

# Project: Greening Public Buildings in Azerbaijan: Promotion of Energy Efficient Materials and Technologies

**Project Aim:** The aim of the project is to promote the concept of green (energy efficient) public buildings in Azerbaijan through:

-The implementation of pilot projects in public schools. The basic idea is to apply renewable energy sources (RES) and energy efficiency (EE) technologies and materials in order to decrease the building's energy consumption and increase RES penetration and demonstrate to its users and visitors that a green building not only drastically reduces its expenses for energy but also improves the quality of its indoor living conditions.

-Training and dissemination activities. Those activities will include:

a) Training and knowhow transfer for installers and engineers through the supervision of the installation procedure of the systems.

b) Public awareness raising and provision of material on renewable energy technologies and energy efficiency in buildings for school classes

**Project Description:** The project is implemented by the Centre of Renewable Energy Sources and Saving (CRES) and the State Agency of Alternative and Renewable Energy Sources of Republic of Azerbaijan. The project technical goals are:

- The deployment of 25 kWp grid connected Photovoltaic Systems at the buildings of the boarding school in Turcan

- The installation of energy efficient lighting systems at the building of the boarding school in Turcan and at the 239<sup>th</sup> high school in Baku using energy efficient bulbs and LEDs.

- The installation of 6 stand-alone photovoltaic lighting systems at the boarding school in Turcan.

- The installation of a 5 kWp grid connected PV system supported by a UPS system at the 239<sup>th</sup> high school in Baku.

- The installation of a solar thermal thermosyphonic system for hot water at the building of the 239<sup>th</sup> high school in Baku.

**Budget:** The total budget of the project is €182908 of which CRES' budget is €90186 and State Agency of Alternative and Renewable Energy Sources is €92722. Financing is provided by the Black Sea Economic Cooperation Hellenic Development Fund BSEC -HDF 46.36%, State of Azerbaijan grant 50.69% and CRES own contribution 2.95%

## Project brief timeline

- Discussions on the project started in 2010
- The contract was signed in March 2012
- A technical visit of CRES staff to Azerbaijan took place in July 2012
- The technical studies and the final design of the systems were completed in Autumn 2012
- The equipment procurement tenders took place in autumn 2012 and the equipment was sent to Azerbaijan in January 2013
- The systems were installed and successful testing operation of the systems occurred during the second technical visit of CRES staff to Azerbaijan in April 2013
- Inauguration of the systems is expected took place on April 29, 2013.

## Project development

The initial talks for joint project development in the RES and energy efficiency area has been started at late 2009 with the visit of the Director of CRES Division of Development Programmes Dr. Dimitris Papastefanakis to Baku in order to meet the staff members of the newly established State Agency of Alternative and Renewable Energy Sources of the Republic of Azerbaijan.

The contact between CRES and State Agency on ARES has been done by the Hellenic Embassy and especially Ambassador Mr. Ioannis Metaxas, who supported the collaboration between the two institutes. In the meeting, it was decided to seek a project implementation under the Black Sea Economic Cooperation Hellenic Development Fund and the Azeri State funding.

Keeping into account that a lot of draft material circulated between the experts of CRES and State Agency on ARES regarding the type of project implemented (PVs, building envelope refurbishment, solar thermal applications, etc.), the possible sites available (schools, municipal buildings), the budget structure and a technical visit were set for the summer of 2010, where CRES expert Mr. Christos Nyctis inspected different site locations and suggested its recommendations to the State Agency ARES experts the type of project that could be implemented.

Among the different scenarios identified, the activities concerning the installation of PV systems on public schools buildings, the installation of efficient LED lighting and UPS storage systems, the installation of stand-alone photovoltaic lighting systems and the solar thermal themosyphonic system for hot water were selected to be the mix of actions which the project would implement in two different Schools in the wider Baku area. The budget of the project, contributed from both the Hellenic and Azeri side was also agreed.

However, due to the economic crisis that erupted in 2010, the project budget had to be re-evaluated. The ongoing talks with the Azeri side until the new budget level was decided took almost two years involving change of the contact person from the State Agency on ARES, which was responsible for the project and more time needed for the new contact person to become fully familiarized with the project.

Finally, in May 2013, with the constant support of the Hellenic Embassy to Azerbaijan and especially the contribution of the Office for Economic and Commercial Affairs and its Head Ms Alia Papanastasiou, who kept all communication bridges open and arranged all important meetings, the project contract between the Black Sea Economic Cooperation Hellenic Development Fund, CRES and State Agency on ARES was signed and since then the project ran uninterrupted. CRES experts Christos Nyctis and George Kyriakarakos visited Baku two times more. The first time all data needed for the design study of the systems were collected on site while the second time the final installations of the systems in collaboration with Azeri working crews were executed.

The equipment sent from Greece to Azerbaijan included:

- Aluminium structure bases for PV panels
- PV inverters
- DC, AC panels, cables, fittings, electrological material
- Solar thermosyphonic system
- LED lamps
- UPS systems

The Azeri side offered the PV panels required for the project. Photos from the systems installation follow:

