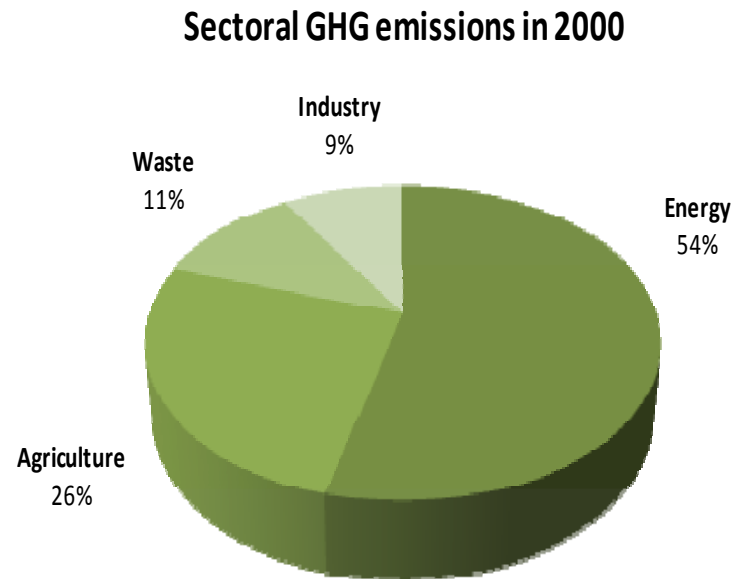


# Nationally Appropriate Mitigation Actions in Georgia Towards Green Growth with Hydropower



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# Georgia – some country facts



Source: Government of Georgia (2009)

- **Population: 4,63 million**
- **GDP: \$ 11,67 billion**
- **GDP per capita: \$ 4900**

Source: World Bank (2010)

## International Recognition

### **World Bank**

**4th in *Ease of Doing Business, 2010***

### **Heritage Foundation**

**4th in *Economic Freedom Index, 2010***

### **Bertelsmann Stiftung**

**4th in *Bertelsmann Transformation Index, 2010***

### **Transparency International**

**7th in the *Global Corruption Barometer, 2009***

# Georgia and its actions to mitigate climate change

1994

- Party to the UNFCCC

1999

- Kyoto Protocol was signed and INC presented to the UNFCCC

2009

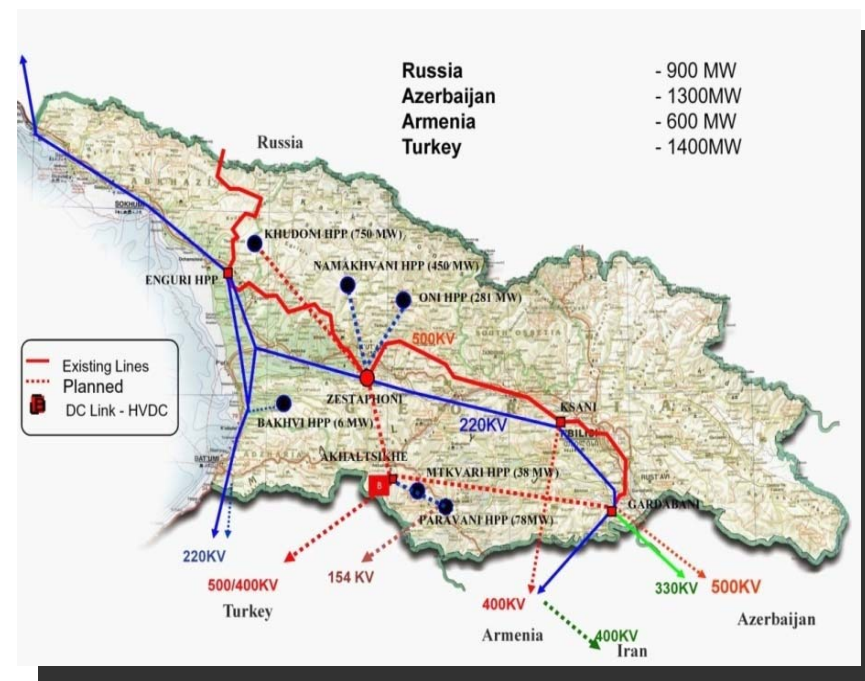
- SNC presented to the UNFCCC

2010

- Association with the Copenhagen Accord, communicating „to establish NAMAs in the context of sustainable development [...] and „to develop a low-carbon growth plan and low-carbon strategy, in particular through the use of renewable energy investments and global cooperation“ [...].

# Key characteristics of the energy sector

- 80-90% of electricity is already generated by hydropower
- Regional energy hub
- Reliable transit country
- Net exporter of renewable energy to neighboring countries
- Rapidly expandable energy markets
- Constant development of additional electricity export infrastructure



# Past and present activities to improve the performance of the national energy sector

## Relevant Projects at regional level

- **“Covenant of Mayors”** - already two cities, Tbilisi and Rustavi, are parties to the covenant
- **Support to Kyoto Protocol Implementation (SKPI)**
- **Support to Energy Market Integration and Sustainable Energy in the NIS (SEMISE)**
- **Energy Saving Initiative in the Building Sector in the Eastern European and Central Asian Countries (ESIB)**
- **Capacity building for sustainable energy regulation in Eastern Europe and Central Asia**

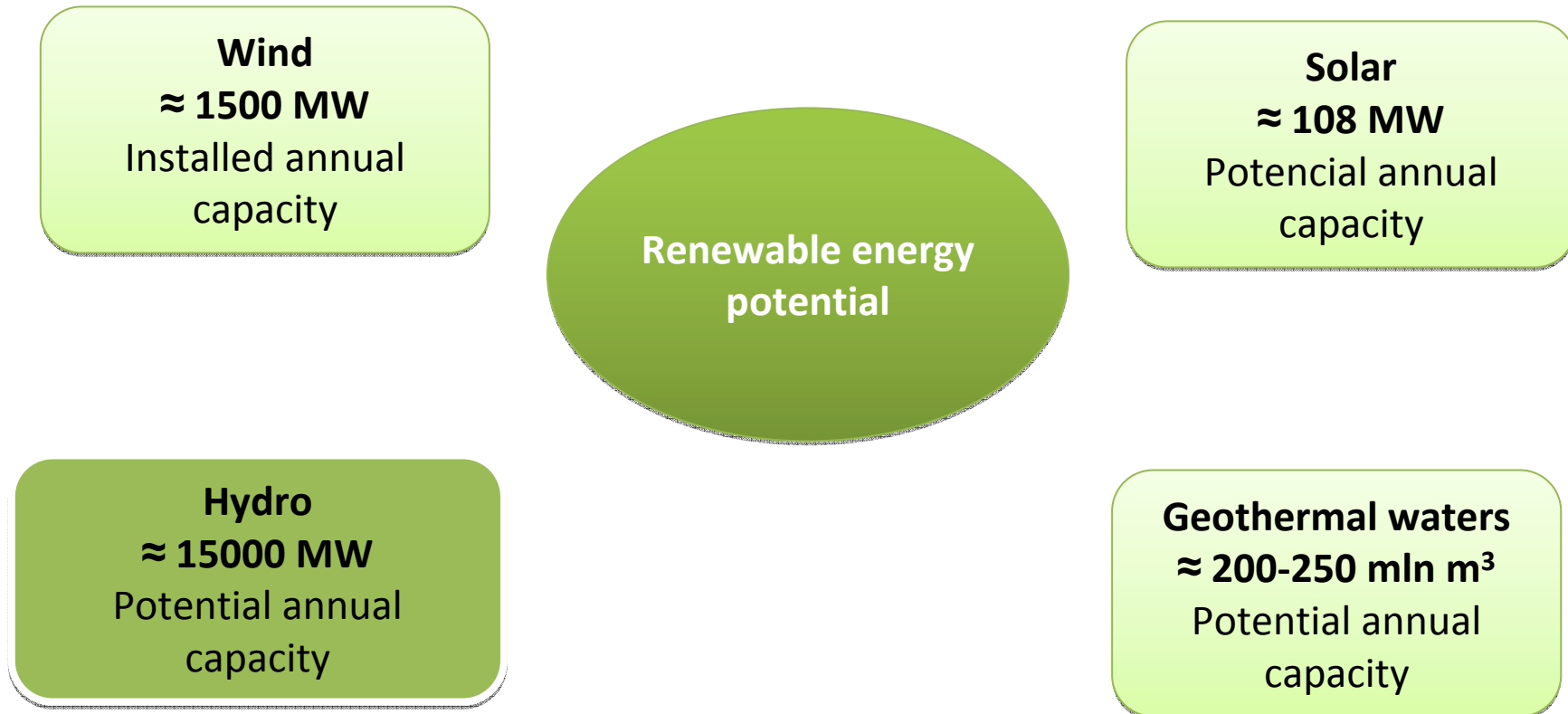
## Relevant Projects at local level

- **“Energy Bus”** - *serves as an energy information resources centre -co-financed by BP*
- **“NATELI- New Applied Technology Efficiency and Lighting Initiative – USAID** *supported activity designed to help large institutions reduce their energy consumption.*
- **“Georgia Rural Energy Program”** - *The USAID-sponsored program to build in-country capacity to increase the utilization of small hydropower resources and improve the energy efficiency potential in rural Georgia (completed)*
- **“GEEP”-Georgian Energy Efficiency Project .**
- **“Clean Energy for IDPs”** - *designed to secure energy supply and promote renewable energy (completed)*
- **“MODEL-CIUDAD”** (MODEL-“Management of Domains Related to Energy in Local Authorities”)- *promote energy efficiency in public buildings and offices.*

# Renewable energy generation in Georgia

## Untapping the potential of hydropower

Hydropower development is one of the priorities of the Government of Georgia



The goal is to move to **100%** hydro utilization and evolve into a major regional exporter of electricity

# A roadmap for clean power generation in Georgia

- **Deregulated power sector** with very impressive turnaround since 2004
- Distribution companies **privatized and operating at a profit**
- Huge potential for renewable energy development **32 TWh**
- **Strong government support** for developing hydropower resources
- **Significant private investment** in generation assets
- Increased **simplification of procedures** for greenfield development
- Favourable environment for power trading and **increasing export** markets

Besides participation in different policy platforms , organizations and programs with the EU, Georgia has a potential to be a significant contributor to reinforcing EU's energy security and achieving 20/20/20 goal via providing and delivering locally generated clean energy to European markets.



# Nationally Appropriate Mitigation Action in Georgia

## Clean energy production in the Kakheti region

- **Type of NAMA: Supported**
- **Sector: Energy**
- **Sub-sector: Renewable energy,**

**hydropower**

- **Gases covered: CO<sub>2</sub>**
- **Global warming potential: 1**

### Objective

*Construction of 10 hydro power plants in the Kakheti region of Eastern Georgia to reduce fossil fuel based electricity generation and related GHG emissions*

**Estimated GHG emission reduction  
(lifetime of the project is 25 years)**

**4,6 million tCO<sub>2</sub>**

or

**2,5 million tCO<sub>2</sub>**

**(at 6% discount rate)**



# Nationally Appropriate Mitigation Action in Georgia

## Clean energy production in the Kakheti region

### Co-benefits

#### Environmental

- Reduction of local air pollution
- Electricity released due to NAMA implementation will be exported in the neighboring countries (mainly in Turkey and possibly in Russia, Armenia and Azerbaijan)

#### Economic

- Local economic development will be stimulated
- Job generation due to construction and operation of plants
- Country balance of payment will be reduced

### MRV

- Guidelines for MRV of NAMAs are still to be developed
- In the meantime, MRV for the proposed NAMA will be based on CDM MRV requirements
- **Monitoring:**  
Based on AMS-ID and ACM0002
- **Reporting:**  
CDM Monitoring Report Form
- **Verification:**  
National entity/international accredited entity

# Nationally Appropriate Mitigation Actions in Georgia

Favorable investment framework provided by the national Government

## Regulatory framework

## Legislative framework

No tariff  
for new HPPs

No special fee  
for grid  
connection

Law on  
electricity and  
natural gas

Rules for power  
delivery

No license  
required for  
export

Free third party  
access to the  
grid

Rules for power  
consumption

Market rules

# Nationally Appropriate Mitigation Actions in Georgia

## Potential barriers to NAMA implementation

General country risk

Long payback periods – lack of local capital for solid and long-term investments

Local banking sector struggling to invest in highly capital intensive projects

Credit risk related to the power off-takers

Foreign exchange risk related to the power price

Construction in mountain areas is risky and connected components of transmission and distribution lines are costly to install

Machinery and equipment have to be imported – dependance on foreign companies if repairs are needed

# International support for NAMA development

**The Government of Georgia has undertaken significant actions to reduce GHG emissions of its energy sector and to enable the country to produce renewable energy, especially through hydropower**

**To develop and implement the Kakheti region NAMA, financial, technical and capacity building support is needed**

**Total cost of the NAMA: \$ 166 million  
Support needed: \$ 46 million (grant)**

**The Clean energy production in the Kakheti region NAMA is one example of many mitigation actions planned in different economic sectors of Georgia**



**Thank You!**

