



# Ministry of Energy and Natural Resources of Georgia

## Hydro Potential and Investment Opportunities in Georgia

### INTRODUCTION



#### Economy

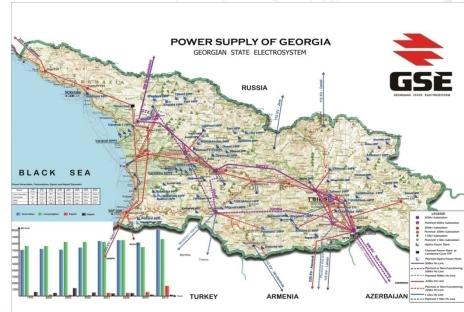
- Open and dynamically growing economy
- Minimum bureaucracy and liberal regulations
- Diversified economic growth

#### International Recognition

- World's Top Reformer country according to Ease of Doing Business (WB/IFC)
- Government's strong commitment for further reforming

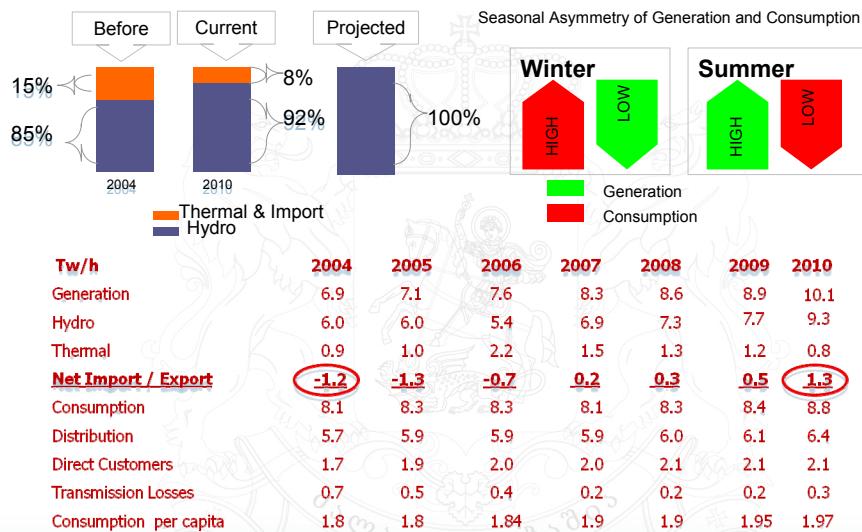
#### Regional Energy Hub

- Reliable transit country
- Net electricity exporter to all four neighboring countries
- Rapidly expandable energy markets
- Construction of additional electricity export infrastructure



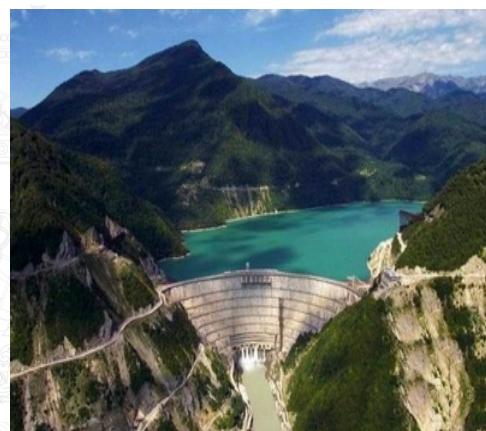


## ELECTRICITY BALANCE



## EXISTING HYDRO POTENTIAL

- Vast untapped hydro resources
- One of the top countries worldwide in water resources per capita.
- Total 26,000 rivers, including around 300 rivers significant in terms of energy production.
- Currently only 18% of total hydro potential is utilized.
- **HPP Greenfield potential at 20 TWh**



## INVESTMENT OPPORTUNITIES



- At present, 53 HPPs (each up to 100 MW) are offered to potential investors
- Investor is free to choose and apply for construction of up to 7 potential HPPs from the list
- However, investor is not limited with the list
- Terms and conditions of EOI for HPPs more than 100 MW capacity is subject of Government's resolution

## HPPs PRE FEASIBILITY STUDY INCLUDES



### Financials/Ratios

- Income Statement
- Cash Flow
- Balance Sheet
- NPV
- IRR

### Technical Projection

- HPPs Technical Data
- Hydrological Data
- Topographic Maps
- Other Necessary Data

## POTENTIAL MEDIUM & SMALL SIZE HYDRO PROJECTS



Nº	Project Name	River Name	Region	Projected Installed Capacity MW	Regulation Type
1	Magona HPP	Magona	Samegrelo	20.6	Reservoir
2	Legarde HPP	Magona	Samegrelo	20.0	Run-of-the-River
3	Medani HPP	Chanis' Tkali	Samegrelo	4.4	Run-of-the-River
4	Lebarde HPP I	Lebarde	Samegrelo	4.6	Run-of-the-River
5	Lebarde HPP II	Tekhuri	Samegrelo	4.2	Run-of-the-River
6	Lesukhe HPP	Tsachkheri	Samegrelo	5.7	Run-of-the-River
7	Tekhuri 1-6 HPP	Tekhuri	Samegrelo	19.2	Run-of-the-River
8	Nakra HPP I	Nakra	Svaneti	14.8	Run-of-the-River
9	Nakra HPP	Nakra	Svaneti	20.4	Run-of-the-River
10	Khumpreri HPP	Khumpreri	Svaneti	16.4	Run-of-the-River
11	Kheledula HPP 1	Kheledula	Svaneti	18.8	Run-of-the-River
12	Kheledula HPP 2	Kheledula	Svaneti	21.6	Run-of-the-River
13	Kheledula HPP 3	Kheledula	Svaneti	44.3	Run-of-the-River
14	Stori HPP 1	Stori	Kakheti	14.0	Run-of-the-River
15	Cheshura HPP	Cheshura	Racha	7.5	Run-of-the-River
16	Samitsi HPP	Jejora	Racha	24.3	Reservoir
17	Jejora HPP	Jejora	Racha	15.8	Reservoir
18	Chala HPP	Kvirla	Inereti	9.1	Run-of-the-River
19	Jri HPP	Kvirla	Inereti	9.2	Run-of-the-River
20	Boriti HPP	Dumala	Inereti	6.4	Run-of-the-River
21	Tsabulari I (sairme) HPP	Tsabularistskali	Inereti	7.7	Run-of-the-River
22	Tsabulari II HPP	Tsablaristskali	Inereti	12.0	Run-of-the-River
23	Khan-Tsabulari HPP III	Khan/Tsablaristskali	Inereti	8.3	Run-of-the-River
24	Khou VII HPP	Khouistskali	Inereti	6.4	Run-of-the-River
25	Zestafoni HPP I	Kvirla	Inereti	10.0	Run-of-the-River
26	Zestafoni HPP II	Kvirla	Inereti	11.9	Run-of-the-River
27	Zestafoni HPP III	Kvirla	Inereti	15.9	Run-of-the-River
28	Zestafoni HPP IV	Kvirla	Inereti	15.9	Run-of-the-River

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## POTENTIAL MEDIUM & SMALL SIZE HYDRO PROJECTS



Nº	Project Name	River Name	Region	Projected Installed Capacity MW	Regulation Type
29	Gubazeuli HPP VI	Gubazeuli	Guria	3.1	Run-of-the-River
30	Bakhvi HPP 1	Bakhvis' Tkali	Guria	15.0	Reservoir
31	Bakhvi HPP 2	Bakhvis' Tkali	Guria	20.0	Run-of-the-River
32	Merisi HPP	Akavreti	Achara	11.5	Run-of-the-River
33	Iori HPP	Iori	Mtskheta-Mtianeti	9.7	Run-of-the-River
34	Dzegvi HPP	Mtkvari	Mtskheta-Mtianeti	10.0	Run-of-the-River
35	Sankuristskali HPP I	Sankuris' Tkali	Kakheti	4.9	Run-of-the-River
36	Sankuristskali HPP II	Sankuris' Tkali	Kakheti	22.6	Run-of-the-River
37	Avani HPP	Avanis Khevi	Kakheti	4.6	Run-of-the-River
38	Duruj HPP	Duruj	Kakheti	1.7	Run-of-the-River
39	Uroveli HPP	Uroveli	Samchche-Javakheti	5.0	Run-of-the-River
40	Stori HPP 2	Stori	Kakheti	11.4	Run-of-the-River
41	Ksani HPP 1	Ksani	Mtskheta-Mtianeti	4.2	Run-of-the-River
42	Ksani HPP 2	Ksani	Mtskheta-Mtianeti	2.1	Run-of-the-River
43	Ksani HPP 3	Ksani	Mtskheta-Mtianeti	3.2	Run-of-the-River
44	Ksani HPP 4	Ksani	Mtskheta-Mtianeti	3.6	Run-of-the-River
45	Ksani HPP 5	Ksani	Mtskheta-Mtianeti	6.0	Run-of-the-River
46	Moredia HPP	Bjohis Khevi	Inereti	4.6	Run-of-the-River
47	Bakhvi HPP 4	Bakhvis' Tkali	Guria	1.0	Run-of-the-River
48	Bakhvi HPP 5	Bakhvis' Tkali	Guria	2.0	Run-of-the-River
49	Stori HPP 3	Stori	Kakheti	13.7	Run-of-the-River
50	Stori HPP	Stori	Kakheti	11.8	Run-of-the-River
51	Janauli 1 HPP	Janauli	Racha-Lechkhumi	1.1	Run-of-the-River
52	Janauli 2 HPP	Janauli	Racha-Lechkhumi	6.6	Run-of-the-River
53	Janauli 3 HPP	Janauli	Racha-Lechkhumi	13.0	Run-of-the-River

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## EXPORT OPPORTUNITIES



- Georgia's hydro potential can be used to offset part of the growing demand in Turkey, Russia, Azerbaijan, Armenia, Iran, and Europe
- Over the last three decades Turkish demand for electricity has grown at an average rate of 7.6% per annum
- By 2013 Turkey is expected to be a net importer of electricity
- The peak demand season (summer) in many of neighboring countries occurs in Georgia's peak supply season – when river flows are at their highest
- Increased profits from carbon credits sell

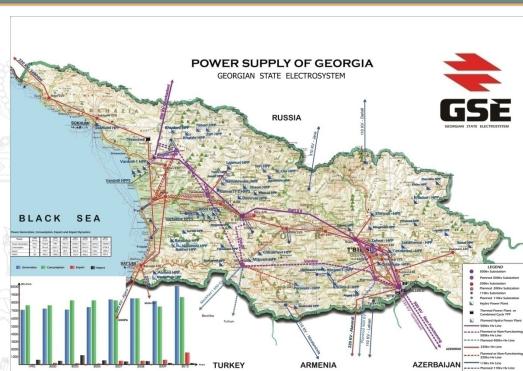
## INFRASTRUCTURE WITH NEIGHBORING COUNTRIES



- Georgian power grid is connected to the grids of all of neighboring countries
- Construction of new high voltage 500/400 KV line to Turkey will be finished by 2012
- Construction of additional interconnection with Turkey is under negotiation

### Existing Transmission lines

- Russia 1155 MW



### Existing & Planned Transmission Lines

- Turkey 2000 MW
- Armenia 835 MW
- Azerbaijan 1150 MW

## EXPORT ORIENTED PROJECTS



- **28 HPP on-going Projects**

- Total installed capacity of 1500 MW and annual generation up to 5 TWH
- Projected investment USD 2.5 bln.
- Construction works to be finished in 2014-2017

Major companies operating in Georgia

- NUROL
- SK Engineering
- Anadolu
- AĞAOĞLU
- Trans Electrica Ltd.
- Energo Pro (Czech Reo)
- EPC (China)



- **6 new HPPs construction were launched in 2009-2010**
- **8 new Large HPPs construction will be launched in 2011**

## EASY REGULATORY FRAMEWORK



- Greenfield projects based on Build-Own-Operate (BOO) principle
- **Totally deregulated all new constructions**
  - No tariff is set for the newly built HPPs - investor is free to choose the market and the price
  - No special fee for the grid connection
  - Free third-party access to the grid
  - No license required for export and no tariff set
  - Guaranteed purchase offered by GoG for three months
  - Priority access for transmission to Turkey (Long term contract with TSO) with new HPPs

## PERMITS AND LICENSES



### Construction Permit

Ministry of Economy & Sustainable Development

Issued **within 60 working days**

### Generation License

GNEWRC

Above 13MW\*

Issued **within 30 working days**

\* HPPs with less than 13 MW do not require Generation License

## INVESTMENT SUPPORTING FACTORS



- Liberal Tax Legislation
  - Only 6 taxes effective in Georgia
  - Low and flat tax rates
  - Internationally accepted methods and practices
  - Minimum bureaucracy
  - Light administrative burden to taxpayers
- Georgia has in force 30 OECD model Double Taxation Avoidance Treaties
- Additional 10 Treaties are in line for official signature or ratification

## INVESTMENT ADVANTAGES



- Deregulated power sector with very impressive turnaround since 2004
- Distribution companies privatized and operating at a profit
- Significant existing private investment in generation assets
- GoG's strong support and commitment aimed at developing hydropower resources
- Simplified Procedures
- Diversified & Expanding export markets including EU

**Thank You!**

