
• There are many critical areas of interest that relate either generally or specifically to fossil fuels and alternatives, energy efficiency, energy independence and security, energy safety issues, climate change, sustainability and renewables, the transportation of energy resources, connecting energy suppliers and consumers, electricity generation and so on.
The Importance of Energy in Financial Economics

• The dominance of energy in global markets is re-emphasized by the reporting of recent energy production, trade and consumption numbers.

• Looking first at production, the numbers reported quantify natural energy resources extracted or produced and include coal, gas, oil, electricity, and heat and biomass production.

• For gas, quantities flared or re-injected are included. The same production is also used in what is meant by trade in gas.
In 2010 world primary energy production increased by 4 %. This is significant when it is considered that there was a 0.6 % reduction in 2009.

The driving force emanated from Asia, which was responsible for nearly half of the increase and currently represents around 30 % of total energy production.
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- Coincidentally perhaps, this amount of production 30% is the same as that for all OECD countries.
- In China production grew by 8 % and represents 18 % of the total. In Russia the growth was 6 % due largely to the growth in LNG.
- The OECD produced a modest increase of 2.3 % driven primarily by growth rates in the US and to a lesser extent in the EU.
• In regard to energy consumption, a slight reduction in 2009 was followed by a 5.5% growth in 2010.
• All G20 countries experienced energy consumption growth, underpinned by a resumption in strong OECD growth following an upturn in economic activity.
• Consumption grew by 6.7% in Japan, 4% in Europe and 3.7% in the US.
• China and India accounted for a 6%
Global Economics and Energy Market

• Important questions in relation to global economics and financial markets arise out of the foregoing numbers (Energy Insights2011).

• Will the global economy demand more energy in the future?

• Where will the energy come from?

• Will large developed countries experience electricity blackouts?
Demand for Energy in the Future

• In answer to the first question the view is put firmly that more energy will be demanded.

• For example, oil demand is expected to increase from 70 million barrels a day to 150 million barrels a day by 2010.

• Chinese and Indian demand will drive a global doubling for numbers of automobiles by 2020 and gas demand will rapidly escalate in the Asia Pacific with coal demand increasing significantly.
Energy Consumption and its Various Dimension

- Energy is a commodity where production and consumption are differently located. An increase in energy consumption means an increase in transport of energy, for example, by long distance imported pipeline gas and LNG shipped by sea.

- Middle Eastern oil supply though OPEC will expand as will the supplies of Russian oil. Coal production will probably expand (mainly in India, Bangladesh, US and China).
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• The final broad question is whether or not the threat of electricity blackouts in larger developed countries is real.

• The answer to this question is, it might be! Capital investment in power generation has fallen behind GDP increases in most industrialized countries.

• This is partly due to market liberalization where privatized producers operate with lower spare capacity than previously.
Energy Consumption and Investment

• The investment problems need to be resolved given that electricity investment is often not perceived to be attractive at the time.

• The investment will probably need to be made more attractive with some form of government involvement.

• Electricity investment is capital intensive, there is a long investment time frame.

• It has low expected rates of return and

- More specific energy issues are fixed topics in the economic and financial press.
- For example, one of the important recent newsworthy events in oil production and exploration was the approval by the United States Bureau of Ocean Management and the anticipated approval by other environmental regulatory bodies of the re-entry by BP into oil exploration in the Gulf of Mexico.

This example raises issues of a broader nature than just plain vanilla economics and finance.
Energy and Location

- Energy is a commodity, which means that time and location matter. As a consequence of location differences between producers and consumers of fossil energy, transport of energy is a major economic activity.
- A hot topic refers to the economics of pipeline gas when a specific issue is raised at a time in the global economy and certainly in the developed economies where interest rates are low and stock markets are volatile, but weak.
- Yet in taxation effective environments the attractiveness of low risk, low return pipeline gas might be an attractive investment in some countries where it is appropriate. Still, this would probably suggest a need for study in areas that are as yet not well exploited.
Role of Financial Markets in Energy Sector

- This brings on discussion about the role of the financial markets in the energy sector under the current circumstances. The energy markets are now the place to be.

- After the bond markets in the 1950s, the stock markets in the 1960s and the 1970s, the option market in the 1980s and the 1990s of the last century it is now the turn of the energy markets.

- Bonds, stocks, and options are products created in the minds of people. The prices of one of these products should be universally more or less the same.
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• Deviations in prices of the same product are due to imperfections. That is not true for energy and energy-related products.

• The price of these products depends on time and location. On top of that, transport of energy—from production place to consumption place—expends energy.
IREDA Energy Efficiency Loan Fund

- The Indian Renewable Energy Development Agency Ltd (IREDA), an ISO 9001:2000 certified entity, was incorporated as a Public Limited Government Company in 1987 under the administrative control of the Ministry of New and Renewable Energy (MNRE), Government of India.

- IREDA is one of the largest DFIs specializing in renewable energy and energy efficiency in the world.