

## Energy Management: The Best Energy Security

Ashok Hattangady [ashok.hattangady@conzerv.com](mailto:ashok.hattangady@conzerv.com)  
Technical Director, iLABS  
Conzerv Systems Pvt Ltd, Bangalore, India.

Ashok heads Product & Technology Design at Conzerv. Conzerv is a pioneer in Energy Management Systems for Industrial and Commercial users.

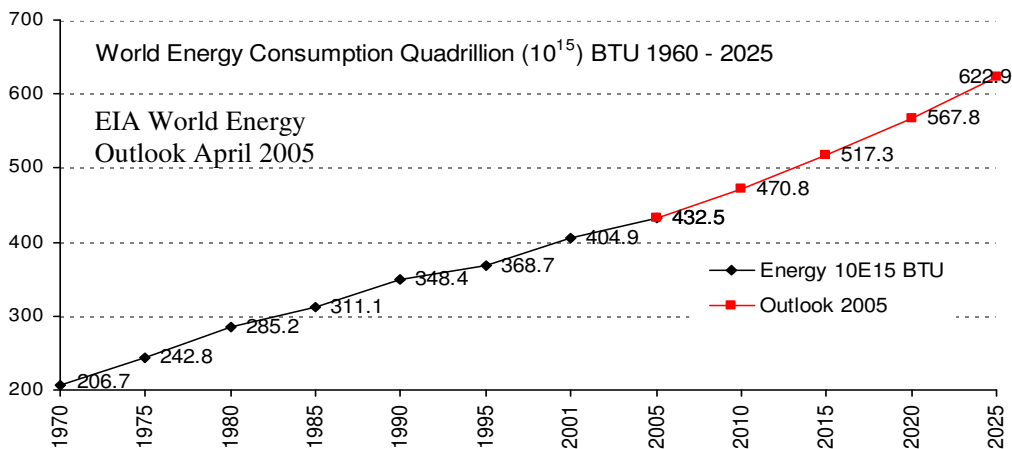
### Abstract

Oil, Coal and natural gas remain the prime movers of mankind over the next two decades. This article examines the factors leading to Energy price volatility. Established sources decline and more expensive, new sites struggle to come on-stream. Forecasters predict that while the April 2005 oil price peak has passed, more violent such peaks are expected over the next two decades crossing record levels of over USD 100 per barrel.

Energy Management is the best Energy Security. Having Energy Management in place helps your business stay healthier against oil shocks. Conzerv, a specialist Energy Management company provides systems and solutions with returns on investment in less than a year under 2005 conditions. Under up-coming scenarios, these tools rapidly become your key competitive edge.

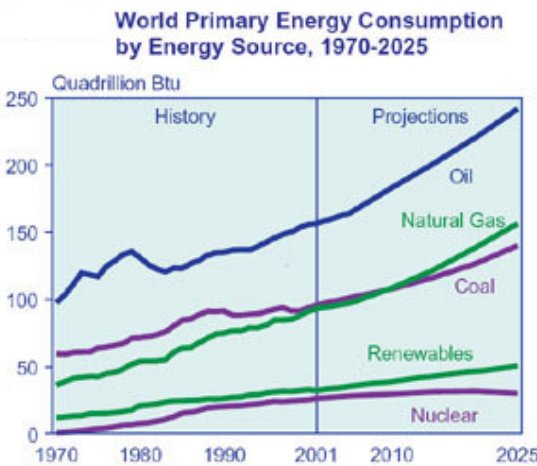
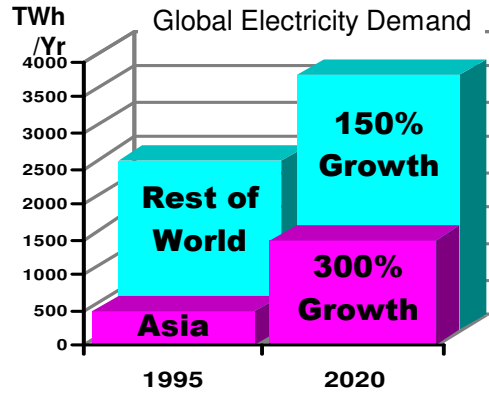
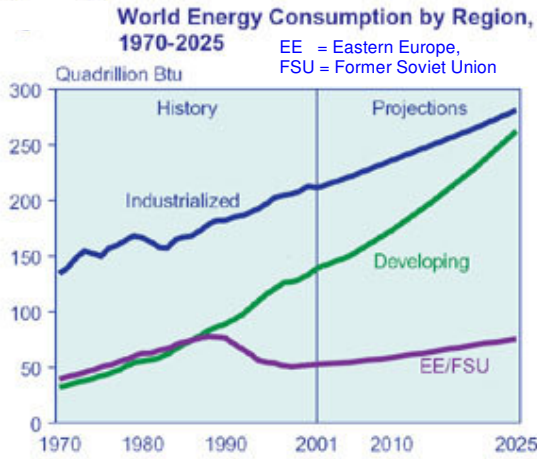
### 1. Growth in World Energy Demand

In the *International Energy Outlook 2004 (IEO2004)* reference case, world marketed energy consumption is projected to increase by 54 percent over the period 2001 to 2025. Worldwide, total energy use is projected to grow from 404 quadrillion ( $10^{15}$ ) British thermal units (BTU) in 2001 to 623 quadrillion BTU in 2025.



*IEO2004* outlook shows that demand for energy in developing Asia (including China and India) is expected to double over the next 20 years, accounting for 40% of the total projected increase in world energy consumption and 70% of the increment for the developing world alone.

In terms of Electricity Demand too, developing Asia is expected to grow twice the global rate over the next two decades.

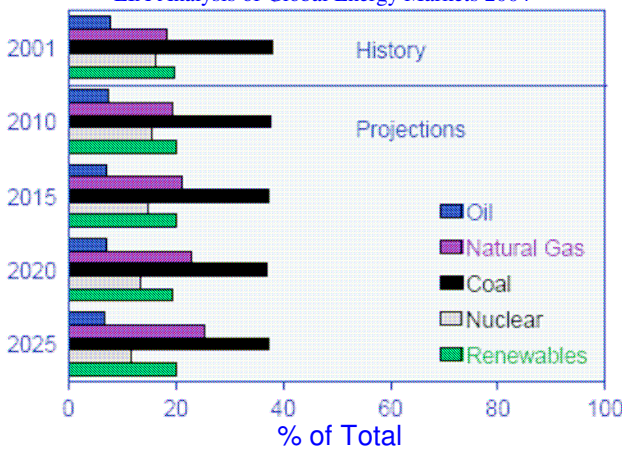


## 2. Oil & Coal - the Prime movers

*IEO2004* also shows that Oil and Coal continue to be the primary energy source over the next two decades, followed by natural gas. However, oil output is hitting a plateau with many primary producers entering depletion mode.

In the case of Electricity Generation, Coal will still be the main fuel. However, coal quality is decreasing. The Power Sector is still the largest contributor to global emissions (followed by road transportation). High sulphur coal and sour oil are therefore a growing concern. The power sector is still one of the largest contributors to emissions, even though the emissions have declined over the years. In 2004, approximately 70% of Global SO<sub>x</sub> emissions and 20% of NO<sub>x</sub> emissions come from power generation.

**World Electricity by Fuel Type 2001 – 2025**  
EIA Analysis of Global Energy Markets 2004



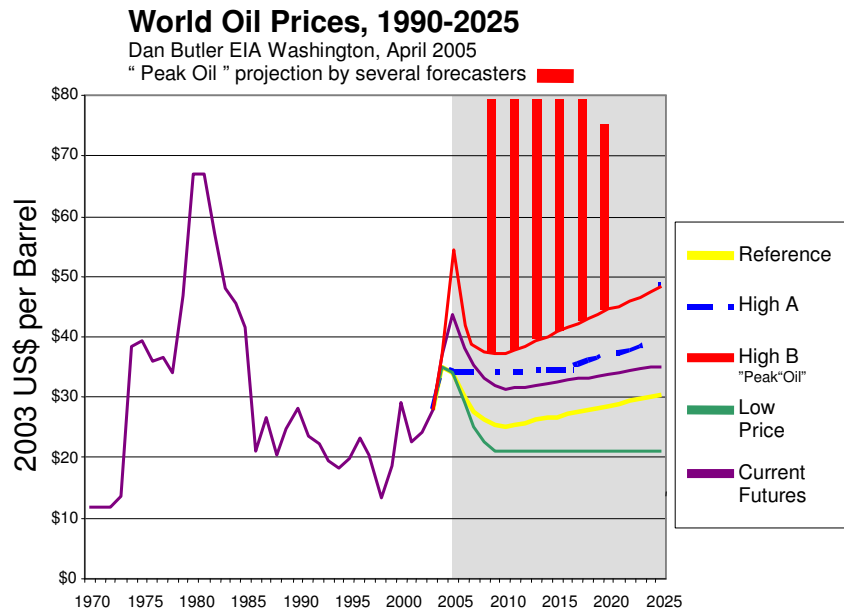
2020, new natural gas and new coal finds will meet the increased electricity demand, perhaps to the extent of 200 GW.

Natural gas, especially unconventional gas, is therefore expected to meet a significant portion of the increased demand for energy, including Electricity generation. Oil companies hope that by

### 3. Price Volatility - the Future

Oil prices have dropped immediately after the April 2005 peak of USD 57 per barrel and might stay in the region of USD 40 per barrel for 2005 – 2006, with projections for 2015 to 2025 averaging USD 30 per barrel.

While this appears comforting, several forecasters including Goldman Sachs predict **sudden peaks crossing record levels of USD 100 per barrel, perhaps for the rest of the decade !** This is primarily attributed to the dynamics of production from new sites while older producers decline. For instance, the 1970s oil shocks and the more recent 2001 California blackouts were triggered by shortfalls in oil and natural gas production as small as 5%, which caused their prices to nearly quadruple. Thus, price volatility is here to stay.



### 4. Energy Management – the best Energy Security

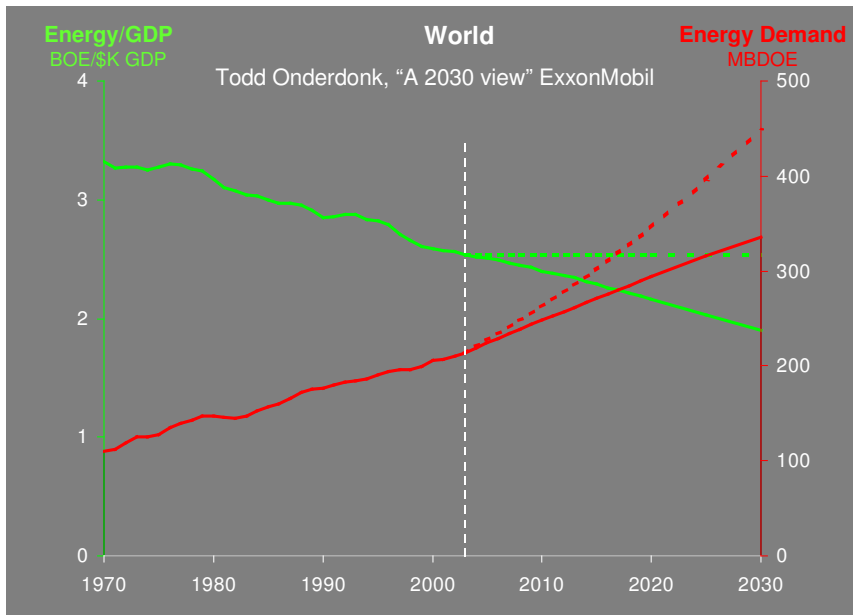
Energy Management and Conservation is the surest Energy Security measure.

Conzerv is a specialist in Energy Management Systems and Services with over 25,000 users over 21 industry segments and 20 countries. Over the past decade, we have an established user base with returns on investment in most cases of under a year even without the peak oil prices of April 2005.

Conzerv offers a simple and practical 3 Step Plan – Measure, Detect, Control.

1. Measure : Instruments and eLAN software to view on-line energy efficiency
2. Detect : Audits, Support and Training to get to know the pulse points of your plant or facility.
3. Control : Demand Control, Power Factor Control, Harmonic Reactors & Filters, What-if-scenarios through eLAN MIS reports, integration with building and process automation.

Find out more at [www.conzerv.com](http://www.conzerv.com)



Apart from cushioning our businesses and way of life against “oil shocks”, Energy Management also plays a role in reducing “resource wars” and a more equitable “Energy / GDP” per capita availability. A study by ExxonMobile shows that despite the projected drain on Energy resources by China, India and developing Asia, their combined GDP by 2030 will still be less than 11% that of USA, Europe and Japan.

## Conclusion

Oil, Coal and natural gas remain the prime movers of mankind over the next two decades. Oil prices peaked in 1980 and again in April 2005. Established sources decline and more expensive, new sites struggle to come on-stream leading to price volatility. Forecasters have projected more violent peaks exceeding USD 100 per barrel over the next two decades.

Energy Management is the best Energy Security strategy. Having Energy Management in place helps your business stay healthier against oil shocks. Conzerv, a specialist Energy Management company provides systems and solutions with returns on investment in less than a year under 2005 conditions. Under these up-coming scenarios, these tools rapidly become your competitive edge and key to success.

---