FIRESPOL
Interreg Europe

European Union
European Regional
Development Fund

3rd Interregional Event

DOSSIER

INDEX

Introduction

FIRESPOL seeks to boost regionally-specialized and decentralized Renewable Energy Private Investment, by introducing improvements in the management of Ops, which will break the financial barriers currently stopping the investment of the RES sector.

The goal of the project is the exchange of knowledge and experiences among the member states through the examples of the best practice in renewable energy projects, and the preparation of the Action Plan for implementing in the best possible manner the Financial Instruments in projects dealing with renewable energy sources and energy efficiency. The exchange of experience among partners is an interregional learning process. Special emphasis is put on elaborating the possibilities to stimulate entrepreneurs to invest in infrastructure for the generation and storage of energy from renewable sources.

Participation in this project will help Croatia in the programming process for the next programme period 2021 – 2028 in the context of defining the requirements and priorities in the field of RES, and the option of including the financing of RES projects combining grant funding with the Financial Instruments.

The project is co-financed by European Union from the European Regional Development Fund under Interreg Europe Programme.

3rd Interregional Event of FIRESPOL

The 3rd international event of FIRESPOL (Financial Instruments for Renewable Energy Investment) partner countries was held on 8 May in Split. The Environmental Protection and Energy Efficiency Fund, as the project implementing authority in Croatia, organised a workshop for the representatives of the partner countries: Spain, as the Project Team Leader, Germany, Latvia, Ireland, Poland, and Croatia.

The aim of the event was to create, through the exchange of experiences and presentation of good practices from the partner countries, a framework that will boost more intensive investment in RES from both the public and the private sector. All partner countries in the FIRESPOL project agree that the exchange of experiences and knowledge has been very beneficial, all with the aim of defining the best solutions for their respective country.

The second day (9 May) was organised as a study visit to the wind farm Jelinak, the first windfarm (WF) in Croatia that is located in Seget Gornji, and to the Hydroelectric Power Plant (HPP) Orlovac in the vicinity of Sinj. HPP Orlovac is a high head diversion plant with 249 MW total installed capacity. HPP Orlovac was commissioned in 1973. The hydroelectric power plant facilities are located in two states: reservoirs (impoundments) with associated facilities and one part of the headrace are located in Bosnia and Herzegovina, while the second part of the headrace, the water chamber, the penstock, the powerhouse and the powerhouse tailrace channel are located in the Republic of Croatia.

Together with the representatives of the partners, the representatives of the Croatian institutions, companies, and banks also participated in the workshop in order to find as efficient as possible, but at the same time applicable solutions for the relevant circumstances with the aim of increasing the use of renewable energy sources.

Event summary

Date: May 8 -9th, 2019
Location: Split (Croatia)

Agenda

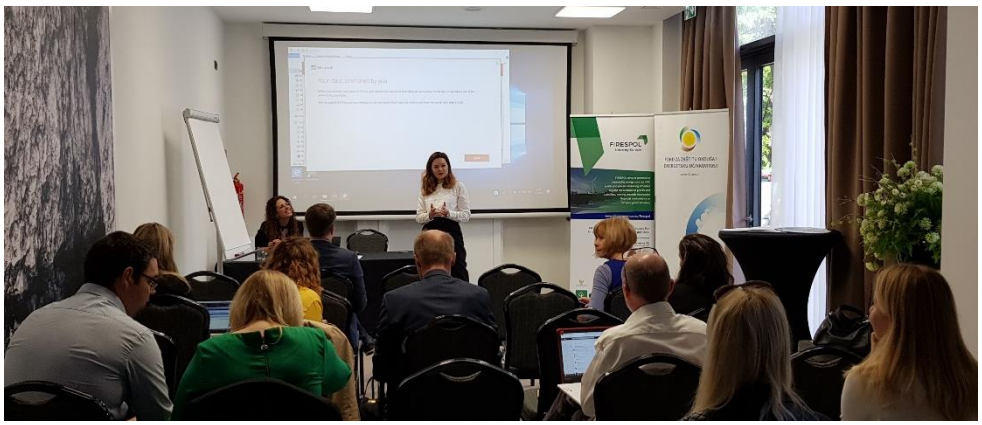
Wednesday, 8 May 2019

Time	Activity	Location
09:00	Welcome and Introduction to the meeting	Split (Croatia)
09:10	Steering Committee meeting	Split (Croatia)
12:00	Interregional Learning Workshop on Good Practices	Split (Croatia)
14:30	Interregional Learning Workshop on Good Practices	Split (Croatia)
15:45	Learning activity Working groups to determine the 15 Good Practices of the project.	Split (Croatia)

Thursday, 9 May 2019

Time	Activity	Location
10:00	Study visit to Power plant 1: Wind power plant Jelinak	Seget Gornji (Croatia)
13:00	Study visit to Power plant 2: Hydro power plant Orlovac	Rude, Sinj (Croatia)

Interregional Learning Workshop on Good Practices



Hotel Marvie, Perišićeva 1, Split

8 May 2019, 9:00-12:00

Steering Committee meeting

The Environmental Protection and Energy Efficiency Fund organized the Steering Committee meeting where the lead partner made a quick general review of all activities. The main ones were discussed and clarified.

TECHNICAL REVIEW

1. Best Practices

The access to the Interreg Europe platform was explained as well as the next steps to upload the best practices. Partners should send to lead partner the agreed 15 best practices by the 31st of May. Besides, partners should upload them to the drive folder: PGI05584_FIRESPOL > 02_SEMESTER 02 > 2.3. Guide of best practices and selection of 15 Good Practices > 2.3.1. Best Practices > Partner folder. The selection of the practices to be uploaded to the platform should start in the next weeks and partners were advised to follow lead partner / JS / expert instructions.

2. Regional self-assessment

Partners explained the development of the activity. Some of them have already finished a draft version of the document (PP5 and PP6), while others have been doing some research and compiling data (PP1, PP2, PP3 and PP4). The next steps were presented along with the deadlines.

3. Stakeholder group

The stakeholder's activity was reviewed. The 2nd stakeholder meeting by some partners is still pending, but they have confirmed that they will schedule it before the end of the Semester. Every partner should send in advance the information about the stakeholder meeting in order to create an event on the website and a news report thereon with the main conclusions of the meeting and the dossier about it.

4. Interregional Events

The 3rd interregional event took place on 8 and 9 May, and the following interregional event was held in Ireland in the period 2-3 July 2019. The upcoming interregional events: 5TH GERMANY - 15-16TH OCTOBER 2019, 6TH LATVIA – TBC (January-February 2020), 7TH SPAIN – TBC (May 2020).

5. Action plans

Some tips about the action plans were given and discussed.

FINANCIAL REVIEW

Spending level was reviewed. The next reporting period starts on the 1st of June. The template for the joint technical report will be shared and partners will need to fill it in by the 15th of July. Some doubts about reporting were discussed.

COMMUNICATION

The objectives and communication indicators status were shown and discussed. However, lead partner has established individual communication commitments per partner in order to disseminate the project and create content for the website. For this reason, every partner should provide content for the website. IE Communication seminar presentation was shared during the event.

8 May 2019, 12:00 – 15:45

Interregional Learning Workshop on Good Practices

The aim of the workshop is to create, through the exchange of experiences and presentation of good practices from the partner countries, a framework that will boost more intensive investment in RES from both the public and the private sector.

All partner countries in the FIRESPOL project agreed that the exchange of experiences and knowledge has been very beneficial, all with the aim of defining the best solutions for their respective country.

The Croatian stakeholders were the representatives from Ministry for Regional Development and EU Funds, Energy Institute Hrvoje Požar, Croatian Chamber of Economy, Croatian Association of RES, Croatian Association of RES; Acciona Energija, City of Split, HEP, HPB (commercial bank), University of Split, Ćurin Nautika, HBOR (Croatian Bank for Reconstruction and Development).

8 May 2019, 15:45 - 18:00

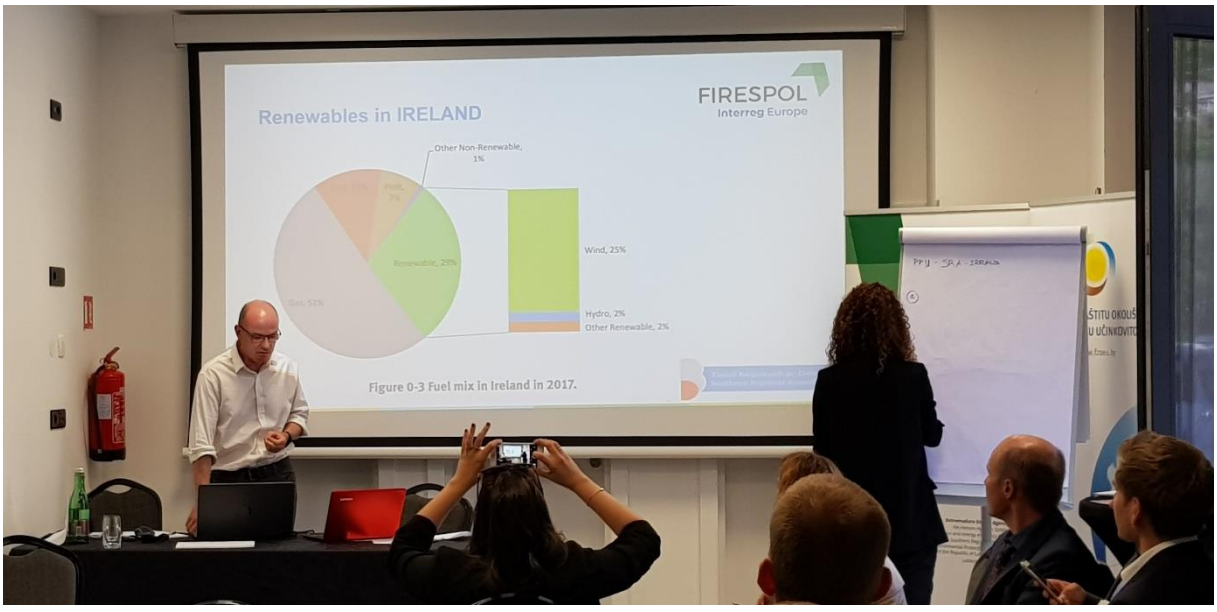
Learning activity

This topic was analysed in depth during the best practice workshop, where the participants were organised in working groups. Ten practice examples presented by every partner were commented and remarked on to decide which of them would be included in the 15 Best Practices of the project (the first 5 best practices were presented during the 2nd Meeting). During the workshop the conclusion was reached which good practices would be uploaded to the platform, which were commented and remarked on by the partners and stakeholders commented.

Photos:


sign loan/credit contract including
grant (520 m PLN – repayable and 280
m PLN non-repayable).


FIRESPOL
Interreg Europe
Financial Instruments for Renewable Energy Investment
3nd Interregional Learning Workshop – Split


Renewables in IRELAND
FIRESPOL
Interreg Europe
Other Non-Renewable, 1%
Renewable, 29%
Wind, 25%
Hydro, 2%
Other Renewable, 2%
Figure 0-3 Fuel mix in Ireland in 2017.

Study Visit I – Jelinak wind farm

30MW wind farm, with 20 AW1500 wind turbines

The second day (9 May) was organised as a study visit to the wind farm Jelinak, the first wind farm (WF) in Croatia that is located in the region of Dalmatia, in Seget Gornji. Wind farm Jelinak comprises 20 wind turbines with 1.5 MW individual rated capacity, and a total rated capacity of 30 MW. The windfarm is able to generate electricity equivalent to the annual consumption of around 30,000 Croatian homes per year. WF Jelinak was built by the Spanish company Acciona, and it has been in function since 2013.

GENERAL INFORMATION

Location: Seget and Marina, Dalmatia-Split, Croatia

Capacity: 30 MW

Wind turbine: 20 ACCIONA Windpower AW 82/1500

Tower: Steel, 80-meter hub height

Start-up: 2013

Owners: ACCIONA

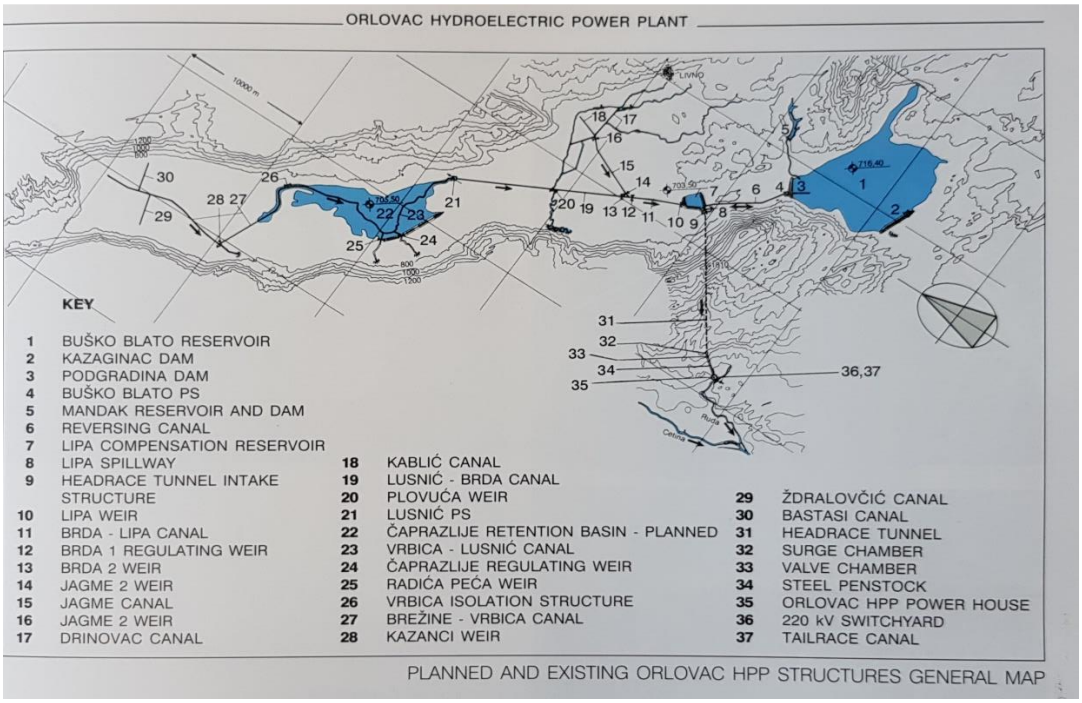
KEY POINTS

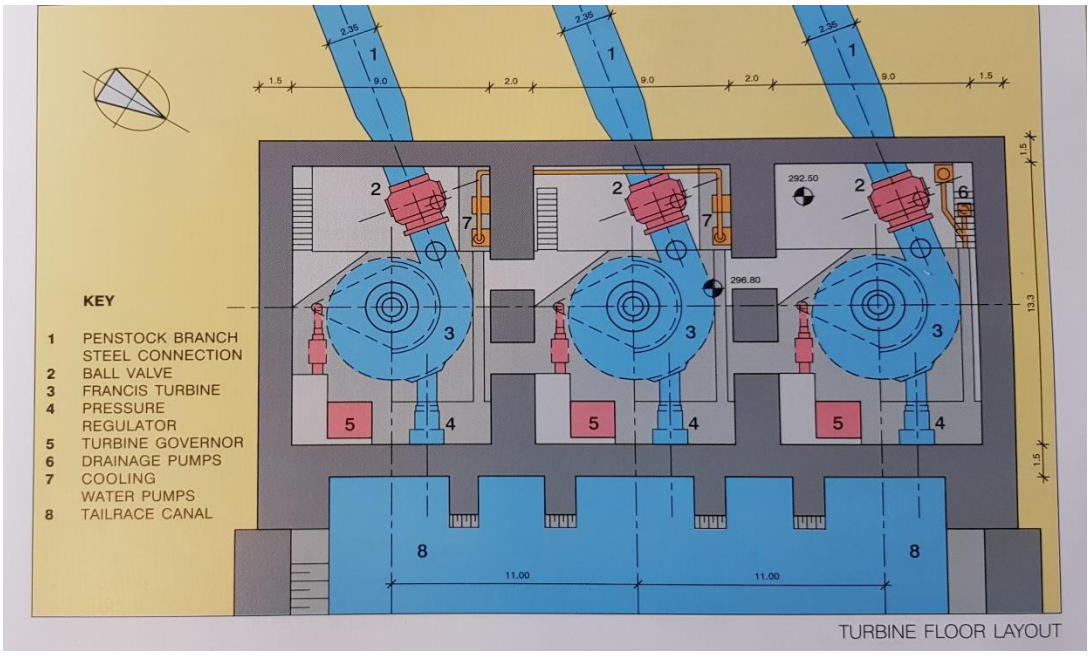
- ✓ First ACCIONA's wind farm in Croatia.
- ✓ Estimated annual production: 81 GWh
- ✓ Clean energy able to cover the demand of over 30,000 Croatian homes
- ✓ Acciona has been in function since 2013.
- ✓ 77,841 metric tons of CO2 from coal-fired power stations avoided per year.
- ✓ Over 500 people worked on the activities related to the entry into service of the wind farm.
- ✓ 80-m-high steel towers manufactured at the shipyards in Split.

Photos:

Study Visit II – Hydro power plant Orlovac

The Orlovac Hydroelectric power plant (HPP) is a high head diversion plant with 249 MW total installed capacity and a part of the hydropower system located in the Cetina River catchment. The structures, within the hydroelectric power plant are located in two states – the reservoirs and appurtenant structures, along with the part of the headrace tunnel are in Bosnia and Herzegovina and the other part of the headrace tunnel, surge chamber, penstock, power house and the power house tailrace canal are in the Republic of Croatia.





The Orlovac HPP basic concept is based on impoundment of the surface water from the karst fields of northwest Bosnia, in the Buško Blato Reservoir. Under natural conditions this water percolates in the sinkholes and flows towards in Cetina River via underground currents. From Buško Blato Reservoir the water is conveyed by a tunnel through the Mt. Kamešnica massif towards Sinjsko polje and used in a controlled manner at the height of about 400 m. Finally, the water is discharged into the Cetina River to be further used by the downstream hydroelectric power plants located on the stretch to Adriatic Sea.

Buško Blato Reservoir has been created by the construction of the Kazaginac and Podgradina Dams and made impermeable by a series of grout curtains. In addition to the Buško Blato Reservoir, the Mandak Reservoir has been impounded. The water from this reservoir is conveyed into the Buško Blato by a canal. Buško Blato Reservoir receives the water from its catchment and from Livanjsko Polje. The canal network carries the water to the Lipa Compensation Reservoir to be forwarded to the hydroelectric power plant. When the inflow from Livanjsko Polje exceeds the power plant demand, the Buško Blato Pumping Station reversing equipment conveys the water through the Lipa – Buško Blato canal into the Buško Blato Reservoir. The Buško Blato Reservoir capacity is 800 mil. m^3 and it is sufficient to receive the volume of a two-year mean inflow and carry out the complete annual regulation. This enables HPP Orlovac to run exclusively as the peaking facility and, when necessary, release under control the excess water towards HPP Zakučac, which is the largest hydroelectric power plant within the Cetina Hydropower System.

The Buško Blato Pumping Station is a reversing pump-turbine facility located adjacent to the Podgradina Dam. It has three functions – pumping water from the Lipa Reservoir into the Buško Blato Reservoir, power generation using the water released from the Buško Blato Reservoir in the direction of Lipa Reservoir, and water pumping from Buško Blato Reservoir at lower water levels to ensure the necessary water quantities for HPP Orlovac operation. The Buško Blato Pumping Station houses three pump-turbine units consisting of impeller pumps with regulation of rotor and stator blades driven by an asynchronous motor-generator. The station is fitted with intakes structures for bi-directional water flow, trash rack and sliding gates.

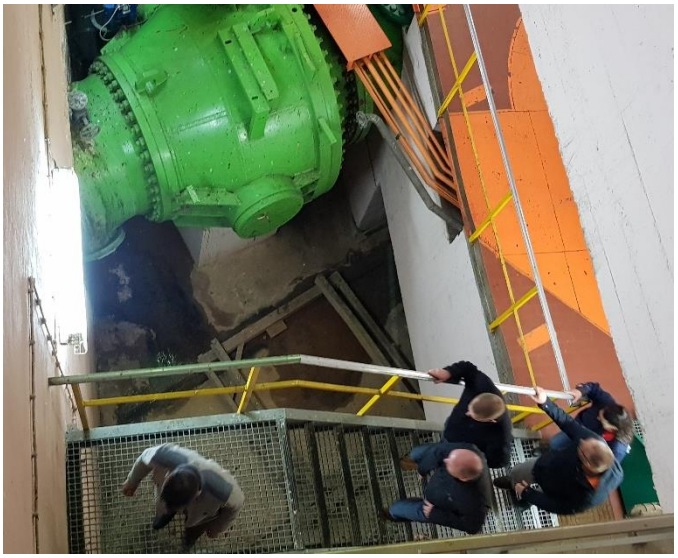
The water from Lipa Compensation Reservoir is conveyed through the intake structure and a 12,100 m long headrace tunnel (5.5 m dia.) with 70 m^3/s capacity, and finally directed trough the penstock into the Orlovac HPP power house. The surge chamber with the vertical shaft is located at the end of the headrace tunnel; the lower end of the vertical shaft extends into two horizontal chambers, each 60 m long.

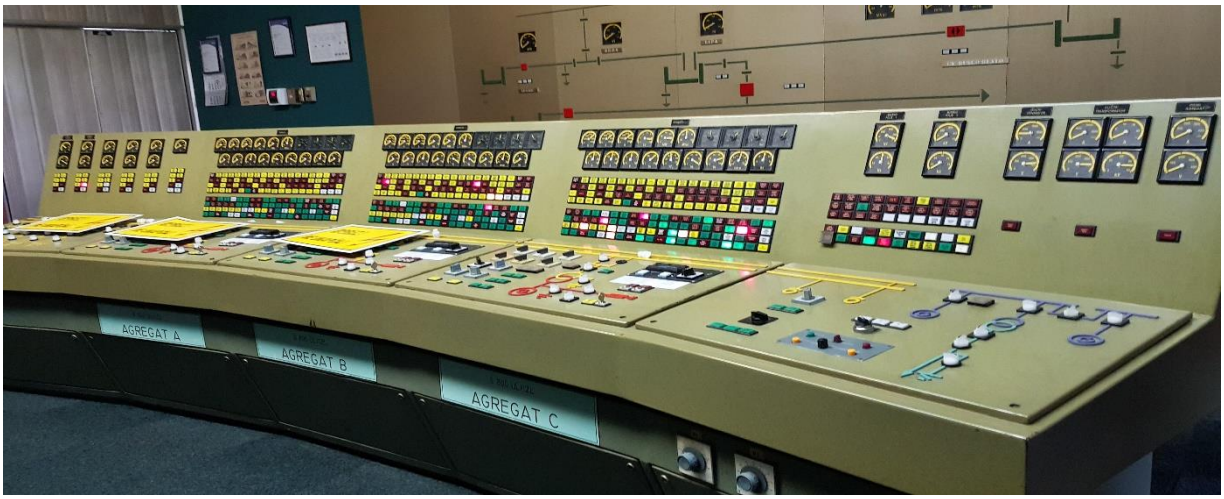
The valve chamber housing an automatic butterfly valve is placed downstream the surge chamber, at the end of the tunnel. From here, the penstock is routed in the open. The penstock is 1,577 m long, with 4.10 m in diameter at the top and 3.65 m at the bottom, laid on the concrete foundations. Upstream the power house, the penstock branches towards three generating units. The power house is a surface and it houses three vertical-shaft generating units with Francis turbines, butterfly valves and pressure regulator, installed discharge 23.3 m3/s each, and three synchronous generators, rating 79 MW with auxiliaries, and the control room.

The short concrete canal takes the water to the Ruda River which flows into the Cetina River. The 220 kV switchyard is located in the immediate vicinity of the power house. It has double busbars with three generator bays, a coupling and metering bay, and two transmission line bays interconnecting the power plant with the power system through double 220 kV transmission lines running to 400/220/110 kV Konjsko Substation.

The service load is supplied from 1 MVA station service generator with the Pelton turbine. The 35 kV transmission line from Sinj and 250 kVA diesel set are used as standbys.

Photo Gallery:





Media - Through multilateral cooperation to more renewables

The event received very good coverage in the media, and it evoked a keen public interest.

18 snaga hrvatske energetike

snaga hrvatske energetike 19

Zajedno do rješenja S ciljem intenzivnijeg ulaganja u obnovljive izvore energije Fond za zaštitu okoliša i energetsku učinkovitost organizirao je u Splitu treći međunarodni susret zemalja partnera projekta FIRESPOL

Kroz razmjenu iskustava i primjere dobre prakse razvit će se instrumenti koji će ukloniti financijske prepreke investiranja u OIE

50 milijuna kuna osigurao je Fond ove godine za poticanje sustava korištenja OIE u kućanstvima

27 posto udjela OIE do 2030. godine novopostavljeni je cilj Hrvatske

Od ove multilateralne suradnje očekujemo mnogo, posebno kada je u pitanju kreiranje programa za sljedeće operativno razdoblje kroz definiranje prioriteta, ali i pronalaženje novih mogućnosti za financiranje projekata u području obnovljivih izvora energije

Dubravko Ponoš, direktor FZOEU-a

Prema Eurostatovim podacima da se zaključiti da trebamo staviti težište na ostale oblike obnovljivih izvora energije te povećati ciljeve u čemu veliki podršku mogu osigurati energetske politike

Uspon solara zbog pada cijena

Što nas čeka u budućnosti?

MOŽE LI I HRVATSKA BITI ZELENA?

Španjolci planiraju za 20 godina sva energiju za industriju, kućanstva i institucije dobivati iz prirode. Hrvatska je na dobrom putu, ali mora puno više ulaziti u korištenje sunčeva potencijala

Struja prodana unaprijed

50 % električne energije