TREN/06/FP7EN/239285/"SOLUTION"

SOLUTION

Sustainable Oriented and Long-lasting Unique Team for energy self suffIcient cOmmuNities

Deliverable No. 2Hv.4.1, WP No. 2Hv.4

INTEGRATION PROMOTION PROGRAM

Know-how transfer report on lessons learnt of promoting innovation

Due date of deliverable: 28-02-2011
Actual submission date: 21-03-2011

Start date of project: 1 November 2009 Duration: 60 Months

Organisation name of lead contractor for this deliverable: HVAR
Revision [v1]

CONCERTO is co-funded by the European Commission

Project co-funded by the European Commission within the Sixth Framework Programme (2002-2006)		
Dissemination Level		
PU	Public	√
PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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1 SUMMARY

This document provides an insight into applied promotion activities, as well as promotion aspects relevant for the project. The report will be periodically revised to incorporate future findings and provide a check point document on overall promotion progress during project duration.

Integration of renewable energy technologies in combination with demand-side management will have significant influence on security of supply and reduction of greenhouse gasses emissions. Environmentally friendly behavior and implementation of renewable technologies will ensure a safe transition from fossil fuel dependency to sustainable future.

Promotion success is influenced by many factors, especially by excellent communication and cooperation between parties involved. Sustainable development is only possible if all parties direct their efforts in the same direction – barriers overcoming. Government, regional and local authorities, as well as community population have to be included in the decision-making process to fulfill set project objectives. After obtaining all relevant information, a full assessment of the situation can be made to cover all relevant aspects and maximize the impact of promotion activities on local community.

2 OBJECTIVE OF THE WORK PACKAGE

This document includes experiences and lessons learned on promotion in selected community, in this case island of Hvar and a brief display of current RES promotion measures in Croatia. As previously stated in D1.1.1 "Energy-related consumer behaviour study", demonstration activities and related promotion campaigns are only achievable if consumer behavior is understood. Also, all relevant stakeholders must be included in all aspects in concern. Introduction of Solution experiences and ideas has been brought to stakeholders to fully assess the current situation through various workshops and presentations. Such activities have resulted in better understanding of Solution objectives and measures to be taken to meet the requirements for becoming a self-sufficient community.

It is intended to continuously improve promotion measures based on previously gained experiences. Stakeholders must be approached in such way to clearly understand socio-economic benefits of becoming a self-sufficient community, especially due to current situation and conditions on the island. It has been proven that the first step towards self-sufficiency is to adjust the end-consumers behavioral habits and attitude towards energy. Energy must be presented as a valuable product intended for the end-user, essential for living comfort. The main change to be made is in the way of thinking and exploiting the resources available. Changes will emphasize the importance of renewable energy sources, especially in such conditions as on island of Hvar. Simple but effective methods must be brought to end-users to achieve outstanding results and maximize the benefits for inhabitants as well as for the community as a whole.

3 APPROACH TO ACHIEVE THE DELIVERABLE

Achieving sustainable development of the island requires noticeable efforts from all stakeholders, governmental institutions, regional and local authorities and island population. Approach to each stakeholder must be determined to gain full cooperation and satisfying information flow. Full cooperation between all stakeholders determines clear rules and criteria on how to implement promotion programs.

3.1 MEETINGS AND WORKSHOPS

During the first year of the project several promotion meetings, presentations and workshops have been organized. Advantages and shortcomings of island of Hvar have been highlighted during promotion meetings, presentations and workshops to ensure all stakeholders realize the importance of sustainable development of the island.

Energy has become an important issue among local population which provides an even bigger opportunity to implement suitable and cost-effective solutions for reduction of energy consumption. Having realized the island energy problem local population provided a positive feedback and realized socio-economic benefits for individual households and community as a whole. Sustainability of the island of Hvar greatly depends on willingness of all stakeholders to work in the same direction and achieve higher living comfort in the first place.

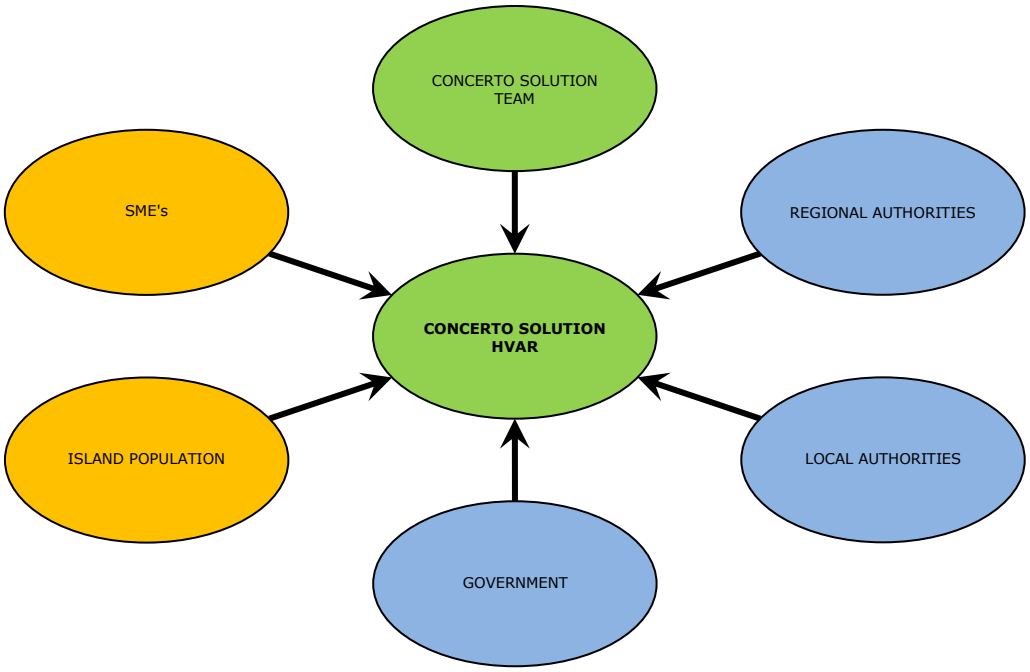
A variety of available renewable technologies and resulting benefits have been presented in the presentations (from November 2009 to March 2011) as suitable for exploitation on island of Hvar with emphasis on solar systems which have the potential to reduce energy used for heating, SHW preparation and cooling in a significant amount. Every activity has provided a further insight into consumer demands and availability of considered resources.

All organized activities were attended with all key stakeholders present; county representatives, local authorities and local community, as well as equipment dealers.

3.2 COMMUNICATION

Early phases of the Concerto Solution project provided a clearer insight into stakeholders' opinion and attitudes on promotion of innovative solutions. Comprehensive discussions were led after every event dealing with activities included in Concerto Solution project. It has been concluded that the necessary prerequisite is the communication between all stakeholders, since general opinion on investment programs and renewable energy sources had to be adapted.

All interested stakeholders have been approached to participate in Solution events in order to gain general acceptance from every interested party and to perform permanent pursuit for innovative and cost-effective solutions that will be applied on the island of Hvar.



Achieving a success during the Concerto Solution greatly depends on communication with authorized governmental institutions, county and local authorities. Concerto Solution team has established fair channels of communication on all levels of authority to fulfill set goals. However, further consultation with authorities related to promotion and participation in various activities is necessary in order to overcome potential barriers.

During the first project year Concerto Solution team has encountered several barriers in communication with governmental institutions due to weak flow of information. Those

barriers have been solved by providing sufficient and consistent information on planned project activities. Regional and local authorities have provided full support on planned activities and undertaken significant efforts to improve the level of cooperation between all stakeholders. Some competitiveness between islands municipalities has been noticed which could enhance the effect of promotion activities on the island. All information must be streamlined in such way that every particular institution receives sufficient information on activities in progress. Such approach results in full cooperation and information transparency in all project activities.

Communication with local population has been conducted through various promotion activities that resulted in increase of informational level among population present on island of Hvar. Permanent personal contact with local population has also achieved significant impact on promotion activities. Key stakeholders in community have perceived the opportunity presented through Concerto Solution project and made efforts to raise the level of acceptance of promotional activities and demonstration activities on the island.

3.3 SUMMARY OF ACTIVITIES

The following table contains all undertaken activities.

DATE	ACTIVITY	TARGETED ENTITIES
11/2009	Kickoff meeting	County and municipalities, general public, entrepreneurs
11/2009	Press release – Slobodna Dalmacija	County and municipalities, general public, entrepreneurs
11/2009	Press release – HEP internal newsletter	County and municipalities, general public, entrepreneurs
12/2009	Press release – Slobodna Dalmacija	County and municipalities, general public, entrepreneurs
12/2009	Press release – Slobodna Dalmacija	County and municipalities, general public, entrepreneurs
03/2010	Workshop on Hvar	County and municipalities, general public, entrepreneurs
03/2010	Press release – HEP internal newsletter	County and municipalities, general public, entrepreneurs
03/2010	Press release – Slobodna Dalmacija	County and municipalities, general public, entrepreneurs
04/2010	Radio Split Interview	General public
05/2010	RES & EE Action on Hvar island	General public
06/2010	Conference on Hvar	County and municipalities, general public, entrepreneurs
08/2010	Meeting with local partners	County and municipalities, partners
09/2010	Meetings with public investors	General public
09/2010	Meeting with local partners	County and municipalities, partners
09/2010	Radio Split Interview	General public
10/2010	Meeting with local partners	County and municipalities, partners
11/2010	Radio For Interview	General public
11/2010	Meeting with local partners	County and municipalities, partners
11/2010	Meetings with potential investors	Potential investors
11/2010	Meeting with representatives of LAG Hvar	General public, LAG Hvar
12/2010	Meeting with local partners	County and municipalities, partners
01/2011	Meetings with potential investors	Potential investors
02/2011	Meetings with potential investors	Potential investors
02/2011	Meetings with local partners	County and municipalities, partners

3.4 FINANCIAL ASPECTS

In order to perform an in-depth analysis of appropriate promotion activities several segments of the overall concept have to be considered. Financial conditions and requirements, such as Feed-in Tariffs, market conditions and incentives and grants, administrative and legislative requirements, scope of demonstration activities and opportunities for communication, dissemination and experience transfer must be assessed to provide a firm basis for implementation of adequate promotion activities. An overview of various promotion measures and actions undertaken during the project are displayed in the following sections of this document.

3.4.1 Feed-in Tariffs for Renewable Energy Sources in Croatia

Feed-in Tariffs in Croatia have proven to be an insufficient tool for securing a noticeable penetration of renewable energy sources into the grid due to a large number of procedures and steps to be taken to acquire the status of a preferred electricity producer. It is envisaged that complicated procedures will be simplified during the next Energy law amendment. Achieved tariffs for previous years and year 2011 interesting for Concerto Solution project and Hvar community are displayed in the following table:

Table 1 Feed-in Tariffs for RE plants of rated power lower than 1 MW

PLANT TYPE	2007 Tariff [kn/kWh]		2008 Tariff [kn/kWh]		2009 Tariff [kn/kWh]		2010 Tariff [kn/kWh]		2011 Tariff [kn/kWh]	
Solar plants ≤10 kW	3,40		3,59		3,70		3,77		3,84	
Solar plants 10≤X≤30 kW	3,00		3,17		3,26		3,32		3,38	
Solar plants ≥30 kW	2,10		2,22		2,28		2,32		2,37	
Biomass PP - from forestry and agriculture	1,20		1,27		1,30		1,33		1,35	
Biomass PP – from wood industry	0,95		1,00		1,03		1,05		1,07	
Biogas PP – from agriculture and food industry	1,20		1,27		1,30		1,33		1,35	
	HT	LT	HT	LT	HT	LT	HT	LT	HT	LT
CHP plants ≤50 kW	0,61	0,32	0,61	0,32	0,77	0,40	0,98	0,51	0,98	0,51
CHP plants 50 kW≤ X ≤1 MW	0,51	0,26	0,51	0,26	0,64	0,32	0,82	0,42	0,82	0,42

3.4.2 Incentives and grants

Incentives and grants play an important role for raising the amount of power generated with renewable energy sources. Apart from Solution grants several incentives were available:

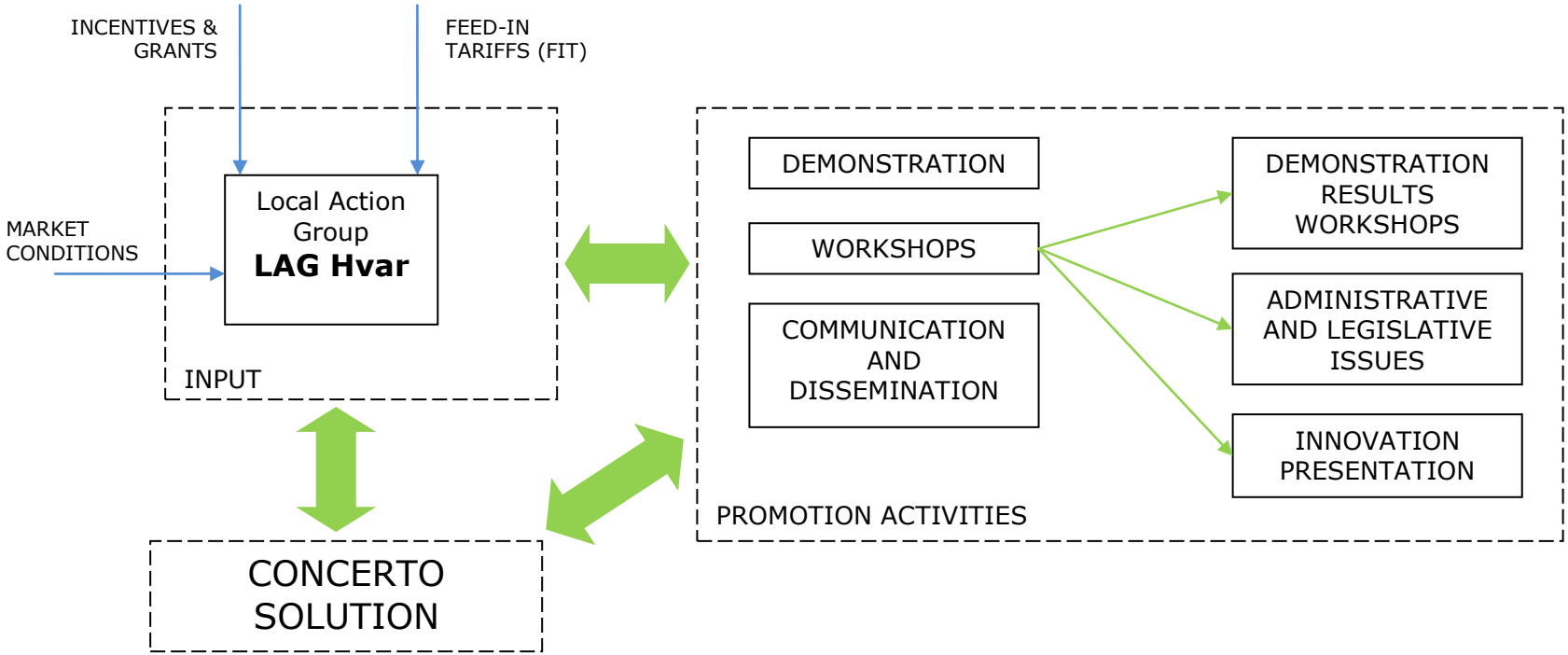
- Environmental protection and Energy Efficiency Fund – private households on islands, incentives for solar SHW installation with LPG support
- Municipality of Jelsa – co-financing of equipment and installation costs for 50 households, 45% of total costs with maximum applicable amount per household determined

Currently, no grants of such kind are available, but it is believed that similar promotion programs will be activated during 2011.

3.4.3 Local Action Group (LAG) Hvar

The Solution initiative has stimulated the interest to form a Local Action Group that will be dedicated to sustainable development of the island, not only in terms of energy but also in terms of agriculture and tourism. Local Action group (LAG) Hvar is an association consisting of representatives of all four municipalities/cities on Hvar island (City of Hvar, City of Stari Grad, Municipality of Sućuraj and Municipality of Jelsa) whose goal is to gather as many as possible interested stakeholders into one association with purpose of promoting and encouraging RE development and innovation on island of Hvar, as well as investigation of associated market to bring best possible solutions and information to interested parties. Significant efforts are expected to be undertaken in the field of promotion and demonstration of delivered and available solutions.

Concerto Solution initiative will in the future, with support from LAG Hvar, promote innovative solutions through demonstration activities, workshops and communication and dissemination activities with regard to demonstration results, administrative/legal issues of RES implementation and presentation of innovative and cost-efficient solutions.


INCENTIVES &
GRANTS
FEED-IN
TARIFFS (FIT)
MARKET
CONDITIONS
Local Action
Group
LAG Hvar
INPUT
DEMONSTRATION
WORKSHOPS
COMMUNICATION
AND
DISSEMINATION
DEMONSTRATION
RESULTS
WORKSHOPS
ADMINISTRATIVE
AND LEGISLATIVE
ISSUES
INNOVATION
PRESENTATION
PROMOTION ACTIVITIES
CONCERTO
SOLUTION

The sole purpose of a Local Action Group on island of Hvar is in strengthening of promotion and acquiring interested parties to apply energy-efficient and RE solutions. Organized workshops and seminars will provide sufficient information for interested parties to gain a deeper insight into socio-economic benefits and free energy resource exploitation possibilities.

3.5 HIGHLIGHTED SOLUTIONS

It has been noticed that several technologies have significant advantages, especially in private buildings. It seems that favorable technology, already applied on island of Hvar, is solar sanitary hot water preparation due to specific conditions existing on the island. Significant reduction in energy used for SHW preparation during summer could be achieved.

It is envisaged that by installing from 10-20 m^2 of collectors energy consumption for sanitary hot water preparation could be reduced from 80% to complete coverage, depending on SHW consumption and the size of the water tank. The problem that persists in several cases observed is small tank volume with regard to SHW consumption. Also, with 10-20 m^2 of collectors up to 10-20% of heating demand during winter could be covered depending on climate conditions.

Figure 1 Favorable technologies (heat pump, SHW preparation and biomass/biogas)

Also, heat pumps are noticed to be a popular solution amongst island population in spite of relatively high investment costs. Nevertheless, high system efficiencies attract more and more investors (in cases of refurbished buildings or new constructions). With weak grid system and frequent grid failures, heat pumps – a grid dependent system has not proven to be confident.

Small-scale photovoltaic systems are mostly used on the island areas where no grid connection exists. Such systems are mostly dimensioned to withstand on battery supply around 3-5 days and to cover basic necessities (lighting, refrigeration, etc.).

It is envisaged that small-scale and large-scale biomass/biogas technologies will contribute in significant amount according to stakeholders' opinion and available bio resources on island. Solutions for replacement of current heating systems with biomass systems in several buildings are being considered.

3.5.1 SWOT Analysis

TECHNOLOGY	STRENGTHS	WEAKNESSES	OPPORTUNITIES	THREATS
SOLAR THERMAL & PV	• exquisite solar potential • "free fuel" • wide range of technologies available • reduction in heating energy consumption up to 15% during winter months • complete coverage of SHW preparation energy demand	• high cost of technology • insufficient number of promotion programs • no appropriate regulatory framework • small market	• significant savings in fuel costs • promotion possibilities among similar communities • application of innovative and cost-effective solutions • sustainable island (touristic promotion) • high emission reduction potential • rising prices of electricity and fossil fuels	• low public awareness on benefits of renewable technologies • insufficient data available for demonstration results • "salesman" approach in presentation of technologies
HEAT PUMPS	• high energy efficiency (COP) • high security of fuel supply (electricity) • space heating and SHW preparation • can be applied in most conditions	• depending on used technology, requirement for costly heating and cooling solutions • electricity dependent technology • depending on used technology, support might be needed • indirect greenhouse gasses emissions through electricity consumption	• can be used in combination with PV to reduce amount of electricity from grid • popular among island population	• grid dependent system • power shortages on island
BIOMASS	• available in large amounts • can be processed for application in various forms • cost-effective technologies for energy utilization from biomass • large and small scale • well developed market in terms of technology • carbon-neutral technologies	• higher cost effectiveness with larger scale • higher large scale investment • greenhouse gasses emissions	• application of innovative solutions • development of agricultural and forest goods for utilization • rising prices of electricity and fossil fuels	• unwillingness of local community to consider district heating systems

4 CONCLUSION

Targeting specific community needs depends on the variety of renewable resources available on the island and will lead to proper steering regarding promotion activities. While workshops and seminars provide an insight into consumer opinion and attitudes, personal contact has been put on the first place to fully assess consumer needs.

Communication and cooperation with interested parties will improve project activities and effects of promotion on local community. After obtaining all relevant information, a full assessment of the situation can be made to cover all relevant aspects and maximize the impact of promotion activities on local community.

Promotion success is influenced by many factors, especially by excellent communication and cooperation between parties involved. Sustainable development is only possible if all parties direct their efforts in the same direction – barriers overcoming.

5 Annex I

CONCERTO

SOLUTION
SUSTAINABLE DEVELOPMENT ON HVAR

KICK OFF MEETING
26.11.2009

CONTENT

- Presentation of the partners
- Project presentation
- Project organisation
- Next steps

Presentation of the partners

Split Dalmatian County

Presentation of the partners

HEP-Obnovljivi izvori energije d.o.o.

Presentation of the partners

eurocontact

A JOINTVENTURE OF

EUROCONTACT CROATIA AND IC CONSULENTEN AUSTRIA

RESSOURCES

Responsible Partner: Wilhelm Reismann

Team Leaders: Ivan Vrankovic, Andreas Helbl, Felix Eckert

Team members:

13 experts in the fields of Mechanical engineering, Electric engineering, Water engineering, Geography & Urban and Transport Planning, Energy management and HVAC engineering, Environmental engineering

Presentation of the partners

FIELDS OF EXPERTISE

Energy Efficiency: Industry, Residential buildings, Office buildings, Shopping Centres

Renewable Energy: Biomass cogeneration, Biogas, Bio fuels, Solar systems, District Heating and Cooling, Cogeneration based on fossil fuels

Hydro power: plants smaller than 10 MW, larger scale hydro power

Sustainable development: Integrated infrastructure development considering energy networks, waste to energy concepts, fuel logistics, water and waste water management, spatial planning, Sustainable Building Certification according to LEED™.

Environmental Due Diligence: Hazardous materials in buildings, Soil, water and air contamination

Presentation of the partners

TYPICAL SERVICES in iC's Energy & Environmental division

- ✓ Technical and financial consultancy
- ✓ Energy efficiency audits
- ✓ Project developments
- ✓ Site investigation and site selection, land due diligence
- ✓ Feasibility studies
- ✓ Joint Implementation consultancy (Carbon Credits procedure according to Kyoto-Protocol)
- ✓ Conceptual design and detail design
- ✓ Tender design and preparation of tender documents
- ✓ Procurement and contract negotiation
- ✓ Construction administration and construction supervision
- ✓ Project management and controlling
- ✓ Commissioning

Presentation of the partners

WHAT DO WE EXPECT

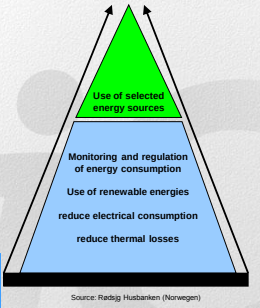
- ✓ ESTABLISHMENT OF A LONG LASTING RELATIONSHIP AMONG THE CROATIAN PROJECT PARTNERS
- ✓ EXCHANGE OF EXPERIENCES IN SUSTAINABLE DEVELOPMENT AMONG PROJECT PARTNERS IN EUROPE
- ✓ INCREASING AWARENESS FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY IN THE REGION
- ✓ ESTABLISHMENT OF A CASE STUDY THAT CAN BE DISSEMINATED TO OTHER ISLANDS AND REGIONS
- ✓ ESTABLISHMENT OF A PARTICIPATORY APPROACH THROUGH COOPERATION WITH ISLANDS CITICENS/INSTITUTIONS

The Solution Project – Overall target 1

Innovative Technologies + Energy Efficiency Measures → Innovation Integration → in Communities / Regions

Source: European Commission

The Solution Project – Overall target 2



Source: Rødsjg Husbanken (Norwegen)

Reach autonomous energy supply

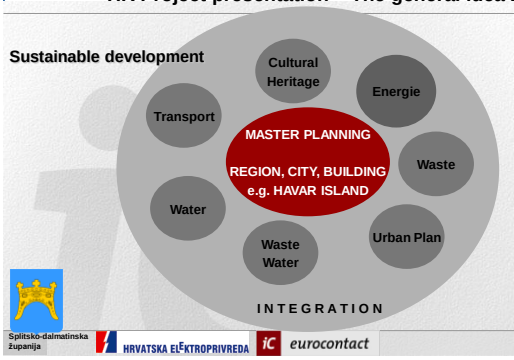
Initiate a long term development strategy!

Case studies
- Finnland
- Croatia
- Switzerland
- Austria

The Solution Project – Overall target 3

- Demonstrate sustainable oriented solutions within energy areas (Cernier, Hartberg, Lapua, Hvar)
- Establish energy self-sufficient and replicable model areas
- Reduce CO2 emissions
- Promote energy effiency measures and renewable energy utilization
- Raise public awareness
- Transfer best practice through trainings to communities

HR Project presentation – The general idea 1



HR Project presentation – The general idea 2

Sustainable development

- Use of local natural ressources
- Employment of local human ressources
- Reduced energy consumption
- Protected Environment
- Better living conditions for futur generations

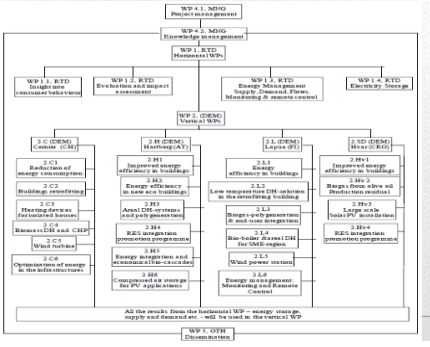
INTEGRATION

HR Project presentation – Hvar Characteristics

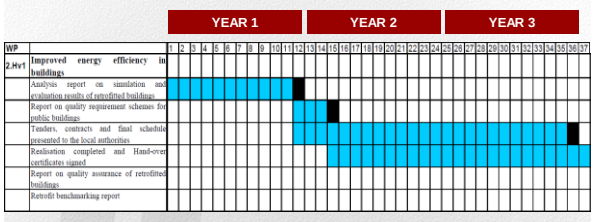
HR Project presentation – Hvar Objectives

- 20 % energy self sustaining till 2020
- Verification of cost / benefit
- Promote and demonstrate energy efficiency in the building sector
- Promote and demonstrate renewable energy technologies (Biogas, Solar, PV, Electricity storage)
- Develop suitable contracting models (e.g. ESCO) to overcome financing barriers

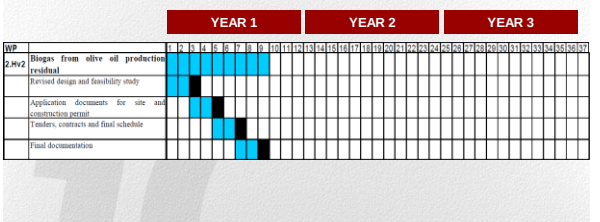
HR Project presentation – Work packages Overview



HR Project presentation – Work Packages 1



HR Project presentation – Work Packages 2



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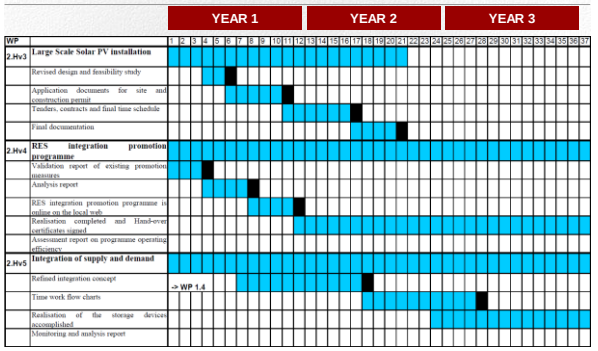
HR Project presentation – Work Packages 3



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HR Project presentation – Responsibilities

Work-package No[1]	Workpackage title	Type of activity[6]	Lead partic. No[7]	Lead partic. short name	Person-months[8]	Start month[9]	End month
2.Hv1	Improved energy efficiency in buildings	DEM	12	IC	9.5	1	58
2.Hv2	Biogas from olive oil production residual	DEM	12	IC	4.5	1	9
2.Hv3	Large scale solar PV installation	DEM	10	HVAR	8	1	21
2.Hv4	RES integration promotion programme	DEM	12	IC	4.5	1	58
2.Hv5	Integration of supply and demand	DEM	12	IC	5	1	58

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HR Project presentation – Deliverables 1

Del. No[1]	Deliverable name	WP no.	Nature[2]	Dissemination level[3]	Delivery date[4]
2.Hv3.1	Analysis report on simulation and evaluation results of retrofitted buildings	2.Hv1	R	PU	M12
2.Hv3.2	Report on quality requirement schemes for public buildings	2.Hv1	R	PU	M15
2.Hv3.3	Tenders, contracts and final schedule presented to the local authorities	2.Hv1	R/O	PP	M36
2.Hv3.4	Realisation completed and Hand-over certificates signed	2.Hv1	D	PU	M48
2.Hv3.5	Report on quality assurance of retrofitted buildings	2.Hv1	R	PU	M56

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HR Project presentation – Deliverables 2

Del. No[1]	Deliverable name	WP no.	Nature[2]	Dissemination level[3]	Delivery date[4]
2.Hv3.6	Retrofit benchmarking report	2.Hv1	R	PU	M58
2.Hv2.1	Revised design and feasibility study	2.Hv2	R	PU	M3
2.Hv2.2	Application documents for site and construction permit	2.Hv2	R	PU	M5
2.Hv2.3	Tenders, contracts and final time schedule	2.Hv2	R/O	PP	M7
2.Hv2.4	Execution and final documentation	2.Hv2	D	PU	M9
2.Hv3.1	Revised design and feasibility study	2.Hv3	R	PU	M6

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HR Project presentation – Deliverables 3

Del. No[1]	Deliverable name	WP no.	Nature[2]	Dissemination level[3]	Delivery date[4]
2.Hv3.2	Application documents for site and construction permit	2.Hv3	R/O	PU	M11
2.Hv3.3	Tenders, contracts and final time schedule	2.Hv3	R	PP	M17
2.Hv3.4	Final documentation	2.Hv3	R	PU	M21
2.Hv4.1	Knowhow transfer report on lessons learnt of promoting innovation	2.Hv4	R	PU	M15
2.Hv4.2	ESCO analysis report	2.Hv4	R	PU	M18
2.Hv4.3	RES integration promotion programme is online on the local web	2.Hv4	O	PU	M12
2.Hv4.4	Realisation completed and hand-over certificates signed	2.Hv4	D	PU	M48
2.Hv4.5	Assessment report on programme operating efficiency	2.Hv4	R	PU	M58

Županija HRVATSKA ELEKTROPRIVREDA eurocontact

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HR Project presentation – Deliverables 4

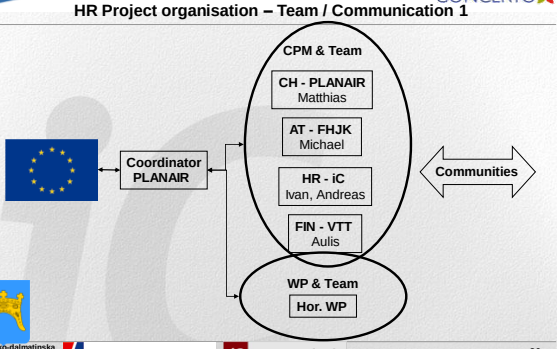
Del. No[1]	Deliverable name	WP no.	Nature[2]	Dissemination level[3]	Delivery date[4]
2.Hv5.1	Refined integration concept	2.Hv5	D	PU	M18
2.Hv5.2	Time work flow charts	2.Hv5	D	PU	M28
2.Hv5.3	Realisation of the storage devices accomplished	2.Hv5	D	PU	M44
2.Hv5.4	Monitoring and analysis report	2.Hv5	D	PU	M58

Splitsko-dalmatinska županija HRVATSKA ELEKTROPRIVREDA eurocontact 24

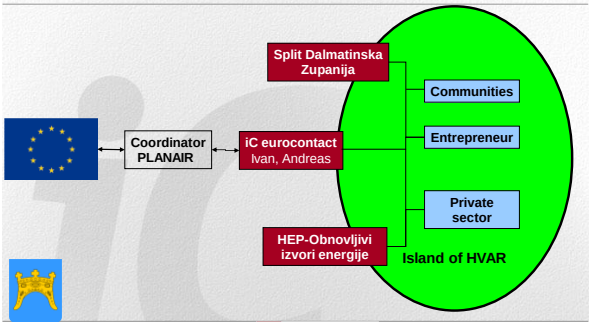
HR Project organisation – Formal requirements

- Time sheets …to be prepared in next step
- Eligible costs
  - **Cost of personnel assigned to the project**
    - Average personnel costs under certain conditions
    - Total personnel direct costs declared = Nr of productive hours worked by researchers on the project x Hourly personnel rate
  - **Travel & subsistence allowances for staff working on the project**
  - **Purchase cost of durable equipment**
  - Costs of consumables & supplies (if identifiable and assigned to the project)
  - Subcontracting (after approval by EC)

HR Project organisation – Team / Communication 1



HR Project organisation – Team / Communication 2



HR Project organisation – Report format / Joint LOGO

LETS SEE WHAT THE KICK OFF
IN SWITZERLAND BRINGS

HR Project organisation – Visibility and Publications

LETS SEE WHAT THE KICK OFF
IN SWITZERLAND BRINGS

HR Project organisation – EC Contribution

Maximum reimbursement rates of eligible costs	Research and technological development activities (*)	Demonstration activities	Management of the consortium activities	Other activities (**)
Network of excellence	50% 75% (***)		100%	100%
Collaborative project(*****)	50% 75% (***)	50%	100%	100%
Coordination and support action			100% (****)	100% (****)

(*) Research and technological development includes scientific coordination.
(**) Other activities means any "specific activity" covered by Annex I.
(***) For *beneficiaries* that are *non-profit public bodies*, secondary and higher education establishments, *research organisations* and *SMEs*
(****) The reimbursement of indirect eligible costs, in the case of coordination and support actions, may reach a maximum 7% of the direct eligible costs, excluding the direct eligible costs for subcontracting and the costs of reimbursement of resources made available by third parties which are not used on the premises of the *beneficiary*.
(*****) Including research for the benefit of specific groups (in particular SMEs)

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HR Project organisation – Input and budget 1

	1 PLAN	2 CENE	3 EPFL	4 CONT	5 HART	6 KAIN	7 KW	8 FHJK	9 IGPH	10 HVAR	11 HEP	12 iC	13 LAP	14 VTT	15 THER	16 SCHE	17 PRED
WP 1.1	1.5				4.0					1.5		4.0		1.0			0.5
WP 1.2	8.0	2.0			2.0	2.0	2.0	12.0		1.5		9.0	3.5	6.5			2.0
WP 1.3			4.0		1.0	1.0	1.0	10.0		2.0	1.0	9.0	2.0	21.0			1.0
WP 1.4			22.0		1.0	1.0	2.5			1.0	1.0	2.0	1.5	0.5			0.5
WP 2C-1	6.0	1.5			1.0	1.0				0.5		1.0	1.0	0.5			
WP 2C-2	2.0	0.5			1.0	1.0				0.5			1.0				
WP 2C-3	1.0	0.5	0.5		0.5	0.5	0.5			0.5		0.5	0.5				
WP 2C-4	1.5	0.5		1.0	3.0	1.0						1.0	0.5	0.5			
WP 2C-5	0.5	0.5		0.5	1.0					0.5		1.0	0.5				
WP 2C-6	0.5	0.5		0.5	1.0	1.0						1.0	0.5	0.5			
WP 2Ha.1	2.0	0.5			6.0	5.0		11.5	8.0	0.5		2.0	0.5	0.5			
WP 2Ha.2	1.0				2.0	2.0		4.0	6.0			1.0	0.5				
WP 2Ha.3	1.0	0.5			7.0	6.5		7.0		0.5		1.0	0.5	0.5			
WP 2Ha.4	1.0	0.5			3.0	3.0	10.0	4.0	0.5			1.0	0.5				
WP 2Ha.5	0.5	0.5			6.0	4.5	2.5	4.5		0.5		0.5	0.5				
WP 2Ha.6	0.5	0.5	1.0		3.5	1.3		1.0		0.5		0.5	0.5	0.5			
WP 2HV.1	0.5	0.5			0.5	0.5	0.5		0.5	3.0		3.0		0.5			
WP 2HV.2								0.5		0.5		3.0		0.5			
WP 2HV.3	0.5		0.5		0.5	0.5	0.5		0.5	0.5	1.0	3.0		0.5			
WP 2HV.4	0.5							1.0				3.0					
WP 2HV.5			1.0							0.5	1.0	2.0		0.5			
WP 2L.1	0.5							0.5					1.0		1.0		
WP 2L.2	0.5							0.5					1.0		1.0		
WP 2L.3	0.5							0.5		0.5			1.0	0.5	1.0		
WP 2L.4		0.5						0.5		0.5			1.0		0.5		
WP 2L.5		0.5								0.5			1.0	0.5			
WP2.L6	0.5				0.5			0.5		0.5			1.0	0.5			
WP 3.1	2.0							2.0				2.0		1.5			2.0
WP 4.1	6.0	1.0			1.5	1.5		4.0		7.0		3.0	1.0	1.5	1.5		3.0
WP 4.2	6.0	1.0		1.0	3.0	3.0	1.5	1.5	1.5	7.0	2.0	2.0	2.0	1.5	1.0	1.0	3.0
WP 5.1	14.0							18.0				18.0		10.0			8.0
WP 5.2	6.0																
Total man-month	83.5	12.0	29.0	3.0	49.0	36.3	21.0	83.5	17.0	35.5	6.0	73.5	23.0	50.0	6.0	1.0	20.0
	519.3																

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HR Project organisation – Input and budget 2

Partner	Abbre-viation	Monthly rate		
		Direct	Overhead	Total
Planair SA	PLAN	11155	2789	13944
Commune de Cernier / Canton Neuchâtel	CENE	11155	2789	13944
Ecole Polytechnique Fédérale de Lausanne	EPFL	6.208	1.552	7.760
Contren SA	CONT	11155	2789	13944
Stadtgemeinde Hartberg/Stadtwerke Hartberg Verwalgung GmbH	HART	8.775	1.755	10.530
FH Joanneum GmbH	FHJK	4582	916	5498
Verein Ecoregion Kaindorf	KAIN	5475	1095	6570
KW Solartechnik Planungs-, Entwicklungs-, Produktions- und Vertriebs GmbH	KW	8.775	1.755	10.530
IG Passivhaus Steiermark / Burgenland	IGPH	8.775	1.755	10.530
Republika Hrvatska, Splitsko-dalmatinska županija	HVAR	2700	540	3240
HEP – Obnovljivi izvori energije d.o.o.	HEP	5130	1026	6156
iC eurocontact	iC	5265	1053	6318
City of Lapua	LAP	6450	3870	10320
VTT	VTT	7134	7063	14200
Thermopolis	THER	7460	1492	8952
Scheiner -Electric	SCHE	6200	1240	7440
Municipality Preddvor	PRED	2700	540	3240

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HR Project organisation – Input and budget 3

Participant number in this project *	Participant short name	Estimated eligible costs (whole duration of the project)					Total receipts	Requested EC contribution
		RTD / innovation (A)	Demonstration (B)	Management (C)	Other (D)	Total A+B+C+D		
1	Planair	176,624.04	565,648.00	278,860.00	181,272.00	1,222,424.04	0.00	885,444.00
2	CENE	37,164.40	2,073,184.40	0.00	33,855.60	2,143,754.40	0.00	1,092,328.00
3	EPFL	402,348.80	194,160.00	0.00	0.00	596,508.80	0.00	398,840.00
4	CONT	0.00	903,145.20	0.00	13,944.00	917,089.20	0.00	395,832.00
5	HART	112,320.00	1,974,850.04	0.00	47,385.60	2,133,755.64	0.00	1,118,650.02
6	KAIN	52,560.00	885,013.20	0.00	29,565.60	967,138.80	0.00	498,351.00
7	KW	77,220.00	583,070.40	0.00	15,795.60	676,086.00	0.00	365,245.00
8	FHJK	146,256.00	358,992.00	179,100.80	37,395.20	712,744.00	0.00	496,583.00
9	IGPH	0.00	769,536.00	0.00	15,795.60	785,331.60	0.00	480,563.00
10	HVAR	25,920.00	1,436,040.00	0.00	29,160.00	1,491,120.00	0.00	766,620.00
11	HEP	24,624.00	950,624.40	0.00	12,912.00	987,540.40	0.00	499,936.00
12	iC	202,176.00	2,225,582.00	113,724.00	44,226.00	2,585,708.00	0.00	1,421,373.00
13	LAP	128,427.20	4,084,640.00	0.00	41,280.00	4,254,347.20	0.00	1,429,960.00
14	VTT	648,475.00	150,230.00	134,184.00	62,832.00	996,721.00	0.00	758,487.00
15	THER	0.00	480,843.60	9,359.60	56,094.00	545,497.20	0.00	385,074.60
16	SCHE	0.00	516,480.00	7,440.00	41,760.00	565,680.00	0.00	397,440.00
17	APE, d.o.o	17,280.00	0.00	35,920.00	45,920.00	99,120.00	0.00	94,800.00
TOTAL		2,051,415.44	18,169,159.24	748,808.40	706,203.20	21,677,586.28	0.00	11,235,626.62

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HR Project organisation – Regular meetings/reporting

LETS DISCUSS AND AGREE

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CONCERTO

"Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs"

Definition for Sustainable Development: Brundtland Report of the World Commission on Environment and Development, 1987

Lets go for it !!!

SOLUTION

- sustainable oriented and long-lasting unique team for energy self sufficient communities

SOLUTION HVAR
EUROPSKI KONCEPT ENERGETSKE AUTONOMNOSTI o.HVARA

Ivan Vranković, dipl.ing.stroj.
Andreas Helbl
otok Hvar - ožujak 2010.

EUROPSKI KONCEPT ENERGETSKE AUTONOMNOSTI

1. ENERGETSKA SLIKA o.HVARA – danas
2. DEMONSTRACIJSKI PROGRAM SOLUTION HVAR
   - Solution - grupa europskih energetski održivih komuna
   - Cilj programa
   - Programom se želi pokazati
3. VIZIJA ENERGETSKE BUDUĆNOSTI o.HVARA

❖ **Sunčani Hvar treba solarnu inicijativu !**

Globalno zatopljenje i ekološki izvori energije

- Dilema:
  - *- globalno zatopljenje je prirodna pojava*
  - *- globalno zatopljenje je rezultat djelovanja čovjeka*
- Emisija stakleničkih plinova doprinosi zatopljenju:
  - *- spaljivanje fosilnih goriva*
  - *- truljenje organske tvari*
- Zasad nema ekološki čistog, **obilnog** izvora energije:
  - *- nuklearna fuzija na bazi vode .. tek za 30 godina*
- Do tada vrijedi pravilo:
  'najbolji način opskrbe energijom je smanjenje potrošnje energije'

Energetska slika RH

- **INA d.d.**
  - *osigurava 84% energije za RH putem fosilnih goriva (nafta / plin)*
  - *više nije u većinskom vlasništvu RH*
- **HEP d.d.**
  - *zasad još u 100% vlasništvu RH*
  - *zbog financijskih teškoća premalo ulaže u proizvodne pogone i elektro energetsku mrežu (uvoz el.energije, ispadi sa mreže)*
  - *uvozi trećinu el.energije isporučene potrošačima*
  - *neminovno stalno povećavanje cijena el.energije.*
- **Obnovljivi izvori energije OIE**
  - *tehnologije proizvodnje energije iz OIE zasad još nisu komercijalno dovoljno isplative*
  - *ovise o poticajima državne agencije HROTE*
  - *novac za poticaje izdvajaju potrošači el.energije*
  - *realiziran manji broj projekata*
  - *gospodarenje šumskim blagom neracionalno*
- ***Hvar ima relativno značajne resurse u OIE:***
  sunce, vjetar, biomasa, more, otpad

EUROPSKI KONCEPT ENERGETSKE AUTONOMNOSTI

1. ENERGETSKA SLIKA o.HVARA – danas

Energetska opskrba o.Hvara :

- Električna energija = 57% ukupne energetske potrošnje otoka
  - preko Brača i Korčule povezan podmorskim kablovima sa kopnom
- Šumska biomasa = 23% ukupne energetske potrošnje otoka
  - drvo u cjepanicama kupuje se na obali ili stihijski pili na otoku
- Lož ulje = 17% ukupne energetske potrošnje otoka
  - spaljuje se u kotlovima za centralno gijanja
- UNP –ukapljeni naftni plin = 3% ukupne energetske potrošnje otoka
  - uglavnom za kuhanje i samo iznimno za grijanje

EUROPSKI KONCEPT ENERGETSKE AUTONOMNOSTI

2. DEMONSTRACIJSKI PROGRAM SOLUTION HVAR

a) Solution - grupa europskih energetski održivih lokalnih zajednica
po jedna iz Švicarske, Austrije, Finske, Hrvatske i Slovenije.

b) Cilj programa je napraviti iskorak prema energetskoj autonomnosti, prvenstveno u stanovanju / zgradarstvu

c) Programom se želi pokazati da je moguće na otoku Hvaru:

primjenom mjera energetske efikasnosti u zgradarsvu smanjiti potrošnju energije za 20%

primjenom suvremenih rješenja grijanja, hlađenja i pripreme STV, smanjiti potrošnju električne energije u toplinske svrhe

20% potrebne energije namiriti iz lokalnih OIE:

- električnu energiju iz otočkih solarnih elektrana
- toplinsku energiju iz solarnih termičkih kolektora i biomase (pelete, sječka, biootpad, ...)

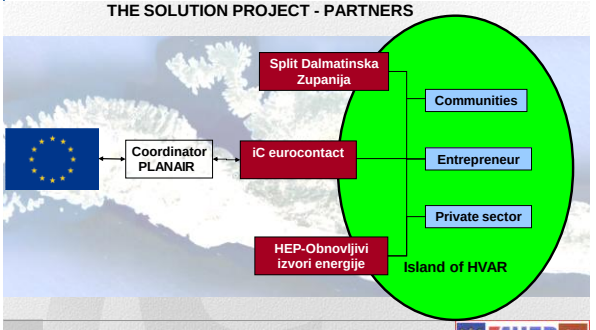
EUROPSKI KONCEPT ENERGETSKE AUTONOMNOSTI

3. VIZIJA ENERGETSKE BUDUĆNOSTI o.HVARA

- *Smanjenje potrošnje energije u kućanstvima, poslovnim i javnim objektima povećanjem energetske efikasnosti zgrada i instalacija grijanja, hlađenja i pripreme sanitarne tople vode*
- *Proizvodnja električne energije u otočkim solarnim elektranama i smanjenje ovisnosti o obskrbi električnom energijom sa kopna*
- *Maksimalno korištenje direktne topline Sunca te akumulirane topline u atmosferi i moru.*
- *Unapređenje korištenja otočke biomase (pelet, sječka, biootpad,..)*

- SOLARNA INICIJATIVA
- LOKALNA BIOMASA
- SINERGIJA INTERESNIH GRUPA
- KAPITAL
- POTICAJI

THE SOLUTION PROJECT - PARTNERS



THE SOLUTION PROJECT - METHODOLOGY

Definition of the Baseline:
- Islands Energy Balance
- Definitionof major consumers
- Building characteristics
- Available ressources
- Current Activities and County strategies
- Experience from similar Islands
- Definition of major problems and barriers

Identification of Energy Efficiency Measures and Project Definition:
- Measures for typical buildings
- Measures in public works
- Measures in terms of public awareness and consumer behaviour

Verification of Renewable Energy Solutions (Cost/benefit):
- Large Scale PV
- Bioenergy
- Solar thermal
- etc.

Integrated Analysis / Demonstration and Verification/monitoring
- Large Scale PV
- Biogas
- Solar thermal
- Etc

THE SOLUTION PROJECT - DEMONSTRATION

PROJECT TYPES
- **Energy Efficiency in the public sector**
- **Energy Efficiency in the hotel sector**
- **Energy Efficiency in the apartment house sector**
- **Photovoltaic plant with 1 MW / Electricity Storage**
- **Bioenergy plant to use local biogenic waste**
- **Solar thermal installations for buildings and industry**

THE SOLUTION PROJECT - DEMONSTRATION

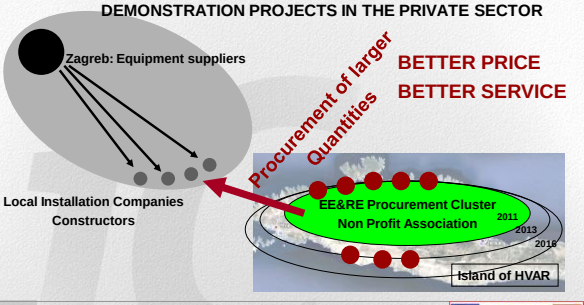
MAXIMUM ELIGIBLE COSTS

- **EUR 100 / m² for Energy Efficiency Measures in the building sector**
- **EUR 2.500 / kW for PV**
- **EUR 1.200 / kW for Bio-energy such as Biogas**
- **EUR 500 / m² for Innovative solar systems**

MAXIMUM CO-FINANCING BY EUROPEAM COMMISSION

50 % of eligible costs

THE SOLUTION PROJECT
DEMONSTRATION PROJECTS IN THE PRIVATE SECTOR



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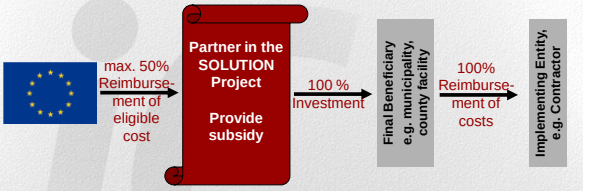
THE SOLUTION PROJECT - DEMONSTRATION

REIMBURSEMENT PROCEDURE – PUBLIC FACILITY



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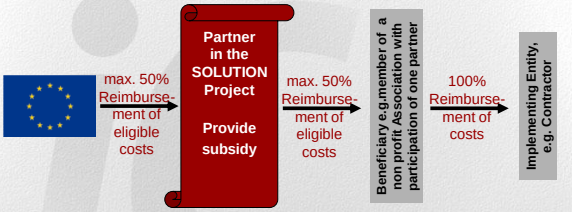
THE SOLUTION PROJECT - DEMONSTRATION

REIMBURSEMENT PROCEDURE – PRIVATE FACILITY



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CONCERTO

THANK YOU FOR YOUR ATTENTION

PROJECT SOLUTION

MEETING ON THE ISLAND OF HVAR

June 8-9, 2010

IMPORTANT:
It is important to send us your flight details (arrival and departure from Split Airport) in order to plan other details of your visit.

Our meeting will take place in **Hotel Amfora** (http://www.suncanihvar.com), as well as the accommodation.

During the following week (after 26th April) we will send you the contact address where you can book your accommodation.

7th June 2010 - Arrival on the Island of Hvar

Transport from Split Airport to City of Split (port)

- by coach, in front of the airport building, organised by Croatia Airlines
- the trip lasts for around 30 minutes and it costs 30 kunas (some 4 €)
- the coach will take you to the port (the last stop)
- please ask the driver for the ferryboat to Stari Grad (Island of Hvar)

Transport from City of Split to Island of Hvar

- by ferryboat from City of Split to Stari Grad (Island of Hvar)
- the time table is (ferryboat departure time from Split to Hvar):
  - 11:00
  - 14:30
  - 17:00
  - 20:30
- the trip lasts around 2 hours and it costs around 40 kunas (some 5,5 €)
- when you arrive in Stari Grad there will be opportunity to take public transport or a hotel transport service (please arrange when booking) that will take you to the City of Hvar and your hotel (hotel Amfora)
- the trip last for around 15-20 minutes

Welcome dinner

On the day of arrival, we will meet in the hotel lobby at 20:00. This is the central meeting point for all of us.

8th June 2010 – Meeting – Day 1

08:00 – 10:00	First session
10:00 – 10:15	Coffee break
10:15 – 12:15	Second session
12:30 – 13:30	Lunch
13:30 – 14:30	Third session
15:00 – 18:00	Site visits; Cultural programme
20:00 –	Dinner

9th June 2010 – Meeting – Day 2

08:00 – 10:00	First session
10:00 – 10:15	Coffee break
10:15 – 12:15	Second session
12:30 – 13:30	Lunch
13:30 – 15:00	Third session
15:30 –	Site visits; Cultural programme

9th June 2010 – Departure from the Island of Hvar

- there will be organised transport from City of Hvar to Stari Grad
- the time table is (ferryboat departure time from Stari Grad to Split):
  - 14:00
  - 17:00
  - 20:00
- when you come to Split you have to take the coach to the Split Airport (from the same bus stop when you have arrived)
- the coach departure time is scheduled at 1,5 hours before the flight (example: if your flight is 20:00, the coach will depart at 18:30)
- otherwise you are suggested to take a taxi (taxi stop is next to the bus stop)

10th June 2010 – Departure from the Island of Hvar

- there will be organised transport from City of Hvar to Stari Grad

- the time table is (ferryboat departure time from Stari Grad to Split):
  - 05:30
  - 07:45
  - 11:30
  - 14:00
  - 17:00
  - 20:00
- when you come to Split you have to take the coach to the Split Airport (from the same bus stop when you have arrived)
- the coach departure time is scheduled at 1,5 hours before the flight (example: if your flight is 20:00, the coach will depart at 18:30)
- otherwise you are suggested to take a taxi (taxi stop is next to the bus stop)

If you have any questions please feel free to contact us directly (Hvar Solution Team, Mr. Zlatko Jankoski, zlatko.jankoski@dalmacija.hr).

Map - the Island of Hvar

CONCERTO

SOLUTION

- sustainable oriented and long-lasting unique team for energy self sufficient communities

Tko hoće, može !

SOLUTION HVAR

BIOMASA I SUNCE
u opskrbi naselja energijom

Ivan Vranković, dipl.ing.stroj.
otok Hvar - siječanj 2011.

CONCERTO

Članovima LAG otoka Hvara,

U prilogu je prezentacija **'BIOMASA I SUNCE'**,

kao mogućeg Projekta za opskrbu otočkog naselja toplinskom i rashladnom energijom, a koji se može sufinancirati kroz program SOLUTION HVAR !

Projekt se može izvesti na dva načina i to kao:

1. **Individualno grijanje/hlađenje zgrada** i organiziranu distribuciju lokalno proizvedenih peleta (iz komine)
2. **Centralno grijanje/hlađenje naselja** sa postupnim proširenjem mreže i izgradnjom ULO hladnjače za skladištenje vlastitih proizvoda

Opcija pod 2) sastojala bi se u konačnici od:

a) Kotla na pelete iz lokalne komine 250 kWt (55 kg/h peleta)
b) Solarnih kolektora 200 m2
c) Apsorbcijskog rashladnog uređaja 100 kWt za hlađenje
d) ULO Hladnjače 200 tona (40 kWt)
e) Distribucijske mreže tople/hladne vode do potrošača u naselju

Naravno da bi se i u ovom slučaju projekt realizirao postupno tj. najprije: **kotao + djelomično solarni kolektori i distribucijska mreža,** a zatim širenjem potrošnje i ev. izgradnjom hladnjače i ostalo!

Pozdrav,
Ivan Vranković
098 277 942
iC grupa

CONCERTO

ENERGETSKA SLIKA o.HVARA – danas

- za grijanje / hlađenje / toplu vodu troši se 67% ukupno utrošene energije (bez prometa), od čega **60% otpada na domaćinstva**
- **Domaćinstva o.Hvara** plaćaju za to opskrbljivačima energijom izvan otoka cca. **5 mil.€ /god**. (bez drva i bez goriva za vozila i strojeve)
- Cijene energije stalno rastu
- **Sunce i otpadna biomasa** mogu pomoći da se znatan dio tog novca zadrži na otoku !

Zaključak:

o.Hvar nedovoljno koristi Sunce i otpadnu biomasu !

CONCERTO

DEMONSTRACIJSKI ENERGETSKI PROGRAM za o.Hvar
do 1.11.2014. uz bezpovratnu potporu EU od 2,2 mil.€

Efikasnost

1.0 ENERGETSKA OBNOVA ZGRADA ……..…..942.750 €
- JAVNE ZGRADE (10.000 m2)
- PRIVATNE ZGRADE (8.000 m2)

Sunce

2.0 SOLARNE ELEKTRANE ……..…..975.000 €
- JAVNA SOLARNA ELEKTRANA (HEP 500 kW)
- PRIVATNA SOLARNA ELEKTRANA (KONČAR 250 Kw)
- KROVNO SOLARNO POSTROJENJE (SGM 30 kW)

Biomasa

3.0 KOMPOSTANA / BIOPLIN (Uljara Balić 80/100 kW).....108.000 €

4.0 BIOMASA + SUNCE
SUSTAVI ZA GRIJANJE / HLAĐENJE (Svirče i Bogomolje)..168.000 €

CONCERTO

PELETE IZ KOMINE **SOLARNI (TH & PV) KOLEKTORI**

Biomasa

Solar

CONCERTO

LINIJA ZA PROIZVODNJU PELETA 200 Kg/h

Smrvljena biomasa

Pelete

CONCERTO is co-funded by the European Commission

CONCERTO

INDIVIDULNE PEĆI NA PELETE SA ILI BEZ DIMNJAKA

7

CONCERTO is co-funded by the European Commission

CONCERTO

KOTAO ZA GRIJANJE NA PELLETE
SA SOLARNOM POTPOROM

EKONOMIČNA KOTLOVNICA
ZA VEĆE KUĆE

INDIVIDUALNI KUĆEVLASNICI MOGU KORISTITI **KOTLOVE NA PELETE** MANJE SNAGE ZA CENTRALNO GRIJANJE I PRIPREMU TOPLE VODE **UZ SOLARNU POTPORU**

➢LJETI SE SANITARNA TOPLA VODA PRIPREMA POMOĆU SOLARNIH KOLEKTORA,

➢ ZIMI SE PROSTOR I STV GRIJE KOTLOM NA PELETE UZ POTPORU SUNCA

8

CONCERTO is co-funded by the European Commission

CONCERTO

KOTLOVI NA PELETE 250 kW za područno grijanje

9

CONCERTO is co-funded by the European Commission

CONCERTO

PELETE IZ KOMINE MOGU OSIGURATI TOPLINU POTREBNU ZA GRIJANJE PROSTORIJA, PRIPREMU STV, GRIJANJE BAZENA .... a u drugoj fazi i HLAĐENJE prostorija i skladišta !

10

CONCERTO is co-funded by the European Commission

CONCERTO

SISTEMA Srl PADOVA
REKUPERATOR OTPADNE TOPLINE IZ DIMNIH PLINOVA (300ºC->100ºC)

INVESTICIJA SE ISPLATI ZA TRI GODINE !

KAKO BI SE POVEĆALA UČINKOVITOST POSTOJEĆIH, VEĆIH KOTLOVA (PEKARNICE) TREBA ISPITATI MOGUĆNOST PRIMJENE REKUPERATORA TOPLINE DIMNIH PLINOVA

11

CONCERTO is co-funded by the European Commission

CONCERTO

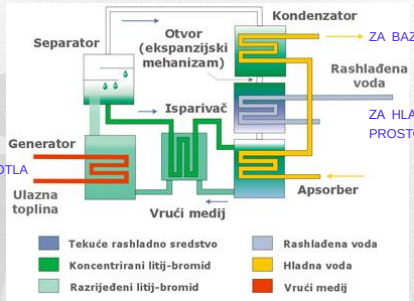
BIO – SOLARNI KONCEPT

12

CONCERTO is co-funded by the European Commission

CONCERTO

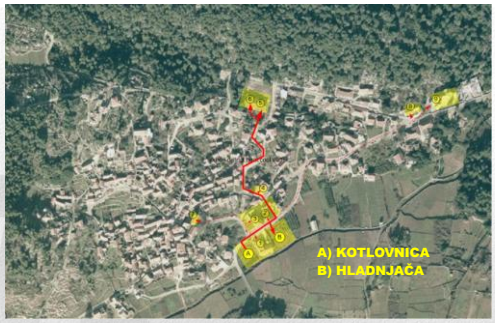
SHEMA APSORPCIJSKOG RASHLADNOG UREĐAJA



CONCERTO is co-funded by the European Commission

CONCERTO

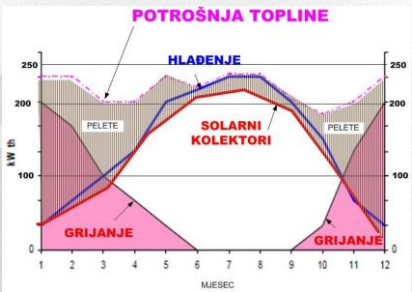
PODRUČNO GRIJANJE / HLAĐENJE U NASELJU



CONCERTO is co-funded by the European Commission

CONCERTO

POTROŠNJA PELETA I DOPRINOS SUNCA



CONCERTO is co-funded by the European Commission

CONCERTO

ZA PODRUČNO GRIJANJE SNAGE 250 kW MOŽE SE DOBITI 150.000.- € BEZPOVRATNE POTPORE EU !

SADA SU NA POTEZU INVESTITORI !

Hvala na pozornosti !

CONCERTO is co-funded by the European Commission

CONCERTO

SOLUTION

- sustainable oriented and long-lasting unique team for energy self sufficient communities

Tko hoće, može !

SOLUTION HVAR

DRVNA SJEČKA za proizvodnju toplinske i električne energije

Ivan Vranković, dipl.ing.stroj.
otok Hvar - siječanj 2011.

CONCERTO

ENERGETSKA SLIKA o.HVARA – danas

- za grijanje / hlađenje / toplu vodu troši se 67% ukupno utrošene energije (bez prometa), od čega **60% otpada na domaćinstva**
- **Domaćinstva o.Hvara** plaćaju za to opskrbljivačima energijom izvan otoka cca. **5 mil.€ /god**. (bez drva i bez goriva za vozila i strojeve)
- Cijene energije stalno rastu
- **Sunce i biomasa** mogu pomoći da se znatan dio tog novca zadrži na otoku !

Zaključak:

o.Hvar nedovoljno koristi Sunce i biomasu !

CONCERTO

DEMONSTRACIJSKI ENERGETSKI PROGRAM za o.Hvar
do 1.11.2014. uz bezpovratnu potporu EU od 2,2 mil.€

Efikasnost

1.0 ENERGETSKA OBNOVA ZGRADA ……..942.750 €
- JAVNE ZGRADE (10.000 m2)
- PRIVATNE ZGRADE (8.000 m2)

Sunce

2.0 SOLARNE ELEKTRANE ……..... 975.000 €
- JAVNA SOLARNA ELEKTRANA (HEP 500 kW)
- PRIVATNA SOLARNA ELEKTRANA (KONČAR 250 Kw)
- KROVNO SOLARNO POSTROJENJE (SGM 30 kW)

Biomasa

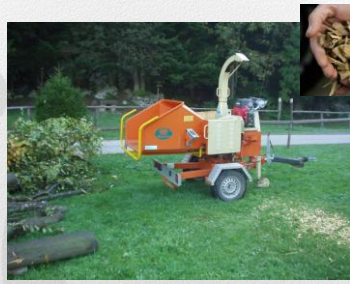
3.0 KOMPOSTANA / BIOPLIN (Uljara Balić 80/100 kW).....108.000 €

4.0 BIOMASA + SUNCE
Proizvodnja električne, toplinske,rashladne energije 168.000 €

CONCERTO

PROIZVODNJA DRVNE SJEČKE

SJEČKALICA do 15 cm



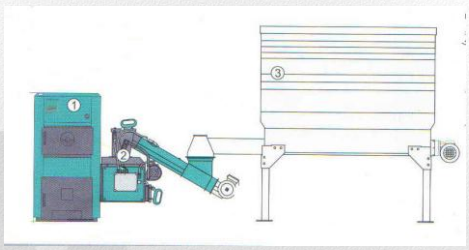
CONCERTO

AUTONOMNI IVERAČ 300 cm

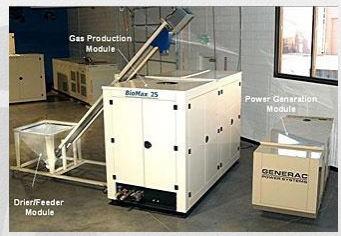
CONCERTO

SKLADIŠTE ZA DRVNU SJEČKU I KOTLOVNICA SA SILOSOM

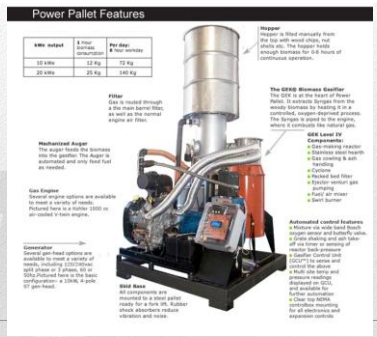
KOTAO NA DRVNU SJEČKU 40 kW SA SILOSOM za dvije kuće po 160 m2



BIOPLINSKI MODUL NA DRVNU SJEČKU SA AGREGATOM 10 kW el



EL.ENERGIJA IZ DRVNE SJEČKE



GEK POWER PALLET 10 kW el

USPOREDBA ISPLATIVOSTI DRVNE SJEČKE PREMA ELEKTRIČNOJ ENERGIJI

ZA GRIJANJE DVIJU KUĆA po 160 m2
NA DRVNU SJEČKU MOŽE SE DOBITI
50% od vrijednosti investicije po računima, do max.16.000.- € BEZPOVRATNE POTPORE EU !

SADA SU NA POTEZU INVESTITORI !

Hvala na pozornosti !

6 ANNEX II

ENERGETIKA 2010. KLJUČNA GODINA ZA MEDITERANSKI SOLARNI PLAN

Hvar čeka prvu solarnu elektranu

Hrvatska se mora aktivnije uključiti u energetsku strategiju Unije za Mediteran, ističe dr. Tonči Tadić, predsjednik Euromediteranskog foruma

PIŠE **MIRKO CRNČEVIĆ** /EPEHA

REUTERS

Godina 2010. bit će, prema svemu sudeći, značajna za ključne projekte Unije za Mediteran (UfM). Jedan od njih je Mediteranski solarni plan, koji su kao ključan istaknuli i predsjednici država članica UfM-a na osnivačkom sastanku Unije za Mediteran u Parizu. O mediteranskim strategijama i o energetskim mogućnostima koje otoku Hvaru nuditi Unija za Mediteran razgovaramo s dr. **Tončijem Tadićem**, predsjednikom Euromediteranskog foruma (EMEF).

Veliki potencijali Dalmacije

– EMEF je nevladin "think-tank" specijaliziran za projekte i strategije Unije za Mediteran. Kako je poznato, na ministarskom sastanku u Marseilleu (4. studenog 2008.) dogovoreno je da će se suradnja država članica UfM-a odvijati u čak 32 područja, od kojih je jedno energetika. EMEF sa svojim stalnim radnim skupinama prati i pokriva sva ta područja suradnje Unije za Mediteran, te može biti sugovornik i Vladi RH, ali i jadranskim gradovima i županijama Hrvatske. Voditelj stalne radne skupine EMEF-a za energetiku je prof. dr. sc. **Ranko Goić** sa splitskog FESB-a – kaže Tadić.

Zaključak UfM-a sa sastanka u Parizu poziva na korištenje alternativnih izvora energije, odnosno na Solarni plan, čiju će konačnu izradu koordinirati Tajništvo UfM-a i njegova stručna tijela. EMEF smatra da bi Hrvatska, kao zemlja s iznimno velikim solarnim potencijalom u Dalmaciji, trebala biti zainteresirana za Solarni plan UfM-a. Zato bi naša zemlja trebala imenovati svoje predstavnike i upravu Mediteranskog solarnog plana, makar na razini promatrača, te ih ponuditi supredsjedateljima UfM-a, Francuskoj i Egiptu.

– Ne ulazeći u detalje, Solarni plan predviđa stvaranje zakonske i organizacijske mreže u svakoj zemlji članici za razvoj i masovnu primjenu solarne energije i drugih obnovljivih izvora. To pretpostavlja ograničavanje rasta potrošnje energije, odnosno učinkovitije korištenje energije te sve moguće uštede. S druge strane, Solarni plan uključuje i povezivanje elektroenergetskih sustava zemalja članica UfM-a, te suradnju na razvoju i primjeni solarne tehnologije. U praktičnom smislu, u zemljama članicama UfM-a to znači niz konkretnih projekata na državnoj ili regionalnoj razini kojima bi se potaknuli tehnički, gospodarski i organizacijski procesi za širu primjenu solarne energije, odnosno kojima bi se privukli investitori u solarnu energiju, bilo na individualnoj, tj. kućnoj razini, bilo na razini malih solarnih elektrana – naglasio je naš sugovornik.

Solarna elektrana pogotovo može biti dobra i za otok Hvar, dakle, naš najsunčaniji škoj, ali i za druge dijelove Splitsko-dalmatinske županije. Županijski, gradski i općinski prostorni planovi trebaju osigurati lokacije za izgradnju solarnih elektrana, a lokalne i državne vlasti na svim bi razinama trebale osigurati nesmetano ishođenje potrebnih dozvola za gradnju takvih elektrana.

– Malo tko uviđa rastuće potrebe za električnom energijom u sezoni zbog sve većeg broja instaliranih klimatizacijskih uređaja. Ljetno povećanje broja stanovnika naših otoka tako postaje sve veći problem za sustav opskrbe električnom energijom, koji je već sada na rubu izdržljivosti. Zato je potrebno lobiranjem i relevantnom računicom potaknuti gradske i županijske vlasti, te Vladu RH i Hrvatsku agenciju za reguliranje energetskih djelatnosti (HERA) da predvide gradnju solarnih elektrana na otocima – ističe dr. Tadić.

Uz masline, smokve, loze

Dodaje da među panelima solarnih ćelija mogu rasti masline i smokve, loze i lavanda, a svi objekti potrebni za rad takve elektrane mogu se razmontirati i odnijeti u nekoliko dana ako više ne bude potrebni.

– Svaka takva solarna elektrana znači i barem 10 radnih mjesta za mlade stručnjake u tehničkim znanostima, za koje inače na otocima nema radnih mjesta – zaključuje dr. Tonči Tadić.

Propuštene prilike

Naša zemlja, nažalost, kaska za onim što zovemo Solarni plan, jer je u novoj Energetskoj strategiji RH propuštena prilika da se u Hrvatskoj još više promoviraju obnovljivi izvori energije, osobito solarna energija. Vjerujem da će daljnja suradnja Hrvatske i UfM-a biti poticaj Vladi RH i nadležnome ministarstvu da što prije usklade Energetsku strategiju sa zahtjevima Mediteranskog solarnog plana – rekao je dr. Tonči Tadić.

Četiri milijuna eura

Za jednu otočnu solarnu elektranu od 1 MW trebalo bi oko 20 hektara, uzevši u obzir prilazne staze, trafostanicu, servisne zgrade i drugu prateću infrastrukturu, što je investicija od oko četiri milijuna eura. Ona samo početno izgleda velika, jer nakon toga gotovo da nema novih izdataka. Takva bi elektrana, smještena na površini poput samo četvrtine prosječnoga golf-terena, zimi otoku Hvaru osigurala 2000-3000 kWh električne energije dnevno, a u ljetnim mjesecima moglo bi se računati i na 6000 kWh dnevno, odnosno energiju za napajanje 300 prosječnih kućanstava.

HEP OBNOVLJIVI IZVORI ENERGIJE
JEDAN OD PARTNERA PROJEKTA
SOLUTION

Ivana Alerić

Iskoristiti povlastice pripadanja konzorciju

HEP Obnovljivi izvori energije se, sudjelovanjem u projektu *SOLUTION*, kvalitetnije pozicionira na hrvatskom i inozemnom tržištu, dobiva potrebna znanja iz područja suvremenih tehnologija te mogućnosti korištenja obnovljivih izvora energije, ne samo primjerom vlastitog projekta, već i svih preostalih projekata, odnosno prijavljenih regija u konzorciju

HEP Obnovljivi izvori energije d.o.o. uključio se u *CONCERTO* - energetski program Europske komisije i to kao jedan od partnera u provedbi projekta *SOLUTION*, financiranog u velikom dijelu sredstvima Europske unije.

Projekt *SOLUTION* akronim je punog naziva ***S**ustainable **O**riented and **L**ong-lasting **U**nique **T**eam for energy self-suff**I**cIent c**O**mmu**N**ities*. Kako i sam naziv projekta govori, riječ je o projektu kojem je temeljni cilj razvoj modela poticanja javnih i privatnih partnera u stvaranju energetski samoodrživih općina, primjenom mjera energetske učinkovitosti te korištenjem obnovljivih izvora energije.

Konzorcij Solution sastoji se od 17 registriranih partnera iz Austrije, Finske, Švicarske i Slovenije, dok Republiku Hrvatsku predstavljaju Splitsko-dalmatinska županija, HEP Obnovljivi izvori energije d.o.o. te kao koordinator projekta, tvrtka *iC eurocontact*.

Otok Hvar - demonstracijska zona za samoodrživi razvoj u Hrvatskoj

Koordinator cjelokupnog projekta i tijelo ovlašteno za izravnu komunikaciju s Europskom komisijom je švicarski *Planair*. Demonstracijski projekti predviđeni su za regije Cernier u Švicarskoj, Hartberg u Austriji, Lapua u Finskoj, Preddvor u Sloveniji te za otok Hvar u Hrvatskoj.

Cjelokupni projekt provodit će se u nekoliko faza, odnosno tematskih cjelina i to: Istraživanje i tehnološka inovacija; Održiva rješenja kao demonstracijski projekt, Treninzi i transfer znanja, Komunikacija te promicanje ideja i iskustava; Project management.

Znači, kao demonstracijska zona za samoodrživi razvoj u Hrvatskoj odabran je otok Hvar, s tim da će se uspješna rješenja, tamo ostvarena, primijeniti i na ostale regije u Hrvatskoj, kao i unutar zemalja konzorcija.

Demonstracijski projekt na otoku Hvaru obuhvaća programe povećanja energetske učinkovitosti na turističkim i stambenim objektima, izgradnju 200 kW postrojenja na bioplin, izgradnju solarne elektrane snage 1 MW, program promicanja korištenja obnovljivih izvora energije te uravnoteženje proizvodnje i potrošnje električne energije.

HEP Obnovljivi izvori energije je odlučio sudjelovati u projektu *SOLUTION*, jer riječ je o primjeni obnovljivih izvora energije, preciznije, Sunčeve energije koja je malo zastupljena u Hrvatskoj, ali i o stjecanju znanja na području inovacija i novih tehnologija.

Olakšan razvoj inovativnih i ekonomski isplativih rješenja

Razvojem pojedinih projekata s povlasticom pripadanja jednom takvom konzorciju dobivaju se potrebna znanja, sposobnosti i iskustva koja predstavljaju korist i prednost svim partnerima. Nadalje, interdisciplinarnim pristupom olakšan je razvoj inovativnih te ekonomski isplativih tehnologija, s ciljem provedbe najbolje dostupnih tehnoloških rješenja.

Ovih je dana Europska komisija potpisala *Grant Agreement* te je time započelo i službeno ostvarenje projekta Solution. Europska komisija u aktivnostima financiranja istraživanja i tehnološkog razvoja sudjeluje s 50 posto do maksimalnih 75 posto, dok se ulaganje u projekt sufinancira s 50 posto.

Pretpostavljeno trajanje projekta je 60 mjeseci, od čega se veći angažman očekuje u prve tri godine, kada se planiraju ostvariti ciljevi prva dva radna paketa (Istraživanje i inovacija te implementacija demonstracijskog projekta).

U trenutačnoj fazi tematske cjeline Istraživanja i tehnološke inovacije, HEP Obnovljivi izvori energije može ponuditi kadrove te stručnu pomoć glede: postojećeg stanja lokalne infrastrukturne, budućih potreba, pitanja problematike priključenja na mrežu, sigurne opskrbe otoka Hvara električnom energijom, pripreme dokumentacije za ishođenje potrebnih dozvola i drugo.

HEP Obnovljivi izvori energije se, sudjelovanjem u tom Projektu, kvalitetnije pozicionira na hrvatskom i inozemnom tržištu, dobiva potrebna znanja iz područja suvremenih tehnologija te mogućnosti korištenja obnovljivih izvora energije, ne samo primjerom vlastitog projekta, već i svih preostalih projekata, odnosno prijavljenih regija u konzorciju.

Projekt CONCERTO

Inače, projekt *CONCERTO* projekt je unutar programa Zajednice FP7, a FP7 je financijski instrument kojim EU financira istraživanje i razvoj u Europi i drugim dijelovima svijeta. Riječ je o najvećem programu Zajednice, s proračunom koji iznosi više od 50 milijarda eura za sedmogodišnje razdoblje, od 2007. do 2013. godine. Kao projekt namijenjen ostvarivanju najširih ciljeva politike istraživanja i tehnološkog razvoja Europske unije, FP7 se dijeli u četiri kategorije, tzv. specifična programa: suradnja, ideje, ljudi, kapaciteti. Više od polovice ukupnih sredstava u proračunu FP7 predviđeno je za deset tematskih područja u okviru specifičnog programa Suradnja: zdravstvo, hrana, informacijska i komunikacijska tehnologija, nanotehnologije, energija, okoliš (uključuje i klimatske promjene), promet, društveno-ekonomske i humanističke znanosti, sigurnost te svemir i prostor.

Energetska učinkovitost

Naša županija dobila je pet milijuna eura, od ukupno 21,6, koliko EU nudi za projekte energetske učinkovitosti, a taj će novac biti iskorišten za niz projekata na Hvaru. O.K.

DAJ PET U SKLOPU MEĐUNARODNOG PROJEKTA ZA UŠTEDU ENERGIJE

Hvaru Europa daje pet milijuna eura

Projekt će mnogo značiti za najsunčaniji otok jer se tijekom pet godina, do studenog 2014. godine, planiraju ulaganja u obnovi svih zgrada u vlasništvu Županije, posebno osnovnih i srednjih škola te Domova zdravlja na cijelom otoku, a gradit će se i sunčana elektrana

PIŠE
OJDANA KOHAREVIĆ

Hvaru će euri dobro doći
MAJA ZRNIĆ / EPEHA

Međunarodni projekt za uštedu energije "Solution", u kojem sudjeluje i Hrvatska provest će se u sljedećih pet godina na otoku Hvaru, a Europska unija je Splitsko-dalmatinskoj županiji za ovaj projekt odobrila pet milijuna eura.

Veliko je to priznanje za ovu županiju koja se prijavila na natječaj za ovaj europski projekt težak 21,6 milijuna eura. Partneri Županije splitsko-dalmatinske su i HEP-OIE d.o.o, te tvrtka IC Eurocontact d.o.o.

Projekt "Solution" za otok Hvar znači postizanje energetske neovisnosti otoka u iznosu od 20 posto do 2020. godine, a kako bi se to postiglo, definirana su tri područja, i to poboljšanje energetske učinkovitosti u zgradama javnog i privatnog sektora, izgradnja sunčeve elektrane, te upotreba biomase u energetske svrhe.

Projekt će mnogo značiti za najsunčaniji otok jer se tijekom pet godina, do studenog 2014. godine, planiraju ulaganja u obnovi svih zgrada u vlasništvu Županije, posebno osnovnih i srednjih škola te domova zdravlja na cijelom otoku, u skladu s najnovijim europskim standardima energetske učinkovitosti, za koja će se dodatno moći prijaviti i objekti privatnih vlasnika.

Partneri u Švicarskoj

Uz to, na Hvaru će se izgraditi sunčana elektrana te nabaviti pogoni za proizvodnju bioplina iz komine, ostataka prerade maslina i vinove loze. Uz ovaj razvojni dio, projekt uključuje i istraživanje na razvoju i primjeni sustava pohranjivanja viška proizvedene energije (primjerice, s komprimiranim zrakom ili vodikom).

Nakon što je ovakva važna vijest stigla u Županiju, partneri u projektu "Solution" će sve detalje dogovoriti sljedećeg tjedna u švicarskom gradu Cernieru, gdje će u ime Splitsko-dalmatinske županije otputovati Visko Haladić, zamjenik župana, i Zlatko Jankoski, stručni savjetnik za energetiku.

U projektu "Solution", uz Hrvatsku sudjeluju i Austrija, Švicarska i Finska, dok Slovenija i Latvija imaju status promatrača.

'SOLUTION' PREDSTAVLJEN MEĐUNARODNI PROJEKT ZA UŠTEDU ENERGIJE

Županija pretekla i neke države EU-a

Hvar ima 2700 sunčanih sati godišnje, što je najbolji pokazatelj opravdanosti ulaganja u sunčevu energiju, kaže Visko Haladić

PIŠE **OJDANA KOHAREVIĆ**

Solarne elektrane mogle bi se naći i uz povijesne hvarske hore

Međunarodni projekt za uštedu energije "Solution", koji će se provesti na Hvaru, predstavili su u srijedu županijski čelnici, župan **Ante Sanader**, zamjenik župana **Visko Haladić**, predsjednik Županijske skupštine **Petroslav Sapunar** te **Ranko Vujčić**, šef Županijskog odjela za energetiku.

- Ovim projektom želimo biti prva županija u korištenju europskih fondova, a posebno obnovljivih izvora energije - kazao je župan Sanader, ističući činjenicu da je Hrvatska na ovome međunarodnome natječaju pretekla Sloveniju i Latviju koje u projektu "Solution" imaju tek status promatrača. - Županija je pokazala da smo i u ovome prije zemalja EU-a - kaže Sanader.

Zahvalio je stručnom županijskom timu na čelu s Rankom Vujčićem koji su iznijeli veliki teret oko pripremanja projekta za europske fondove, a rad županijskih stručnjaka pohvalio je i Petroslav Sapunar. Jedan od glavnih pregovarača u županijskom timu bio je Visko Haladić, zamjenik župana, koji je kazao zbog čega je Hvar najpogodnije mjesto za program "Solution".

- Naš Hvar ima 2700 sunčanih sati godišnje, što je najbolji pokazatelj opravdanosti ulaganja u sunčevu energiju - kazao je Haladić. Kad će se izgraditi prva fotoelektrana, kojom bi se opskrbljivalo stanovništvo na Hvaru, još se ne zna. Sljedeće godine će uslijediti pregovori u Bruxellesu te potom na Hvaru kako bi se dogovorili detalji ovog vrijednog projekta.

Predstavljanje projekta "Solution" bilo je uvod u neformalno druženje županijskih čelnika s predstavnicima medija. I jedni i drugi nisu štedjeli čestitke i pohvale. Županijski čelnici zaželjeli su novinarima da u sljedećoj godini ne ostanu bez posla, a u ime novinara zahvalio je **Marinko Čavar**, dugogodišnji novinar HRT-a Studija Split. I novinari i političari ovom su se prilikom složili kako će ionako dobra suradnja biti još bolja te da će u sljedećoj godini i novinari koji prate rad Županije imati bolje uvjete rada.

Ukra

ŠOLTA

Jaslice u

Šoltanski umj
Petrić, kao št
izradio je jasli
mali Isus rođe
ovaj način po
je umjetnik, s
Božića koji ni
biti odvojen o
karakteristika
i mornara. I m
umjetnik, aka
Ivan Pezer iz
je kip svetog
- sovu, koji pr
značajna obil

IMOTSKI

Rotary kl
osnovce

Imotski Rota
božićne blag
je učenicima
imotskih osn
vrlo vrijedne
su dva kompl
uređaje dobil
"Zmijavci", p
Znaori i Ivanl
OŠ "Aržano"
Svib jedan ko
jedan kompl
područno od
Podbablje i Č
područna šk
Mi čemo i ub
sličnim darov
najmlađe, jer
i ulaganje u n
izjavio je pre
kluba Imotsk
Kuprić.

HVAR

'Odgoj z
humano

TEHNOLOŠKI ISKORAK UZ NEPOVRATNE POTICAJE EUROPSKE UNIJE

HVARANIMA PONUĐEN PROJEKT KORIŠTENJA OBNOVLJIVIH IZVORA ENERGIJE

Otočani prigrlili 'solarnu inicijativu'

U projektu koji će biti predstavljen, riječ je o novim tehnologijama proizvodnje energije iz obnovljivih izvora sunca, vjetra, biomase, topline atmosfere i mora

PIŠE **MIRKO CRNČEVIĆ**/EPEHA

Nakon što su stanovništvu otoka Hvara stručnjaci **Darko Hozjan, Robert Horvat i Jožef Kardinar** 18. i 19. ožujka održali javna predavanja o primjeni dizalica topline i solarnih sustava, te njihovih kombinacija u mediteranskom podneblju, na školu će danas i sutra biti predstavljen projekt "Solution" koji realizira Splitsko-dalmatinska županija uz nepovratni poticaj Europske unije, a u suradnji s partnerima HEP-OIE d.o.o. iz Zagreba i iC Consulenten ZT GmBH iz Beča.

–Nekad su naši očevi iz ekonomskih razloga napuštali školj, a mi danas, u ovoj ekonomskoj krizi, pokušavamo "solarnom inicijativom" osigurati poslovnu perspektivu i opstanak, pa čak što više i povratak naše djece na otok. Hvarani se ponose svojom kulturnom, poljodjelskom i turističkom tradicijom, ali sada je vrijeme da Hvar napravi "tehnološki iskorak", koristeći direktno energiju svoga sunca, ali i energiju akumuliranu u okolini, čuvajući pritom čistoću svoga zraka i ljepotu krajolika – poruka je **Ivana Vrankovića**, koordinatora projekta (iC grupa).

Predstavljanje projekta za lokalne vlasti, institucije, potrošače i općenito stanovništvo, uz sudjelovanje prof. **Michaela Heidenreicha** (Social/Consumer Behaviour Study), upriličit će se kroz četiri predavanja u Starom Gradu i Hvaru. Naravno, bit će riječi o novim tehnologijama proizvodnje energije iz obnovljivih izvora sunca, vjetra, biomase, topline atmosfere i mora, ali uz istodobno smanjenje rasipanja energije, što svakako treba iskoristiti.

Otočani su, kako Vranković dodaje, prihvatili Europski koncept energetske autonomnosti, budući da je kompatibilan s njihovim osnovnim gospodarskim djelatnostima – poljoprivredom i turizmom. Zato su se i pridružili grupi europskih, održivih zajednica iz Švicarske, Austrije, Finske i Slovenije, te je unutar konzorcija "Solution" pripremljen uz pomoć Županije, HEP-OIE-a i iC grupe iz Beča energetski demonstracijski program "Solution Hvar".

Dipl. ing. Ivan Vranković, koordinator projekta 'Solution Hvar'

MIRKO CRNČEVIĆ / EPEHA

Nepovratno 2,68 milijuna eura

Konzorcij "Solution" uspio je na natječaju FP4 Concerto ishoditi nepovratna sredstva EU-a u iznosu od 11,23 milijuna eura, od čega samo za otok Hvar 2,68 milijuna eura. A programom se u razdoblju od pet godina planira ostvariti unapređenje energetske učinkovitosti u zgradarstvu, izgradnja solarnih elektrana (4x250 kW) na više lokacija s pripadajućim sustavom kratkoročnog pohranjivanja električne energije, energetsko korištenje poljoprivredne i šumske biomase, te biorazgradivog otpada, stalno praćenje potrošnje energije na otoku, optimiranje energetskog sustava, te upravljanje proizvodnjom i potrošnjom energije – istaknuo je Ivan Vranković, napomenuvši da je cilj programa i europskih financijskih poticaja pokazati da je na otoku Hvaru zaista moguće do 2020. postići smanjenje energetske potrošnje za 20 posto, ali i namirenje isto toliko proizvodnjom iz OIE-a.

Marica Žanetić Malenica

Concerto zajednica na Hvaru

U Starom Gradu na Hvaru su 29. i 30. ožujka o.g. održani radni sastanci u organizaciji Splitsko-dalmatinske županije (SDŽ), HEP Obnovljivih izvora energije (HEP OIE) i tvrtke *iC Consulenten ZT GmbH* iz Beča. Na njima je predstavljen je energetski projekt SOLUTION s kojim su upoznati: predstavnici lokalne vlasti (gradonačelnici, načelnici, vijećnici gradova Hvar i Stari Grad te općina Jelsa i Sućuraj); predstavnici institucija na otoku Hvaru (HEP, Hrvatske šume, hotelijeri, ugostitelji, turistička zajednica, poljoprivredne zadruge, poduzetnici, obrtnici...) i javnost (lokalno stanovništvo, kućevlasnici, poljoprivrednici i ostali). Sastanke je vodio Visko Haladić - zamjenik Župana SDŽ, a Projekt su predstavljali: dr.sc. Zlatko Jankoski - stručni savjetnik za energetiku Upravnog odjela za gospodarstvo, razvoj i EU integracije SDŽ i voditelj Projekta te Ivan Vrankovič i Andreas Helbl kao predstavnici *iC* Grupe.

Istraživačko-razvojni projekt SOLUTION (*Sustainable Oriented and Long-lasting Unique Team for Energy Self-Sufficient Communities*) jedan je u nizu projekata iz programa CONCERTO, kojeg sufinancira EU pod istraživačkim okvirnim programom FP 7 (*Seventh Framework Programm*) kako bi pomogao zajednicama (regijama, gradovima, otocima) pri provedbi energetskih strategija s ciljem osiguranja kvalitetnog regionalnog razvoja. U okviru programa CONCERTO provodi se 18 projekata u kojima sudjeluje 45 zajednica s područja EU. Natječajem iz 2009. godine odobrena su četiri nova projekta u koje je uključeno još 13 zajednica. Glavni cilj programa CONCERTO je udružiti inovacijske i demonstracijske aktivnosti u okviru područja korištenja OIE, energetske učinkovitosti i zgradarstva kako bi se postigla rješenja koja će na najučinkovitiji i najekonomičniji način smanjiti emisiju ugljičnog dioksida.

Otok kao energetski samodostatna zajednica

SOLUTION je okupio pet europskih država - partnera i to: Austriju, Finsku, Švicarsku i Hrvatsku te Sloveniju kao partnera - promatrača. Svatko od partnera izabrao je područje primjene projekta - *concerto* zajednicu, a u Hrvatskoj je kao područje primjene Projekta odabran otok Hvar i to njegov istočni dio, uključujući i grad Stari Grad. Sveukupni cilj SOLUTION projekta za otok Hvar je postići energetsku neovisnost otoka u udjelu od 20 posto do 2020. godine. Od ukupno 138 projektnih aktivnosti, na Hvaru će se za ostvarenje sveukupnog cilja provoditi njih približno 74, s tim da će glavne od njih biti: izgradnja Sunčevih elektrana (ukupno četiri); izgradnja energane na biomasu/bioplin; izgradnja sustava pohranjivanja energije; poboljšanje energetske učinkovitosti u zgradama javnog i privatnog sektora te promidžba Programa i Projekta. Prve tri godine planira se intenzivna provedba aktivnosti i izvedba sustava, a tijekom četvrte i pete obavljalo bi se promatranje, analiziranje, izvješćivanje i promidžba.

Uz V. Haladića, koji je vodio sastanke. Projekt su hvarskoj zainteresiranoj javnosti predstavili dr.sc. Z. Jankoski, A. Helbl i I. Vranković

Na otoku Hvaru do 2014. četiri solarne elektrane

Na realizaciju projekta 'Solution Hvar' utrošit će se nešto više od 5 milijuna eura. Europska komisija za tu je namjenu osigurala nepovratna sredstva u iznosu od 2,68 milijuna eura. Moguće je da sve četiri jedinice lokalne samouprave – Hvar, Stari Grad, Jelsa i Sućuraj, budu imale po jednu solarnu elektranu

PIŠE **MIRKO CRNČEVIĆ**

Zlatko Jankoski i Ivan Vranković (drugi i treći s lijeva) s kolegama iz drugih zemalja partnera u hotelu 'Amfora' u Hvaru

MIRKO CRNČEVIĆ / CROPIX

Radnom sastanku u sklopu projekta "Solution", koji je održan u hotelu "Amfora", nazočila su 33 predstavnika i projektna partnera iz Austrije, Švicarske, Finske i Hrvatske, a Slovenija je bila u ulozi zemlje promatrača. Upriličene su radionice, potom su uslijedile prezentacije provedenih aktivnosti i postignutih rezultata, a sa sudionicima sastanka osobno je u ime Europske komisije surađivao **Mario Dionisio.**

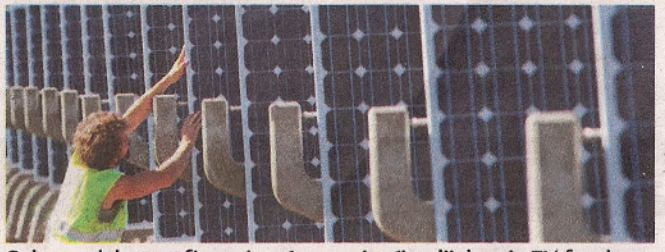
Na realizaciju projekta "Solution Hvar" utrošit će se nešto više od 5 milijuna eura. Europska komisija za tu je namjenu osigurala nepovratna sredstva u iznosu od 2,68 milijuna eura, dok će ostali dio sufinancirati partneri i njihovi izvođači - HEP OIE, iC Consulenten iz Beča i Splitsko-dalmatinska županija.

-Programom koji treba dovršiti do studenog 2014. na Hvaru predviđamo izravna ulaganja od približno 4,5 milijuna eura. Ona se odnose na unapređenje energetske učinkovitosti u zgradarstvu, zatim izgradnju četiri solarne elektrane od po 250 kW različitih tehnologija, te energetsko korištenje poljoprivredne biomase i biorazgradivog otpada. Jedan od segmenta je svakako i sustav pohranjivanja električne energije, dok istraživački dio projekta podrazumijeva demonstraciju tehnologije komprimiranog zraka, a ovisno o mogućnostima također bismo željeli pokrenuti proizvodnju, spremanje i korištenje vodika.

Naravno da se računa i sa stalnim nadzorom, što je vrlo značajno za optimiziranje, odnosno upravljanje proizvodnjom i potrošnjom energije – kazao je dr. sc. **Zlatko Jankoski**, stručni suradnik za energetiku UO za gospodarstvo, razvitak i obnovu Splitsko- dalmatinske županije.

Koncept energetske autonomnosti

Dakle, Hvarani su prihvatili europski koncept energetske autonomnosti kako bi se u većoj mjeri koristili obnovljivim izvorima i smanjili energetsku potrošnju. U tom se smislu na energetsku učinkovitost u zgradarstvu - javne i privatne zgrade, planira utrošiti oko pola milijuna eura, a moguće je da sve četiri jedinice lokalne samouprave - Hvar, Stari Grad, Jelsa i Sućuraj, budu imale po jednu solarnu elektranu. Na Otoku sunca će se, prema riječima inženjera **Ivana Vrankovića,** koordinatora projekta (iC grupa), dodatno izgraditi i dva objekta po principima pasivnih kuća. U jednoj, s karakteristikama demonstracijske građevine, sjedište će naći asocijacija zainteresiranih investitora, dok bi druga manja, ustvari familijarna kuća, trebala poslužiti za tehnička mjerenja energetske učinkovitosti.



Solarne elektrane financirat će se najvećim dijelom iz EU fondova