

BEM Micro-credential



BEM content (for all partners)	Title/name of the credential	Photovoltaic panel installer		
	Function of the micro-credentials / purpose	The purpose of the microcredit program is to train participants to independently perform tasks related to the installation, maintenance and dismantling of photovoltaic panels.		
	Possible target groups	unemployed, people who want to retrain.		
	Branch/sector of application	Production of electricity		
	Fields of application / work environment	residential, business, industrial, public space, sports facilities		
	Typical work/professional tasks	<ul style="list-style-type: none"> • Installation, maintenance and dismantling of photovoltaic systems according to technical documentation. • Assembly and disassembly of the photovoltaic panel support structure, • Selection of equipment (cables, connectors, charging regulators, solar accumulators/batteries, invertors, DC/AC protection) 		
	Learning outcomes (personal and job related)	<p><i>Knowledge</i></p> <ul style="list-style-type: none"> • defines the term photovoltaic panel • knows the electrical characteristics of the photovoltaic panel; • specifies the division of photovoltaic systems according to the method of supplying consumers; • explain the influence of shading on the output power of the inverter and the production of electricity; • states the effects of panel aging; • defines the concept of string and central inverter; • lists different types of supporting structures; • defines the switching and protective equipment of photovoltaic systems; • lists the characteristics of AC and DC cables in photovoltaic installations • explains the basic procedures of mechanical assembly of elements and photovoltaic systems; • explains the procedures for the electrical connection of elements of the photovoltaic panel system 	<p><i>Skills</i></p> <ul style="list-style-type: none"> • installs and mounts the photovoltaic panel (depending on the material of the building's roof); • selects the place of installation of the photovoltaic panel (the relationship between the building and the outside world); • connects the photovoltaic panel to the inverter • carries out winding of various types of supporting structures for the installation of photovoltaic panels; • connects the switching and protective equipment of photovoltaic systems; • connects AC and DC cables in photovoltaic systems; • assembles and dismantles the structure for carrying the panels • makes electrical connections of elements and equipment of 	<p><i>Competences</i></p> <ul style="list-style-type: none"> • lifelong learning working with data and information; • Implementation of safety and health protection measures at work and environmental protection • Preparation and installation and maintenance of photovoltaic systems • Business communication in work with clients, colleagues and superiors • aesthetic competence; • entrepreneurship and entrepreneurial competence;

			<p>photovoltaic systems that are connected to the distribution network (On-grid) and systems that are not connected to the distribution network (off-grid);</p> <ul style="list-style-type: none"> • performs battery maintenance (off-grid); • reports malfunctions in a timely manner and performs maintenance of photovoltaic solar systems 	
	Validation	<p><i>Criteria</i></p> <ul style="list-style-type: none"> • suitability - reliability; (compliance of the assessment with established, public and precise assessment criteria); • validity; (evaluation shows the effects of learning - achievement of results, engagement and progress of participants; • diversity of assessment methods: (choice of appropriate and application of different assessment methods and techniques in order to ensure validity, reliability and objectivity of assessment); • evaluation without discrimination and selection on any basis; 	<p><i>Procedures</i></p> <ul style="list-style-type: none"> • formation of the examination committee; • determining the list of tasks for the exam; • extracting work tasks; • checking competence by creating tasks; • examination records; • awarding of certificates; 	
	Recognised/accepted (documented by MoU)	Company name: "Envidome" doo Niš		
	Provider(s)	Vocational secondary schools - Publicly recognized organizers of educational activities (JPOA)		
Additional information (if needed)	Entry level / prerequisites	<p>NOKS level 1 - primary education and upbringing, primary adult education, primary ballet education and upbringing and primary music education and upbringing</p> <p>125 hours</p>		
	Possible duration (recommendation)			
Specific content (national) (if needed)	Position in the chain of educational programmes	<p>Non-formal training</p> <p>3rd level of NOKS; 3rd level EOK</p> <p>5</p>		
	Reference to NQF			
	Credits			