

***Status of Energy Crisis
&
Conservation in Pakistan***

By:

Zia Ul Islam

Director

Ministry of Environment

General Information

- Area: 796,096 km²
- Population: 173.51 Million
- Capital: Islamabad
- GDP Growth Rate: 2 %
- GDP per capita: 2,661 \$
- Urbanization: 33.5%



Issues

- Technical and management inefficiencies in energy sector in both public and private sectors.
- Non-availability of funds
- Lack of capacity of regulatory agencies to regulate whole sector
- Production is not viable due to old obsolete technology & usage of 2nd hand technology
- Inadequate system of energy audit
- Inefficient building material
- People opt for cheap technology as latest technology is too expensive

Current Status

Comparison of Energy Consumption by Source

Fig-1: Energy Consumption by Source (2003-04)

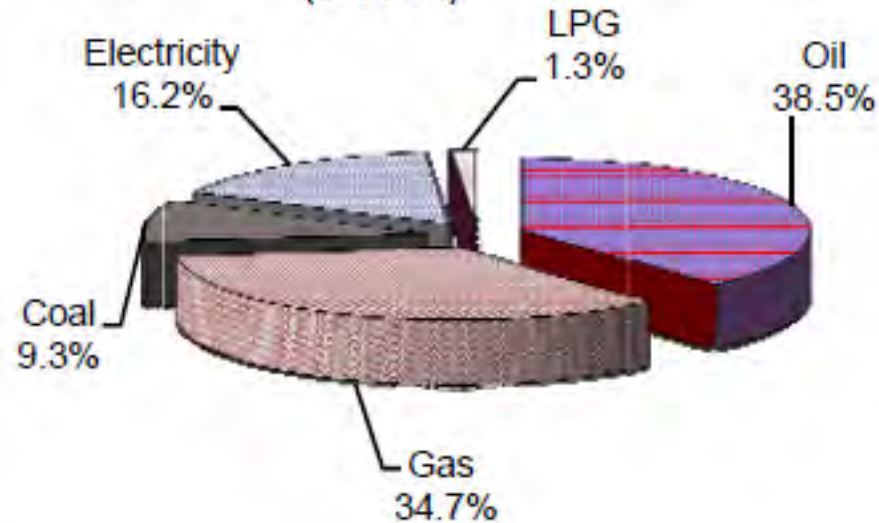
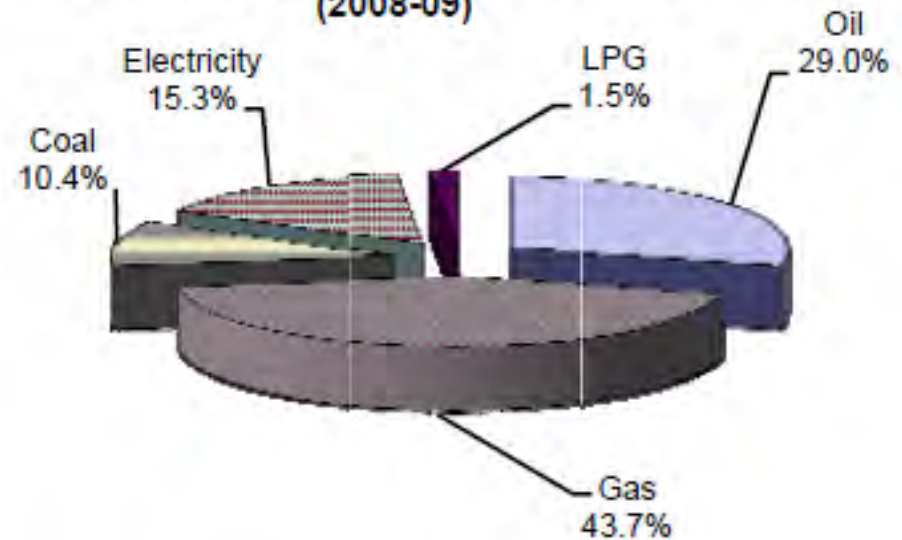
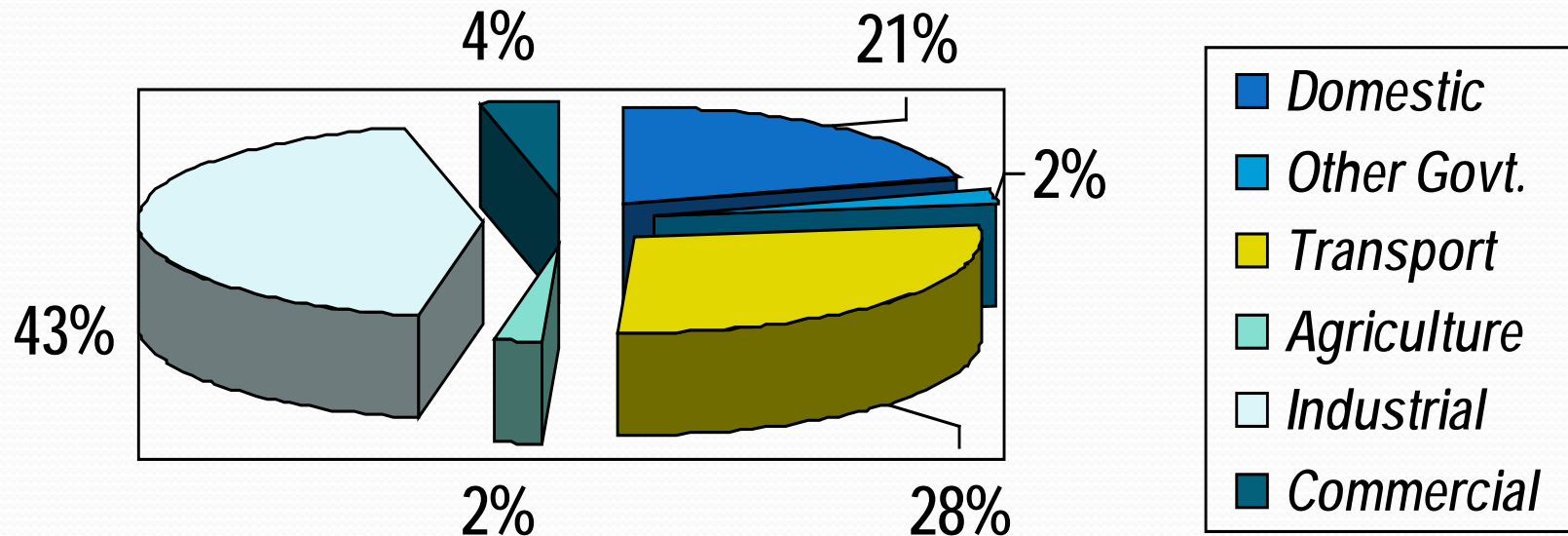


Fig-2: Energy Consumption by Source (2008-09)



Energy Consumption by Sector

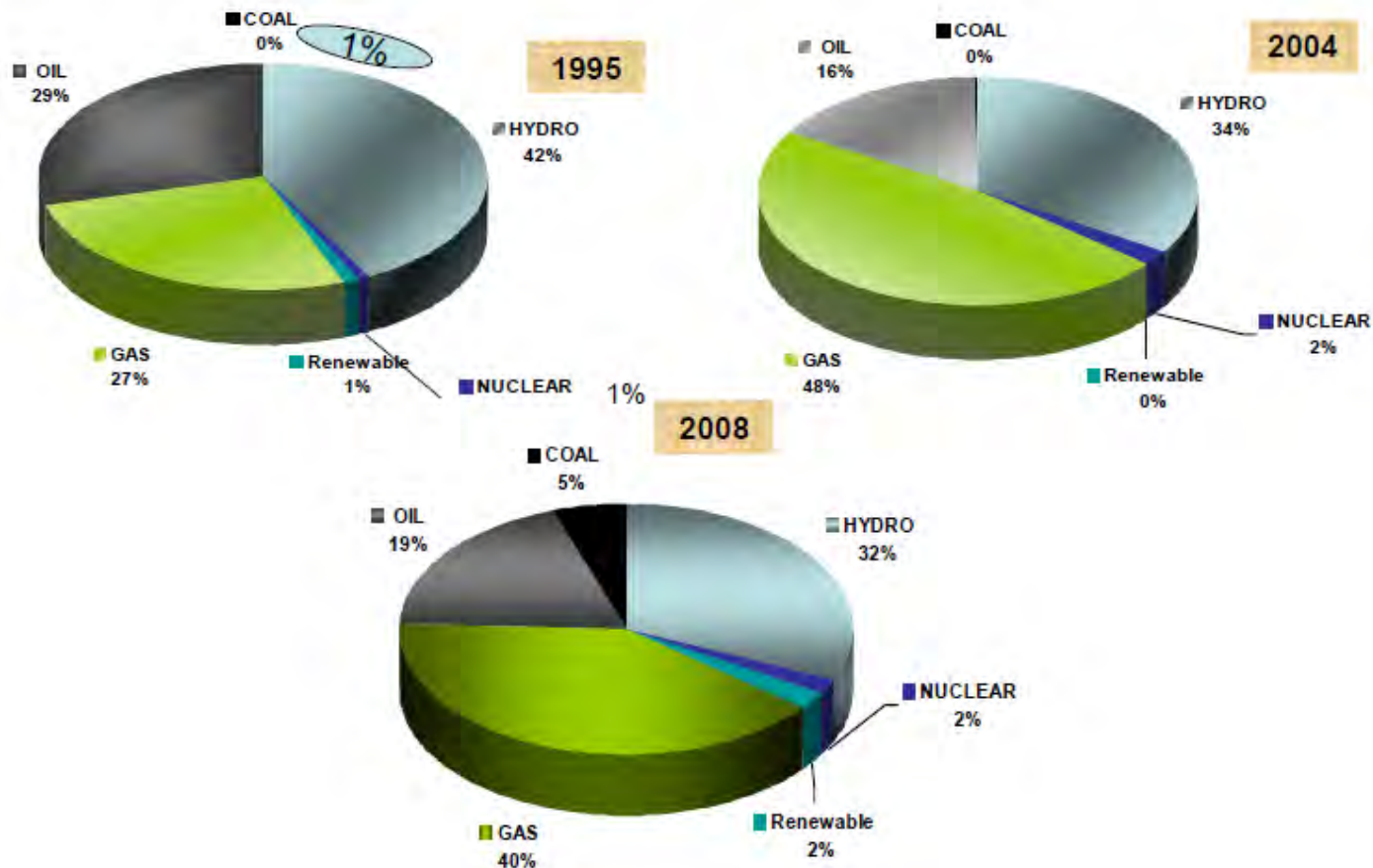
(Total: 37 Million TOE)



Industrial Sector takes the largest slice of national energy consumption closely followed by transport sector (28%) HSD consumption for tractors is not separately available and is included in the transport section.

(Source: Pakistan Energy Year Book, 2009)

Energy Mix in Power Generation (% age)



Projection for Demand and Supply of Electricity (2008-2010)

No.	Year	Firm Supply (MW)	Peak Demand (MW)	Surplus/(Deficit) (MW)
1.	2008-09	15055	19080	4025
2.	2009-2010	15055	20584	5529

Source: Ministry of Water and Power

Renewable Energy Potential in Pakistan

Energy Source	Potential
Wind	0.346 Milion MW
Solar	2.9 Million MW
Bagasse Cogeneration	1800 MW
Waste to power	500 MW
Mini & small hydel	2000 MW

Investment Potential for the Renewable Energy: USD 16 billion dollars

Gravity of the Challenge Today

- Seriously worsening gap between Energy supply and demand
- Non sustainability of fossil fuels (limited oil and gas reserves)
- Spiraling oil prices
- Lack of energy conservation culture
- Compounding poverty with political fallout

Situation Analysis

- Pakistan lacks integrated national energy security plan up till 2005.
- Low per capita energy consumption with only 14 million British Thermal Unit (MMBTU) as compared to 92 MMBTU for Malaysia and 514 MMBTU for Japan.
- Per capita energy consumption is a key development indicators of “quality of life” of the population.
- Demand suppression strategy has been used which has perpetuated unavailability of energy.
- Unavailability of sustained and affordable energy to industry which has suppressed economic growth and created declining tendency for industrial investment in Pakistan.

Energy Conservation

Energy Conservation Potential

Annual Savings US\$ 3 billion

- Industry 15 - 25%
- Transport 15 - 20%
- Agriculture 15 - 20%
- Buildings 20 - 30%
- **Average 15 - 20 %**

Initiatives

The National Energy Conservation Policy

- The first ever National Energy Conservation Policy has been developed and approved by Government in 2006
- The policy provides a broad guideline to promote conservation in all sectors of economy



The Bill on Energy Efficiency and Conservation

- The Bill is in the process of being promulgated



Building Energy Code of Pakistan

The Building Energy Code of Pakistan is now being fine tuned for implementation and enforcement

Encouraging Mass Transit

- Launched private – public partnership based environment friendly CNG transport system for ten major cities of Pakistan

Achievements

Some Interventions

Industry

- | | |
|--------------------------------------|-----|
| • Preliminary Energy Audits | 80 |
| • Detailed energy Surveys | 50 |
| • Boiler/ Furnace Tune-Up | 767 |
| • Combustion Analyzers | 53 |
| • Burner/ Boiler Replacement Surveys | 100 |
| • Electrical System Surveys | 100 |
| • Steam System Surveys | 47 |
| • Demonstration Projects | 5 |

Building (Promoting energy smart building culture)

- | | |
|------------------------------|-------|
| • Preliminary Energy Surveys | 85 |
| • Detailed Energy Audits | 54 |
| • Demonstration Projects | 6 |
| • Building Energy Codes | Ready |

Some Interventions

Agriculture

Transport

Training/ Outreach/ Information

Development Projects

Completed:

- Fuel Efficiency in Road Transport Sector Project
- National Awareness Campaign on Energy Efficiency

On-going:

- Mass Transit CNG Bus Project
- Standardization and Labeling of Appliances
- Energy Conservation Fund (ECF)
- Provision of Technical Services & Energy Audits

Energy Associated Policies

Energy Associated Policies

- Natural Gas Allocation & Management Police-2005
- Policy for Power Generation Projects-2002
- Liquefied Natural Gas(LNG) Policy-2006
- Liquefied Petroleum Gas (LPG)-2006
- Petroleum Policy -2009
- Pakistan Renewable Development Policy-2006
- National Policy for Coal Development-2010 (In progress)

Policy Directions & Targets (2010-2015)

- Energy Sector and its entities to be integrated under one umbrella.
- Energy Conservation Bill to be enacted, and ENERCON to be a regulatory authority
- Implementation of the approved National Energy Conservation Policy on fast track
- Private-Public partnership to promote EC by facilitating easy access to appropriate technologies.
- PM directive for strict implementation of EC measures in all Government Transport and Buildings (Residences, Offices for lighting and air conditioning purposes).



Policy Directions & Targets (2010-2015)

- Directive for all heavy energy consuming entities to have their own energy managers and develop EC plans for implementation.
- Institution of National Award on Energy Conservation
- Energy Conservation to be declared as an industry for appropriate financial & fiscal incentives

Policy Directions & Targets (2010-2015)

- Financially and fiscally Promoting best practices which would be low cost high return initiatives in various energy consuming sectors of economy
- Development, implementation and follow-up on specific energy conservation projects as envisaged in the EE/EC Policy in various sectors of economy
- The “Conservation Resource” to be promoted as a low cost source of new energy supply that can be developed in a comparatively shorter timeframe. It is usually easy to harvest and environment friendly

The Way Forward

- Private-Public partnership on EC being promoted by facilitating easy access to appropriate technologies.
- Inculcation of Energy Service Companies (ESCOs) culture for promotion of PPP
- Implementation of the approved National Energy Conservation Policy on fast track
- Mass awareness to sensitize various sectors of society to consider adopting EC options

The Way Forward

- Strict enforcement of commercial activity timings
- The Building Energy Code to be incorporated in the bye-laws of the Municipal Bodies and Development Authorities etc.
- Energy audits of existing buildings to be carried out by the respective organizations in collaboration with ENERCON.
- The heads of the public and private sector organizations to designate energy focal person/manager for ensuring adoption of energy conservation & efficiency measures in their organizations.



Thanks

