing note that over the long term and after factoring in fees, active managers are unable to consistently outperform the index to which they benchmark their performance. Advocates of active investing argue that with extensive research on individual companies, selective investing, and close monitoring of a portfolio, a portfolio manager can generate alpha, or risk-adjusted outperformance versus a benchmark.

Individual MLP market capitalizations range from a couple hundred million dollars to tens of billions of dollars. If an active manager running a $1 billion portfolio would like to put on a 1% position in a small MLP, liquidity constraints may prevent the manager from being able to enter or exit the position in a reasonable amount of time. This may cause active managers to take large positions in the larger, more established MLPs, which are the same MLPs in a market-cap weighted index. This phenomenon is known as closet indexing.

Alerian wrote an extensive white paper examining active vs passive MLP investing. Published in 2015, the paper concluded that:

1. Over the long term, actively managed MLP funds underperform the AMZ.
2. MLP distribution growth outpaces that of actively managed MLP funds.
3. MLP mutual funds display a strong case of closet indexing.
4. MLP mutual funds have not generated strong alpha over the long term.

Choosing an Active Manager

For those investors who are not comfortable choosing their own MLPs, but still would like active management, Alerian recommends considering the following factors when selecting an active manager.

History – As stated ad nauseum, past performance is not an indication of future returns. However, the MLP space is still a very young space. MLP market capitalization has increased remarkably over the past 10 years. As one can imagine, with the outsized growth of the space, suddenly there are many money managers entering the MLP space. If a manager claims to have been actively investing in MLPs for the past ten years, it is worth looking into his or her track record, as very few people were actually investing in MLPs 15 or 20 years ago.

Outperformance – The entire purpose of paying for active management is to outperform the index after fees. If the active manager is not consistently outperforming the index, or, after fees is underperforming the index, an investor is better served by investing in a passively managed product. Outperformance in a single year may be outstanding, but consider whether the manager has outperformed in previous years and under various market conditions.

Differentiation – An active manager whose portfolio closely mimics an index may be engaging in closet indexing. Investors are encouraged to examine the underlying portfolio to be sure it matches the investment thesis and philosophy of the manager.

Turnover – Frequent trading could trigger tax bills for the fund that may not be in the best interest of investors. Many investors are attracted to the MLP space for the tax benefits that holding MLPs can provide, such as a potentially large percentage of distributions being tax deferred. However, this tax deferral lasts only until the sale of the position, so a manager with a high turnover ratio may not be passing along this benefit to his or her clients.

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Choosing an Indexed Product

As an indexing firm, Alerian constructs and maintains MLP and energy infrastructure indices which it licenses to its partners for the creation of passively managed investment products. We launched the first real-time MLP index in 2006, which has since become the industry standard benchmark, and we continue to work hard to maintain indices that meet the most rigorous standards. With that bias in mind, Alerian recommends that investors looking for a passive investment consider the following when researching underlying indices.

Transparency – Passive investors should know what they are buying. The constituents of the underlying index should be available to investors, as should the methodology used to determine those constituents. If a change is to be made, that information should be public as well. Any index that lacks transparency is more like active management than to a truly passive investment. A transparent portfolio allows investors to be sure the underlying portfolio matches their investment thesis. Not all MLP indices are the same—some are midstream focused, others are focused on income, and still others exclude energy MLPs.

Objectivity – An index provider may be tempted to include MLPs for subjective reasons: a personal investment, a relationship with the management team, or to juice returns on a stock already included in an actively managed fund. For each index, there should be rules in place to prevent personal opinions and emotions from impacting the construction and rebalancing of the index. Having a codified set of rules that is transparent and freely available to the public, as well as prohibiting index committee members from taking positions in individual MLPs in their personal accounts, all help maintain objectivity. Additionally, indexing firms should be careful to avoid conflicts of interest with actively managed investments.

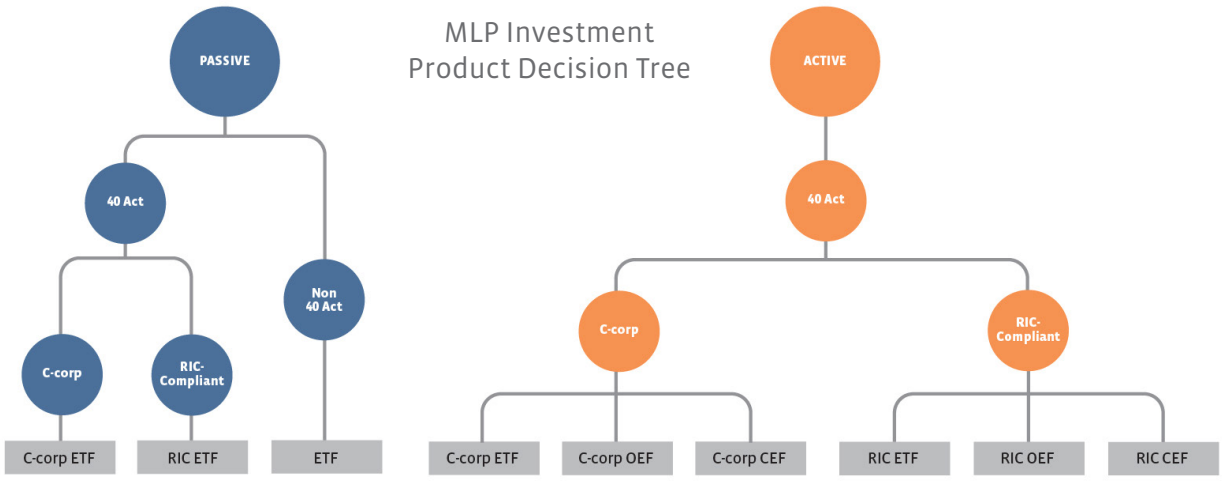
The Myriad of MLP Investment Products

Many investors do not fit the criteria listed above for buying individual MLPs, but thankfully, a variety of MLP access products are available to investors.

MLPs are pass-through structures that do not pay taxes at the entity level. Instead, income and deductions are passed through to the end investor. Regulated investment companies (RICs) such as Closed-End Funds (CEFs), Mutual Funds, and Exchanged Traded Funds (ETFs) under the Investment Company Act of 1940 (collectively, "40 Act Funds") are also pass-through structures. Under current law, 40 Act Funds seeking to retain pass-through status are prohibited from owning more than 25% of their assets in MLPs. Funds that abide by this law have come to be called "RIC-compliant."

There are funds that have more than 25% of their assets in MLPs; however, these funds are no longer pass-through structures and are required to pay taxes at the fund level. Functionally, this means that fund performance is reduced by the amount of taxes accrued (i.e. will be owed when positions are sold). Think of it like your employer withholding a certain portion of income taxes. In this case, the fund withholds (or accrues) a portion of the returns. Some funds will use leverage to offset some of the effect of taxes. While leverage can increase returns when performance is positive, when performance is negative leverage will also cause the fund to lose more money. These funds are also able to preserve the return of capital benefit for their investors, and since they can own 100% MLPs, the proportion of income that is classified as return of capital is greater. They tend to be favored by investors seeking to maximize after-tax income.

Some funds are passively managed, where performance is linked to an index or benchmark. These funds tend to have lower fees. An actively managed fund has higher fees to account for the fact that a portfolio manager must be paid to choose individual stocks.



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40 Act Funds – C corporation taxation – 100% MLPs

A 40 Act Fund such as a mutual fund, CEF, or ETF which owns more than 25% MLPs will be taxed as a C corporation. As the underlying positions increase in value, the fund will accrue a deferred tax liability (DTL) to account for taxes that will be owed should the position be sold. This DTL is assessed at the corporate tax rate of 35% and assumed rate attributable to state taxes. The DTL is removed from the Net Asset Value (NAV) of the fund, meaning that if the value of the underlying portfolio rises from $100 to $110, the fund's NAV will move from $100 to $106.5. As the position falls, the DTL will be reduced. When the fund is in a net DTL position, the DTL effectively reduces the volatility of the underlying portfolio, assuming no leverage is employed. If the fund has no DTL to unwind, it will track the underlying portfolio on a one-for-one basis. Fund distributions track the return of capital proportion of the underlying basket of securities and lower an investor's cost basis.

Advantages:
- Owning the underlying securities
- Tax character of distributions mirrors that of underlying portfolio
- Fees are taken from the NAV, preserving the yield

Disadvantages:
- DTL mutes gains and losses when the fund is in a net DTL position

Suitability:
- Taxable investors seeking after-tax yield
- Investors who prefer low volatility

ETFs vs Mutual Funds
ETFs trade throughout the day; whereas mutual funds price only at the end of the day. However, mutual funds always price at NAV, while ETF prices are determined by the market. ETFs may also be sold short. Typically, MLP ETFs have lower fees, ranging from around 50 bps-100 bps. Mutual funds fees in this category are a bit higher and range from around 70 bps–140 bps. Mutual funds may also use up to 33% leverage.

Closed-End Funds
CEFs were the first 100% MLP C Corporation, 40 Act products. Like mutual funds, they can also use up to 33% debt leverage. Because CEFs do not have a creation/redemption feature, pricing may stray from NAV, causing them to trade at a premium or discount. Their liquidity is also constrained by the fund itself as opposed to the underlying securities held.

40 Act Funds – RIC Compliant – Less than 25% MLPs

Funds which own less than 25% MLPs do not pay taxes at the fund level, enabling them to pass through the entire return to their investors. The return of capital benefit from owning MLPs is muted due to the limit imposed on MLP ownership. Investors interested in RIC-compliant MLP funds should research what the fund owns for the other 75%. Common positions include utility companies, exploration and production companies, refiners, energy infrastructure companies, MLP ETNs, MLP GPs structured as C corporations, and cash.

Advantages:
- Ownership of the underlying securities
- Little to no tracking error

Disadvantages:
- Maximum of 25% of portfolio invested in MLPs
- Other 75% performance can meaningfully deviate from MLP performance
- Generally lower yield

Suitability:
- Tax-advantaged investors
- Total return investors in a taxable account
- Investors without exposure to the asset classes in the other 75%

As with 40 Act Funds that make a C corporation tax election, RIC compliant 40 Act funds may be mutual funds, CEFs, or ETFs.

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Exchange-Traded Notes (ETNs)

An ETN is an unsecured debt obligation of the issuer. It is an agreement between an investor and an issuing bank under which the bank agrees to pay the investor a return specified in the issuance documents. MLP ETNs may track a basket that is 100% MLPs without accruing for DTLs.

Advantages:

- Little to no tracking error as the bank agrees to pay the return
- Intraday knowledge of portfolio holdings
- Generally lower expense ratio than MLP 40 Act Funds

Disadvantages:

- Coupons are taxed at ordinary income rates
- Lower income as the expense ratio is removed from coupon payments
- Exposure to the credit risk of the underlying bank

Suitability:

- Tax-advantaged accounts such as 401(k)s or IRAs
- Total return investors in a taxable account
- Investors comfortable with the credit risk of the financial institution

Separately Managed Accounts (SMA)

An SMA is an account that is managed by a portfolio manager. Unlike owning a basket of individual MLPs and receiving multiple Schedule K-1s, an SMA consolidates everything so that the investor only receives one Schedule K-1. SMAs may generate UBTI. Once UBTI exceeds $1,000 in an account, additional taxes may be assessed.

Advantages:

- Keeps tax characteristic of the underlying investment
- Typically lower fees than publicly traded products

Disadvantages:

- May generate UBTI
- Issues a Schedule K-1
- High minimum investment

Suitability:

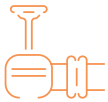
- Large institutions such as pensions and endowments
- Very wealthy individual investors

Classification Standard

// Classification Standard

The Energy MLP Classification Standard (EMCS[SM]) is the first framework designed to standardize the sector classifications of energy Master Limited Partnerships (MLPs). MLPs are categorized by their primary business activity, with an additional delineation by product or customer made for certain activities to account for structural differences in business risk.

Since the acronym "MLP" technically refers to a specific tax structure, not a business model or type of investment opportunity, Alerian has further divided energy MLPs by their primary business. Each has its own preferred contract style and length, customer set, opportunities, and challenges. Alerian reviews these designations on an annual basis and hopes that this set of standards helps to make the industry just a little more accessible.



Pipeline Transportation

Petroleum, Natural Gas

Transportation via large-diameter pipeline of crude oil, refined petroleum products, natural gas, and natural gas liquids.

Storage

Liquids, Gas

Storage of crude oil, refined petroleum products, natural gas, and natural gas liquids in aboveground tanks, depleted gas reservoirs, aquifers, and salt caverns.

Marketing

Retail, Wholesale

Retail distribution of heating fuels (propane and heating oil) and wholesale distribution of motor fuels (gasoline and diesel).

Services

Midstream, Upstream

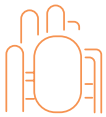
Provision of field services to the midstream and upstream sectors, including compression, offshore drilling, and saltwater disposal.

Mineral Interest

Ownership of mineral and royalty interests leased to third parties that develop, mine, and sell the reserves in exchange for payments.

Regasification

Conversion of natural gas from a liquefied state to a gaseous state via floating storage and regasification units acting as import terminals.



Gathering & Processing

Petroleum, Natural Gas

Transportation from the wellhead to processing plants, which separate methane from NGLs, which are themselves separated at fractionation plants.

Production & Mining

Hydrocarbons, Coal, Frac Sand

Production of crude oil, natural gas, and natural gas liquids from wells; and the extraction of coal and frac sand from mines.

Marine Transportation

Petroleum, LNG

Transportation via tankers and carriers of crude oil, refined petroleum products, and liquefied natural gas over bodies of water.

Catalytic Conversion

Conversion of a feedstock over a catalyst to produce nitrogen fertilizers (UAN and ammonia), petrochemical feedstocks (ethylene and methanol), and coke.

Refining

Processing of crude oil into refined petroleum products, including gasoline, diesel, jet fuel, petrochemicals, and liquefied petroleum gases.

Other

Liquefaction, Rail Terminaling

Other activities in which only one partnership is primarily engaged, including the liquefaction of natural gas and rail terminaling.

Glossary

// Glossary

3D Seismic Imaging: a process that uses acoustic energy, similar to sonar, to determine the density and topography of underground rock formations

At the Market: typically in reference to an equity offering where new shares are created and issued at market prices based on demand

Backwardation: the market condition where the price of a forward or futures contract is trading lower than the predicted spotprice

Contango: the market condition where the futures price of a commodity is higher than the expected spot price

Distributable Cash Flow: please see MLP 201 – Understanding MLP Cash Flows and Financial Reporting for a detailed explanation

Horizontal Drilling (Directional Drilling): a drilling technique that involves manipulating a drill bit underground so that it changes direction, please see MLP 201 – Shale Revolution for a detailed explanation

Hydraulic Fracturing: a process in which a mixture of water, sand, and other chemicals is pumped into a well at a very high pressure to break up delicate shale rock, please see MLP 201 – Shale Revolution for a detailed explanation

Hydrocarbons: a general term for crude oil and natural gas, encompassing all organic molecules with a molecular structure containing exclusively carbon and hydrogen atoms

Incentive Distribution Rights: please see MLP 201 – Incentive Distribution Rights for a detailed explanation

Investable Weight Factor: the float, or percent of units available for public trading

Liquefaction: the process in which natural gas is converted from its gaseous state to a liquefied state

Proppant: according to the EPA, "a granular substance such as sand that is used to keep the underground cracks open once the hydraulic fracturing fluid is withdrawn"

Regassification: the process in which liquefied natural gas in converted from its liquid state to its gaseous state

Shale: fine-grained sedimentary rock composed of silt and clay, characterized by its many breakable thin layers. As it relates to energy, hydrocarbons can be found in these layers.

Take-or-pay contract: a contract between a seller and buyer mandating that a buyer must purchase a certain amount of goods or services or pay a penalty

Total Return: price appreciation plus yield

West Texas Intermediate: a grade of crude oil typically extracted from Texas that is commonly used as a pricing benchmark

// Acronyms

ATM: At the Market

AUM: Assets Under Management

DCF: Distributable Cash Flow

DOE: Department of Energy

E&P: Exploration and Production

EBITDA: Earnings Before Interest, Taxes, Depreciation and Amortization

EIA: Energy Information Administration

EPA: Environmental Protection Agency

EPS: Earnings Per Share

ETF: Exchange Traded Fund

ETN: Exchange Traded Note

ETP: Exchange Traded Product

FERC: Federal Energy Regulatory Commission

FFO: Funds From Operations

FINRA: Financial Industry Regulatory Authority

IDR: Incentive Distribution Right

IEA: International Energy Agency

IPO: Initial Public Offering

IWF: Investable Weight Factor

LNG: Liquefied Natural Gas

LPG: Liquefied Petroleum Gas

M&A: Mergers and Acquisitions

MLP: Master Limited Partnership

MQD: Minimum Quarterly Distribution

NAV: Net Asset Value

NGL: Natural Gas Liquid

NGV: Natural Gas Vehicle

NYSE: New York Stock Exchange

PLR: Private Letter Ruling

PPI: Producer Price Index

PTP: Publicly Traded Partnership

PUD: Proved Undeveloped Reserves

REIT: Real Estate Investment Trust

RIA: Registered Investment Advisor

RIC: Regulated Investment Company

SEC: Securities and Exchange Commission

UBTI: Unrelated Business Taxable Income

WTI: West Texas Intermediate

// Units of Measure

C: Hundreds (100)

M: Thousands (1000)

MM: Millions (1,000,000)

B: Billions (1,000,000,000)

T: Trillions (1,000,000,000,000)

Bbl: Barrel, equal to 42 US Gallons

MBbls: One thousand barrels

MMBbls: One million barrels

MBbls/d: One thousand barrels per day

MMBbls/d: One million barrels per day

Btu: British thermal unit, a measurement of the energy content of natural gas

MBtu: One thousand British thermal units

MMBtu: One million British thermal units

MBtu/d: One thousand British thermal units per day

MMBtu/d: One million British thermal units per day

CF: Cubic feet, a volumetric measurement for natural gas at 60 degrees Fahrenheit and 14.73 psi of pressure

CCF: One hundred cubic feet of natural gas

MCF: One thousand cubic feet of natural gas

MMCF: One million cubic feet of natural gas

BCF: One billion cubic feet of natural gas

TCF: One trillion cubic feet of natural gas

CCF/d: One hundred cubic feet of natural gas per day

MCF/d: One thousand cubic feet of natural gas per day

MMCF/d: One million cubic feet of natural gas per day

BCF/d: One billion cubic feet of natural gas per day

TCF/d: One trillion cubic feet of natural gas per day