

Energy Policy of Ethiopia

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1.0 Background on Energy Sector of Ethiopia

- Ethiopia's energy consumption is predominately based on biomass energy sources (94%).
- Traditional Energy Sources are Fuelwood, Charcoal, dung cakes BLT
- Modern Energy is mainly products of petroleum and Electricity
- Petroleum product is the major part from modern energy and it is mainly used for transport sector
- Per capita electricity consumption is 28kWh

Background of Energy Sector in Ethiopia (Contd.)

- The major source of electricity is hydro power plant
- Total installed capacity at the moment is 791MW (755 MW ICS and 36 MW SCS)
- Ethiopia has potential of more than 45,000 MW from hydropower
- Geothermal resource potential is estimated 1070 MW
- Coal reserve is 70 Million Tones
- Natural Gas Reserve 4 TCF (Terra Cubic Feet)
- Within 5 to 6 years we will have 3025MW (1180 +1870 MW) additional supply from four hydro generation projects
- Estimated potential of bagasse cogeneration > 263 MW
- Woody biomass 787 Million tones
- Solar, wind and animate energy potential exist at considerable size
- Huge potential on biofuel (ethanol and biodiesel) (currently 8 million liters of ethanol and huge potential of biodiesel)

2. 0 Energy Sector Issues

- Ethiopia has faced serious problems in energy supply and utilization;
- The need to transform from traditional to modern energy sources which demand for heavy investment in terms of foreign currency and domestic resources;
- The new economic policy has created favorable conditions for the private sector and encourages investment – which entails heavy investment burden in the energy sector ;

Energy Sector Issuescontd

- The continued destruction of forestry resources for firewood has resulted in environmental problems, loss of productivity and ecological imbalance
- Increasing scarcity and cost of household fuels, particularly firewood increased stress on women and children who usually are supposed to collect fuel
- Traditional energy consumption in Ethiopia is associated mainly with environmental problems
- The cost of petroleum imports has brought worsening impact on Ethiopia's trade balance and foreign exchange availability

Energy Sector Issuescontd

- Low efficiency of energy utilization in all sector
- The agricultural sector is still at primitive stage and highly dependent on animate power
- Lack of access and/or unavailability to modern energy sources in rural areas

3.0 Objectives and Rationales of Energy Policy

3.1 Rationales of Energy Policy

- To develop and utilize the country's energy resources on the basis of Ethiopia's overall development strategy ;
- To assist other economic sectors to meet their development objectives by putting in place a clearly defined energy policy;
- To save scarce foreign exchange resources and to ensure that energy is efficiently utilized;
- To ensure reliable and secure energy supplies to cushion the economy from external and internal disruptions of supply as well as price fluctuations;

Rationales of Energy Policy (Contd.)

- To ensure that development of energy prices and to ensure economic profitability;
- To ascertain what energy technologies and equipment are appropriate for and compatible with the country's economic development needs, and
- To raise the efficiency of the energy sector and develop the necessary institutional and man power capabilities to undertake energy development programs.

3.2 Objectives of Energy Policy

- To ensure sustainable (reliable, affordable and long lasting) supply of energy ;
- To remove bottlenecks inherent to energy resource development and utilization;
- To provide guidelines and strategies for the faster development and supply of energy;
- To ensure a reliable supply of energy at the right time and affordable price
- To give priority to the development of indigenous energy resources;
- To increase energy utilization efficiency and reduce energy waste; and
- To ensure that the development and utilization of energy is benign to the environment.

4.0 Priority of The Energy Policy

- To place high priority on hydropower resource development;
- Energy mix is encouraged: renewable such as solar, wind and geothermal are to be developed given their cost competitiveness
- To take appropriate policy measures to achieve a gradual transition from traditional energy fuels to modern fuels;
- To pay due and close attention to ecological and environmental issues during the development of energy projects;

Priority of The Energy Policy(contd.)

- To set issues, and publicize standards and codes which will ensure that energy is used efficiently;
- To develop human resources and establish competent energy institutions; and
- To provide the private sector with necessary support and incentive to participate in the development of the country's energy resources.

5.0 Energy Policy

5.1 Energy Resource Development

5.1.1 Traditional Fuels

- Countrywide afforestation program will be undertaken to enhance the supply of fuelwood to consumers

5.1.2 Modern energy resource development

- Hydropower will form the backbone of the country's energy sector development strategy as it is the country's most abundant and sustainable energy resource;
- Ethiopia's geothermal and coal resources will be developed on the basis of their economic profitability;

5.1 Energy Resource Development...contd

5.1.3 Alternative energy resources development

Policy

- Solar and geothermal will be used, wherever possible for process heat and power generation;
- Ethiopia's wind energies resource will be developed to provide shaft power for water pumping and irrigation and;
- Coal will be developed and used as alternative fuel

5.2 Energy Supply

5.2.1 Households energy Policy

This is *to achieve a balance between the supply and demand for household fuels*. Government will seek to stabilize their prices by increasing the supply of alternative fuels and relieving the pressure on wood resources.

5.2.2 Transport energy Policy

- To formulate measures and give emphasis to the introduction of improved and appropriate transport technologies in the rural areas
- To adopt conservation measures to reduce the use of petroleum products in the transport sector
- To decrease the use of petroleum products in the transport sector by substituting where ever possible to new non petroleum fuels

5.2 Energy Supplycontd

5.2.3 Agricultural energy policy

Policy

Government's agricultural sector energy supply policy is *to increase the supply of modern energy sources to the agriculture sector* .

5.2.4 Industrial Energy

Policy

Government's industrial sector energy policy is :

- *To ensure that industrial energy supply will be compatible with the industrial development of the country; and*
- *To ensure the industrial energy use and supply will be based on economic and efficiency criteria*

5.3 Energy conservation and efficiency

It is necessary to adopt energy conservation and efficiency measures in all sectors. It is also necessary to establish the necessary mechanisms to ensure adherence to such standards and codes.

5.4 Comprehensive Policy Measures

- Energy and environment (power generation, transmission, distribution)
- Energy Science and Technology (Traditional energy and electricity)
- Energy Policy Planning and Management (least cost)
- Energy Institutional Issues

6.0 Conclusion

- Ethiopia has energy policy which was drafted in 1994 and latest power sector policy . The power sector policy has emphasized what was subjected in the main energy policy document. The two policy documents has encouraged the use of *indigenous resource and renewable energy* . A sustainable energy development is a high priority and this also has been addressed in the environmental policy of Ethiopia too. The document is comprehensive in all aspects.
- The policy needs only to update when it is feasible with understanding that it passes through the process of dynamism. Currently it is possible to work with it without any problem. However, important energy sub-sectors need special attention to develop strategy such as biofuel development strategy .

6.0 Conclusion.....contd

- On the other hand , it needs to give emphasize in the use of geothermal for Ethiopia as *energy mix and for rural industrial development program*.
- In order to develop such resource only need to design a development strategy and invest on such sub-sectors. This calls national, regional and international cooperation for the better achievement of energy development.