



## Country Report

# Energy Policy of Ethiopia

**Japan International Cooperation Agency  
Tokyo International Center**

June 24- July 14, 2012

JICA Training Centre (Tokyo)

# Outline

1. General information about the country
2. Overview of the Energy Sector
3. Energy Policy

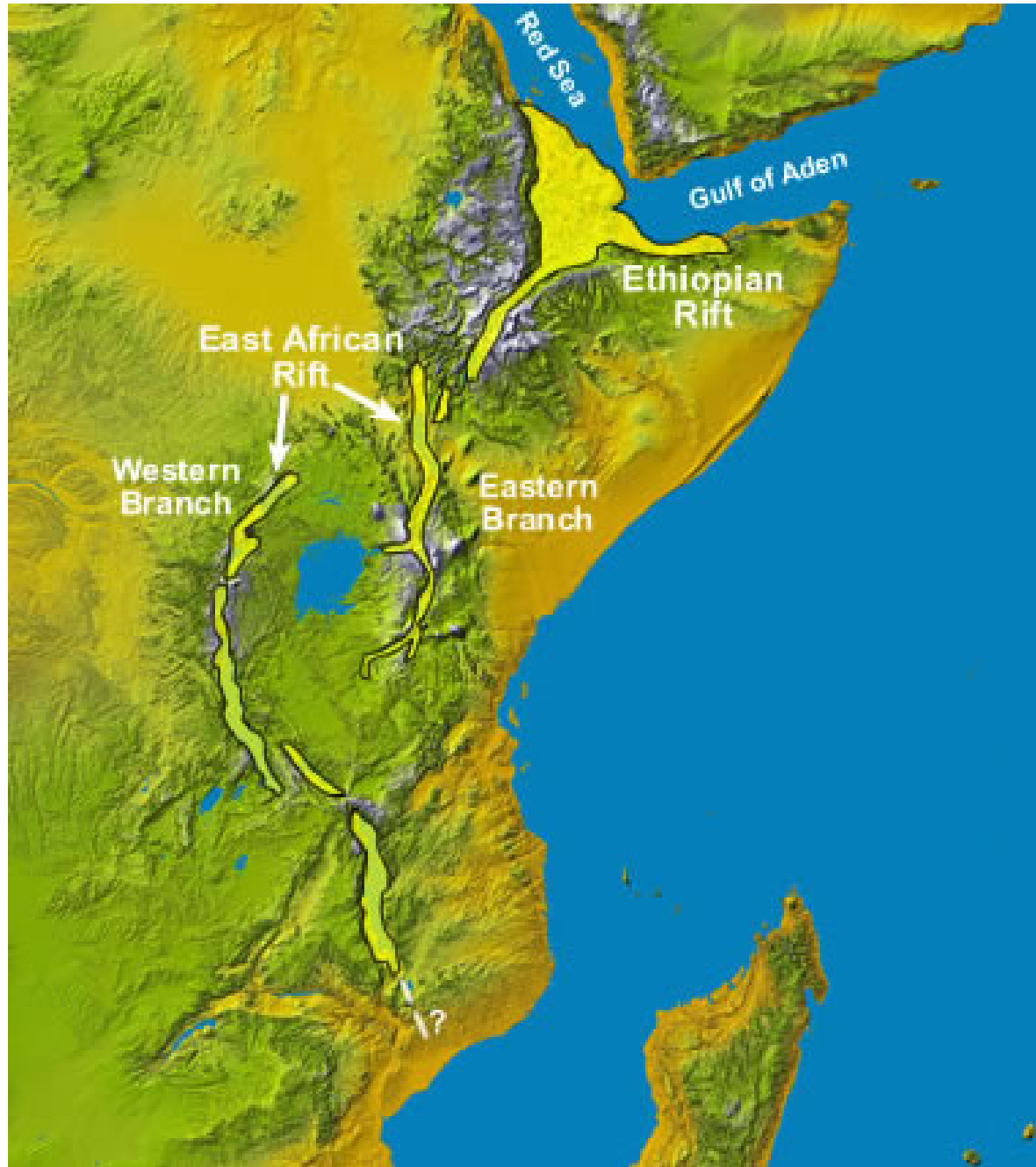
# **1. General Information of Ethiopia**



# General Information

- Ethiopia - landlocked country in the Horn of Africa.
- Total area - 1.13 million square km.
- Population - 85.2 million.
- Population growth rate – 2.8% per year.





# LUCY

- ❖ Lucy's skeleton was found in Hadar
- ❖ 3.22 and 3.18 million years old .





# Rock- Hewn Church - Lalibela



# Castle - Fasiledes





# Obelisk of Axum







# Home of different Ethnicities









# Numbers of Amharic Language

፩	፪	፫	፬	፭	፮	፯	፰	፱	፲
1	2	3	4	5	6	7	8	9	10
፳	፴	፵	፶	፷	፸	፹	፺	፻	፻፬
20	30	40	50	60	70	80	90	100	10000

፻	፻፲	፻፳	፻፶	፻፷	፻፹	፻፺
comma	full stop / period	colon	semi-colon	preface colon	question mark (no longer used)	

# Traditional Dance

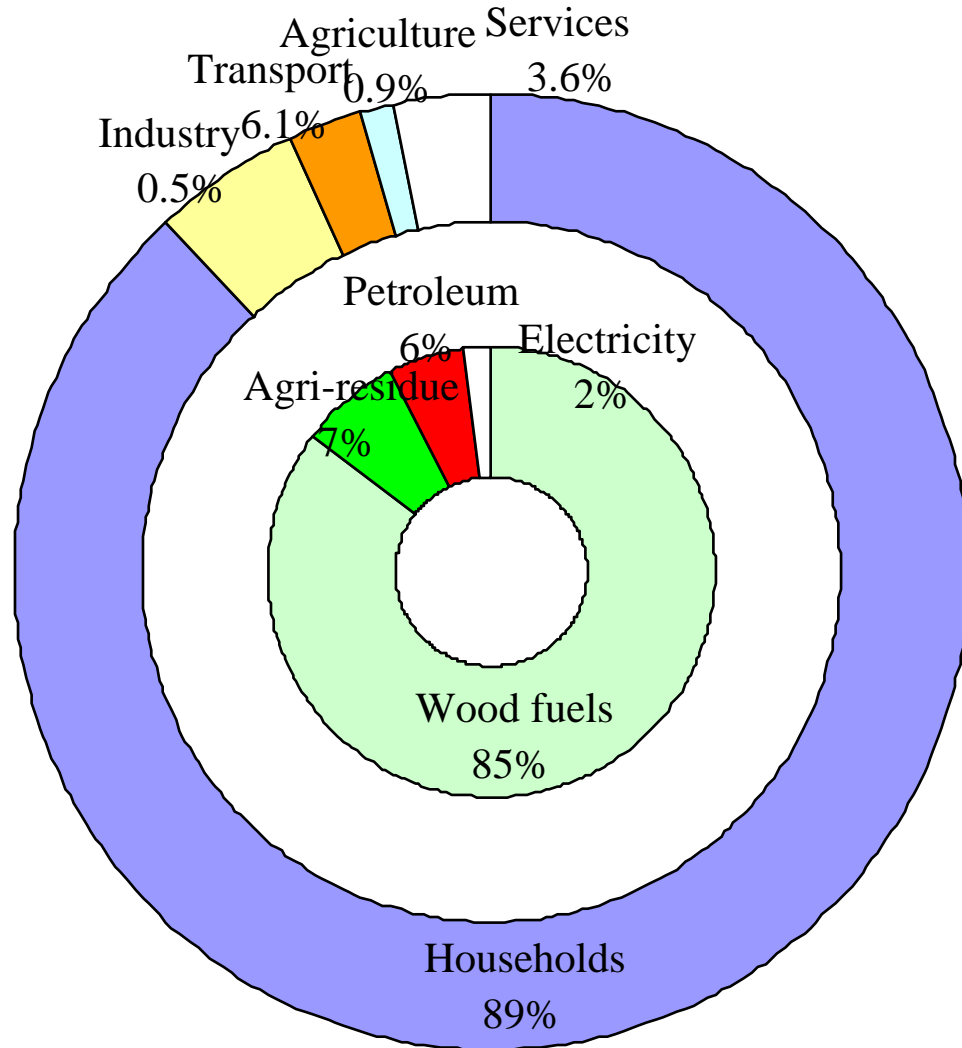


## 2. Overview of the Energy Sector

# Energy Resources of Ethiopia

Resource	Unit	Total Stock	Exploitable potential	Currently exploited
<b>Woody biomass</b>	Million tons	<b>1,150</b>	<b>74/year</b>	<b>60</b>
<b>Crop residue</b>	Million tons		<b>38 /year</b>	<b>4.9/year</b>
<b>Dung</b>	Million tons		<b>29.8/year</b>	<b>7/year</b>
<b>Solar</b>	kWh/m <sup>2</sup> /day		<b>5.2 - 6.5</b>	<b>≈5 MW</b>
<b>Wind</b>	m/s		<b>3.5 - 9</b>	
<b>Hydropower</b>	MW		<b>45,000</b>	<b>2,000</b>
<b>Geothermal</b>	MW <sub>e</sub>		<b>5000</b>	<b>3.5</b>
<b>Bio-ethanol</b>	Million litres		<b>300-2000/year</b>	<b>8/year</b>
<b>Natural gas</b>	Billion m <sup>3</sup>		<b>110</b>	
<b>Coal</b>	Million tons		<b>300</b>	

# Energy Supply and Consumption



# Electrification Status

- ❖ Electrified towns in 2004/05 - 648.
- ❖ As a result of Universal Electricity Access Program (UEAP), in 2008/09:-
  - ❖ number of electrified towns - 3,500,
  - ❖ number of connected customers - > 1.83 million.
- ❖ Annual new customer connection rate in the past ~ a maximum of 40,000 Vs. current annual new connection rate is an average of 350,000 customers and 1700 towns & villages,
- ❖ Electricity coverage has reached 41%.
- ❖ Objective to expand electricity coverage in the country to 75% in the coming five years.

# Present Power Capacity by Source

<b>Energy Source</b>	<b>Capacity (MW)</b>
<b>Hydro</b>	<b>1842.6</b>
<b>Geothermal</b>	<b>7.3</b>
<b>Small scale hydro and diesels</b>	<b>158.8</b>
<b>Total Generation</b>	<b>2008.7</b>



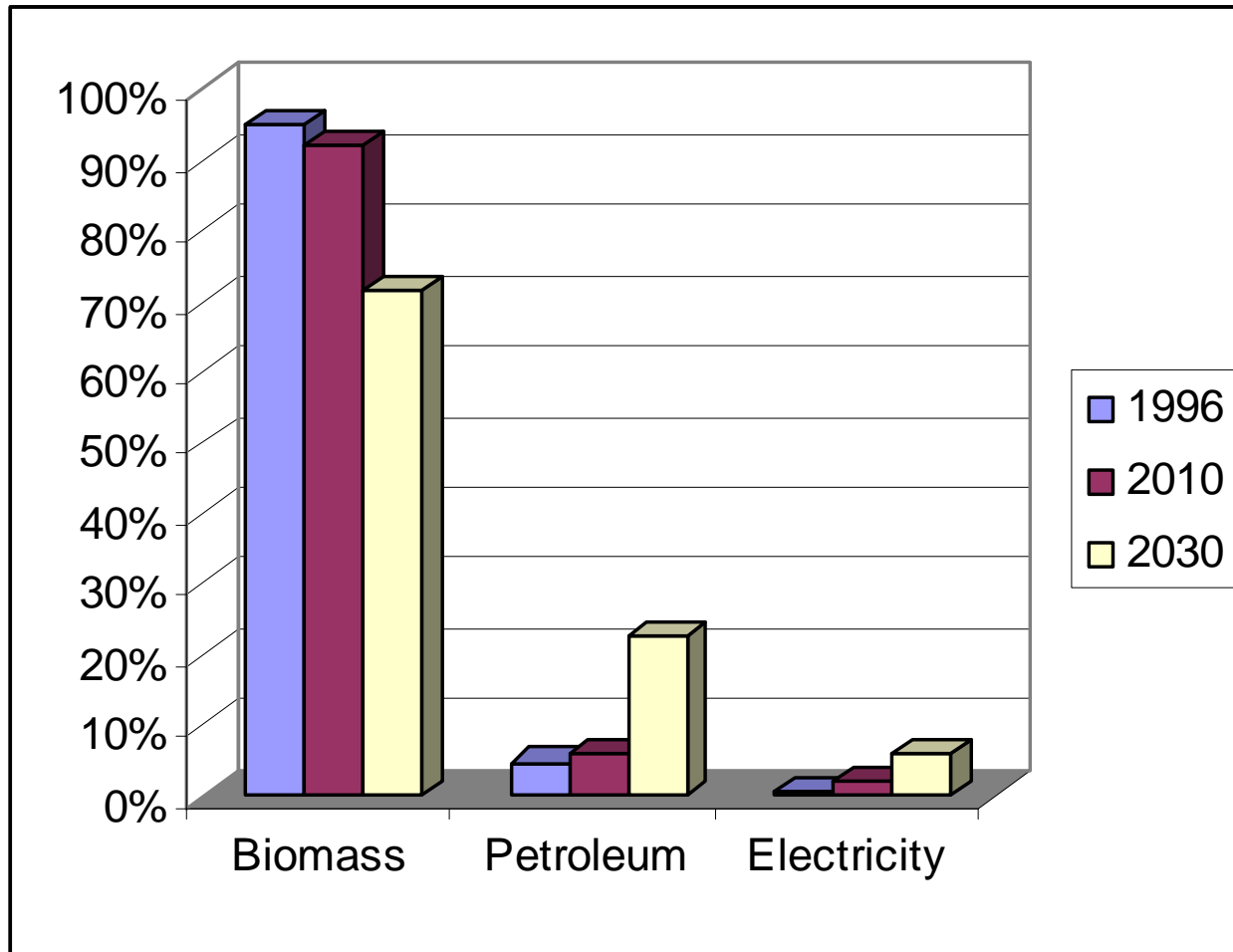
# Power Plants Under Construction

<b>No.</b>	<b>Plant</b>	<b>CAPACITY /MW/</b>
<b>1</b>	<b>Aluto Langano Geothermal</b>	<b>75</b>
<b>2</b>	<b>Adama I Wind Farm</b>	<b>51</b>
<b>3</b>	<b>Ashegoda wind farm</b>	<b>120</b>
<b>4</b>	<b>Grand Ethiopian Renaissance Dam / Blue Nile HPP</b>	<b>6000</b>
<b>5</b>	<b>Genale III HPP</b>	<b>256</b>
<b>6</b>	<b>Gibe III HPP</b>	<b>1870</b>
	<b>Total</b>	<b>8372</b>

# Power sector Plan

- ❖ Satisfy domestic demand,
- ❖ Generate power for East Africa power connection,
- ❖ Thus,
  - ❖ By 2015 reach  $> 8,000$  MW
  - ❖ Increase power generation by 14 times in 2020,
    - ❖  $\Rightarrow$  reach 15,000 MW.
  - ❖ Increase power generation by about 25 times by 2040.

# Trend of Energy Supply and Consumption 1996-2010



# 3. Energy Policy

# National energy policy

- ✦ Made official in 1994
- ✦ Objective :- to facilitate dev.t of energy resource to support economic growth.
- ✦ Focuses on:
  - ❖ Necessity of development of energy resources
  - ❖ Ensure reliability of energy supply at the right time and at affordable prices,
  - ❖ Promotes agro-forestry,
  - ❖ Use demand side management
  - ❖ Shift to modern energy resources

## (Cont' d)

- ❖ High priority to hydropower development,
- ❖ Priority to address household energy demand,
- ❖ Geothermal, solar, wind and coal are to be developed on the basis of their economic viability,
- ❖ Emphasises are given to the development of bio-fuels, natural gas and oil exploration by providing incentives,
- ❖ Address energy efficiency and conservation
- ❖ Encourages private sector participation
- ❖ Capacity building.

# Energy Sector Issues

- ❖ Energy Poverty
- ❖ Biomass resource is declining
- ❖ Hydro based generation system is not backed by adequate generation mix,
- ❖ High dependence on imported petroleum fuel,
- ❖ Emergence of modern technology
- ❖ Limited capacity
- ❖ Lack of recent information

# Rational for policy update

- ✦ Almost two decades since the policy was formulated,
- ✦ The economy of the country has relatively improved,
- ✦ Change in the energy demand and supply,
- ✦ Energy sectors have increase,
- ✦ Modern fuels have been introduced,
- ✦ Inter-Regional power pull is in progress,
- ✦ Global climate condition calls for cleaner energy,
- ✦ Climate finance is available.



# Status of the Policy

- The policy is being revised.

*Arigato  
gozaimasu*

Contact: [report@tky.ieej.or.jp](mailto:report@tky.ieej.or.jp)