PROJECT PRESENTATION

1.	**Program Title**	P.O. RO-MD 2014-2020
2.	**Call Title**	
3.	**Project Title**	Research and promotion of highly efficient energy generation through trigeneration by using solar renewable resources for getting electricity, heat and cold and purchasing of equipment
4.	**Project ID**	P1.2 ENI-2SOFT/1.2/66
5.	**Project coordinator/ manager**	Prof. Gavrilas M. – Partener - IEEIA
6.	**Consortium (if any)**	Institute of Power Engineering of Moldova (IPEM) Iasi County Council (ICC)
7.	**Project budget – Total value (Lei/Euro)**	767115 Lei / 153423 Euro
8.	**Project budget – TUIASI value (Lei/Euro)**	49480 Lei / 9896,00 Euro
9.	**Implementation period**	11 December, 2020 - 31 December, 2022
10.	**Main objective/s**	The general objective is to intensify and deepen sustainable economic, social and environmental cooperation in the cross-border area between Romania and the Republic of Moldova by developing a system for generating electricity, hot water and cold with photovoltaic panels through trigeneration from solar

		renewable energy source. The overall objective is to develop a high efficiency PV to generate electricity by increasing the panels efficiency by extracting heat by tubular capillary mats and circulating fluid and using it for getting domestic hot water, heating and cooling building. This is a new approach to the problem that will generate inventions during the project implementation on both the whole system and its elements. The theoretical and experimental research will generate new technological ideas and the research carried out by the joint staff of Moldovan and Romanian specialists, will facilitate cooperation in the field of research and innovation contributing to the economic development of the cross-border regions. The project aims to develop and research a pilot photovoltaic and thermal (PVT) system to be installed on the ”Bucuria” balneary resort building in Vadul lui Voda, Chisinau (RM) (where patients with cardiovascular diseases are treated and belonging to National Confederation of Trade Unions) and on the Raducaneni (RO) Medico-Social Unit building (where elderly and lonely patients are treating and living and belonging Iasi County Council).
11.	**Project activity/es**	**1. Project management** 1.1 Beneficiaries’ joint working plan. Each Beneficiary will develop own working plan that will be component part of the Beneficiaries’ joint working plan. It will assure project fulfilling step-by step. 1.2 Self-assessment team members files reporting. Daily every team member will report to the Project manager orally and once in 4-weeks in writing about the results obtained and deviations from the plan for his (her) self-assessment and the appreciation of the project's implementation phase. Each Beneficiary will keep a file with team members reports. This will ensure an efficient and ongoing communication between partners. Once every 2 weeks the team and project self-evaluation will be done. 1.3 Intermediate reporting. Intermediate reporting will include the description of intermediate results of ongoing project. **2. Information and Communication plan**

		2.1 Project website development and maintenance. A project website will be developed and published. It will contain general information about project, the necessity and advantages of renewable energy, in particular of solar energy, existing technology of usage, project ongoing, obtained results, permanent communication with followers. Website will publish articles written by the team members and volunteers. 2.2 Project launch and project advantages demonstration. Meetings will be with undergraduate students, lecturers and postgraduate students at universities, researchers in RM and RO. Project launch will take place at Power Institute of Academy of Sciences from Moldova being invited researchers from Academy of Sciences from Moldova, students and staff from universities. Practical presentation will be fulfilled at the installation site. Students and lecturers transportation will be provided. Media will participate. 2.3 Promotion in media. Three press release will be issued in the local/regional and country media describing project supported by EU and importance of renewable energy usage, obtained intermediary and final results. Three interviews on radio, TV or newspapers will be published. **3. Project development and research** 3.1 Patent applications will be filed with AGEPI in Moldova. Patent applications on new solution of PVT systems will be filed with AGEPI in Moldova. 3.2 Dissemination of gained knowledge and experience to undergraduate students, master students, PhD students and engineers. 3.3 Participation in a scientific conference with a report. Presentation of research results at a scientific conference for information exchange with colleagues in the field. 3.4 Participation at the invention exhibitions. Participation at the international invention exhibition to display the achievements within the project. 3.5 Acquisition of Computing system and equipment necessary for project implementation. Two computing systems will be purchased: one by Institute of Power Engineering of Moldova, one by Technical University ”Gheorghe Asachi” of Iasi. Acquisition of equipment is necessary for project implementation. It includes acquisition of tools,

		measurement instruments and other. They are as components of the developing systems, as well as, materials like pipes, steel and aluminum profiles that will be used for the structure. 3.6 Acquisition of equipment necessary for the project implementation. Acquisition of equipment is necessary for project implementation. It includes acquisition of tools, measurement instruments and other. They are as components of the developing systems, as well as, materials like pipes, steel and aluminum profiles that will be used for the structure. 3.7 Demonstration of the possibility of air cooling in buildings with hot water obtained from PVT panels. Demonstration of the possibility of air cooling in buildings with hot water obtained from PVT panels. During implementation of the project will be fulfilled experiments to get it by usage of absorption chiller or other means. 3.8 5 patent applications filed with AGEPI in Moldova. During the implementation of the proposed project will be found new technical solutions, which will be registered as patent applications for invention. 3.9 Report at a scientific conference. Presentation of research results at a scientific conference for information exchange with colleagues in the field. 3.10 Dissemination of the gained knowledge. Dissemination of gained knowledge and experience to undergraduate students, master students, PhD students and engineers will be organized at Bucuria Sind, where they will learn the real functioning system with all needed explanations. **4. Trigeneration system** 4.1 Installation of the trigeneration system on the sanatorium "Bucuria Sind" roof (Republic of Moldova) and on Raducaneni socio-medical unit roof (Romania). 4.2 Testing both trigeneration systems. Both sets of trigeneration systems (from RM and Romania) will be tested at the same time. The amount of electricity and heat generated and consumed, the amount of domestic water generated and the amount of generated cold in different seasons will be measured daily. The experimental data obtained will be used for the overall feature of the PV panel trigeneration system.

12.	**Project result/s**	1. A system for trigeneration of electricity, hot water and cold air by using solar resources for research in RM 2. A system for trigeneration of electricity, hot water and cold by using solar resources for testing in Romania 3. 58 PV panels equipped with tubular capillary mats (42 - in RM and 16- in Romania) 4. Demonstration of the possibility of air cooling in buildings with hot water obtained from PVT panels 5. Patent applications filed with AGEPI in Moldova 6. Dissemination of gained knowledge and experience to undergraduate students, master students, PhD students and engineers 7. Participation in a scientific conference with a report
13.	**Project website (if any)**	*https://2soft.energetica.md/en*

14.	**Project photo/s (if any)**