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Projekt CO-EMEP – Improvement of cooperation for better energy management and reduction of energy poverty in HU-HR cross-border area

(HUHR/1901/3.1.1/0019)

**Public call for collecting applications of interested citizens – private house owners or co-owners in order to assess their energy poverty risk and/or energy poverty stage**

* **Clarification of the selecting criteria –**

Medjimurje Energy Agency Ltd./Zala County

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# Introduction

As pointed out in the **Public call for collecting applications of interested citizens – private house owners or co-owners in order to assess their energy poverty risk and/or energy poverty stage** (in further text: Public call), the main goal is to select 5 private houses in Medjimurje County and 5 private houses in Zala County that will be included in the implementation of pilot actions.

Pilot actions include development of energy audits and measurements of general building characteristics (thermographic measurements, blower door testing and U-value measurement) for 10 selected private houses in HU-HR cross-border area. Based on results of energy audits and implemented measurements the detailed plans for enhancing energy efficiency with defined measures with relevant technical solutions and financial possibilities for each relevant household will be developed.

In order to select 10 private houses which will be included in the implementation of pilot actions, project partners defined a scoring system based on relevant criteria. The criteria are defined in line with the energy poverty definition developed within CO-EMEP project. The purpose of this document is to clarify this scoring system.

## Excluding criteria

By applying the excluding criteria, the received applications can be excluded from the future selection process, i.e., scoring in order to define the ranking list of valid and timely received applications. The excluding criteria are the following: legality of the private house, power of the primary heat source of private house for heating and preparation of domestic hot water greater than 30 kW, gross floor area of the private house greater than 250 m2 and the existence of an energy certificate.

Explanations for each exclusion criterion are given below:

* 1. **Legality of the private house** – the private house for which the application is submitted should be legal, i.e., built on a basis of a building permit or other appropriate act in accordance with Construction Act (OG 153/13, 20/17, 39/19, 125/19) in Croatia or any other or equated with it by a special law and which has not been upgraded or changed in relation to the act proving its legality;
	2. **Power of the primary heat source for heating and preparation of domestic hot water greater than 30 kW** – according to the Ordinance on simple and other constructions and works (OG 112/17; 34/18, 36/19, 98/19, 31/20) in Croatia if the power of primary heat source for heating and preparation of domestic hot water is greater than 30 kW, then this is a case of a building with a complex technical system where a person for energy certification of building is obligated to ensure that the energy audit and energy certification of the building should be performed in a team of at least three experts each of whom must be one of the following professions: architectural/construction, mechanical and electrical (according to Article 17 of Ordinance on persons authorized for energy certification, energy audit of a building and regular inspection of heating and cooling or air conditioning systems in a building - OG 73/15, 133/15, 60/20);
	3. **Gross floor area of private house is larger than 250 m2 –** in accordance with the Ordinance on simple and other buildings and works (OG 112/17; 34/18, 36/19, 98/19, 31/20) in Croatia a private house is considered a simple building in case its gross construction area is less than or equal to 600 m2. Households, especially those characterized as energy poor in the cross-border area, live on average in smaller buildings, so as an exclusive criterion it is stated that its gross construction area may not exceed 250 m2;
	4. **Existence of energy certificate** – a private house has an energy certificate.

## Scoring criteria

Criteria relevant for scoring the received applications are the following: total household net income, year of construction and type of heating energy source. These criteria are in line with the definition developed within the project by relevant experts.

Each of these criteria with appointed points are described below.

### Household income

One of the most important criteria for addressing energy poverty is total household income, i.e., total net household income in € that includes income of employed household members and income of other household members (including personal income, pensions, child allowances, unemployment benefits, social assistance, insurance benefits and other).

For the purposes of scoring this criterion, 3 ranges are defined: up to 570,00 €, HRK; 570,00 € - 1.140,00 € (+ 200,00 € for each subsequent household member); and over 1.140,00 € (+ 200,00 € for each subsequent household member) where the range will be scored in order with 0, 10 and 6 points. The lower limit (570,00 €) is determined by the median monthly salary at the regional level (Medjimurje County) for December 2020, while the middle and upper limit corresponds to the amount of two monthly median salaries (1.140,00 €).

For scoring purposes, the amount of the median monthly salary was taken into account, because the calculation based on the median is considered a better option than the average since it gives an insight into the real situation, because the calculation of the average salary includes the highest salaries, which are often much higher than the lowest. By calculating the median this is bypassed. The first and the second range refers to the households with low monthly incomes, but the second range is awarded with a higher number of points because it refers to the households that with an affordable budget could invest in increasing the energy efficiency of their homes using available co-financing mechanisms. The lowest range includes households that are considered poor with disposable income and are much more likely that such households will not invest in increasing the energy efficiency of their homes because the funds currently available to them are sufficient only to meet basic living needs. Their interest in investing in increasing the energy efficiency of their home would depend on the percentage of co-financing rates from available co-financing sources, with a higher probability of investment in the case of 100% co-financing rates.

Household income correlated with the number of household members is a good indicator of the level of energy poverty. Accordingly, applicants will be required to specify the number of household members as well as their status (employed, unemployed, child, pensioner) to be used exclusively for internal statistics purposes.

Since some household members don’t have income, the formula (energy poverty definition also) also includes adding the amount of 200,00 € (estimated amount according to the instructions of social work experts based on to the information on the maximum amount of benefits that can be granted to users of social care centers in Croatia) for each subsequent household member where the middle and upper range increase according to the increase of the number of household members.

### Year of construction

Next relevant criterion is the year of construction of the private house which indicates the construction characteristics of the object, i.e., private house which can help in identifying the degree of energy poverty. The general quality of buildings changed during different periods of construction as a result of different climatic, economic, technical-technological and sociological influences, whereas a special influence on the quality and energy consumption had the required energy price for heating and thermal protection regulations. Accordingly, 3 ranges are also defined for this criterion. The first range refers to the period before year 1987, because in 1987 the first regulations in the field of thermal protection in Croatia were adopted, which included stricter requirements for thermal protection of buildings by limiting heat losses not only through individual elements of the outer shell, but also for the building as a whole. Buildings built in the period up to 1987 are large energy consumers with only a minimal thermal insulation or no thermal insulation at all and they have significant heat losses and do not meet current energy efficiency requirements. The second range includes the period between years 1987 and 2008. The third range refers to the period after 2008 when Directive 2002/91/EC on the energy performance of European Parliament buildings of 16 December 2002 and Directive 89/108 / EEC of the European Parliament of 22 December 1989 were adopted at European level. The newly enacted directives then had to be implemented into the national legislation of the Member States, which in turn resulted in increased requirements for the thermal protection of buildings. The listed ranges were scored as follows with 10, 6 and 0 points.

After the construction of the building, certain measures, such as replacement of external carpentry, thermal protection of external walls, roof, ceiling to the attic, floor to the basement, etc. are often implemented, which increases the physical properties of the building in terms of energy efficiency (energy renovation).

Therefore, applicants will have to indicate the year in which they carried out a certain measure/s of energy renovation, which will not be further scored, but will be an indication that there is household awareness of the importance of investing in increasing energy efficiency of their home and improving quality of their life.

### Type of heating energy source

When identifying the stage of energy poverty of a household, it is very important to determine the type of energy source used for heating and domestic hot water preparation because energy poverty is not only a consequence of low income, but also of inefficient use of energy and the type of used energy source for space heating. The most well-known energy sources for space heating are electricity, fuel oil, natural gas, firewood/biomass and renewables (renewable energy sources).

The energy source used greatly affects the cost of heating and to some extent harms the environment through CO2 emissions. The most cost-effective energy sources for heating space are firewood/biomass and natural gas, but in the case of natural gas as an energy source for heating space there is a big drawback, and that is the release of CO2 emissions into the environment which is not acceptable today. In addition to natural gas, electricity and fuel oil are also harmful to the environment. Environmentally friendly energy sources include firewood/biomass and renewables.

In accordance with all the above, the highest points 10 and 8 can be achieved in case of electricity and fuel oil, in case of natural gas 6 points, firewood/biomass 4 points and in case of renewables 0 points.

The scoring system is presented in Table 1.

***Table 1. Scoring system***

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| **Name of the criteria** | **Scoring** |
| **Household income** | < 570,00 € | 6 |
| 570,00 € – 1.140,00 € (+ 200,00 € by each subsequent household member) | 10 |
| > 1.140,00 € (+ 200,00 € by each subsequent household member) | 0 |
| **Year of construction** | before 1987 | 10 |
| between 1987 - 2008 | 6 |
| after 2008 | 0 |
| **Type of heating energy source** | Electricity | 10 |
| Fuel oil | 8 |
| Natural gas | 6 |
| Firewood/biomass | 4 |
| Renewable energy sources | 0 |

After evaluating and scoring of all received applications, Medjimurje Energy Agency Ltd./Zala County will make a **ranking list of received applications** and will send request for additional documentation for the 5 best ranked application in order to check the truthfulness and accuracy of the data from the application form as well as the fulfillment of the excluding criteria.

In case certain irregularities in the applications in relation to the data from the application form are found, Medjimurje Energy Agency Ltd./Zala County reserves the right to reject the application and continue to request additional documentation and check the truthfulness and accuracy of the data for the next best ranked application/s until the moment when 5 private houses that meet all the conditions of the Public call are selected.

Based on the results of the truthfulness and accuracy of the applications, after submitting additional documentation, **5 private houses in the Medjimurje County/Zala County will be selected in order to be included in the implementation of pilot actions**.

In order to achieve cooperation between the Applicants of the selected applications (owner/co-owner of the family house) and Medjimurje Energy Agency Ltd./Zala County an **agreement** will be signed where mutual rights and obligations before and during the implementation of pilot actions will be defined.