



COUNTRY PRESENTATION ON ENERGY POLICY 11TH MAY 2010

AT
TOKYO INTERNATIONAL CENTRE - JAPAN

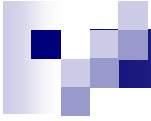
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ZANZIBAR - TANZANIA



UNITED REPUBLIC OF TANZANIA

(TANGANYIKA AND ZANZIBAR)

ZANZIBAR



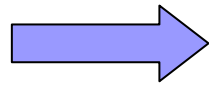
Assessment of the Energy Balance of Zanzibar



Solar PVs at Uzi, 2008



Energy Balance



Includes all uses (demand) and supply of energy

- **Domestic sector** (households)
- **Institutions** (hospitals, camps, schools, etc.)
- **Business sector** (hotels, shops, markets etc.)
- **Industrial sector** (small-, medium- and large industries)

Demand of Energy

Domestic Sector (households):

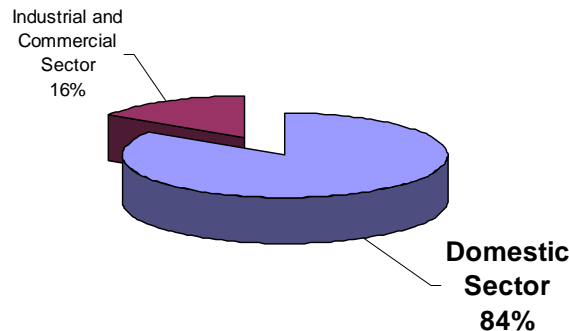
Cooking (*firewood, charcoal, agricultural residues*)

➤ Lighting (*electricity, kerosene, candles etc.*)

Power for radio, TV, iron etc.

(*electricity, petroleum products*)

Picture taken by SEI, 2008

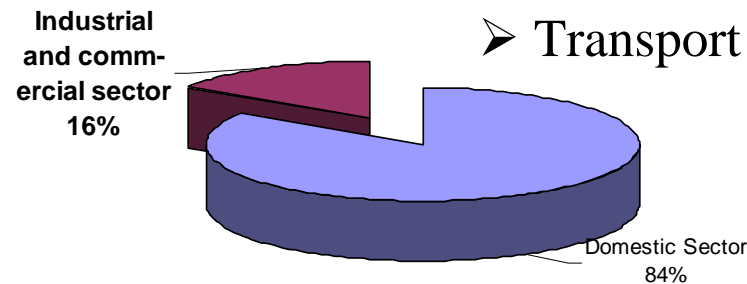


Demand of Energy

Institutions, Businesses and Industries (transport included):



- Cooking (*woodfuel in institutions such as schools, hospitals and camps*)
- Lighting (*electricity in the whole sector*)
- Power for electrical equipment (*electricity, petroleum products for power production in the whole sector for machines, pumping of water, ac's etc.*)
- Transport (*fossil fuels*)



Demand and Supply of Fossil Fuels, (approximately 15% of the energy)

- Uses within all sectors in the society, mainly for transport
- From year 2003-2007, the import has grown with almost 20 %
(compare with population with an estimated growth of 13 %)
- The market is privatised, and five companies are licensed
- Market for LPG/gas is growing very slowly
- Fossil fuels are bought on the international market. From 2003 to 2007 the average price in Zanzibar more than doubled (from 600 TShs to almost 1,400 TShs)
- No gas or oil findings have so far been observed in Zanzibar, although studies indicate such existence
- Oil and gas is regulated by the Petroleum Exploration and Production Act from 1980

Demand and Supply of Woodfuel and Agricultural Residues, (> 80% of the energy)

- Approximately 1.4 million m³ of these fuels are used per year
- The main uses are for cooking in the domestic sector and in different institutions (schools, hospitals, camps etc.)
- Use of woodfuel can create in-door pollution and health problems
- Charcoal is the main fuel in urban areas and firewood and agricultural products are the main fuels in rural areas
- Woodfuel supply at the islands has declined rapidly during the last decades, and the deforestation is continuing
- Import of woodfuel (mainly charcoal) has increased considerably
- Lack of up-dated statistics on the demand and supply of these fuels

Demand and Supply of Renewable Energy, (less than 1% of the energy)

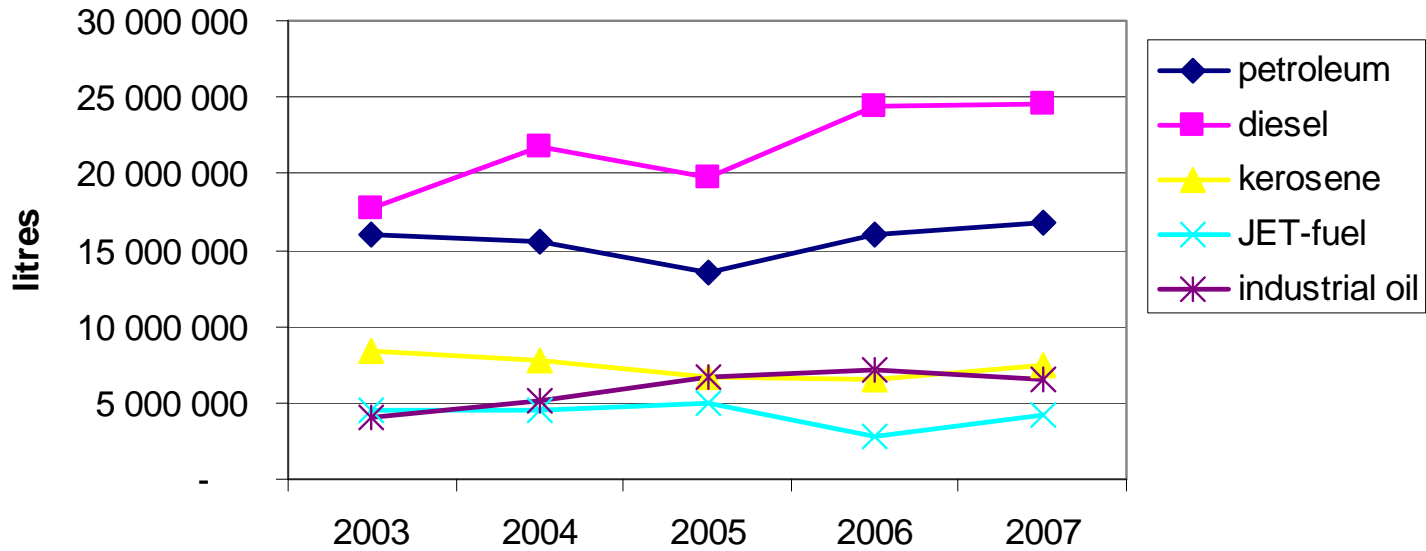
➤ Potential for:

- solar energy (*electricity and heat, at present: 220 solar PV installed, high investment costs for solar PV, low for solar heaters*)
- wind power (*electricity and power, assessment study made, no wind plants installed (except for water pumping), high investment costs*)
- energy from waves and tides (*electricity and power, initial study on-going, high investment costs*)
- biogas (*heat and fuel, no installations in Zanzibar, medium investment costs*)
- ethanol production (*mainly fuel, project initiated on mainland Tanzania*)
- energy from waste treatment (*electricity and heat, no installations in Zanzibar, high investment costs*)

➤ These sources are at present very scarcely used

Demand and Supply of Fossil Fuels, (approximately 15% of the energy)

Uses of Fossil Fuel Products, year 2003-2008

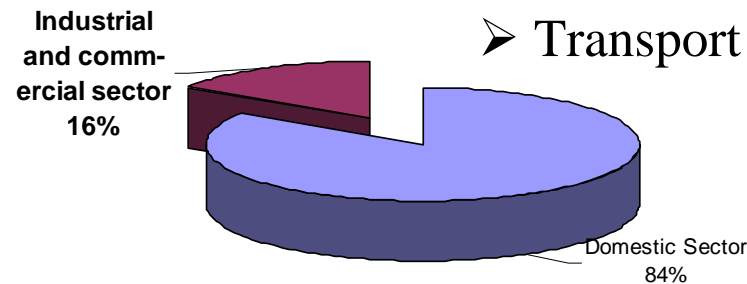


Demand of Energy

Institutions, Businesses and Industries (transport included):



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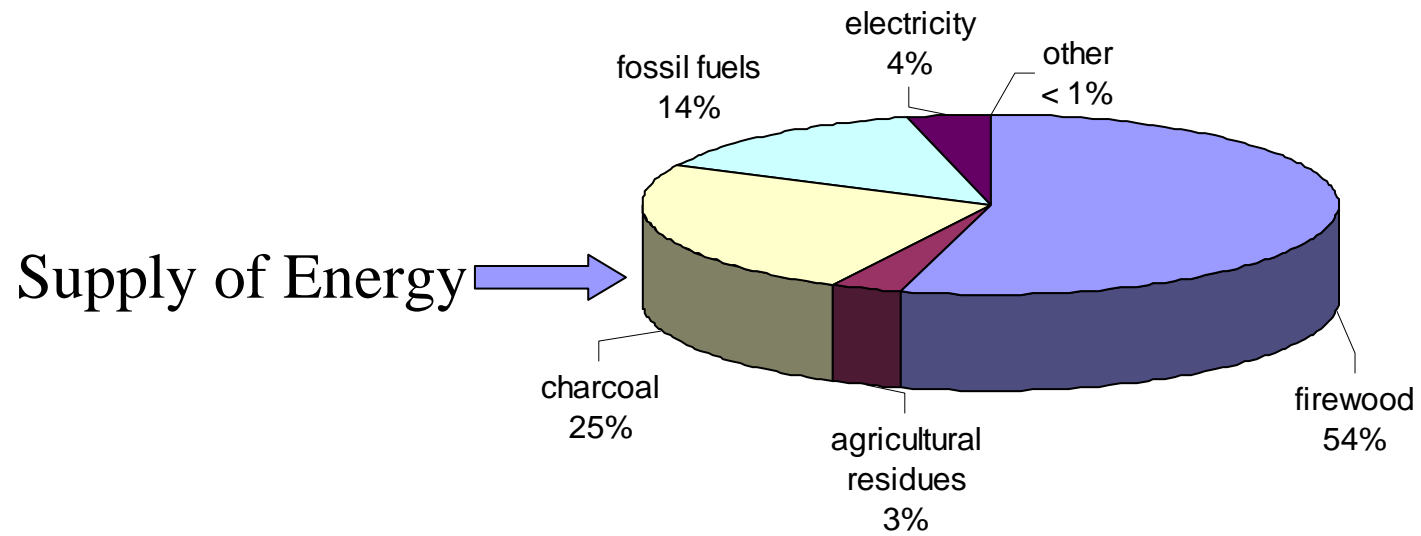


Energy Balance for Zanzibar

Sources used for the assessment:

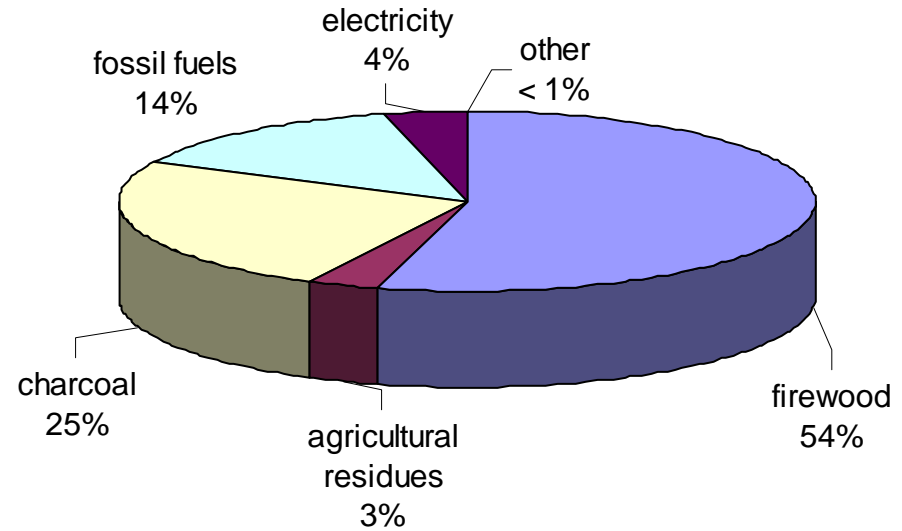
- **Statistics** collected by the Department of Energy and Minerals
 - ✓ Fossil fuels import (*petroleum, diesel, kerosene, JET-fuel, IDO*), volumes and prices
 - ✓ Electricity, volumes and prices
 - ✓ Wind speed and direction (*measures at the airport*)
- **Information from earlier studies** on biofuel (volumes on firewood, charcoal and agricultural residues), and prices from the present market
- **Information from on-going studies** (solar PVs etc.)

Energy Balance for Zanzibar

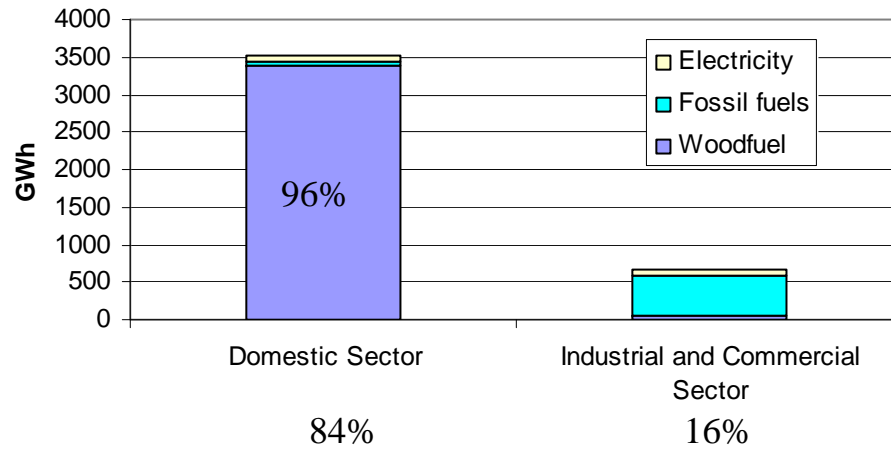


Energy Balance for Zanzibar

Supply of Energy →



Energy Uses in Different Sectors



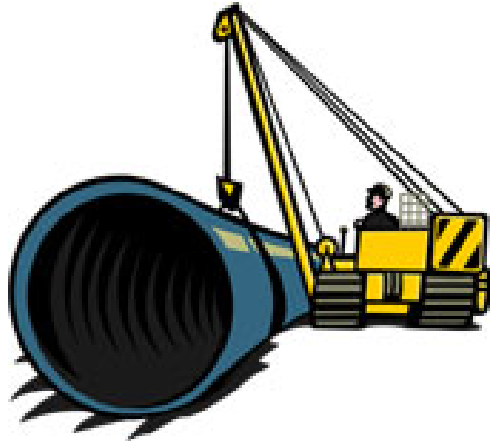
← Demand of Energy

Energy Balance for Zanzibar

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Planned Energy Related Projects



- Submarine transmission cable from mainland Tanzania to Unguja, 100 MW (in operation by 2012)
- Submarine transmission cable from mainland Tanzania to Pemba, 20 MW (in operation by 2010)

On-going Energy Related Projects

➤ **Financial Turn Around of ZECO**

Project with the aim to facilitate the creation of a customer-oriented company guided by good business principles and generating a positive cash-flow.

Part of a larger Energy Sector Program

➤ **Rural Electrification**

Connection of rural areas to the electricity services

➤ **Study on Issues Concerning Oil and Gas Exploration**

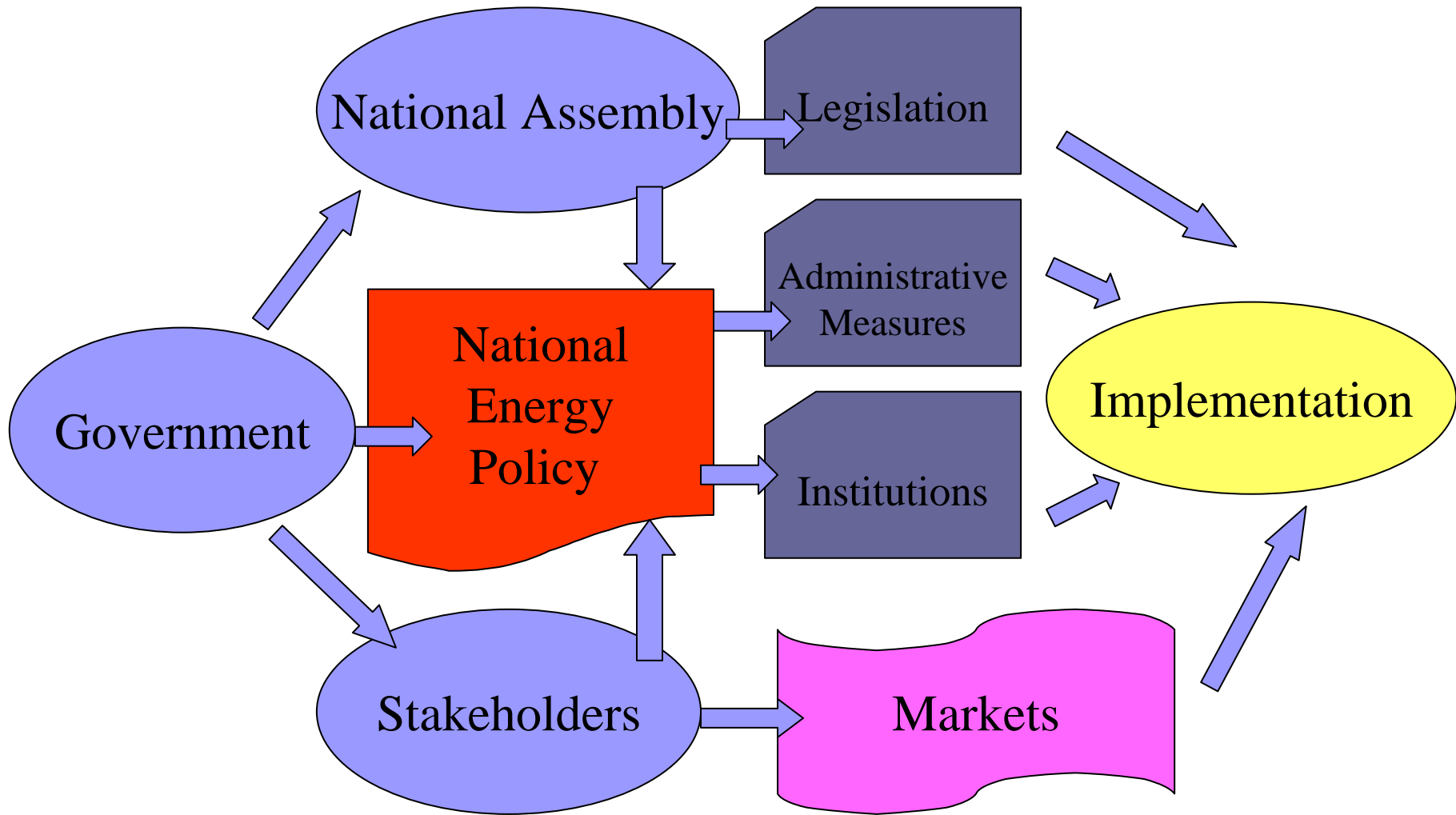
Recently started study with the aim to study the situation and design and formulate a sharing agreement between Zanzibar and mainland Tanzania

Important Issues and Problems of the Energy Sector in Zanzibar

- Energy Sufficiency (*unreliable and insufficient supply of electricity and fossil fuels, monopolistic situation, high costs of electricity and fossil fuels, lack of indigenous modern energy sources*)
- Modern Technology (*high investment costs for renewable energy, such as wind and solar, lack of information on wind conditions etc., lack of awareness among general public on benefits with modern energy and disadvantages with woodfuel (health issues etc.)*)



DEVELOPMENT OF ENERGY POLICY



DEVELOPMENT OF DRAFT ENERGY POLICY

- PHASE I – INCEPTION PERIOD (MARCH – MAY 2008)
- PHASE II - ENERGY SITUATION ANALYSIS (MAY = SEPTEMBER 2008)
- PHASE III - SCENARIOS, ENERGY OPTIONS AND POLICY SITUATION (OCT. – DECEMBER 2008)
- PHASE IV – DEVELOPMENT OF ENERGY POLICY(DEC. – JANUARY 2009)
- FINAL ENERGY POLICY PAPER, DEC. 2010 WAS PRODUCED



THANK YOU

ORIGATO GOZAIMASU