



ENERGY EFFICIENCY IN HEALTH INSTITUTIONS CURRENT ACTIVITIES AND PLANS

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Ministarstvo zdravlja

Energy efficiency in health institutions

- The big expenses and irrational use of energy in health care facilities
- Through the project "Energy Efficiency in Montenegro" 6 buildings are scheduled for adaptation . Investments worth 3 million euros.



Review of energy consumption and energy-generating products of viewed objects

No	Naziv zdravstvene ustanove	Vrsta energenta	Potrošnja energenta (t,l)	Potrošnja energenta (kWh)	Potrošnja el. energije (kWh)	Ukupna potrošnja energije (kWh)
1.	OB i DZ Pljevlja	ugalj	531	1.842.015	595.621	2.437.636
2.	OB Berane	lož ulje	173.000	2.090.769	834.172	2.924.941
3.	SB Risan	mazut; lož ulje	82.670; 14.400	923.886 170.976	440.318	1.535.180
4.	SB Brezovik - Nikšić	lož ulje	130.000	421.183	1.465.000	1.886.183
5.	OB Bijelo Polje	ugalj	566	1.965.294	1.034.300	2.999.594
Ukupno:				7.414.123	4.369.411	11.783.534

Detailed energy review

- Detailed energy review for 5 health facilities are made
- Proposed measures to increase energy efficiency in hospitals ,which are divided into three groups:
 - ➔ **Energy management**
 - ➔ **Cladding**
 - ➔ **Heating system**

The review of proposed measures ,that are divided into three groups according to the established investment , energy savings and money savings

Opšta bolnica i Dom zdravlja Pljevlja

No.	Opis mjere	Planirana ušteda (kWh/a)	Smanjenje troškova (€/a)	Visina investicije (€)	Prost period otplate (a)
1.	Energetski menadžment	92.128	1.800	9.000	5,0
2.	Omotač objekta	527.426	10.127	178.200	17,5
3.	Sistem grijanja	856.290	34.336	186.000	5,4

Ukupna investicija: **373 200 EUR**

Prost-period otplate: **8,1 godina**

The review of proposed measures ,that are divided into three groups according to the established investment , energy savings and money savings

Opšta bolnica Berane

No.	Opis mjere	Planirana ušteda (kWh/a)	Smanjenje troškova (€/a)	Visina investicije (€)	Prost period otplate (a)
1.	Energetski menadžment	-	-	5.000	-
2.	Omotač objekta	615.383	40.000	273.420	6,8
3.	Sistem grijanja	273.420	46.800	45.000	1,0

Ukupna investicija: **323 420 EUR**

Prost-period otplate: **4 godine**

The review of proposed measures ,that are divided into three groups according to the established investment , energy savings and money savings

Specijalna bolnica "Vaso Ćuković" Risan

No.	Opis mjere	Planirana ušteda (kWh/a)	Smanjenje troškova (€/a)	Visina investicije (€)	Prost period otplate (a)
1.	Energetski menadžment	46.000	4.400	15.000	3,4
2.	Omotač objekta	197.444	8.292	101.500	12,4
3.	Sistem grijanja	884.610	40.489	504.250	6,5

Ukupna investicija: **620 750 EUR**

Prost-period otplate: **7,4 godina**

The review of proposed measures ,that are divided into three groups according to the established investment , energy savings and money savings

Specijalna bolnica za plućne bolesti "Dr Jovan Bulajić" - Brezovik

No.	Opis mjere	Planirana ušteda (kWh/a)	Smanjenje troškova (€/a)	Visina investicije (€)	Prost period otplate (a)
1.	Energetski menadžment	-	-	-	-
2.	Omotač objekta	690.074	36.160	264.062	7,3
3.	Sistem grijanja	17.058	894	12.000	13,4

Ukupna investicija: **276 062 EUR**

Prost-period otplate: **8 godina**

The review of proposed measures ,that are divided into three groups according to the established investment , energy savings and money savings

Opšta bolnica Bijelo Polje

No.	Opis mjere	Planirana ušteda (kWh/a)	Smanjenje troškova (€/a)	Visina investicije (€)	Prost period otplate (a)
1.	Energetski menadžment	43.267	952	5.000	5,4
2.	Omotač objekta	1.648.279	36.263	144.955	4,0
3.	Sistem grijanja	435.395	14.470	111.310	7,7

Ukupna investicija: **261 265 EUR**

Prost-period otplate: **5,1 godina**

Projected savings for specific measures in hospitals

	Planirana ušteda (kWh)	Smanjenje troškova (€)	Specifična planirana ušteda (kWh/m ²)	Specifično smanjenje troškova (€/m ²)
Energetski menadžment	181.395	7.152	10,39	0,41
Omotač objekta	3.678.606	130.842	134,28	4,78
Sistem grijanja	2.913.353	136.989	106,34	5,00
Ukupno	6.773.354	274.983	247,24	10,04

- Taking into account the fact that the total energy consumption per annum for 5 analyzed hospitals is 11,783,534.00 kWh, and that the proposed energy efficiency measures had realized value of the planned savings in the amount of 6,773,354.00 kWh annually, and reduce the cost of € 274,983.00 on annually level - ***the justification of the project implementation of energy efficiency is more than obvious.***

Improvement of EE measures –Clinical Center Podgorica

- **Government of Spain -Grant**
- **Signed agreement with IDOM**
- **Calling for tenders for the works ,the end of 2010**



Conclusion

- **Improving energy efficiency in health care institutions has multiple positive effects, which lead to significant savings in energy consumption, and on the other hand improves the working conditions of medical and administrative staff and stays of patients;**

Future activities

- Plans



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Thank you for your attention !

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