<Croatia> PV plant on General hospital Zabok

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PV plant on General hospital Zabok

- Country: Croatia
- Location: Krapina-Zagorje County
- Status of the project: Finished
- Date of finalization: October 2019

Financial model

- Financial model (EPC/ESC, Leasing, Crowdfunding): ESC
- Total investment size [EUR]: 330 000
- Total energy related investment size (EUR): 330 000
- Financing (own contribution, grants etc.) [%]: ESCO

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Financial overview of the project/model

- Energy Supply Contracting (ESC) - Hospital did not have to invest its own funds in the construction of the solar power plant but entered into a contractual relationship with a private investor who sells electricity to the Hospital
- Hospital achieves savings already during the contract period with a private individual, while after the expiration of the contract, the solar power plant becomes the property and under operational management of the Hospital
- Contract period - 10 years
- One of the criteria - the price of electricity from the solar power plant must be at least 10% lower than the price of electricity that the Hospital pays from the distribution network

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Energy impact/ energy indicators

- Primary energy savings [GWh/a]: 0.81
- RES production [GWh/a]: 0.5
- Other energy related benefits: -

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Technical overview of the project

- Overall capacity of the plant is 450 kW and on a given microlocation (City of Zabok) it produces around 450 000 kWh of electricity per year
- Rooftop installation – mostly on flat concrete roof surface and smaller part on a tin roof with a slight slope
- A dozen inverter units were used for electricity conversion
- 25 years of full operational lifetime
- Decommission/recycling is expected somewhere between 25th and 40th year of the project operation phase

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Barriers/problems accrued

- Hospitals are recognized as critical places in terms of the importance of uninterrupted supply of electricity and other energy sources
- The implementation of such and similar projects in hospital facilities depend either on the availability of grants or on the possibilities of using alternative implementation mechanisms
- Technical barriers were unknown at the beginning of the project development - PV connection cost can raise quite a bit depending on the condition of the building's substation (the cost is known after evaluation done by the Distribution System Operator which is based on previously sent conceptual design blueprints)
- ESCO model is still not used regularly in Croatia, especially for public buildings

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Risk mitigation

- Financial and implementation risk was transferred to ESCO
- Dedicated tender and contractual documentation suitable for both sides in the agreement was developed
- Market research and consultations with actors from the photovoltaic industry in order to test the potential market and investment possibilities were conducted

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Conclusions

- Good practice example on how to overcome potential barriers related to financing of energy related projects by using innovative financing mechanisms
- Promotion of ESCO model
- Influence on Croatian energy and ESCO market as a whole