Ministry of Water and Energy

ETHIOPIA

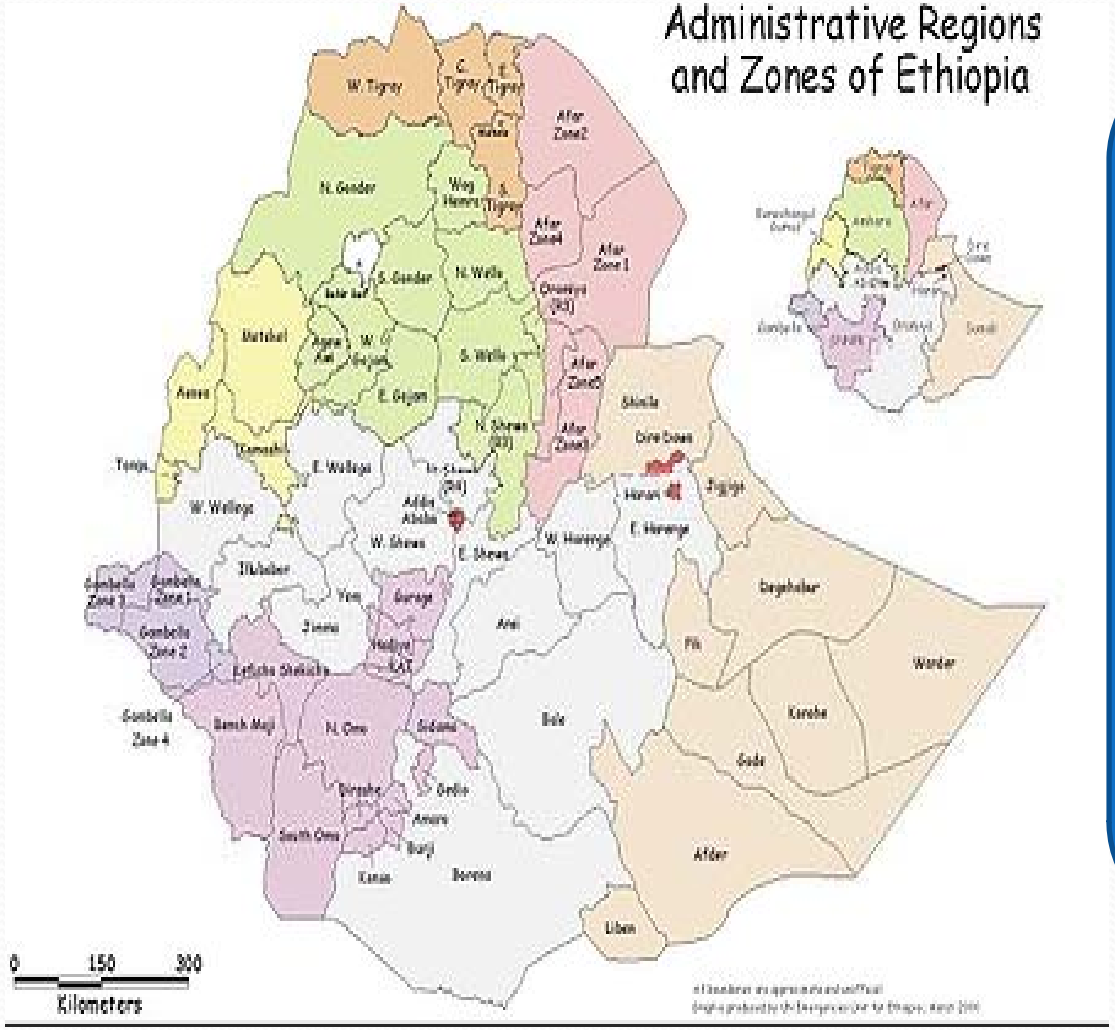
2011 Washington Energy Summit: Powering Cities of the Future

Sept. 27-28, 2011, Washington

PRESENTATION OUTLINE

1. **Expectations of the future energy requirements for cities and villages in Ethiopia;**
2. **Similarities and differences of Ethiopia's energy needs with other developing World;**
3. **Specific obstacles that need to be overcome in order to provide sufficient energy to cities and villages in Ethiopia;**
4. **Possibility of generalization from Ethiopia's experience to other parts of Africa.**

1.Expectations of the future energy requirements



- Ethiopia is located in the Horn of Africa with more than 80 million People
- The country is a Federal Democratic Republic State with Nine Administrative Regions and two Charted Towns.
- There are more than 150 cities and towns with more than 20,000 inhabitants.

Expectations of energy requirements ..(contd)

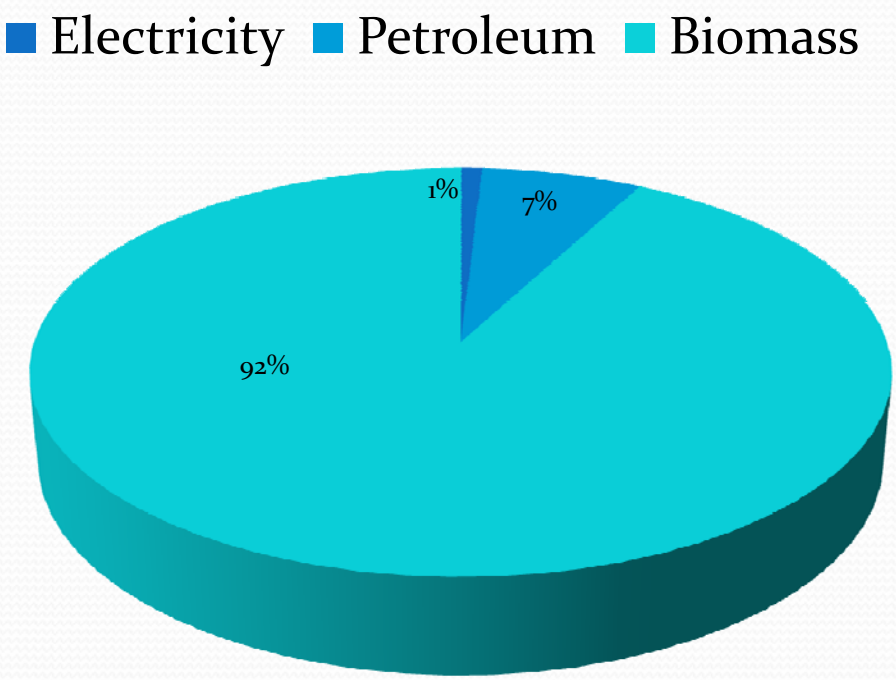
- Addis Ababa and other regional capital cities are growing very fast.
- The future urban growth will mostly take part in these cities
- Currently , Addis Ababa, the capital city is responsible for more than 45% of the modern energy consumption.
- As urban population increases, massive energy requirement is mandatory.

Expectations of energy requirements ..(contd)

- Access to reliable, affordable, and Sustainable Energy service is essential for our cities and villages mainly to:
  - accommodate the basic needs of our citizens and to reduce poverty (especially women and girls)
  - fulfill our Growth and Transformation Plan (GTP)
  - achieve Millennium Development Goals (MDGs)
  - address Climate change (where all African cities are the most vulnerable)

Ethiopian Energy Balance (2010)

- Electricity and Petroleum Share 8%
- Biomass share 92%
- Majority of the population depend on traditional biomass fuels.



Expectations of energy requirements .. (contd)

- For the last 7 consecutive years Ethiopian Economy grew more than 10%, which is one of the fastest economy in Africa (being non-oil exporting country).

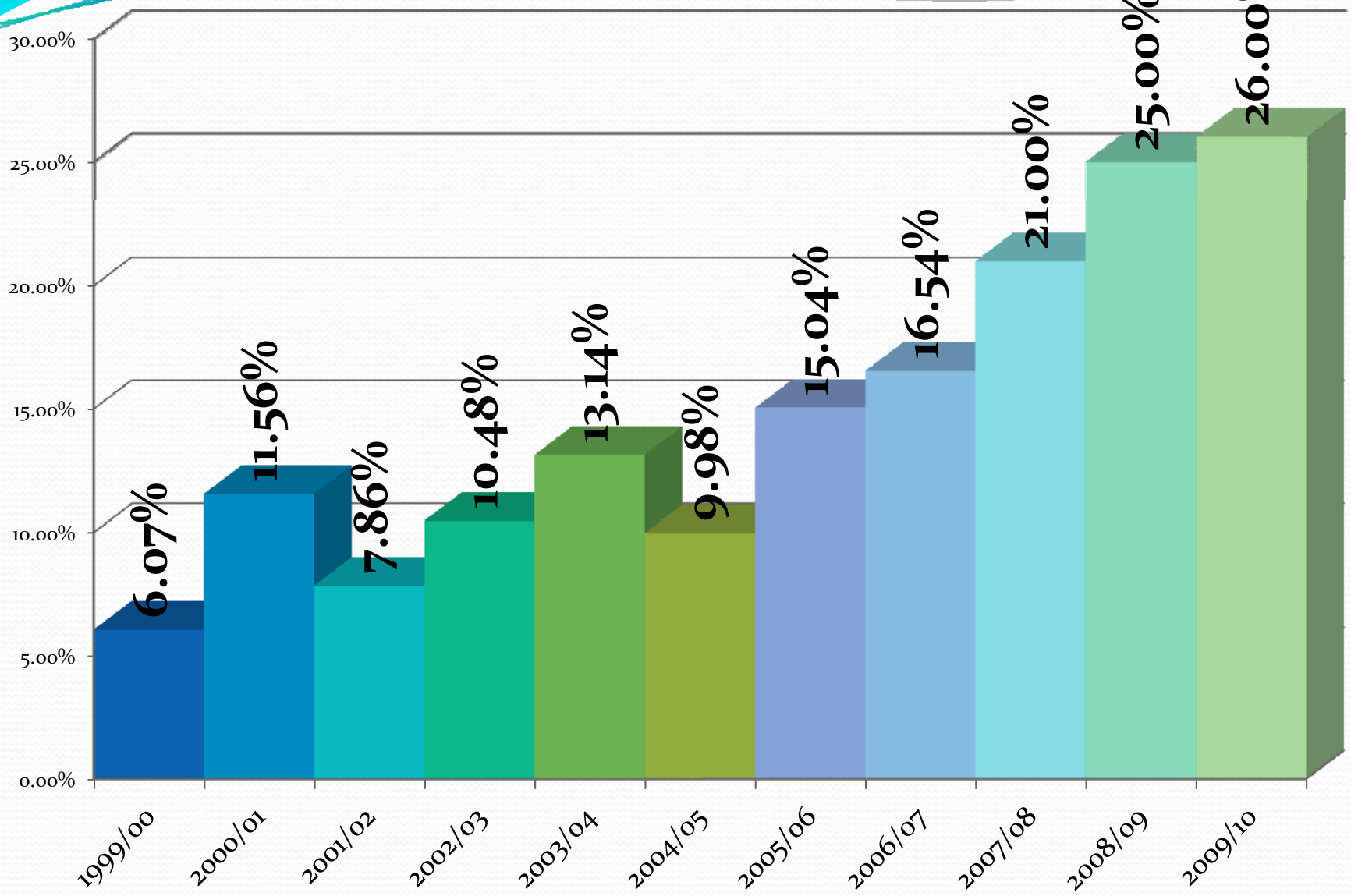
From 2010-2015

- the economy is expected to grow more than 11%
- electricity access will increase from the current 45% to 75%
- to address this development electricity demand will grow by around **32%**.

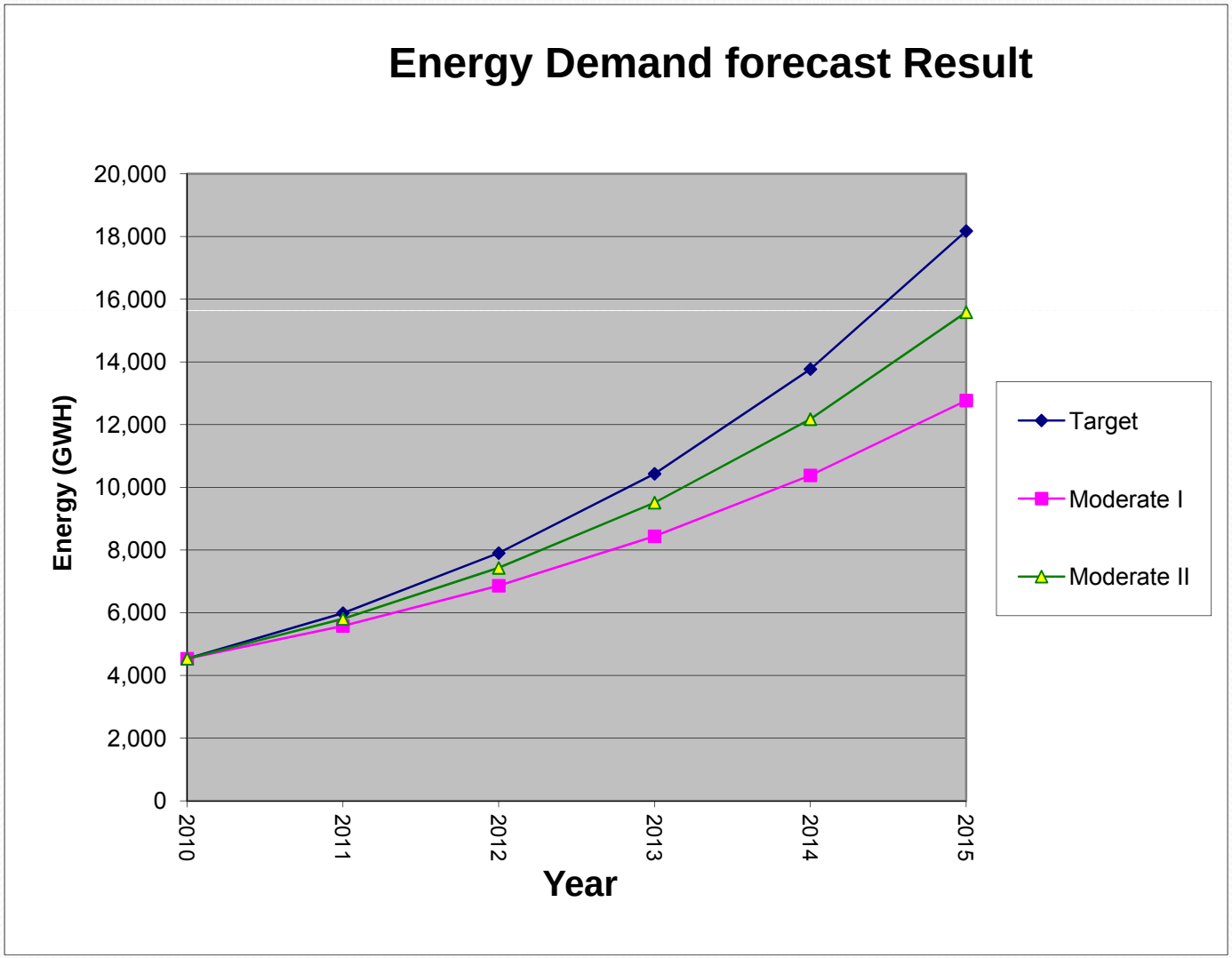
1.4 Electricity Demand Growth

- From 2002 to 2008, the average annual energy demand growth was 17%.
- In 2010 the national demand growth rate is increasing more than 26%. Which is above the existing Power supply.
- According to the Target Scenario Electricity demand will be expected to grow by 32% from 2011-2015.

Yearly Demand Growth

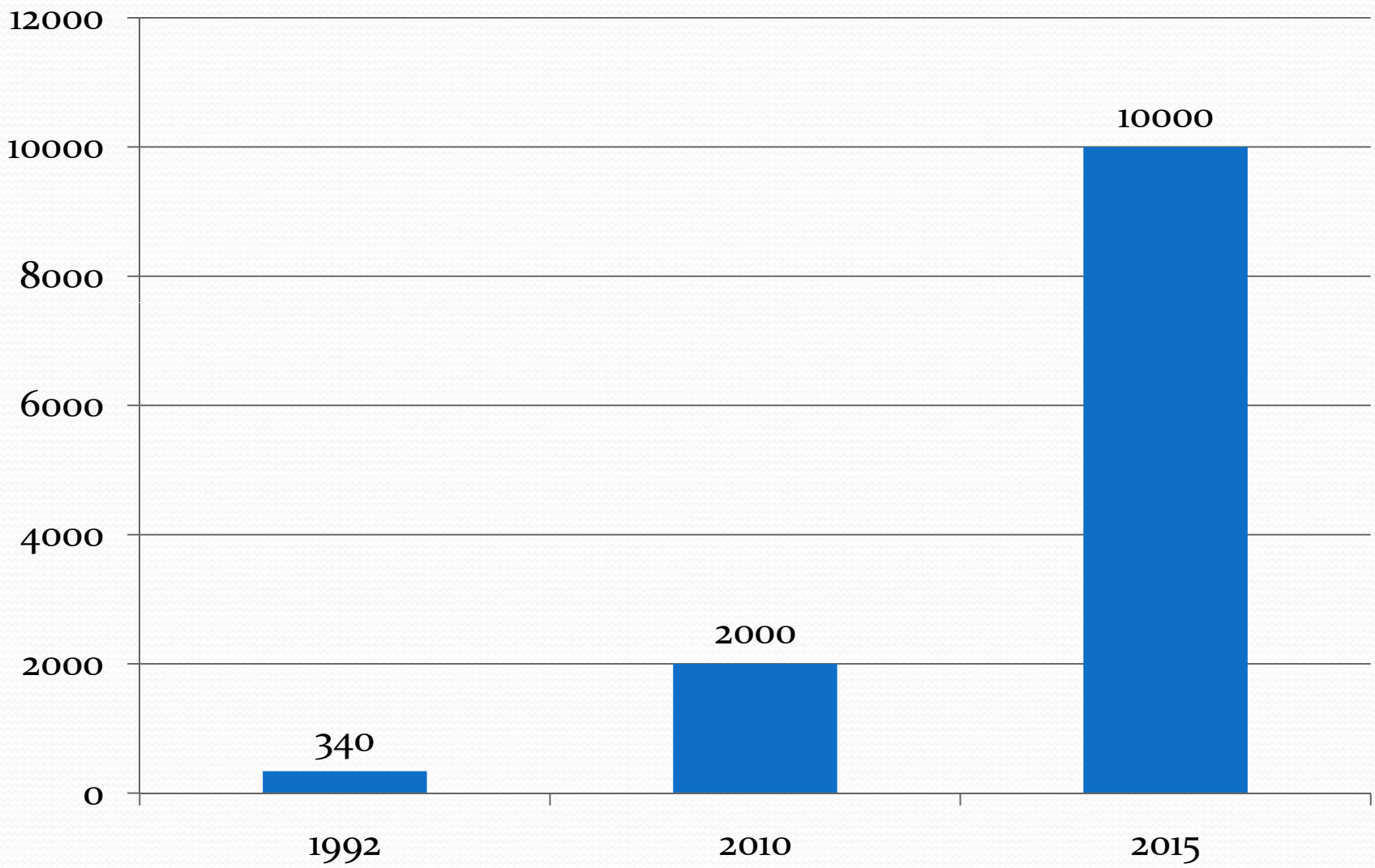


Power Demand Forecast
Target and Moderate forecast

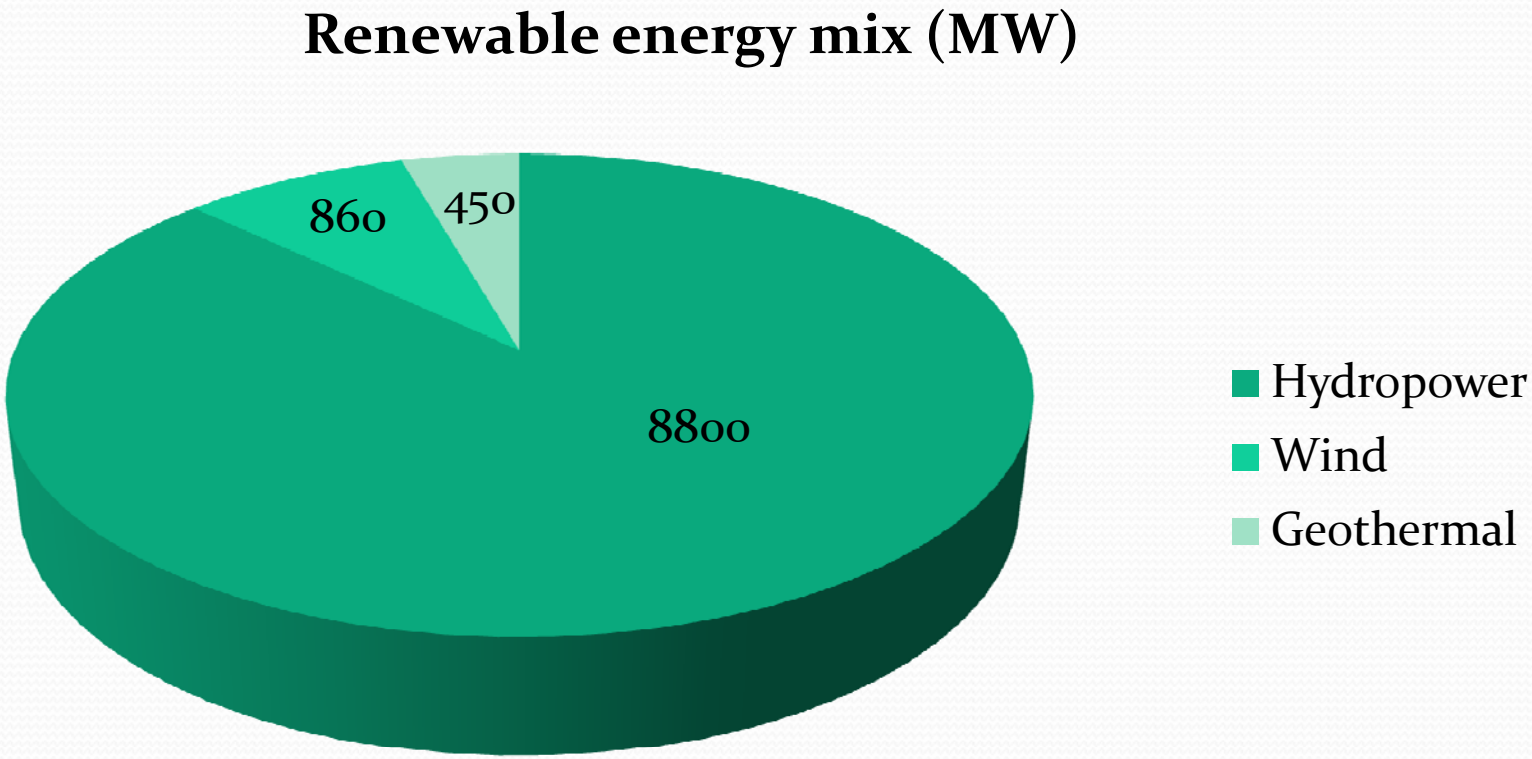


According to the Target scenario electricity demand will be expected to grow by **32%** for the period 2011-2015.

Electricity Generation capacity Growth (MW)



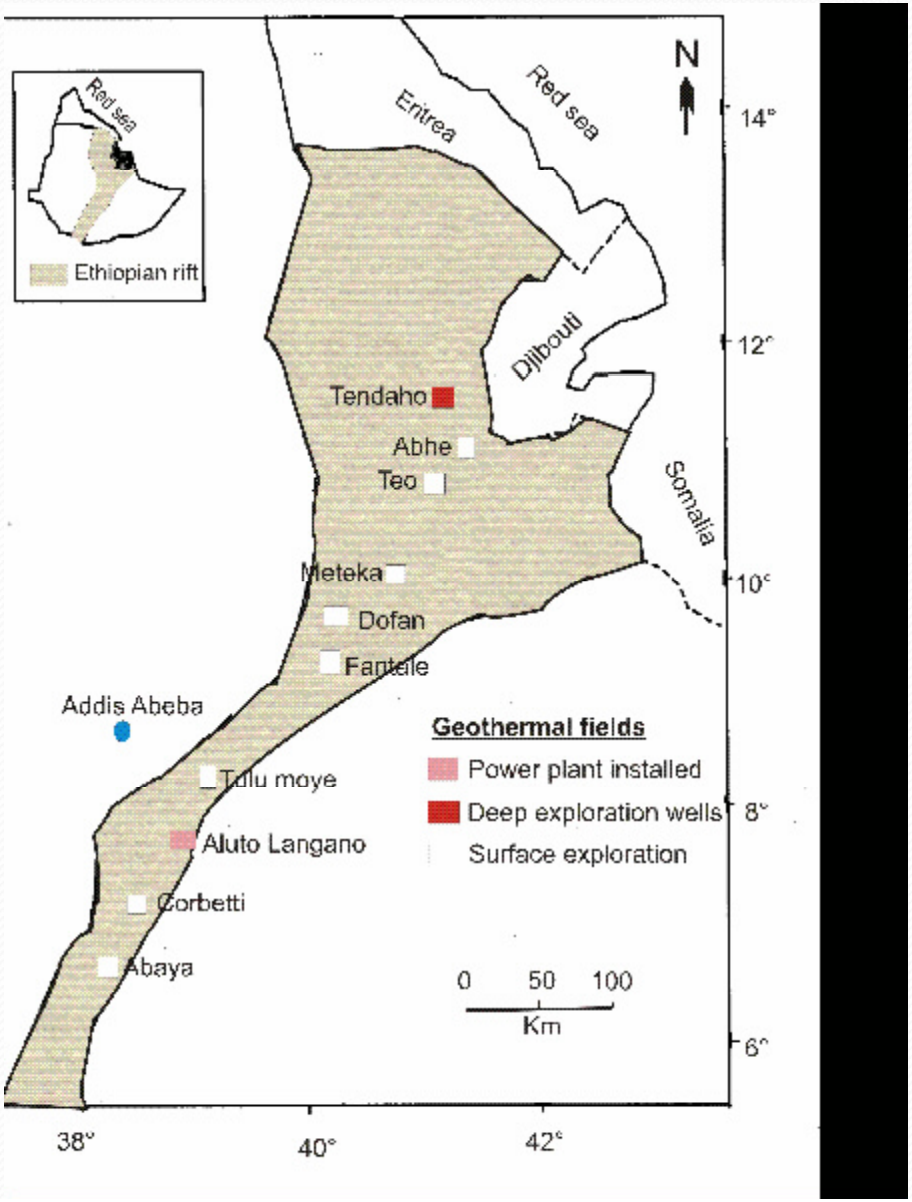
Generation Plan from Renewable Energy in the year 2011-2015



1,870 MW HP Project under construction

5250 MW HP Project under construction

Geothermal Fields Under development



Expectations of energy requirements .. (contd)

- petroleum fuels replacement with bio-fuel blending (10% ethanol blending is operational)
- Introduction electric rail system for major cities
- **To reach 80% of the household in rural cities and villages**
  - disseminate 9 million efficient cook stoves
  - 3 million solar technologies
  - 14,000 biogas digesters

2. Similarities and differences of Ethiopia's energy needs with other developing World;

Similarities

- Like other African countries Ethiopian Cities and villages are among the least electrified countries.
- Energy access and energy security is utmost priority for these cities and villages.
- Securing financial resources for implementing energy projects is a challenge
- Needs improving sector and utility performance

Similarities (Contd)

- Like other developing countries we focus on energy efficiency programs.
- We are in a process to build technology and innovation capacity.
- Most cities and villages settlement are relatively small and widely dispersed, difficult to provide modern energy services.

“Differences” Experiences to share

- Our country is largely dependent on renewable energy resources, mostly hydropower resources unlike most African countries.
- We have a very good track record on Universal Electricity Access program we have managed to electrify more than 1,000 towns and villages every year. The electric access increased from 16%-41% with in five year period.
- In our case Public sector is the major player in the power sector development
- Our electricity tariff is very cheap and help urban poor

3. Specific obstacles for providing sufficient energy to cities and villages in Ethiopia

Some of the major obstacles that need to be tackled for energy development are:

1. Institutional technical and management capacity problems.
2. financing investment requirements for renewable energy
3. rapid scaling up of proven successful technologies
4. Lack of capacity mainly on the private sector.

4. Possibility of generalization of Ethiopia's experience to other African Coutnries

1. The introduction of the Universal Electricity Access Program, and
2. The commitment of the Government to integrate the green power system with other African countries.

Universal Electricity Access Program

→ Started with the view to enhance the access from 16% (2002) to reach 75% in 2015

→ the country managed to electrify 1700 towns/villages per annum.

4.. ……Continued

- Two strategies followed

1. Grid-based Large & Medium Scale power generation, and
2. Small-scale Renewable Energy Stand-alone/Mini- grid) technology options.

- No. of electrified towns are reached 5,168 in 2010 from total of 782 rural towns/villages in 2006.
- Access to electricity has reached 41% from 16%

4.. ……Continued

The Commitment of the Government to Integrate the Green Power System

- Ethiopia follows a climate resilient green economy path.
- Ethiopia has huge hydropower potential (more than 45 GW).
- Ethiopia believes strongly on the importance of regional interconnection with clean and cheaper energy .
- the country has devised a strategy for accelerating cross-border town electrification and Regional interconnection with neighboring countries and beyond;

Achievements and ongoing programs

- the Ethiopia-Djibouti interconnections is operational since the beginning of 2011
- The Ethiopia –Sudan Interconnection will be operational before the end of this year.
- Ethiopia –Kenya interconnection line finance is secured construction will start in 2012.
- Ethiopia-Sudan-Egypt interconnection line feasibility study completed, seeking finance for construction.

4.. ……Continued

Benefits from regional interconnections: include:

- Strategic partnership among the countries, which will have significant contribution for regional economic cooperation and stability;
- All interconnected cities and villages will have Lower unit energy costs and renewable energy which displaces expensive and environment unfriendly thermal generation.
- Contributes for climate mitigation action

4.. …… Regional interconnection)

Ethiopia –Djibouti Interconnection is operational

Ethiopia-Sudan Interconnection will be energized in 2011.

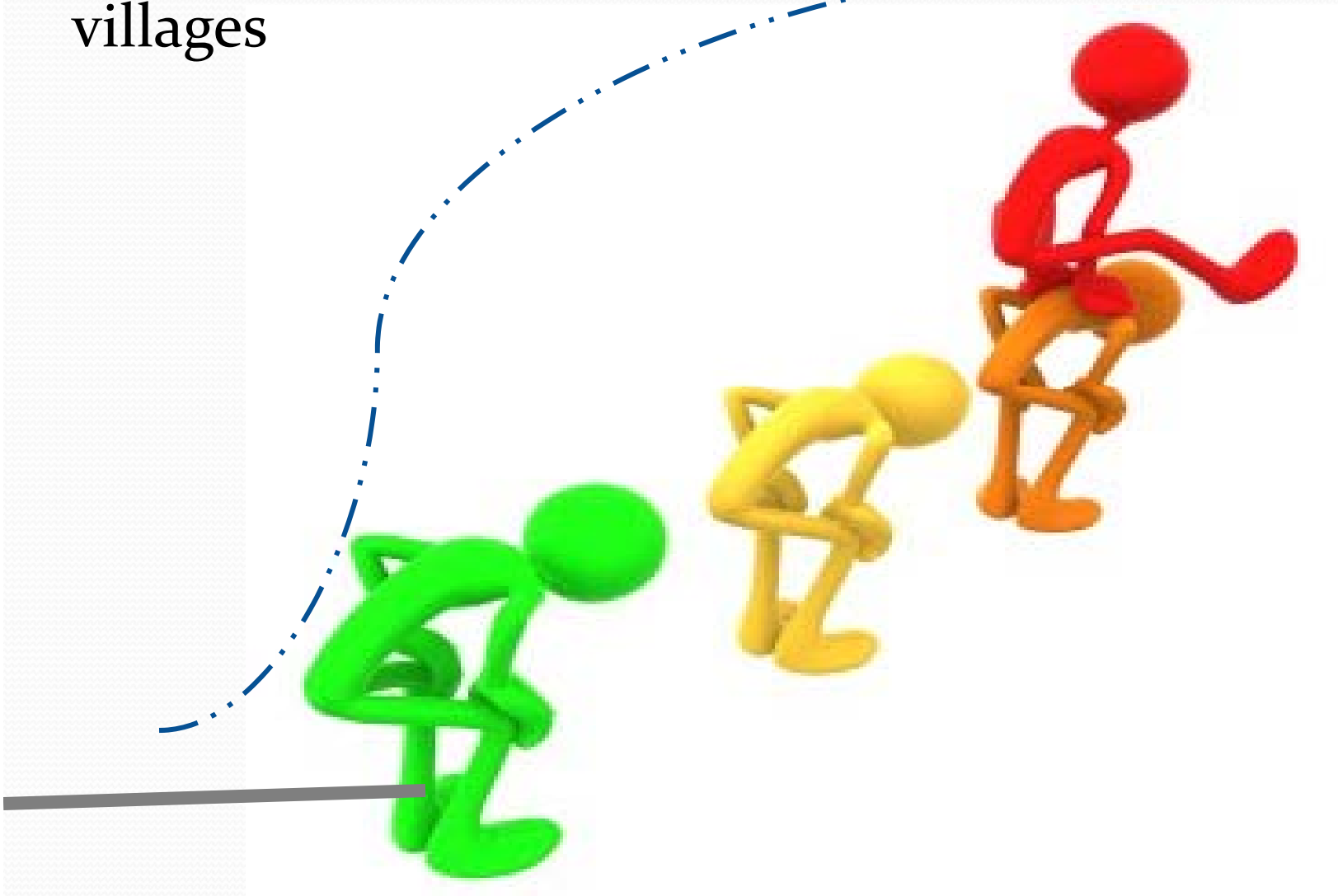
Ethiopia –Kenya Interconnection construction Starts in 2012.

Ethiopia's Energy vision

To be the Green Energy Hub in the East African Region By 2020

We have to follow Leap Frog development

To energize our cities and villages



Promoting a Culture of Innovation

We have to change the dark Africa to Lighting Africa

I Thank you