Plan

# COMMUNITY MANAGED RENEWBLE ENERGY FOR RURAL ETHIOPIA (CMRE)

## ACP-EU ENERGY FACILITY SEMINAR

## BRUSSELS 26th -27th APRIL 2012

## Diamant Brussels Conference & Business Centre

**Fasil Tsegaye**



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# Project Description

- 3 years period (2007-2011) including no-cost extension (9 months)
- Total budget 1,289,927 EUR (75/25)
- 83,438 people in 20 Kebeles (Sites)

# I. Project Objectives

Overall Objective:

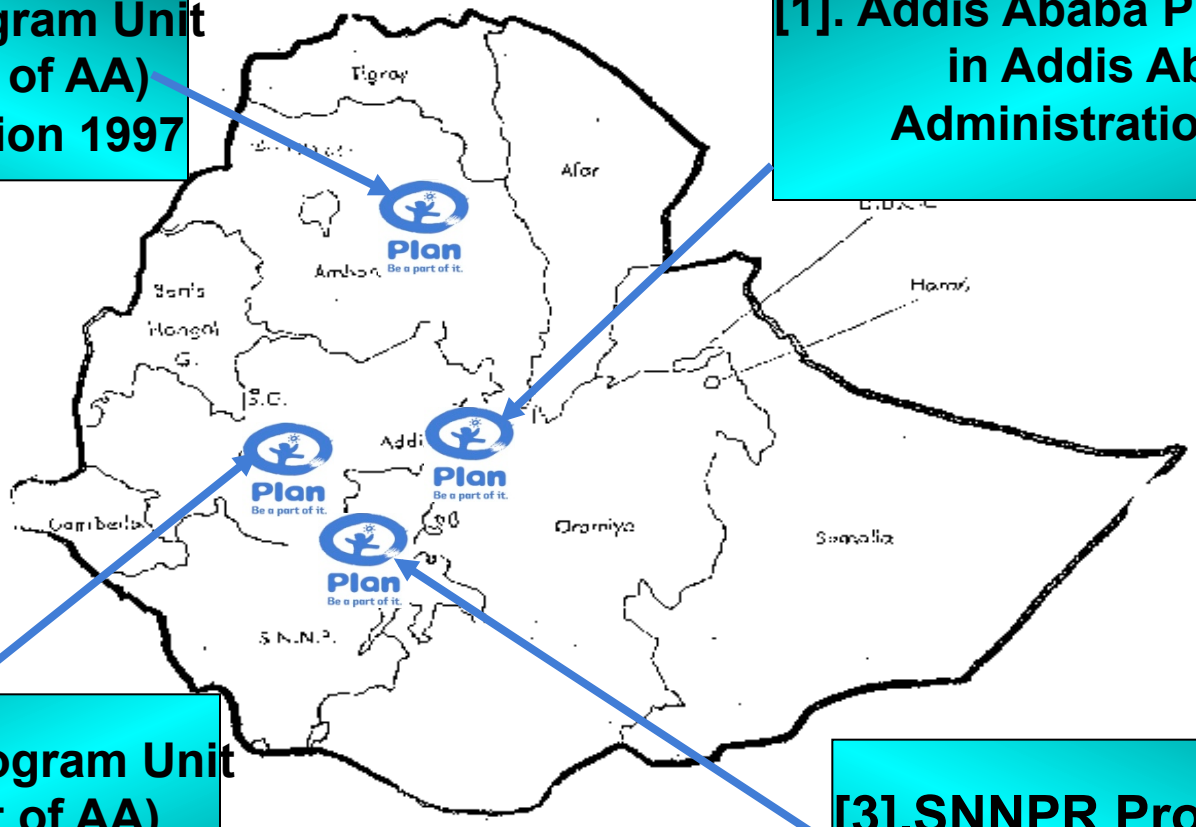
A. To improve access and quality of essential services such as health care, education and potable water supply to rural communities through increased access to renewable energy (Photovoltaic systems)

B. To improve the livelihood of rural households and the conditions of the natural environment through the promotion and dissemination renewable energy such as PV systems and dissemination of FSS

# Plan Ethiopia's Operational Areas

[2].Amhara Program Unit (700km North of AA) in Amhara Region 1997

[1]. Addis Ababa Program Unit in Addis Ababa Administration 1995




[4]. Oromiya Program Unit (335km West of AA) in Oromia Region 2006

[3].SNNPR Program Unit (300km South of AA) in SNNP Region 2002

# Solar Electrified Services

## 33 Solar Schemes

- Education, 10
- Health, 10
- Potable Water Supply, 13

# Solar Electrified Services Continued…

## *Education*

- Students can study in libraries
- Laboratory exercises for students
- Radio/TV/plasma & ICT programs
- Staff turnover significantly reduced
- Adult education (night program)
- Community confidence and their productivity enhances

# Solar Electrified Services Continued…

# Solar Electrified Services Continued…

## *Health*

- Medicines can be kept in refrigerators and will be available for emergency (like vaccines)
- Laboratory service
- Emergency (especially delivery service for mothers during the night)
- Staff turn over significantly reduces
- Health awareness via TV/ Tape

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# Solar Powered Water Continued…

***Potable Water Supply for domestic & productive***

**Reduce common water born communicable diseases like diarrhea**



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# Solar Powered Potable Water Supply Continued…

# Continued…

Increased access to safe water

Carbon Free &
Reduce greenhouse gas

Low running cost unlike diesel generators

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# Capacity Development

## Sensitization at different level (community, district, zone & region)

*At School*

*National & Regional Energy Workshop*

# Capacity Development Continued…

**Practical on-job training for renewable energy committees & district experts (water, health, education & energy)**

# INVESTMENT

| Facility & Other Goods | Quantity | Amount in EUR |
|---|---|---|
| School | 10 | 167,582.23 |
| Health Post | 10 | 109,722.38 |
| Water Scheme | 13 | 363,466.62 |
| Solar Refrigerator | 10 | 13,000 |
| Pico-Solar Kits | 500 | 71,000 |
| Total | | 724,771.23 |

# Average capacity and use of Solar PV (kW)

| Type | Capacity | Use |
|---|---|---|
| Schools (with staff residences) | 34KW | 22KW |
| Hospitals (Health Posts) | 22KW | 12KW |
| Potable Water Pumping | 58.5KW | 58.5KW |

# Average annual production of electricity

| Type | kWh per year |
|---|---|
| Schools (with staff residences) | 28638 (For all 10 schemes) |
| Hospitals (Health Posts) | 11534 (For all 10 schemes) |
| Potable Water Pumping | 99280 (For all 13 schemes) |

# Average investment costs (USD $) per Installation

| Type | Average cost/per installation | Average cost/ per kW |
|---|---|---|
| Schools (with staff residences) | 24,060 USD | 7076 USD (averg. 3.4KW) |
| Hospitals (Health Posts) | 15,952 USD | 7251 USD (averg. 2.2KW) |
| Other (please specify) Potable Water Pumping | 37,097 USD | 8244 USD (avg. 4.5KW) |

# Procurement Procedure

- Full package of service provision is the best strategy to carry out big procurements and PIE has benefited from such type strategy.
- It helps to improve networking with the renewable energy sector
- Easy to negotiate terms
- Facilitates easy investment
- Reduces pressure on the implementers of the project

# Opportunities

- The issue of climate change has become global agenda leading to the use of RE
- The government of Ethiopia has made the issue of climate change a priority
- Encouraging policies introduced on the use of renewable energy e.g. the lifting of custom (taxes) on selected PV systems
- Increasing local capacity and skills to supply and promote renewable energy technologies (private sector & GTZ)

# Challenges

- Lack of access to spare parts locally
- The EC regulation on the rule of origin is time taking and technologies are expensive (quality is the merit here)
- Low level of awareness regarding climate change and the need for renewable energy
- Low level of institutional capacity to support the promotion of renewable energy in the rural areas
- Limited capacity and lack of investment by the private sector  on the PV systems locally