



General Information on the 1994 Formulated Energy Policy and Current Available Energy Statistics

Ethiopia: Country Paper

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Presentation Steps

1. Background Information on the Energy System Status;
2. Current Energy Policy;
3. Available Energy Demand & supply Statistics;
4. Major bottlenecks for Energy Policy Formulation; and
5. Participant's interest Areas in the Training Program



Energy Resource Endowment & Consumption Rate

Energy Resource Endowment	Exploitable Potential
1. Biomass (million t/y)	
* Woody	1120
• Agri-residue + dung	15-20
2. Hydro (MW)	45,000
3. Geothermal (MW)	5,000-7,000
4. Average Solar(KWh/m ² .day)	5
5. Wind (m/s)	5-6
6. Coal (million ton)	320
7. Natural Gas (Billion m ³)	116,000,000
Fuel wood = 77% (electricity – access = 31%) Agri + dung + Charcoal = 15% Petroleum = 4% Electricity = 2%	

2. Current National Energy Policy

The Government issued the first energy policy in 1994. The rationale / premises for the formulation are:

1. To develop and utilize the country's energy resources along with the introduction of energy conservation and efficiency strategy;
2. To support other economic sectors to meet their development objectives;
3. To save scarce foreign exchange resources and to ensure that energy is efficiently utilized;
4. To ensure reliable and secure energy supplies to lessen the economic from external and internal disruptions of supply as well as price fluctuations;
5. To change the current energy production and utilization practices and
6. ensure that energy development is based on sound management practice and is benign to the environment.



----Cont. (Overarching and basic objectives of the Policy

As stipulated in the document, article 3, the objectives of the energy policy are:

- ◆ to ensure a reliable supply of energy at the right time and at affordable prices, particularly to support the country's agricultural and industrial development strategies adopted by the government.
- ◆ To ensure and encourage a gradual shift from traditional energy sources use to modern energy sources.
- ◆ To stream-line and remove bottlenecks encountered in the development and utilization of energy resources and to give priority to the development of indigenous energy resources with a goal toward attaining self sufficiency.
- ◆ To set general guidelines and strategies for the development and supply of energy resources



----Cont (Energy Sector Priorities)

As noted in article 5 of the policy, the Government of Ethiopia's energy sector policy priorities are:

- To place high priority on hydro-power resource development, as hydrological resources are Ethiopia's most abundant and sustainable energy forms;
- To take appropriate policy measures to achieve a gradual transition from traditional energy fuels to modern fuels;
- To set, issue and publicize standards and codes which will ensure that energy is used efficiently and properly;
- To develop human resources and establish competent energy institutions;
- To provide the private sector with necessary support and incentives to participate in the development of the country's energy resources, among others.



Cont..(Broad Energy Sector Issues)

Some of the main policy issues presented in the document are concerning on:

- Energy resources development;
- Energy supply; and
- Energy conservation and efficiency;



...Cont. (Energy Resource Development)

1) Traditional fuel is placed in primary:

It states that a country wide afforestation program will be undertaken to enhance the supply of fuel wood to consumers and to reduce the negative effects of agric-residue use for energy on soil fertility

2) Development of modern energy resources.

This give emphasis to the development of hydropower, geothermal, coal and natural gas and undertaking exploration in areas promising for oil and natural gas by providing incentives to oil companies to encourage them to take in exploration activities.

3) Development of alternative energy resources.

These include solar energy, wind resource and low enthalpy geothermal resource for process heat and shaft power.



...Cont. (Energy Supply Issue)

The statements for the various sectors:

- * **For the household** - the policy states that Government's household energy policy is to achieve a balance between the supply and demand for household fuels,
- **For the transport** - to formulate policy measures and give emphasis to the introduction of improved and appropriate transport technologies,
- * **For the agriculture sector** - energy supply policy is to increase the supply of modern energy sources,
- * **For the industry** - energy supply will be compatible with the industrial development of the country, and ensuring that industrial energy use and supply is based on economic and efficiency criteria.



..Cont.. (Energy Conservation & Efficiency Issue)

The measures to be taken in each sector are:

1. **Household**: - To increase energy efficiency by instituting conservation and energy saving measures
2. **Industry**: - To improve the efficiency of industrial equipment to conserve and reduce energy consumption.
3. **Transport**: - Government will institute and enforce measures to improve energy efficient use and conservation in the transport sector in order to decrease petroleum product consumption.
4. **Agriculture**: - energy demand in the agriculture sector will be met through locally-produced modern energy resources
5. **Commercial and Service Sector** : - Government will adopt energy efficiency measures to eliminate energy waste in the commercial and service sectors arising from inefficient end-use devices.
6. **Mining and Construction Sector**: - Government will adopt energy saving measures in the mining and construction sectors to decrease energy waste

Cont.. (Shortcomings of the current Energy Policy)

The shortcomings of the existing policy:

- ◆ The rural sector was not well emphasized in the policy;
- ◆ The policy was not based on detailed needs analysis;
- ◆ The policy was formulated based on inadequate information;
- ◆ No strategies were set for private sector participation;
- ◆ The international context was overlooked;
- ◆ Current concerns were not reflected; and
- ◆ There was is no strategies for the policy implementation.



3. ENERGY DEMAND AND SUPPLY STATISTICS

Table1. Estimated Fuel wood Supply & Demand (million m³)

Year	Demand	Sustainable Supply	Deficit
1997	52.9	11.7	41.2
2000	58.4	11.2	47.2
2005	68.5	10.4	58.1

---Cont.(ENERGY DEMAND AND SUPPLY STATISTICS)

Table 2. Supply & Demand Balance (MWh)

	2005/06	2006/07	2007/08
Total production	2896600	3301859	3547000
Total supply	2896600	3301859	3547000
*Own use	5670	8100	24700
*T +D losses	535320	664959	329300
Total final Consumption	2361280	2636900	3217700
*Industry	na	921200	1236400
*Transport	na	na	na
Others			
*Com + Pub.	572640	662700	794100
*Household	780240	998900	1116700
*Streetlight	33120	46000	45800

---Cont.(ENERGY DEMAND AND SUPPLY STATISTICS

Table 3. Petroleum products supply and Consumption

year	Petroleum products supply (Tons)					
	gasoline	Jet fuel	Kerosene	Diesel oil	Fuel oil	total
2005/06	137233	368670	Na	811013	158207	1475122
2006/07	148368	411357	Na	927939	158841	1646505
2007/08	138993	na	482219	1072793	187287	1881272

Year	Petroleum products consumption(Tons)					
	gasoline	Jet Fuel	Kerosene	Diesel oil	Fuel oil	Total
2005/06	147514	145775	229898	851381	161942	1536510
2006/07	144637	177049	242925	927939	163268	1655819
2007/08	1430224	218500	265665	1077193	175926	1880308

4. Major bottlenecks for Energy Policy Formulation

- a. Currently the energy institutions available are lacking highly qualified people for formulating proper policy for the various energy sub-sector.
- b. Insufficient Assessment of Energy Resource and Technologies
- c. Lack of Concern for Timely Updating
- d. Absence of Strong Organ



5. Participant's interest Areas in the Training

The most important areas needed are:

- Energy demand projection methodologies;
- Energy balance preparation; and
- Energy policy and strategy formulation

REASON

Not well experienced in forecasting energy demands using different models, preparation of national energy balance and, designing energy policy and strategy framework.





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