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Essay: Energy Derivative

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1. Introduction

With my paper, I would like to give you some basic information's about Energy Derivatives, As we know Investment became more complicated as new types of derivative instruments are being created over the pass of the last two decades. The use of derivatives has been around for quite a long time, specially in the farming industry.

A derivative instrument in which the underlying asset is based on energy products including oil, natural gas and electricity, which trade either on an exchange or over-the-counter. Energy derivatives can be options, futures or swap agreements, among others. The value of a derivative will vary based on the changes of the price of the underlying energy product.

2. Energy Industry

The energy industry is the totality of all of the industries involved in the production and sale of energy, including fuel extraction, manufacturing, refining and distribution.

Energy has become a very essential requirement today for existence of humans with the rapidly developing world. People have turned to the use of energy driven resources to make their life much easier. This has created a great demand for energy thus leading to a supply deficit from the energy industry. Even though the energy industry is faced with this supply deficit it has still been going on with its driving factors ensuring invention of changes to cope with developing world. These driving forces have also greatly contributed to the key successes factors in this industry

One of the driving forces in energy industry is increasing need for energy in the world. The world is developing swiftly and people are consuming more energy through use of electronics which calls on the energy industry to meet this increasing demand. Another driving force in this industry is the need to combat environmental degradation (Pipeline & Gas Journal, 2005). This is because in the last years people have used fossil like oil, natural gas or coal as the source of energy. These fossils contribute around 88 percent of greenhouse effect. Thus the energy industry is been looked upon to come up with new ways to produce energy which do not have

negative effects to our environment. Another driving force is the need to achieve energy security (Greg, 2009). The changing politics and economies in the world call upon government to come up with own energy productions for security.

There have been numerous successes made in the energy industry though inventions and new technologies. One of the success factors is the use of solar energy. Currently invention of solar panels made of plastic has been made instead of using silicon which is expensive. Another success factor is the inventions on generation of wind energy. In China inventions on use of magnetic levitation wind turbines which has increased energy production of a normal turbine by 20 percent (Lindermann, 2005). Use of permanent magnets to generate energy is another success factor within energy industry. Magnets are been used on electric motors, generators and heaters as they are able to draw 100 watts of electricity. Thus the energy industry is changing with new inventions triggered by its driving forces.

3. Key products in energy industry

As we saw energy industry, plays big role in our society, while globalization, and development of countries, I can say that countries with highest natural resources and depends, how they use those resources , they are leader, in world economy.

Fast development of the technology, plays big role in using of energy industry.

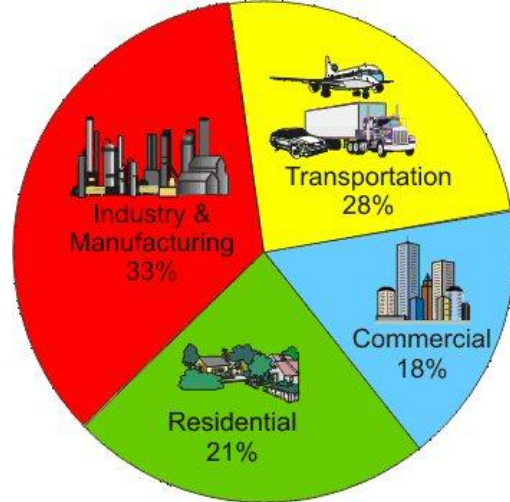
Main products in Energy industry are :

1. **Oil.**
2. **Natural Gas** and
3. **Alternative Energy.**

Life became expensive, and consumption is really high in general, for example consumption of energy is really high, in daily basis, I can see myself ho much energy I consume, here in my room, so I

can imagine , in all the world , we use electricity to cook food, to warm some water, watching television etc...

Every day, the average American uses about as much energy as is stored in seven gallons of gasoline. It is quite easy to draw a conclusion who are the dominant consumers of energy, just taking look into figure 1.



As we can see in this figure, industry, transport, residential and commercial environment, they play big role in spending different energy, like electricity, gas, oil.

3.1. Oil

According to Wikipedia Oil is any neutral chemical substance that is a viscous liquid at ambient temperatures, is immiscible with water but soluble in alcohols or ethers.

Oil is traded in form of gallon barrels, traditionally in contracts for 1000 barrels. The examples of exchanges, where oil is traded, are CME and NYME. Though oil is openly traded in gallons, the price of oil is counted as price of an individual barrel. Oil, being limited resource, experiences its prices growth. Though it's possible that in the future due to existence of other substitutes it can become a secondary energy source.

According to <http://www.malaysiandigest.com/features/59641-top-10-biggest-oil-producers-countries-in-the-world-2012-2013.html> we can find top countries who produce Oil.

Top five countries who produce Oil are:

1. Saudi Arabia

Crude production: 11.75 million barrels per day

Share of world production: 13.24 percent

Daily exports to the U.S.: 1.42 million barrels

Proven reserves: 262.6 billion barrels.

2. United States

Crude production: 10.59 million barrels per day

Share of world production: 11.94 percent

Daily exports to the U.S.: Not applicable

Proven reserves: 20.68 billion barrels

3. Russia

Crude production: 10.3 million barrels per day

Share of world production: 11.64 percent

Daily exports to the U.S.: 572,000 barrels

Proven reserves: 60 billion barrels

4. China

Crude production: 4.19 million barrels per day

Share of world production: 4.7 percent

Daily exports to the U.S.: 2,000 barrels

Proven reserves: 20.35 billion barrels

5. Iran

Crude production: 4.13 million barrels per day

Share of world production: 4.6 percent

Daily exports to the U.S.: 0

Proven reserves: 137 billion barrels.







3.2. Natural Gas

Now if you're talking about Gas as an energy source, we need it because it is the most abundant and easily distributed source of

chemical energy available. The word "gas" can refer to two separate mixtures of compounds. Gasoline is a petroleum distillate that is liquid at standard temperature and pressure, yet easily mixes with air to form a combustible vapor. This means that gasoline can be easily transported and stored, and also is readily converted into usable energy. As the name implies, Natural Gas occurs naturally and is a gas phase at standard temperature and pressure. In fact, natural gas will never liquefy under pressure alone. It is a very efficient source of energy, but requires a pipeline infrastructure for efficient distribution and due to its low density makes for poor energy storage.

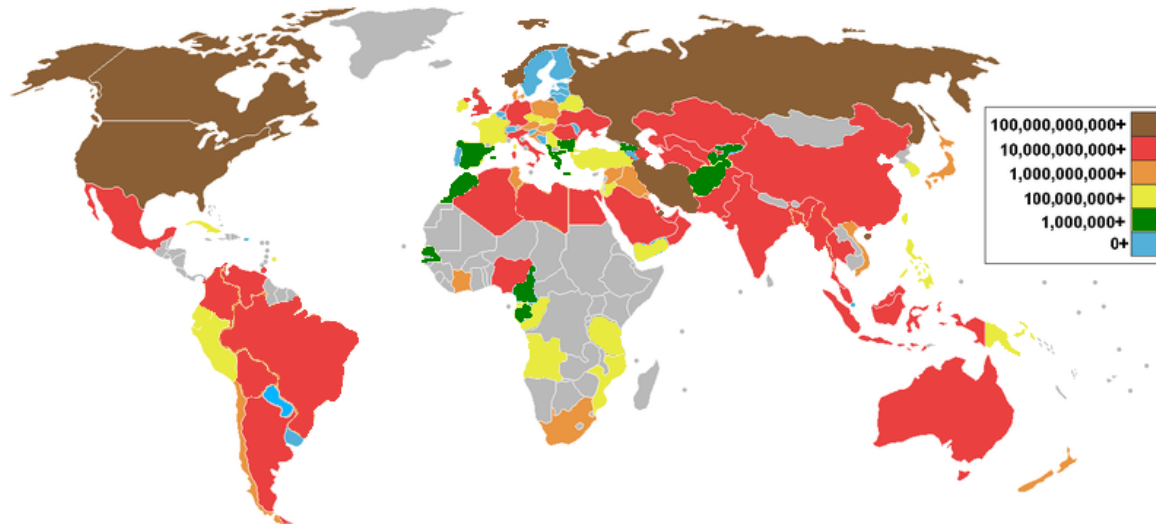
Natural gas is an important energy source to provide heating and electricity. It is also used as fuel for vehicles and as a chemical feedstock in the manufacture of plastics and other commercially important organic chemicals.

Also we can see table of top five countries who produce gas:

Rank ↕	Country/Region ↕	Annual natural gas production (m ³) ↕	Date of information ↕
—	<i>World</i>	3,177,000,000,000	2009 est.
1	 Russia	647,000,000,000 ^[3]	2010 est.
2	 United States	619,000,000,000 ^[3]	2010 est.
—	 European Union	182,300,000,000	2010 est.
3	 Canada	152,300,000,000	2010 est.
4	 Iran	138,500,000,000	2010 est.
5	 Qatar	116,700,000,000	2010 est.

Source: http://en.wikipedia.org/wiki/List_of_countries_by_natural_gas_production

Also we can look in map of countries:



Picture 1. Source :
http://en.wikipedia.org/wiki/List_of_countries_by_natural_gas_production

3.3. Alternative Energy.

Development of the world , has become necessary to use alternative energy. As I mentioned before, in this paper, we spend a lot of energy in daily life, all the households, businesses, governments,... every thing need energy, to work. So lifestyle changed in ages, and also needs are high now then in previous years. So countries or governments they had to think how to use natural sources, because they are less expensive and also natural sources they are less dirty for climate. So if we want to keep good condition of air, governments they should think about, to use more alternative energy.

According from wikipedia “Renewable energy is energy that comes from natural resources such as sunlight, wind, rain, tides, waves and geothermal heat, which are renewable because they are naturally replenished at a constant rate.”

Here are some possible alternatives:

1. Solar
2. Wind Power
3. Geothermal

1. Solar energy is the generation of electricity from the sun. It is split up into two types, thermal and electric energy. These two subgroups mean that they heat up homes and generate electricity respectively.

2. Wind energy is the generation of electricity from the wind.

3. Geothermal energy is using hot water or steam from the Earth's



4. Energy trading

As we saw in previous pages, energy plays really big role , in market, so also It take serious place in Financial Market.

Financial market is previously organized place for trade with stocks, shares, securities and contracts. Financial market is divided in two parts: general market (where most of the categories are being traded) and specialized market (for instance energy market).

Energy market is submarket of financial market. On the energy market are primarily being traded emergent. And it is one of the most significant market since slight fluctuation on it, might cause chain reaction on each of other markets.

5. Conclusion

Energy has become a very essential requirement today for existence of humans with the rapidly developing world. People have turned to the use of energy driven resources to make their life much easier. This has created a great demand for energy thus leading to a supply deficit from the energy industry

One of the driving forces in energy industry is increasing need for energy in the world.

Main products in Energy industry are :

- 1. Oil.**
- 2. Natural Gas and**
- 3. Alternative Energy**

Sources:

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