

# EU RES Industry Workshop: Promotion of Investment in the INOGATE countries

**Tuesday, 6 March 2012  
Brussels, Belgium**

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"ANELIK BANK" LTD

**“Anelik Bank” CJSC**

**Republic of Armenia**



# ARMENIA BEING A MOUNTENIOUSE COUNTRY...



- ▶ Republic of Armenia (RA) has significant renewable energy resources, utilization of which will make possible to cover 30% of national electricity demand by 2025
- ▶ Renewable energy is declared as one of priorities in development of economy of Armenia.
- ▶ All electricity generated from renewables shall be mandatory purchased pursuant to the Law with fixed tariff during 15 years from the operation starts.
- ▶ Despite not having natural resources of oil and gas Armenia is energy exporting country.

## HAS A BIG POTENTIAL FOR RES

- ▶ **94 operating SHPPs**
- ▶ **65 SHPPs in stage of construction**
- ▶ **3 SHPPs have obtained CDM certificate**
  
- ▶ **Total output in 2010 – 385 million KW/h**
- ▶ **5% of internal demand is covered by SHPPs (135 MW)**
- ▶ **Target - about 10% by the year 2020**

## Statement of facts as of 2011

### RE Funding institutions:

- ▶ **IFC** – 15 million USA Dollars,
- ▶ **WB** - 5 million USA Dollars,
- ▶ **EBRD** - 7 million USA Dollars,
- ▶ **Cafesjian Foundation** through Cascade Credit - 3 million USA Dollars,
- ▶ **EBRD EE/RE** program through Anelik Bank CJSC – 3 million USA Dollars, US\$; market interest APR, 5 years tenor;
- ▶ **German-Armenian Fund** from KfW -16 partner PFI, term 8-12 years
  - ✓ (GAF-RE I) - Euro 6 million
  - ✓ (GAF-RE II) - Euro 18 million

## Statement of facts as of 2011

- ▶ The funds are being utilized with difficulties
- ▶ Only few banks out of 16 are active participants
- ▶ The SHPPs have difficulties in different stages of project implementation
- ▶ Overdue loan repayments



# The Characteristics of RE Investments

- ▶ High up-front costs and comparably low operational costs
- ▶ Lack of experience of investors and lenders increases transaction costs.
- ▶ Long grace period necessary until revenues from sold electricity receive.
- ▶ The capital intensiveness implies a high sensitivity to capital cost financing for this kind of projects
- ▶ Business mainly has expressive seasonality

## **Anelik Bank is:**

- ▶ One of the first banks in RA started financing the RE projects since 1998
- ▶ One of the leaders in RA banking system financing the RE projects
- ▶ Financed 6 SHPPs construction and equipment modernization projects
- ▶ Total Capacity – 14.8MwT
- ▶ The only bank Implemented CDM Project for SHPP

# The first Plant

## Started production on November 15, 2009

### The Projected Main indices of Cascade of Client 1, 2, 3

The name of SHPP	Height of sea level	Power' Capacity	Annual production of Energy
Client- 1	2,240 meters	2.4 MWT	14,000,000 KWT
Client- 2	1,950 meters	4.37 MWT	18,000,000 KWT
Client- 3	1,650 meters	4.87 MWT	22,000,000 KWT

**Granted Amount – 450,000Euro**





## Difficulties

- ▶ The initial costs and credits associated with the proposed SHPPs are underestimated
- ▶ The feasibility study for existing SHPPs are not thorough and comprehensive
- ▶ PFIs do not have methodology of project financing analyses of SHPPs
- ▶ Lack of experience of SHPPs owners and management
- ▶ Lack of forecasts based on seasonality of business. There are no sensitivity Analyses
- ▶ Ineffective evaluation of projects efficiency

## How to overcome difficulties

- ▶ Introduction of International Sound practices
- ▶ Well adapted training and coaching technologies combining class-room with intensive on-the job training both for PFI and SHPPs owners and management.
- ▶ Development of RE loan related procedures, Standardizing all procedures: starting from application, finishing with monitoring
- ▶ Tailor-made Analytical Model development for SHPP lending analyses

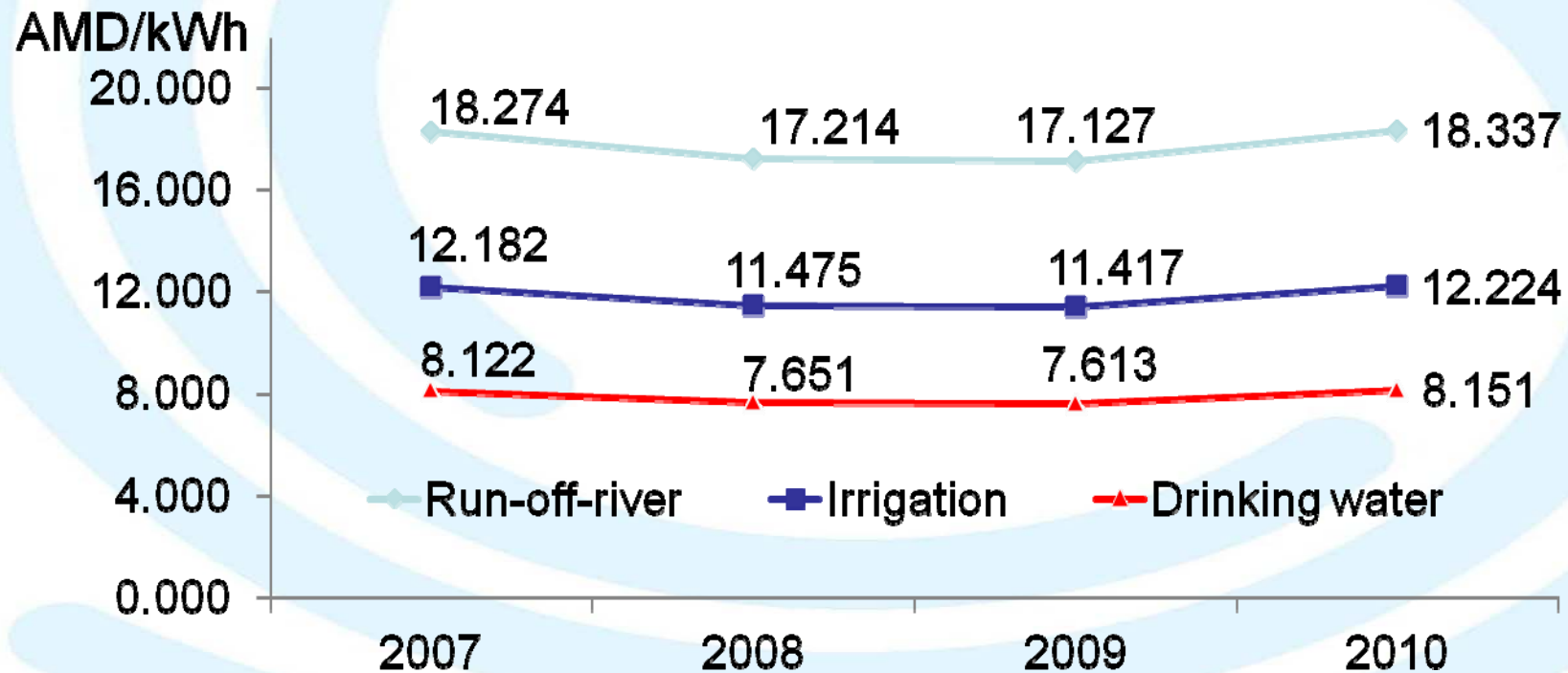
**THANK YOU  
FOR YOUR ATTENTION !**

## Restricted role for RA banks

- **Banks unwilling to fund Long term SHPPs from own sources**
- **Banks unable to make appropriate technical analyses, feasibility studies and financial justifications**

# SHPP DEVELOPMENT

- ✓ 15 years guaranteed purchase of 100% of generated energy
- ✓ Preferential feed-in tariff, reviewed annually





# Legislation

- ✓ Law on Energy, 1997
  - ✓ 15 years guaranteed purchase of 100% of generated energy from RE
- ✓ Law on Energy Saving and Renewable Energy, 2004 Г.
- ✓ Preferential feed-in tariff, PSRC № 207N, May 4, 2007
  - ✓ Annual review based on inflation and USD/AMD exchange rate

$$T = T_1 \left[ K_1 \frac{PI}{100} + K_2 \frac{ER_1}{ER_2} + (1 - K_1 - K_2) \right]$$

- ✓ Customs payment deferment for turbines

# CDM PROJECTS IN ARMENIA

✓ Registered by CDM Executive Board

N	Project name	GHG reduction, tCO2/annum	Installed capacity, MW	Annual generation, GWH/annum
1	Nubarashen Landfill Project	130,000	1.20	10
2	Lusakert Biogas Plant	62,832	0.85	7
3	Yeghegis SHPP	3,166	3.16	7.3
4	Argichi SHPP	13,331	8.56	30.5
5	Jradzor SHPP	8,734	5.93	20

# CDM PROJECTS IN ARMENIA

✓ **Approved by DNA – under validation**

N	Project name	GHG reduction, tCO <sub>2</sub> /annum	Installed capacity, MW	Annual generation, GWH/annum
1	Eghvard-2 SHPP	8,741	9.0	18.21
2	Hankavan-1 SHPP	1,225	1.2	2.71
3	Energocor Bundled SHPP Project	9,369	6.81	30.18
4	Saravan and Her-Her SHPPs	5,321	6.04	17.1
5	Amberd SHPP Cascade	8,274	11.54	29.68

# CDM PROJECTS IN ARMENIA

## ✓ Projects under development – PDD level

N	Project name	GHG reduction, tCO2/annum	Installed capacity, MW	Annual generation, GWH/annum
1	Mika Cement CDM Project	114,793	-	-
2	Cascade Credit Bundled SHPP Project	30,137	14.8	69.5
3	Gegharot SHPP	3,395	2.49	10.61
4	Afforestation/reforestation Project in Lori Region	8,000	-	-