# Chapter 1

# Powering Your Portfolio: Energy in Brief

### *In This Chapter*

- Defining energy
- Understanding why energy makes for a great investment
- Knowing the risks
- Identifying the various ways to invest in energy

Energy is the most vital industry the world has ever seen. It generates the most revenue and it's a foundational requirement for all other industries. Apple needs energy to make its computers and run its warehouses full of servers. Walmart needs energy to transport its goods and keep the lights on at its thousands of retail locations. As such, the energy market is fertile ground for investment.

But where does one start? With so many sources of energy and companies to choose from, a beginner can become overwhelmed very quickly. Unlike other sectors of the market, like restaurants or retail, for example, investing in energy is about much more than just individual companies with a singular goal. Energy crosses borders, both geographically and in the way it upends the traditional approach of categorizing companies with neat and tidy labels.

Apple is a technology company; Walmart is a retail company. That's pretty straightforward. But what is Exxon, which trades on the New York Stock Exchange (NYSE) under the ticker XOM (written as NYSE: XOM)?

Is it an oil company? A natural gas company? A refiner? A retail gasoline company? A commodity trader? You get the idea. The point is that it and many other so-called major integrated oil and gas companies, or majors, is all of the above, and sometimes more. BP (NYSE: BP) and Shell (NYSE: RDS-A), for example, are also solar, wind, and biofuel companies, which also makes them technology and agriculture companies.

This diversity is what makes the energy market so unique and such a great place to invest in. The energy market involves exploration, mining, processing, refining, retail, shipping, pipelines, technology, and more. And you can invest in companies at every step of the process, whether they do it all or specialize in one or two parts of the chain.

# What Is Energy?

Before simply jumping in, I'd like to define energy as I cover it in this book. It's important to know the nature and scope of a market you'll be putting your hard-earned dollars into. The *Merriam-Webster Dictionary* definition of energy breaks it down into several parts.

Energy

- Has a dynamic quality
- Is a vigorous exertion of power
- Is a fundamental entity of nature that is transferred between parts of a system in the production of physical change within the system, and is usually regarded as the capacity for doing work
- Is usable power (such as heat or electricity) or the resources for producing such power

For investment purposes, I like a combination of the third and fourth definitions. To put a finer point on it, the two types of energy are *primary energy* and *secondary energy*.

For an energy source to be primary, it must naturally exist in nature. Primary energy sources can't be man-made. Primary energy is the primary focus of this book and includes

- **Crude oil:** The most widely traded commodity on the planet, oil fulfills one-third of the world's energy needs. From exploration and drilling to refining and distribution, oil presents myriad investment opportunities. I cover the crude basics in Chapter 6, futures trading in Chapter 8, producers in Chapter 9, and funds in Chapter 10.
- **Natural gas:** This was once considered a waste fuel, as companies routinely burned it off just to get rid of it. Today, thanks to new drilling technologies and concerns about oil depletion, natural gas is being looked to as the fossil fuel of the future. I spell out what you need to know in Chapter 7.

- **Coal:** No other fuel provides more electricity than coal. Forecasts show that coal will surpass oil as the world's top fuel source by 2022. It's cheap and abundant, but it's also dirty. I give you coal fundamentals in Chapter 11, analyze coal's future in Chapter 12, and chronicle investment opportunities in Chapter 13.
- **Uranium:** Many countries are looking to provide emission-free electricity with nuclear reactors, especially in Asia. China alone has plans to build more than 150 new reactors. But even though nuclear has been proven safer than other fuels, high-profile incidents make nuclear the most contentious of all energy sources. You can find a nuclear overview in Chapter 14, uranium life cycle and mining info in Chapter 15, and the best ways to invest in Chapter 16.
- **Solar energy:** In a single second, the sun produces enough energy to meet current global needs for 500,000 years. The world just hasn't quite figured out how to efficiently harvest it yet. But the process of doing so is now big business. I shine light on solar investments in Chapter 17.
- **Wind energy:** Already cheaper than coal and nuclear for electricity production in certain areas, wind has attracted the attention of countries and companies worldwide. Wind is a very young market with much room to grow; the United States, for example, still hasn't erected its first offshore wind farm. I get you in position to profit on wind in Chapter 18.
- **Geothermal energy:** The only renewable resource capable of providing constant energy, geothermal has been used as an energy source for more than a century. I outline geothermal opportunities in Chapter 19.
- **Biomass (organic material):** This can be burned to create electricity or processed into liquid fuels for transportation. Though it has been criticized for displacing food from hungry mouths, plant-based fuel is finding success in various locales. You can find a discussion of biofuel investments in Chapter 20.

Some sources of primary energy are transformed into more usable forms of energy. Electricity, for example, is a form of secondary energy because it's produced from primary sources. Gasoline is also a secondary energy source because it's refined from oil.

# Why Energy Investing?

Just because various energy sources exist doesn't mean that they're easy to get or that they can provide enough reliable, affordable energy for the entire global population. More than 1.2 billion people worldwide still lack access to electricity, and more than 2.5 billion still use wood, charcoal, and dung for

the energy to cook and heat. The fact that demand is this much greater than supply inherently makes energy a prime market for growth. As those billions of people in Africa, Asia, and South America begin to embrace the comforts of the developed world, the already record-breaking revenues of energy companies are going to expand even more. And the developed world isn't using any less, either.

This constant need for more energy is what sends prices ever higher. Average retail prices for gasoline set a record in 2011 and then set another record in 2012. Retail prices for electricity are climbing as well. My view is that if energy prices are constantly rising because of incessant demand and limited supply, why not invest in energy to profit?


Between now and 2035, the International Energy Agency has forecast that "global energy demand will push ever higher, growing by more than one-third," and to meet those growing energy needs, "cumulative investment of $37 trillion is needed in the world's energy supply system." That is the kind of environment I want to invest in.

## Investing in energy companies

Need more reasons to get started investing in energy? Here you find a list of the world's largest companies in order of the revenue they generated in the most recent fiscal year. Finding the pattern isn't hard: Nine of the ten companies in the world with the highest sales are energy companies. If the list kept going, you'd also find energy companies in spots 11 and 13.

Every other industry needs energy. That's why when I look to invest, energy is always the first place I start. It's like the guy who sold picks and shovels during the California gold rush. He made money whether or not the prospectors found gold. Energy is the picks and shovels for everything in the modern world, from food production to construction to transportation to computers.

| Company | Industry | Annual Revenue (Billions of Dollars) |
|---|---|---|
| Exxon Mobil | Oil and gas | $482.3 |
| Royal Dutch Shell | Oil and gas | $481.7 |
| Walmart | Retail | $469.2 |
| Sinopec Group | Oil and gas | $441.4 |
| BP | Oil and gas | $388.3 |
| China National Petroleum Corp. | Oil and gas | $378.0 |
| Saudi Aramco | Oil and gas | $356.0 |
| Vitol | Energy commodities | $297.0 |
| State Grid Corporation of China | Electric utility | $265.9 |
| Chevron | Oil and gas | $253.7 |

I also think energy makes for a great investment because the industry is constantly innovating. Whether it's the perfection of fracking technology to economically harvest once uneconomic shale gas reserves, or the constant improvement in how much light a solar panel can turn into electricity, or the advent of using Internet technology to reduce how much energy people use in their homes and offices, new advances are always being made — and monetized — in the energy sector. I outline many more reasons to invest in energy in Chapter 3.

## Fears, Risks, and Politics


Energy, like all other investments, carries risks. Policy is always changing. Improved technology can quickly make an entrenched technology obsolete. Geopolitical rifts can happen overnight. But if you identify and properly manage the risks, energy can provide above-average returns that many other sectors can't.

Many countries publish multiyear plans that outline the direction they want to take when it comes to procuring energy. In the United States, you can read bills being proposed in Congress. The more you read about energy and follow the news, the easier it is to spot potential shifts or disruptions on the horizon. Some things, however, you can't control. A tsunami that knocks out nuclear reactors, a blown-out well at the bottom of the ocean, an overthrown dictator in Libya — all these things are out of your control, and you should accept that fact before you put any money on the line.

If you manage the risks you can control and make peace with the ones you can't, energy investing offers a bevy of benefits. Not only can you beat the returns of the broader market, such as the Dow Jones Industrial Average or the S&P 500, but you can also attain a greater sense of self-worth by investing in the types of energy you believe in. You can get an education by following and reading about all the things that affect and relate to the global energy industry. I devote all of Chapter 5 to the risks and rewards of energy investing.

## Ways to Play

One way to play is by buying shares of, say, Exxon or Shell and holding them forever. And many people do just that. But you have many more ways to invest in energy besides the company names on your corner gas station. For starters, hundreds of publicly traded companies explore and drill for gas on their own. And other companies specialize in a niche part of the energy market — leasing oil rigs, for example, or operating a pipeline.

And when you move past oil and gas, you have still hundreds more companies to choose from: coal and uranium miners and processors, companies that build nuclear plants, solar panel producers, and wind turbine manufacturers, just to name a few.

Your options aren't restricted to just companies, either. Commodities are a huge part of the energy game. You can trade oil, gas, coal, uranium, and even electricity on exchanges with futures contracts, although, as Chapter 8 points out, doing so can be risky and requires large amounts of capital. You also have an entire universe of mutual and exchange-traded funds (ETFs) that you can use to invest in energy. Some focus on a specific energy source and the companies that produce it; others focus on the price of certain energy commodities; and some blend the two. And like most investments, you can deploy various strategies like shorting and leverage.

You can find a detailed discussion of all the various energy investment vehicles in Chapter 4. You can find specific investment options for various energy sectors in their respective chapters throughout the rest of the book.