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ener2i Innovation Voucher Georgia2015

IV_GE_2015_15 “Energy Efficient Construction Material”

Objective

The main objective of the project is to produce an EE insulating construction material (high efficient porous slate blocks) using existing innovative high temperature furnace.

Expected outcomes

- Innovative thermal insulating building material (slate block) will be tested;
- A certain amount of porous high efficient blocks will be produced;
- Building weight constructed with slate blocks will be reduced by 15-20%;
- Heat loss from walls will be reduced by two (in case of the slate blocks);
- Considerable reduction of construction costs;
- Savings of construction/building materials;
- Increase demand for slate blocks in the local market;
- Access to the international market (Possibility of export when production increases);
- Increased income/profit of the company;
- Additional benefit for the scientific team;

Company description

LTD “ENERGY SYSTEMS” was established in 2013. The company has experience in modern technologies of solid fuel combustion, producing technology of insulating construction materials, effective dust catching filters for the asphalt-concrete plants.

Research Partner

Georgian Technical University, Research Centre of Thermal Physics;

Company contact data

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IV_GE_2015_24 Integrated innovative solution of the problems of energy efficiency at construction and repairing of the buildings, with the use of environmentally pure insulating means based on local raw materials.

Objective

The main objective of the project is to work on the innovative proposal, technical and economic justification and business plan for plant construction for building materials from clay shale and basalt fiber. The clay-shale, which occurs only in the Durudji riverbed (Eastern Georgia) exceeds 30 million m³. According to preliminary studies from these raw materials, 12 kinds of heat and soundproof building materials or their ingredients for export can be produced.

Expected outcomes

- Systematization of preliminary studies data and their distribution; as well as the analysis of research results brought from Ukraine;
- Formation of ToR and of technical passport of innovative proposal;
- Development of the technical-economic ground;
- Creation of a business plan;

Company description

LTD "Imedi" was established in 2013. The company is engaged in consulting implementation of innovative building materials that enhance energy efficiency. Currently, the company is working on commercialization of part of its intellectual property in the area of Renewable Energy sources. The company has developed several new technologies for production of construction materials from clay shale and basalt rock.

Research Partner

- SRO 'Nanodugabi' - Georgian Technical University;
- Association 'European Studies for Innovative Development of Georgia';
- SRI Constriction Materials;
- Research Institute Glass-plastics and Fiber.

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IV_GE_2015_33 Energy Saver Hybrid-drying Apparatus of Foodstuff

Objective

The main objectives of the project are

- Developing a mobile and operated ecologically clean, energy saver drying apparatus;
- Developing and testing of 2 prototypes
- Testing of drying apparatus with solar energy without decreasing performance of drying process

Expected outcomes

- Examination of technical characteristic and testing of drying methods.
- Carrying out research on drying innovation hybrid technology with infrared beams.
- Modification of infrared thermo films and convectional spread of hot air, warmed by solar energy.
- Production of drying device, implementing new and innovative technologies, leading to a mass production
- Integration of feedback and lessons learned to the non-stopping research process.

Company description

“GERKY” LTD was founded in 2015. Employees are specialists with higher technical education and experience on enterprise activity. One of the aims of the company is to introduce innovative technologies particularly in agricultural development. The company works on creation of energy savers, hybrid-drying apparatus of foodstuff.

Research Partner

Georgian Technical University - Faculty of Mechanical Engineering Manufacture Technology.

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IV_GE_2015_37 Grid-tie Solar Photovoltaic Systems for Tbilisi Street Lighting

Objectives

- Gaining know-how and enhancing the qualification of Georgian specialists working on Solar PV Systems through the study visit to Czech Republic (in accordance with EU standards)
- Designing a high power grid-tie solar PV system for Tbilisi street lighting (in accordance with European standards); as a next step installation of the system is planned. System's approximate peak power will be around 500kW;

Expected outcomes

- Being the first large grid-tie solar project of a kind to be implemented in Georgia;
- Installation of solar modules in Tbilisi, at the bare, rocky slopes, not ideal for recreational areas and urbanization. Solar modules stretched along the slope will improve the look of the landscape. Reducing soil erosion and rock falling process;
- Expert's newly acquired know-how will be used to design, install and maintain grid-tie solar PV systems. Becoming an important milestone of the project as well as for the implementation of similar projects in the future.

Company description

'Sun House' Ltd was established in November 2011. The company's fields of activity cover research and implementation of renewable energy projects. Since its establishment, the company has implemented up to 400 off-grids solar photovoltaic projects. In recent years Sun House has cooperated with different foreign companies such as Sunny Watt and Glomex from Czech Republic.

Research Partner

Brno University of Technology; the "Photon Energy" Company in Czech Republic;

Company contact data

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IV_GE_2015_38 “Pellets From Waste Biomass”

Objective

Turning waste production residues i.e. biomass of cones into renewable, carbon-neutral, eco-friendly fuel, pellets. In addition, providing a solution to waste disposal opening new possibilities for large scale production of alternative, carbon-neutral, renewable biofuel in Georgia.

There is a theoretical and practical basis for production of alternative, renewable, eco-friendly biofuel, diversifying energy supply, reducing greenhouse gases emissions, and ultimately contributing to the strengthening of energy independence of Georgia.

Expected outcomes

- Implementation of the project making manufacturing process more energy efficient, waste-free, environmentally friendly and starting the production of biomass pellets;
- Using biomass waste as an alternative, renewable, environmentally friendly fuel;
- Production of alternative, renewable, eco-friendly bio-fuel product which is in steady demand on both domestic and export markets;
- Saving 120 -150 tons of CO₂ emission in the atmosphere by replacing fossil fuel with biomass pellets;

Company description

Goni Ltd. was established in 1996; It has its headquarters in Tbilisi, and regional branches in Borjomi and Ambrolauri municipalities. Goni Ltd. trades with plants and seeds, mainly exporting seeds of coniferous trees to the EU and USA.

Research Partner

Tbilisi State University, Ilia state University, Graz University of Technology – Austria.

Company contact data

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IV_GE_2015_39 Solar Energy Parabolic Steam Generator

Objective

The main objective of the project is to launch a serial production of small power (1-5 kW) concentrated solar energy parabolic steam generators at the facilities of the company.

Expected outcomes

- Production of prototype model, develop by engineers from the company's design department and professors from GTU. Currently preparation of design drawings of solar tracking and automated management systems is ongoing.
- Reducing temperature of solar panels. Temperature of water heated by of solar panels that are commonly used in Georgia is approximately 40-50 C°. Therefore the use of such panels can lower the consumption. This innovation will significantly increase area of usage of solar energy.
- Developing technical passport of steam generator, promoting activities and launching the product into Georgian market.

Company description

'New Technology Center' LLC represents a corporate rebranding of 'Wood Service' LTD founded in 1999 in Tbilisi, Georgia. Rebranding started in 2014 and will be complete in 2015. 'New Technology Center' LLC maintains a leading position on Caucasus market of sustainable architecture, engineering, supervision and project management, as well as construction services for all types of residential, commercial, public or industrial building projects.

Research Partner

Georgian Technical University - Faculty of Architecture, Urban Planning & design;

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