PRODES **Promotion of Renewable Energies for Water Production through Desalination**

www.prodes-project.org

Report on the Seminars

Deliverable WP 6.4

Intelligent Energy Europe

Acknowledgements

This publication has been produced as part of the ProDes project. The logos of the partners cooperating in this project are shown below and further information about them and the project is available on www.prodes-project.org:

www.wip-munich.de
www.ineti.pt
www.aquamarinepower.com
www.befesa.es
www.cres.gr
www.aosol.pt
www.hellasenergy.gr
www.ciemat.es
www.unipa.it
www.fraunhofer.de
www.edsoc.com
www.tinox.com
www.capitalconnect.gr
www.itccanarias.org
www.prodes-project.org

Intelligent Energy Europe

ProDes is co-financed by the Intelligent Energy for Europe programme

(contract number IEE/07/781/SI2.499059)

The sole responsibility for the content of this document lies with the authors. It does not necessarily reflect the opinion of the European Communities. The European Commission is not responsible for any use that may be made of the information contained therein.

Table of Contents

Introduction

Within the ProDes project four Seminars have been organised and implemented, one Seminar in each of the target countries, Italy, Spain, Greece and Portugal, during the 2nd year of the project. All Seminars have been completed from June to September 2010. This document presents the reports from these four Seminars, while an organisational overview is given in the table below:

Country	Italy
Location	University of Palermo, Palermo (Italy)
Time scheduling	28/09/2010
Target group	Representatives of local authorities, decision-makers and professionals
N° of participants	20
Country	Spain
Location	Offices of IDAE, Madrid
Time scheduling	15th June 2010
Target group	People in charge of elaborating the National Plan for Renewable Energy in Spain
N° of participants	6
Country	Greece
Location	Classical Athens Imperial Hotel
Time scheduling	9th of September 2010
Target group	Representatives of National Administration, financial sector and related companies
N° of participants	87
Country	Portugal
Location	LNEG, Edifício Solar XXI, Lisbon
Time scheduling	20th September 2010
Target group	Representatives of relevant institutions on the water and renewable energy sectors
N° of participants	3 (from the target group)

1 Seminar in Italy

1.1 Introduction

Time and place of the Seminar:

The seminar was held on the 28th of September 2010 in Palermo, in the council room of the Engineering Faculty at the Università di Palermo.

Target Group:

Policy makers from local governmental authorities were invited along with professionals and researchers dealing with legislative issues on RE and water management. The event was advertised in several different ways (leaflets, web sites of University of Palermo (www.unipa.it, www.dicpm.unipa.it) e-mail and fax messages, and phone calls for inviting directly policy makers). The list of participants to the Seminar held on the 16th of March was also used to extract some interested professional who already participated to the previous Seminar.

1.2 Implementation of the Seminar

The seminar was held on the 28th of September in Palermo. It was implemented by the staff of UNIPA with the support of a subcontractor (SINTESI), which previously supported UNIPA in the organisation of the two courses for professionals and the Seminar. All invited speakers, as well as representatives of public authorities, were contacted directly by UNIPA internal staff. A copy of the invitation leaflet is reported in Appendix 1.3.

The official language of the seminar was Italian and the lecture material was in Italian with the exception of the last presentation on the framework of RE and desalination in Greece, Spain and Portugal, for which some slides provided by INETI, CIEMAT and CRES were used directly in English.

A coffee break was held in a room very close to the council room, providing some time and space for discussions between participants.

Moreover information material on the Prodes Project and research activities carried out in Palermo on RE-desalination was also made available on the registration desk.

All the presentations were made available (with the permission of all the speakers) as .pdf files to all participants through a link (in the web site of SINTESI), which was sent by e-mail few days after the seminar.

1.3 Participants – Speakers

About 20 participants attended the event, coming mainly from the field of water and wastewater treatment and RE. A list of all participants, with relevant affiliation and e-mail address, is reported in the table below.

List of Participants

Name	Affiliation	E-mail
Barbaro Chiara	University	barbarochiara@dream.unipa.it
Cappello Francesco	ENEA	francesco.cappello@enea.it
Cipollina Andrea	University	cipollina@dicpm.unipa.it
Cosenza Bartolomeo	University	b.cosenza@dicpm.unipa.it
Di Liberto Gaetana	individual	taniadiliberto@alice.it
Garofalo Giusto	SICILIACQUE	g.garofalo@siciliacquespa.it
Grispo Serena	individual	seryx85@inwind.it
Hoffmann Alessia	APSICILIANE	alessia.hoffmann@apsiciliane.it
Micale Giorgio	University	micale@dicpm.unipa.it
Montalbano Maria Luana	Individual	luanamontalbano@katamail.com
Murgia Bartolo	Individual	bmurgia@libero.it
Pampalopne Salvatore	Provincia Regionale di Palermo	pampalonesalvatore@libero.it
Piacentino Antonio	University	piacentino@dream.unipa.it
Rizzuti Lucio	University	rizzuti@dicpm.unipa.it
Romano Maria Concetta	AMAP	concetta.romano@amapspa.it
Scafidi Michele	individual	scafidi@dima.unipa.it
Scardina Francesca	Individual	f.scardina@mclink.it
Siragusa Angelo	AMAP	angelo.siragusa@gmail.com
Tamburini Alessandro	individual	alessandrotamburini@alice.it
Tucciarelli Tullio	University	tucciar@SUNIDRA.IDRA.UNIPA.IT

Speakers were also chosen from different areas of expertise. Three internal speakers of the Palermo PRODES group chaired the event and gave general speeches on the Prodes project and on the actual Italian framework for desalination and RE-desalination.

Another speaker from the University of Palermo, Dr. Antonio Piacentino, presented the technological and economical potentials of co-generative schemes for desalination and energy production, along with relevant legislative issues and governmental subsides related to the energetic efficiency increase in co-generation processes.
Finally, Dr. Francesco Cappello (a senior researcher from ENEA, the most important Italian Research Institute for Renewable Energy) presented the technological and legislative framework of RE in Italy and in Sicily.
The list of speakers is reported in the Table below.

List of Speakers

Name	Affiliation	Subject of the speech	E-mail
Cappello Francesco	ENEA	*The Italian technological and legislative framework for Renewable Energies*	francesco.cappello@enea.it
Cipollina Andrea	University	*Renewable energies for fresh water production: the actual framework and development potentials for the next future* & *The Italian technological and legislative framework for Desalination technologies*	cipollina@dicpm.unipa.it
Micale Giorgio	University	*Renewable energy and desalination: sustainable sources for the future of water and energy* & *The Italian technological and legislative framework for Desalination technologies*	micale@dicpm.unipa.it
Piacentino Antonio	University	*Cogeneration plants and desalination: legislative frame work and application potentials*	piacentino@dream.unipa.it
Rizzuti Lucio	University	*Presentation of the PRODES project* & *The legislative framework for Renewable Energy Desalination in Greece, Spain and Portugal*	rizzuti@dicpm.unipa.it

1.4 Minutes of the Seminar in Italy

Presentations – Discussions:

The seminar started with the opening by Prof. Giuspeppe Filardo, head of the Chemical Engineering Department, and Prof. Lucio Rizzuti who presented the Prodes project and the agenda of the seminar.
Then, Prof. Giorgio Micale briefly presented the current status of desalination technologies and the potentials of coupling RE and desalination, while the subsequent speech by Dr. Andrea

Cipollina was held just before the coffee break presenting the current status and general perspectives of RE-desalination technologies and market.
A coffee break was offered, thus creating a good opportunity to open discussions between participants.
Then, Dr. Antonio Piacentino presented the technological and economical potentials of co-generative schemes for desalination and energy production, along with relevant legislative issues and governmental subsides related to the energetic efficiency increase in co-generation processes.
Dr. Francesco Cappello presented the technological and legislative framework of RE in Italy and in Sicily.
Finally, Dr. Andrea Cipollina illustrated the actual framework for water and desalination in Italy with specific reference to the Sicilian situation, followed by a brief discussion in which Prof. Lucio Rizzuti presented the frameworks for RE and desalination in Greece, Portugal and Spain, inviting participants to open a discussion.
Following this last speech, the seminar ended with a long and interesting discussion about the problems related to the legislative and administrative framework for RE and desalination technologies in Sicily. It emerged, in particular for these latter, how a clear and complete regulation is totally missing in the present national and regional legislative framework.

Outcomes:

The seminar successfully achieved the main goal of presenting the actual framework of RE and desalination to the target group, also highlighting lacks and potentials for improvement of the present legislative and administrative situation in Italy and in Sicily.

Moreover, participants requested the presented material along with a large database provided by Dr. Cappello on the legislative aspects of RE in Italy. Such material has been made available to all participants through a link in a dedicated web page provided by SINTESI.

1.5 Agenda of the Seminar in Italy

When: 28th of September 2010

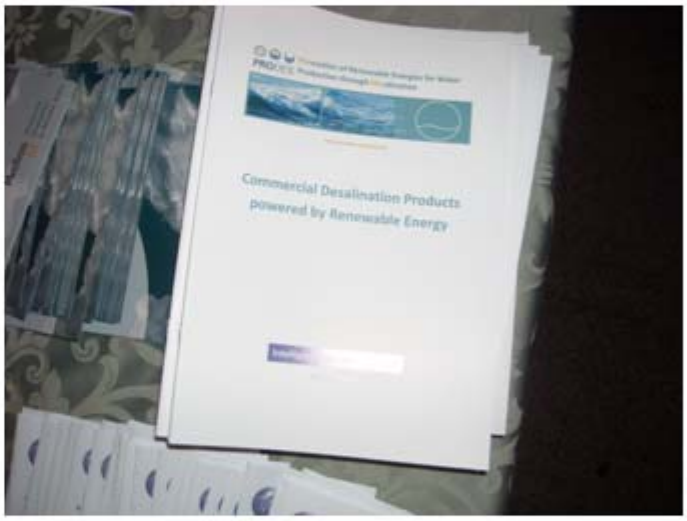
Where: in the council room of the Engineering Faculty within the University Campus in Palermo

Contact persons:

Andrea Cipollina, Tel. +39 091 23863780, e-mail: cipollina@dicpm.unipa.it
Giorgio Micale, Tel. +39 091 23863780, e-mail: micale@dicpm.unipa.it
Lucio Rizzuti, Tel. +39 091 23863717, e-mail: rizzuti@dicpm.unipa.it

Date: Tuesday, 28th of September 2010		
Time	**Content**	**Responsible**
09:00 – 09:30	*Openings and presentation of the PRODES project*	Giuseppe Filardo, Lucio Rizzuti
09:30 – 10:00	*Renewable energy and desalination: sustainable sources for the future of water and energy*	Giorgio Micale
10:00 – 10:30	*Renewable energies for fresh water production: the actual framework and development potentials for the next future*	Andrea Cipollina
10:30 – 11:00	*Cogeneration plants and desalination: legislative frame work and application potentials*	Antonio Piacentino
11:00 – 11:30	*Coffee break*	
11:30 – 12:00	*The Italian technological and legislative framework for Renewable Energies*	Francesco Cappello
12:00 – 12:20	*The Italian technological and legislative framework for Desalination technologies*	Andrea Cipollina
12:20 – 12:40	*The legislative framework for Renewable Energy Desalination in Greece, Spain and Portugal*	Lucio Rizzuti
12:40 – 13:50	*Open discussion with questions and answer from attendants and speakers*	All
13:50 – 14:00	*Closings and final communications (about the material availability, consultation of the Prodes web site, etc.)*	Lucio Rizzuti

Annex 1.1: Photos from the Seminar in Italy


Commercial Desalination Products
powered by Renewable Energy

Annex 1.2: Seminar Agenda

PRODES
Promotion of Renewable Energies for Water Production through Desalination

Seminario per policy makers su:
"Quadro legislativo europeo e nazionale per l'utilizzo di processi di Dissalazione con Energie Rinnovabili"

9,00-9,30
Saluti, presentazione del progetto PRODES e agenda della giornata
Francesco Paolo La Mantia, Preside della Facoltà di Ingegneria dell'Università di Palermo
Ennio Cardona, Prorettore dell'Università degli Studi di Palermo
Giuseppe Fiorda, Direttore del Dipartimento di Ingegneria Chimica dei Processi e dei Materiali dell'Università di Palermo
Lucio Rizzuti, responsabile del Progetto PRODES

Opening

9,30-10,00
Energie rinnovabili e processi di dissalazione: fonti sostenibili per il futuro dell'acqua e dell'energia
Renewable energy and desalination: sustainable sources for the future of water and energy.
Giorgio Micale, Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, *Università di Palermo*

10,00-10,30
Energie rinnovabili per la produzione di acqua dolce: assetto attuale e potenziali di sviluppo nel prossimo futuro
Renewable energies for fresh water production: the actual framework and development potentials for the next future.
Andrea Cipollina, Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, *Università di Palermo*

10,30-11,00
Impianti cogenerativi e dissalazione: quadro legislativo e potenzialità applicative
Cogeneration plants and desalination: legislative frame work and application potentials
Antonio Piacentino, *Dipartimento di Ricerche Energetiche ed Ambientali, Università di Palermo*

11,00-11,30 - Coffee break

11,30-12,00
L'attuale assetto tecnologico ed il quadro legislativo italiano per le energie rinnovabili
The Italian technological and legislative framework for Renewable Energies
Francesco Cappello, *ENEA*

12,00-12,20
L'attuale assetto tecnologico ed il quadro legislativo italiano per le tecnologie di dissalazione
The Italian technological and legislative framework for Desalination technologies
Giorgio Micale / ***Andrea Cipollina***, Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, *Università di Palermo*

12,20-12,40
Il quadro legislativo per le energie rinnovabili ed i processi di dissalazione in Grecia, Spagna e Portogallo
The legislative framework for Renewable Energy Desalination in Greece, Spain and Portugal
Lucio Rizzuti, Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, *Università di Palermo*

12,40-13,20
Dibattito sullo stato attuale dei quadri legislativi vigenti e sul loro potenziale di applicazione alla promozione delle nascenti tecnologie di dissalazione con energie rinnovabili
Open discussion on the current legislative frameworks and their potentials for the promotion of Renewable Energy Desalination.

13,20-13,30
Chiusura dei lavori
Closure

Programma del seminario
Martedì 28 Settembre 2010
Sala del Consiglio della Presidenza
Facoltà di Ingegneria – Università di Palermo

PRODES project is supported by
Intelligent Energy Europe

SINTESI

PRODES

Promotion of Renewable Energies for Water Production through Desalination

Università degli Studi di Palermo

SINTESI

Seminario per "*Policy Makers*" su:

Quadro legislativo europeo e nazionale per l'utilizzo di processi di Dissalazione con Energie Rinnovabili

European and National legislative frameworks for *Renewable Energy Desalination*

28 Settembre 2010

Sala del Consiglio della Presidenza della
Facoltà di Ingegneria
Viale delle Scienze, Ed.7

Evento organizzato da

Università degli Studi di Palermo

SINTESI

www.associazionesintesi.it

Supportato dal Progetto Europeo ProDes
(Promotion of renewable energy for seawater DESalination)
www.prodes-project.org

PRODES

Intelligent Energy Europe

SCHEDA DI REGISTRAZIONE

Cognome e nome (*Surname and name*)

Indirizzo (*address*)

Cap – Località (*zip code - city*)

e-mail

Telefono (*telephone*)

Professione/Aree di interesse professionali
(*Main interest areas*)

Si prega di inviare la scheda di registrazione, per e-mail o fax, a:
Ing. Andrea Cipollina
E-mail: cipollina@dicpm.unipa.it
Fax: +39 091 7025020

Coordinamento:
L. Rizzuti, G. Micale, A. Cipollina, B. Cosenza
Dipartimento di Ingegneria Chimica dei Processi e dei Materiali, Università di Palermo
+39 091 23863780 – +39 333 7521739
+39 091 23863742
cipollina@dicpm.unipa.it

Annex 1.3: Seminar invitation leaflet (2/2)

Ormai da alcuni decenni la dissalazione viene proposta come utile strumento per la risoluzione di crisi idriche in molti paesi del mondo, garantendo una fonte di approvvigionamento idrico di sicura qualità, di sicuro accesso, con costi sostenibili (ormai spesso al di sotto di 1 €/m³ di acqua prodotta), a dispetto dell'imprevedibilità della disponibilità idrica legata ai livelli di piovosità annuali.

L'elevata richiesta energetica dei tradizionali processi di dissalazione, però, ha posto dei vincoli importanti legati ai costi di produzione, ad aspetti ambientali ed alla disponibilità di fonti energetiche, ad esempio di fondamentale importanza quando la produzione di acqua dissalata risulta necessaria in un sito isolato difficilmente raggiungibile da mezzi di trasporto e/o dalla rete elettrica. Alla luce di ciò, l'accoppiamento con fonti di energia rinnovabile può costituire un importante gradino verso uno sviluppo sostenibile di tali tecnologie.

In questa fase di sviluppo iniziale, però, tali tecnologie necessitano di un supporto da parte dei governi che, come fatto con le energie rinnovabili, potrebbero promuovere l'utilizzo di queste nuovi fonti di approvvigionamento idrico/energetico per uno sviluppo sostenibile del nostro pianeta.

Obiettivo di questo seminario, rivolto particolarmente ai "Policy Makers", è quello di discutere dell'attuale quadro legislativo europeo e nazionale che regolamenta l'utilizzo di energie rinnovabili e tecnologie di dissalazione al fine di individuarne i punti di forza e di debolezza per poi discutere costruttivamente dei possibili potenziali di applicazione alle nascenti tecnologie di dissalazione con energie rinnovabili.

Il seminario si inquadra all'interno di un programma di attività supportate dal Progetto di Ricerca Europeo ProDES (www.prodes-project.org), di cui l'Università di Palermo è partner attivo, volte alla promozione dell'utilizzo di Energie Rinnovabili per la produzione di acqua potabile attraverso tecnologie di Dissalazione.

Programma del seminario

Martedì 28 Settembre 2010

9,00-9,30 – Apertura dei lavori, presentazione del progetto PRODES e agenda della giornata
Opening
***Prof. F.P. La Mantia**, Preside della Facoltà di Ingegneria di Palermo*
***Prof. E. Cardona**, Prorettore dell'Università degli Studi di Palermo*
***Prof. L. Rizzuti**, Responsabile del Progetto PRODES*

9,30-10,45
Energie rinnovabili e processi di dissalazione: fonti sostenibili per il futuro dell'acqua e dell'energia
Renewable energy and desalination: sustainable sources for the future of water and energy.
***Prof G. Micale**, Università di Palermo*

Il mercato della dissalazione con energie rinnovabili
The renewable energy desalination market
***Dr. A. Cipollina**, Università di Palermo*

10,45-11,15 - Coffee break

11,15-13,30
Il quadro legislativo italiano per le energie rinnovabili ed i processi di dissalazione
The Italian legislative framework for Renewable Energy Desalination
***Dr. A. Piacentino**, Università di Palermo*
***Ing. F. Cappello**, ENEA*

Il quadro legislativo europeo per le energie rinnovabili ed i processi di dissalazione
The European legislative framework for Renewable Energy Desalination
***Prof G. Micale**, Università di Palermo*

Dibattito sullo stato attuale dei quadri legislativi vigenti e sul loro potenziale di applicazione alla promozione delle nascenti tecnologie di dissalazione con energie rinnovabili
Open discussion on the current legislative frameworks and their potentials for the promotion of Renewable Energy Desalination

Chiusura dei lavori
Closure

The availability of freshwater is of paramount importance in all geographical areas where the uncertainty of freshwater sources may hamper or even stop agricultural, industrial and civil activities.

Since last century desalination processes have been proposed to help solving water crisis in many areas of the world, with sustainable production costs lowering down to or below 1Euro/m³ up to present date.
However, the large energy requirements of conventional desalination processes poses a number of problems related to the availability of energy sources and environmental sustainability, particularly in those cases where the desalination facility is installed in a remote site disconnected form the electric grid. To this regard the coupling with renewable sources of energy may well represent a major step forward towards the goal of overall (i.e. economic and environmental) sustainability for current and future desalination technologies.
The main objective of this workshop, particularly devoted to Policy Makers, is the presentation of the current European and National Legislation in the field renewable energy desalination technologies. The workshop is aimed at Policy Makers, as well as professionals, technicians, academic and industrial researchers, private and public companies/institutions operating in the sector.
The workshop is organized within the framework of the European Research Project ProDES, i.e. Promotion of Renewable Energy for Water production through Desalination (www.prodes-project.org), with Università di Palermo acting as one of the consortium partners.

Interverranno autorità locali, professionisti e ricercatori del settore;
Contributions from public authorities, professionals and researchers operating in the field

2 Seminar in Spain

2.1 Introduction

Time and place of the Seminar: 15th June 12:00, Madrid

Target Group: Main representatives of IDEA, the government office in charge of elaborating the National Plan for Renewable Energy in Spain

2.2 Participants – Speakers

List of Participants

	Name	Individual or representing a company	E-mail address
1	Carlos Montoya Rasero	IDAE	cmontoya@idae.es
2	Raquel Vázquez Meco	IDAE	rvazquez@idae.es
3	Andrés Paredes Salvador	IDAE	aparedes@idae.es

List of Speakers

	Name	Individual or representing a company	E-mail address
1	Julián Blanco Gálvez	CIEMAT	julian.blanco@psa.es
2	Guillermo Zaragoza	CIEMAT	guillermo.zaragoza@psa.es
3	Baltasar Peñate Suárez	ITC	baltasarp@itccanarias.org

2.3 Minutes of the Seminar in Spain

Presentations – Discussions:

In the context of ProDes workpackage 6 and its objectives, the key decision makers were identified as the Institute for Diversification and Saving of Energy (IDAE), an entity depending on the State Secretary for Energy. Amongst other activities like promotion and dissemination, IDAE is in charge of managing the measures and funds destined for the Renewable Energy Plan, therefore a key factor in the policy as the decisive body for funding RE desalination in Spain. A first contact was made with them and a visit of some IDAE representatives to PSA-CIEMAT installations took place in early 2010. They were shown the technologies of desalination powered by renewable energy

and their possibilities, as well as the potential of combining the generation of renewable energy with water desalination. This was complemented by further information provided via email.

In order to fulfil the goal of Task 6.4, a private Seminar was organized in Madrid in June, which was attended by 3 representatives from IDAE (Carlos Montoya Rasero, Raquel Vázquez Meco and Andrés Paredes Salvador, main officers responsible of elaborating the National Plan for Renewable Energy) and from the ProDes side led by Julián Blanco Gálvez and Guillermo Zaragoza from CIEMAT and Baltasar Peñate Suárez from ITC. A general presentation was made by CIEMAT and ITC on the present status of desalination powered by renewable energy. The ProDes project was described in depth, explaining the activities, the courses, and describing results like the road-map, deliverable D4.2, etc. After a revision of WP6 and its outcomes was made, a discussion followed on the framework for the implementation of RE desalination with the road-map as a basis. The main institutional barriers were identified and the legislative issues sufficiently known by the attendants. Specific recommendations were given by CIEMAT and ITC for improving the implementation of RE desalination. The need of harmonizing the policies of renewable energy and desalination was emphasized, stressing the necessity of promoting and subsidizing not just renewable energy but water produced by desalination with renewable energy.

Outcomes:

The attendants showed strong interest in all the information provided and were very receptive to the growing relevance of desalination in the context of RE. A positive response was received after the Seminar from the IDAE officers, who agreed to include desalination in the next Plan for Renewable Energy in Spain (2011-2020) to be presented at the end of 2010, so that subsidies can go not only to the production of energy from renewable sources but to the production of water with renewable energy. Furthermore, a collaboration was opened between CIEMAT, ITC and IDEA to monitor the technology development and the implementation of RE desalination in the near future.

3. Seminar in Greece

3.1 Introduction

Time and place of the Seminar:

The Seminar has been carried out at the Classical Athens Imperial Hotel, in central Athens in 9th of September 2010.

Target Group:

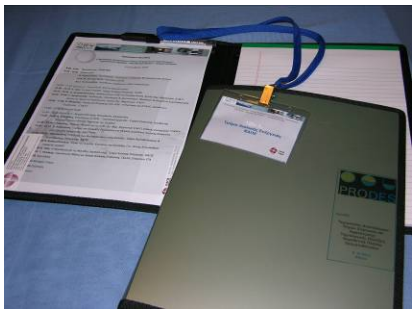
Scope of the Seminar was the presentation of the framework condition of RES and Water in Greece, the gaps on the legislation and administration system and ways to approved them. Also, the financing support of RES and Desalination projects via National Funds, Private funds (BOOT Method), Public Private Partnership Scheme [PPP], etc., was also in the targets of the Seminar. Final the presentation of the Energy and Water problems in the Aegean islands, with views on the proposed funding National programmes[1] as well as the presentation of the lessons learnt and experiences from the installation of an RES Desalination plant in Milos island combined the thematic area of the Seminar. For the purposes of the Seminar purpose people from the Ministry of Environment, Energy and Climatic Change as well as from PPC Renewables, the Regulatory Authority of Energy and the Water Sector (EYDAP, DEYAs) have been invited and participated. People from EYD EPAN of the Ministry of Economy and from Banks are invited and they present their future plans with their presentation and their active participation. Finally, people from the market PV and Wind Companies, Water Treatment - Desalination Companies, Technical Companies that want to invest on Energy and Water, Universities, etc have been participated providing in the Seminar a global framework on technical, economic, financing aspects.

3.2 Implementation of the Seminar

The one day Seminar is organized by CRES. A lot of work has been done on the organization of the seminar in order to have a successful result.

The Seminar is announced via:

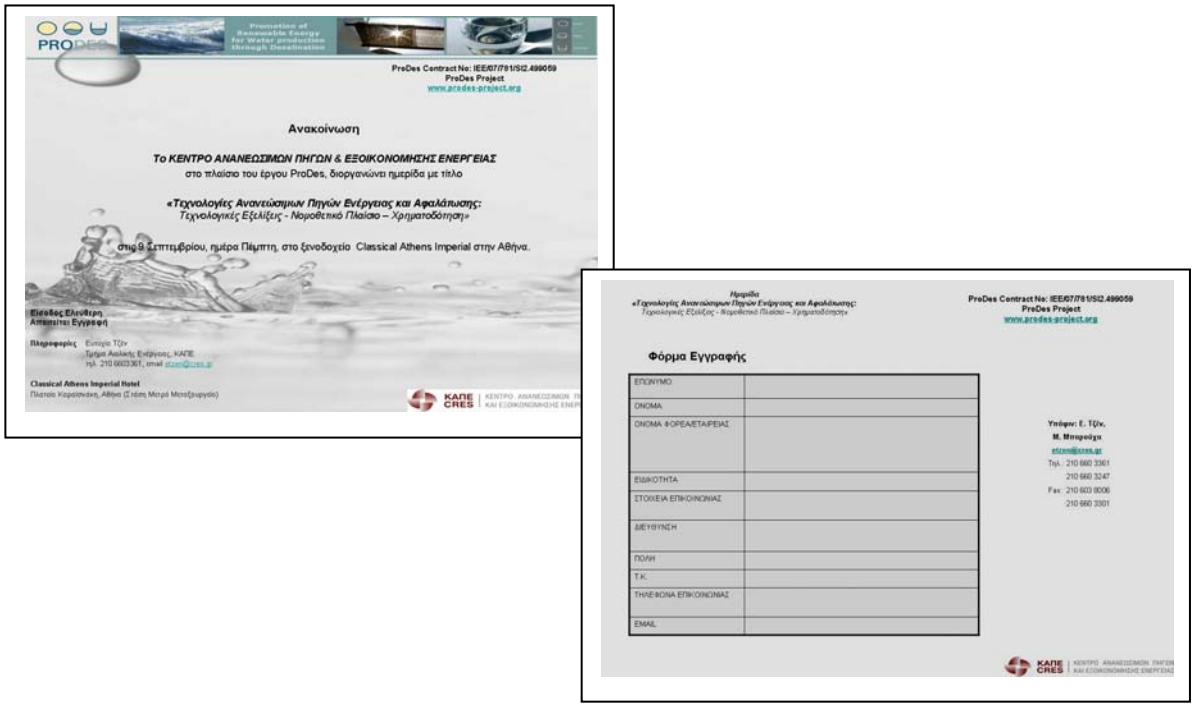
- CRES site
- Sending of Invitations by email
- Article in a Greek Energy Magazine
- "ANEMOLOGIA", Vol 62, July-August 2010



[1] The Greek Government is planning to announce a tender for the development of RES Desalination plants in 18 Aegean islands.

The Seminar announcement

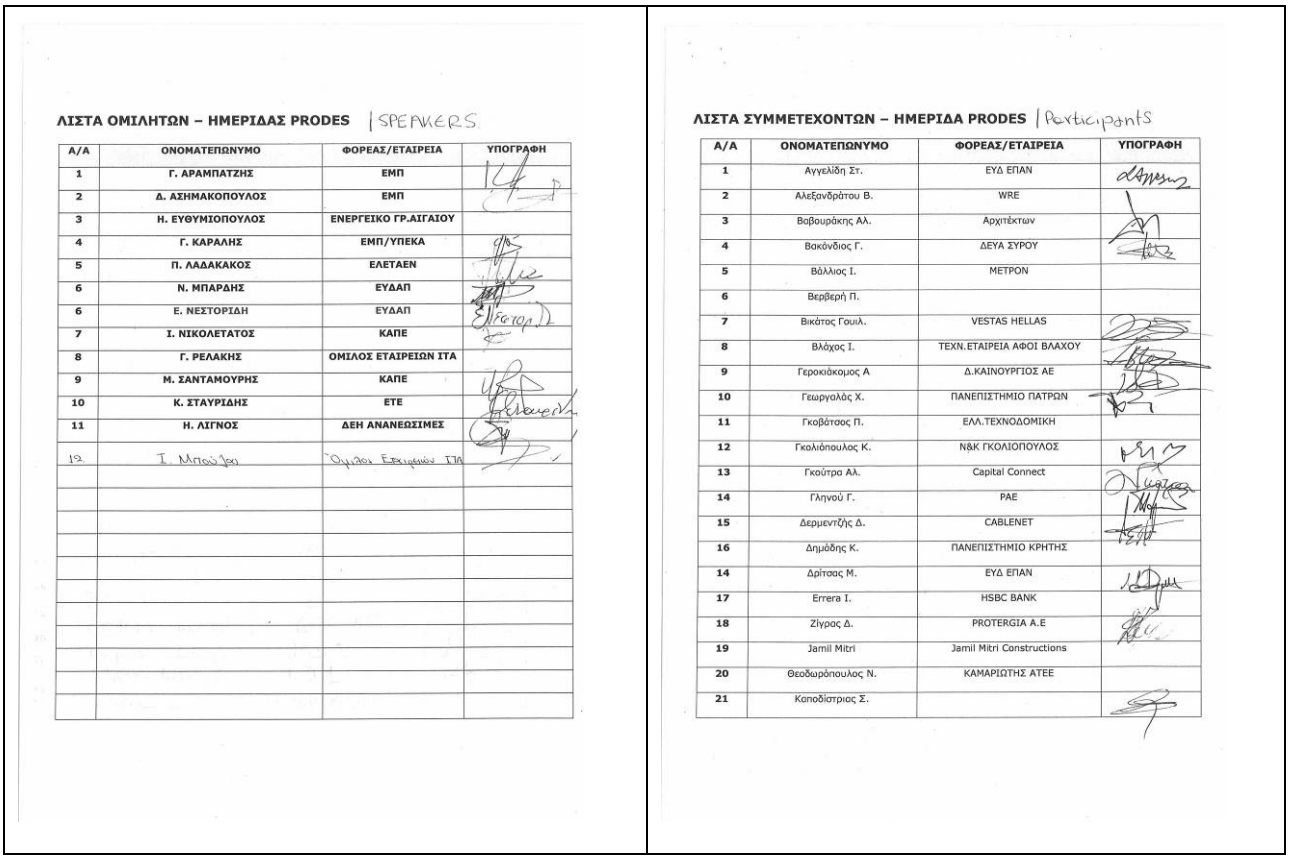
The Seminar Invitation and Registration form



3.3 Participants – Speakers

The number of participants was of 87. The participants came from the Ministry of Environment, Energy and Climatic Change, from EYD EPAN of the Ministry of Economy, from Regulatory Authority of Energy (RAE), from Athens Water Supply and Sewerage Company (EYDAP SA), from Municipal Enterprises for Water and Sewage (DEYA), Technical University of Athens, University of Aegean, Investors, Desalination Companies, Wind Energy Companies, PV Companies, Technical Companies, Consultants, etc. Also, SKAI TV – Econews, a well known TV channel for its environmental activities is participated in the event and have interviews with people from the Ministry, CRES and DEYA. The video is available in the site of SKAI TV (www.skai/tv/econews).

The list of the participants is provided below:



ΛΙΣΤΑ ΟΜΙΛΗΤΩΝ – ΗΜΕΡΙΔΑΣ PRODES | SPEAKERS

Α/Α	ΟΝΟΜΑΤΕΠΩΝΥΜΟ	ΦΟΡΕΑΣ/ΕΤΑΙΡΕΙΑ	ΥΠΟΓΡΑΦΗ
1	Γ. ΑΡΑΜΠΑΤΖΗΣ	ΕΜΠ	
2	Δ. ΑΣΗΜΑΚΟΠΟΥΛΟΣ	ΕΜΠ	
3	Η. ΕΥΘΥΜΙΟΠΟΥΛΟΣ	ΕΝΕΡΓΕΙΚΟ ΓΡ.ΑΙΓΑΙΟΥ	
4	Γ. ΚΑΡΑΛΗΣ	ΕΜΠ/ΥΠΕΚΑ	
5	Π. ΛΑΔΑΚΑΚΟΣ	ΕΛΕΤΑΕΝ	
6	Ν. ΜΠΑΡΔΗΣ	ΕΥΔΑΠ	
6	Ε. ΝΕΣΤΟΡΙΔΗ	ΕΥΔΑΠ	
7	Ι. ΝΙΚΟΛΕΤΑΤΟΣ	ΚΑΠΕ	
8	Γ. ΡΕΛΑΚΗΣ	ΟΜΙΛΟΣ ΕΤΑΙΡΕΙΩΝ ΣΤΑ	
9	Μ. ΣΑΝΤΑΜΟΥΡΗΣ	ΚΑΠΕ	
10	Κ. ΣΤΑΥΡΙΔΗΣ	ΕΤΕ	
11	Η. ΛΙΓΝΟΣ	ΔΕΗ ΑΝΑΝΕΩΣΙΜΕΣ	
12	Ι. Μπαϊλής	Όμιλος Εταιρειών ΣΤΑ	

ΛΙΣΤΑ ΣΥΜΜΕΤΕΧΟΝΤΩΝ – ΗΜΕΡΙΔΑ PRODES | Participants

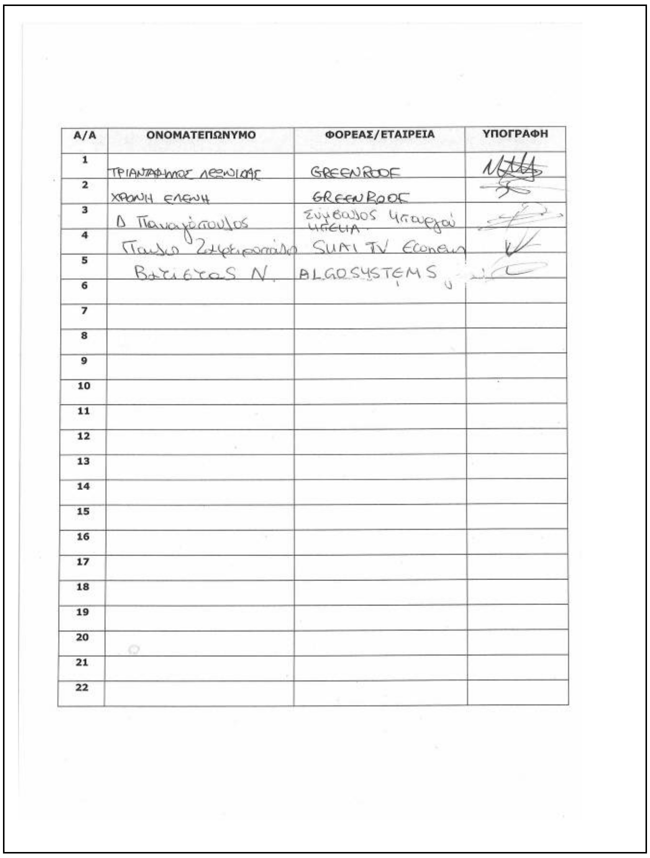
Α/Α	ΟΝΟΜΑΤΕΠΩΝΥΜΟ	ΦΟΡΕΑΣ/ΕΤΑΙΡΕΙΑ	ΥΠΟΓΡΑΦΗ
1	Αγγελίδη Στ.	ΕΥΔ ΕΠΑΝ	
2	Αλεξανδράτου Β.	WRE	
3	Βαβουράκης Αλ.	Αρχιτέκτων	
4	Βακόνδιος Γ.	ΔΕΥΑ ΣΥΡΟΥ	
5	Βάλλιος Ι.	ΜΕΤΡΟΝ	
6	Βερβερή Π.		
7	Βικάτος Γουιλ.	VESTAS HELLAS	
8	Βλάχος Ι.	ΤΕΧΝ.ΕΤΑΙΡΕΙΑ ΑΦΟΙ ΒΛΑΧΟΥ	
9	Γεροκιάκομος Α	Δ.ΚΑΙΝΟΥΡΓΙΟΣ ΑΕ	
10	Γεωργαλάς Χ.	ΠΑΝΕΠΙΣΤΗΜΙΟ ΠΑΤΡΩΝ	
11	Γκοβάτσος Π.	ΕΛΛ.ΤΕΧΝΟΔΟΜΙΚΗ	
12	Γκαλιόπουλος Κ.	Ν&Κ ΓΚΟΛΙΟΠΟΥΛΟΣ	
13	Γκούτρα Αλ.	Capital Connect	
14	Γληνού Γ.	PAE	
15	Δερμεντζής Δ.	CABLENET	
16	Δημάδης Κ.	ΠΑΝΕΠΙΣΤΗΜΙΟ ΚΡΗΤΗΣ	
14	Δρίτσας Μ.	ΕΥΔ ΕΠΑΝ	
17	Errera I.	HSBC BANK	
18	Ζίγρας Δ.	PROTERGIA A.E	
19	Jamil Mitri	Jamil Mitri Constructions	
20	Θεοδωρόπουλος Ν.	ΚΑΜΑΡΙΩΤΗΣ ΑΤΕΕ	
21	Καποδίστριος Σ.		

22	Καραχάλιας Ελ.		
23	Καινούργιος Π.	Δ.ΚΑΙΝΟΥΡΓΙΟΣ ΑΕ	
24	Κωστάντιος Χρυσ.Χαρ.		
25	Κατώπης Κ.	GAMESA ΕΝΕΡΓΕΙΑΚΗ ΕΛΛΑΣ ΑΕ	
26	Κουντουρέλης Ηρ.	ΓΓ Αιγαίου	
27	Κίκου Γ.	ΕΛΛΗΝΙΚΗ ΤΑΙΡΕΙΑ ΠΕΡΙΒΑΛΛΟΝΤΟΣ & ΠΟΛΙΤΙΣΜΟΥ	
28	Καρράς Κ.	ΕΛΛΗΝΙΚΗ ΤΑΙΡΕΙΑ ΠΕΡΙΒΑΛΛΟΝΤΟΣ & ΠΟΛΙΤΙΣΜΟΥ	
29	Κηπουρός Κ.	Κ. ΚΗΠΟΥΡΟΣ ΕΝΕΡΓΕΙΑ ΑΕ	
30	Κορρέ Μ.	ENOLIA VENTUS AE	
31	Κρητικού Ε.	ΕΥΔ ΕΠΑΝ	
32	Κολωνάς Θ.	EUNICE ENERGY GROUP	
33	Λεκού Α.		
34	Λιαροκάπη Ν.	ΚΑΛΛΙΓΚΑΝ ΕΛΛΑΣ ΑΒΕΕ	
35	Λιγνός Η.	ΔΕΗ ΑΝΑΝΕΩΣΙΜΕΣ	
36	Μαρκατσέλας Π.		
37	Μαντάς Ζ.	ENERCON GMBH	
38	Ματσούκας Χρ.	ACTION SYNERGY S.A.	
39	Μελισσαροπούλου Μ	Φυσικός	
40	Μπαρδάκας Ευστρ.	ΤΕΡΝΑ ΕΝΕΡΕΓΕΙΑΚΗ	
41	Μίγδαλης Κ.	Δ.ΚΑΙΝΟΥΡΓΙΟΣ ΑΕ	
42	Μικελίδης Α.	ΕΚΠΑΙΔΕΥΤΙΚΟΣ	
43	Nahvi A.	RENINVEST SA	
44	Νικολόπουλος Π.	ENERCON GMBH	
45	Νικολόπουλος Σ.	ΣΥΜΒΟΥΛΟΣ	

46	Νίνος Αντ.	BROKERHOUSE REAL ESTATE	
47	Ξένιος Α.	EEN ΕΛΛΑΣ ΑΕ	
48	Ξεύγενος Δ.	ΕΜΠ	
49	Παρνασσός Χ.	BCI AE	
50	Παπάζογλου Α	Δ. ΚΑΙΝΟΥΡΓΙΟΣ ΑΕ	
51	Παντιώρας Γ.	RF ENERGY A.E	
52	Παπαδοπούλου Ε.	HELLAS SOLAR POWER	
53	Παππάς Ι.	GREEN EVOLUTION SA	
54	Παπαδάκης Ι.	IWECO MVSA	
55	Παπαβασιλείου Διον.	ΚΑΠΕ	
56	Παπαθανασίου Στ.	ΕΜΠ	
57	Περβολαράκη Ειρ.	BCI AE	
58	Πέτσα Στ.	LDK CONSULTANTS	
59	Σαμαρτζής Σ.	ΕΥΔ ΕΠΑΝ	
60	Σιγάλας Μ.	PHOTOVOLTAIC	
61	Τζέν Ι.	DAMAVAND TRADING COMPANY	
62	Τσαλκάνη Κ.	ΕΣΥΔ	
63	Τσαλτάκης Π.	ΕΥΔ ΕΠΑΝ	
64	Τσεκούρα Ε.	ΕΛΛΗΝΙΚΗ ΤΕΧΝΟΔΟΜΙΚΗ ΕΝΕΡΓ.	
65	Τσεπετζής Ν.	ΕΛΛΗΝΙΚΗ ΤΕΧΝΟΔΟΜΙΚΗ ΕΝΕΡΓ.	
66	Τσίλια Σ.	ΕΥΔ ΕΠΑΝ	
67	Φέτση Αγγ.	ΕΥΔ ΕΠΑΝ	
68	Φαραό Β.		
69	Φλώρου Β.	Σ.Κ. ΑΙΓΙΣ ΣΥΜΒΟΥΛΟΙ	

70	Χασάπης Κ.		
71	Χρονόπουλος Π.	ΤΕΧΝ.ΕΤΑΙΡΕΙΑ ΑΦΟΙ ΒΛΑΧΟΥ	
72	Χρήστου Γ.	ΜΕΤΡΟΝ	
73	Χατζόπουλος Β.	ΝΑΝΚΟ ΑΝΑΝΕΩΣΙΜΕΣ Α.Ε.	
74	Κολογγιός Ζ.	ΤΕΜΑΚ	
75	Κουρεμπελέ Μ.	ΤΕΜΑΚ	
76	Νικολάου Σωτ.		
77	Γ. Εμμανουήλίδης	ΕΝΕΡΓΕΙΑΚΟ ΓΡΑΦΕΙΟ ΑΙΓΑΙΟΥ	
78			
79			
80			
81			
82			
83			
84			
85			

Α/Α	ΟΝΟΜΑΤΕΠΩΝΥΜΟ	ΦΟΡΕΑΣ/ΕΤΑΙΡΕΙΑ	ΥΠΟΓΡΑΦΗ
1	Μενιδιάτης Δημήτρης	Φοιτητής ΕΜΠ	
2	Χαλκιαδάκης Αλέξης	Ενεργειακό γραφείο Αιγαίου	
3	Εμμανουηλίδης Γεώργιος	Ενεργειακό γραφείο Αιγαίου	
4	Καρταλίδης	ΕΜΠ	
5	Βευτερόπουλος	ΕΥΔΑΠ Α/Νοημοσύνης	
6	Θεοδωρακόπουλος Δημήτρης	RF ENERGY AE	
7	Τορνάρης Μιχάλης	MEMSYS	
8	Χρόνης Γρηγόρης	-//-	
9	Νικολάου Στυλιανός	PARADIGM A.E.	
10	Διαμαντάκης Νικόλαος	Φοιτητής Ε.Μ.Π.	
11	Σταυρόπουλος Δημήτριος	ΕΥΔΑΠ	
12	ΝΙΚΟΛΑΟΥ ΣΩΤΗΡΗΣ	ΚΕΠΑΓΡ ΠΕΛΟΠΟΝΝΗΣΟΥ	
13	ΤΖΑΛΑΒΑΡΑΣ ΣΩΤΗΡΗΣ	SABO S.A.	
14	ΝΤΑΛΙΒΑΣ ΠΑΡΑΣΚΕΥΑΣ	SABO SA	
15	ΙΑΛΙΑΤΣΑΣ ΑΝΤ	ΕΜΠ	
16	Τζαλοκώστα Λ.	ΕΥΔΑΠ	
17	Κ[illegible] Δ		
18	[illegible] Θ.	-//-	
19	ΓΕΩΡΓΙΟΥ ΔΡΟΣΗ	BCI AE	
20	Φραγκος Σταύρος	ΥΠ.ΕΞ	
21	Μανωλάκος Δημήτρης	Γ.Π.Α.	
22	ΝΤΑΛΙΑΝΟΣ Π.	ENFINITY	



Α/Α	ΟΝΟΜΑΤΕΠΩΝΥΜΟ	ΦΟΡΕΑΣ/ΕΤΑΙΡΕΙΑ	ΥΠΟΓΡΑΦΗ
1	ΤΡΙΑΝΤΑΦΥΛΛΟΣ ΛΕΩΝΙΔΑΣ	GREENROOF	
2	ΧΡΟΝΗ ΕΛΕΝΗ	GREENROOF	
3	Δ Παναγόπουλος	Σύμβουλος Υπουργού ΥΠΕΚΑ	
4	[illegible]	[illegible]	
5	Βατιστας Ν.	ALGOSYSTEMS	
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			

The number of speakers was 12. The names of the speakers, their organizations and the subject of their presentations are presented following:

	Name	Individual or representing a company	Subject of speech
1	N. Sifounakis	Deputy Minister Ministry of Environment, Energy & Climatic Change	Welcome Brief Presentation of the coming tender for RES Desalination in specific Aegean islands
2	M. Santamouris	President of CRES	Welcome
3	H. Lignos	PPC Renewables	Welcome, RES Investments of the Power Public Corporation RE
4	G. Arabatzis	Technical University of Athens, NTUA	Design, Evaluation and Optimization of Hybrid RES desalination systems
5	D. Assimakopoulos	Technical University of Athens, NTUA	RES Desalination in the Greek islands with serious water shortage problems
6	G. Karalis	Ministry of Environment, Energy and Climatic Change	The framework for RES in Greece The new RES Law
7	P. Ladakakos	Hellenic Wind Energy Association	Technical & Institutional Challenges for Large Scale Wind Penetration in Greece
8	E. Nestoridi	EYDAP	Production of electricity from RES- The

			Experiences of EYDAP
9	I. Nikoletatos	CRES – PV Dept.	The Evolution of PV s in Greece
10	E. Tzen	CRES – Wind Energy Dept	1. Presentation of the ProDes Project 2. Water/Desalination Framework in Greece
11	K. Stavridis	National Bank of Greece	Investments on RES Large projects – Projects Financing – Bank Tools
12	I. Bouzas	ITA	Lessons learnt from the development of the RES Desalination plant in Milos island

The Seminar Programme

PRODES

Promotion of Renewable Energy for Water production through Desalination

Πρόγραμμα Ημερίδας

«Τεχνολογίες Ανανεώσιμων Πηγών Ενέργειας και Αφαλάτωσης: Τεχνολογικές Εξελίξεις - Νομοθετικό Πλαίσιο - Χρηματοδότηση»

9 Σεπτεμβρίου 2010

9:00 - 9:30 Προσέλευση - Εγγραφές

9:30 - 10:00 Χαιρετισμοί

Ν. Σηφουνάκης, Υφυπουργός, Υπουργείο Υποδομών, Μεταφορών και Δικτύων

Καθ. Μ. Σανταμούρης, Πρόεδρος ΚΑΠΕ

Δρ.Ι. Τσιπουρίδης, Διευθύνων Σύμβουλος, ΔΕΗ Ανανεώσιμες

10:00 - 11:00 Ενότητα Ι - Τεχνολογία ΑΠΕ & Αφαλάτωσης

10:00 - 10:15 Ε. Τζέν, Το έργο ProDES, *Τμήμα Αιολικής Ενέργειας, ΚΑΠΕ*

10:15 - 10:30 Δ. Ασημακόπουλος, Αφαλάτωση με ΑΠΕ στα Άνυδρα Νησιά, *Σχολή Χημ. Μηχανικών, Ε.Μ.Π*

10:30 - 10:45 Γ. Αραμπατζής, Σχεδιασμός, Αξιολόγηση & Αριστοποίηση Υβριδικών Συστημάτων Συμπαραγωγής Ισχύος και Νερού με Αφαλάτωση, *Σχολή Χημ. Μηχανικών, Ε.Μ.Π*

10:45 - 11:00 Ν. Μπάρδης, Παραγωγή Ενέργειας από ΑΠΕ - Η Εμπειρία της ΕΥΔΑΠ, *Διευθύνων Σύμβουλος, ΕΥΔΑΠ*

11:00 - 11:30 Διάλειμμα Καφέ

11:30 - 13:30 Ενότητα ΙΙ - Χρηματοδότηση, Νομοθεσία, Εφαρμογές

11:30 - 11:45 Κ. Σταυρίδης, Επενδύσεις σε ΑΠΕ - Τραπεζικά Εργαλεία - Project Financing, *Διευθυντής Μεγάλων Έργων Εθνικής Τράπεζας της Ελλάδος*

11:45 - 12:00 Γ. Κάραλης, Θεσμικό Πλαίσιο για τις ΑΠΕ, *Δρ. Μηχ. Μηχανικός Ε.Μ.Π, Ειδικός Συνεργάτης ΥΠΕΚΑ*

12:00 - 12:15 Π. Λαδακάκος, Τεχνικές και Θεσμικές Προκλήσεις για Μεγάλη Διείσδυση Αιολικής Ενέργειας στην Ελλάδα, *Γραμματέας ΕΛΕΤΑΕΝ*

12:15 - 12:30 Ι. Νικολετάτος, Η Εξέλιξη των Φωτοβολταϊκών στην Ελλάδα, *Τμήμα Φωτοβολταϊκών & Διεσπαρμένης Παραγωγής, ΚΑΠΕ*

12:30 - 12:45 Η. Ευθυμιόπουλος, Νησιά του Αιγαίου: Ευκαιρίες και Εμπόδια, *Γεν. Δ/ντης Ενεργειακού Γραφείου Αιγαίου*

12:45 - 13:00 Ε. Τζέν, Η Νομοθεσία για τις Μονάδες Αφαλάτωσης, *Τμήμα Αιολικής Ενέργειας, ΚΑΠΕ*

13:00 - 13:15 Γ. Ρελάκης, Αφαλάτωση Μήλου με Χρήση Αιολικής Ενέργειας, *Όμιλος Εταιρειών ΙΤΑ*

13:15 - 13:30 Ερωτήσεις

13:30 - 14:30 Ελαφρύ Γεύμα

14:30 - 15:30 Συζήτηση

Λήξη Εργασιών

ΚΑΠΕ CRES | ΚΕΝΤΡΟ ΑΝΑΝΕΩΣΙΜΩΝ ΠΗΓΩΝ ΚΑΙ ΕΞΟΙΚΟΝΟΜΗΣΗΣ ΕΝΕΡΓΕΙΑΣ

Within the Seminar **three** ProDes documents were available for the participants:

- ProDes Newsletter
- The roadmap
- Commercial Desalination Products powered by Renewable Energy

3.4 Minutes of the Seminar in Greece

Presentations – Discussions:

The presentations concerns with the energy and water problems in the Aegean islands, PV and Wind Energy current status and future prospects, RES and Water license procedures, presentation of the new Energy Law, financing of RES projects, proposals for the new Government's programs and tenders, presentation of the wind desalination unit in Milos island. All the presentations were very specific with main scope to minimize the barriers, to diminish the bureaucracy and to accelerate the procedures.

The attendants had a great interest on most of the information provided. After participants request, the presentations of the Seminar are available at CRES site, www.cres.gr

Outcomes:

During the discussion session of the seminar the followings are proposed:

- implementation of a specific framework for the development of desalination units

- simplification and acceleration of the procedures

- promotion of RES desalination units – provision of benefits or subsidies to the investors

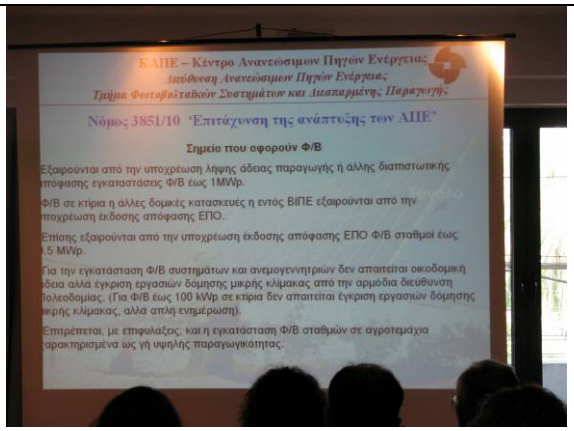
- promotion of the BOOT method for new installations

- minimization of the licensing requirements for units of less than 10 m3/day for municipal use (for very small islands such as Pserimos, Arkioi)

- acceleration of the licensing procedures for RES and Desalination projects. There is a great interest from investors but delays is still the main barriers on the development of the projects

Finally, it should be mentioned, that people from the Government provide positive response to study and further support the RES Desalination development, especially for the Greek islands.

Annex 3.1: Photos from the Seminar in Greece


ΚΑΠΕ – Κέντρο Ανανεώσιμων Πηγών Ενέργειας
Διεύθυνση Ανανεώσιμων Πηγών Ενέργειας
Τμήμα Φωτοβολταϊκών Συστημάτων και Διασπαρμένης Παραγωγής
Νόμος 3851/10 'Επιτάχυνση της ανάπτυξης των ΑΠΕ'
Σημεία που αφορούν Φ/Β
Εξαιρούνται από την υποχρέωση λήψης άδειας παραγωγής ή άλλης διαπιστωτικής
απόφασης εγκαταστάσεις Φ/Β έως 1MWp.
Φ/Β σε κτίρια ή άλλες δομικές κατασκευές η εντός ΒΙΠΕ εξαιρούνται από την
υποχρέωση έκδοσης απόφασης ΕΠΟ.
Επίσης εξαιρούνται από την υποχρέωση έκδοσης απόφασης ΕΠΟ Φ/Β σταθμοί έως
.5 MWp.
Για την εγκατάσταση Φ/Β συστημάτων και ανεμογεννητριών δεν απαιτείται οικοδομική
άδεια αλλά έγκριση εργασιών δόμησης μικρής κλίμακας από την αρμόδια διεύθυνση
πολεοδομίας. (Για Φ/Β έως 100 kWp σε κτίρια δεν απαιτείται έγκριση εργασιών δόμησης
μικρής κλίμακας, αλλά απλή ενημέρωση).
Επιτρέπεται, με επιφυλάξεις, και η εγκατάσταση Φ/Β σταθμών σε αγροτεμάχια
χαρακτηρισμένα ως γη υψηλής παραγωγικότητας.

4 Seminar in Portugal

4.1 Introduction

Time and place of the Seminar: 20th September 2010, LNEG facilities in Lisbon

Target Group: Representatives of relevant policy and administration institutions on the water and renewable energy sectors

4.2 Implementation of the Seminar

The Seminar aimed at the discussion of the present framework for desalination and renewables in Portugal, promoting the discussion around the possibilities and obstacles presented to the use of RE powered desalination.

Although desalination technologies are not exploited in a consistent way at national level, considering that water production infrastructures are mostly based in underground captation, surface water reservoirs and ducted transportation, they are already considered as a possibility for the resolution of localized scarcity problems, as stated in the National Strategy for Sustainable Development, where desalination is identified as one of the possibilities of alternative water sources.

Considering the scope of the discussion to be promoted in the Seminar, addressing issues such as the desalination plants licensing process, the ease of access of private consumers to desalination technologies, the access to the public maritime domain, desalination effluent discharges or the access to feed-in tariffs in RE systems producing energy for auto-consumption in desalination systems, e.g., a list of invitations was defined among public and private institutions with relevant role in the decision processes related (see invitation list in Annex), namely:

- DGEG - Directorate General for Energy and Geology: entity of the Portuguese Public Administration, depending on the Ministry of Economy (MEID), whose mission is to contribute to the definition, promotion and assessment of public policies regarding energy and geological resources, following a philosophy of sustainable development and supply security. In DGEG mission are included the dissemination and public awareness efforts in the fields of energy, resources, energy efficiency and sustainable development policies and available public instruments;

- ARH's - Administrações de Regiões Hidrográficas: public institutes under the dependence of the Ministry of Environment (MAOT), responsible for the management of hydrological resources at regional level;

- CCDR's - Comissões de Coordenação e Desenvolvimento Regional, public regional committes, under the scope of MAOT, with attributions in the scope of integration of regional and

local development, execution of national policies on environmental and territorial management questions and alignment of European and Regional development programmes;

• Instituto da Água, IP: public institute under the dependence of the Ministry of Environment (MAOT), acts as national Water Authority having the mission of propose, assess and assure the national policies on the domain of hydrological resources;

• AdP Águas de Portugal: public held private group responsible for the implementation of water captation, distribution and treatment systems.

Given the reduced, or even almost inexistent use of desalination in Portugal (with exception of the RO plant at Porto Santo island, dating from the 70's and installed in the sole habited island with scarce water resources identified in the national territory), the Seminar was set to the eve of the final PRODES Consortium meeting, held in Lisbon, profiting from the presence of PRODES partners and from their participation, presenting the national framework for desalination in Greece, Italy and Spain.

Together with the invitation of PRODES partners to present their respective national contexts, two other speakers where invited: AdP, presenting some reflections on the use of desalination technologies by part of the major water captation, distribution and treatment company; and GE Power, presenting their experience in the installation of an RO unit for a group of hotels in the South of Portugal (Algarve).

The presentation of the national framework conditions for Portugal, Spain, Italy and Greece, together with the presentation of some reflections on desalination use by the major Portuguese water supplier and a concrete example of RO use in a group of hotels, where the base for an open discussion following the presentations.

Considering both the provenience and agenda of the invitees, the Seminar was set to last the morning period, between 9.00 and 13.00.

4.3 Participants – Speakers

Aiming the settlement of a discussion around licensing, policies, tariffs and potential use of RE powered desalination in Portugal, a group pf speakers were invited to the Seminar, presenting the national framework conditions for RE desalination in Portugal, Spain, Italy and Greece, some reflections on the use of desalination in the Portuguese water production system and an example of RO desalination use in a group of hotels in the South of Portugal. The Seminar had also an introductory presentation of PRODES project.

A late agenda reschedule by Mr. Carlos Póvoa impeded the presentation by Águas de Portugal.

From the original invitation list, with 25 invitees representing 20 different institutions, only 6 attendance confirmations were received. In spite of this, the final attendance was limited to 3 invitees, in representation of Instituto da Água, ARH Alentejo and DGGE. The Seminar counted also with the participation of PRODES partners.

List of Participants

	Name	Individual or representing a company	E-mail address
1	Adérito Mendes	INAG - Instituto da Água	aderito@inag.pt
2	Isabel Pinheiro	ARH Alentejo	geral@arhalentejo.pt
3	João Bernardo	DGEG	dg.secretariado@dgge.pt
4	João Farinha Mendes	LNEG, IP	farinha.mendes@ineti.pt
5	Pedro Adão	Ao Sol, Lda	pedro.adao@aosol.pt
6	Marcel Wieghaus	SolarSpring	marcel.wieghaus@solarspring.de
7	Bill To	SolarSpring	bill.to@solarspring.de
8	Mattew Folley	Aquamarine Power	matthew.folley@aquamarinepower.com
9	Dimitris Manoulakis	Hellas Energy	dman@aua.gr
10	Alexandra Goutra	Capital Connect	agoutra@capitalconnect.gr

List of Speakers

	Name	Individual or representing a company	E-mail address
1	Michael Papapetrou	WIP	michael.papapetrou@wip-munich.de
2	Eftihia Tzen	CRES	etzen@cres.gr
3	Guillermo Zaragoza	CIEMAT/PSA	guillermo.zaragoza@psa.es
4	Giorgio Micale	Univ. Palermo	micale@dicpm.unipa.it
5	Pedro Horta	LNEG, IP	Pedro.horta@lneg.pt
6	Carlos Yague	GE Power	Carlos.Yague@ge.com

4.4 Minutes of the Seminar in Portugal

Presentations – Discussions:

The programmed presentations and speakers where:

- PRODES Presentation, Michael Papapetrou, WIP
- National Framework for Desalination and Renewables: Portugal, Pedro Horta, LNEG

- National Framework for Desalination and Renewables: Spain, Guillermo Zaragoza, PSA/CIEMAT
- National Framework for Desalination and Renewables: Greece, Eftihia Tzen, CRES
- National Framework for Desalination and Renewables: Italy, Giorgio Micale, Univ.Palermo
- Reflexions on the use of desalination with renewable energies, Carlos Póvoa, AdP
- Experiences on the development of an RO project for an Hotel in Portugal, Carlos Yague, GE Power

A late agenda reschedule by Mr. Carlos Póvoa impeded the presentation by Águas de Portugal.

In view of the present invitees, the discussion following the different presentations addressed the following main topics:

- the national context of the water supply systems and the reasons for not using desalination;
- the use of desalination as an alternative water source in the framework of the new water and sustainability strategy;
- the present legislational framework and licensing procedures and the inexistence of dedicated regulations regarding desalination;
- the access to feed-in tariffs in auto-consumption regimes.

Outcomes:

From the discussion, and after the experience and competences of the present invitees (Mr. Adérito Mendes as Planning Director of INAG, Mrs. Isabel Pinheiro as coastal studies technician at ARH Alentejo and Mr. João Bernardo as Renewable Energies Service Director) the following conclusions and outcomes were accomplished:

- Portugal does not present relevant water scarcity problems. Local scarcity problems are mainly related to inefficiencies in the water distribution system (leakages, e.g.), rather than in resources shortage;
- In the present context, and given the existing water production infrastructures, desalination does not present economical advantages in the scope of large production systems, mainly based in dam reservoirs and underground captation. A good example is the investment made in the Alqueva dam, whose capacity covers the needs previewed for the Southern region;

- Water production and distribution Infrastructures have been developed mainly after public owned private companies, whose investments are secured on a water distribution monopoly base, impeding private consumers located in areas served by the water distribution network to develop private water captation projects (mandatory connection to the public network);

- Such development scheme is traduced in low (indirectly subsidized) water prices;

- The wide coverage rates attained with the present water production and distribution system, gathered with the mandatory connection to the public distribution system, render difficult the development of private desalination plants;

- One other aspect regards the classification of sea water as a public resource, which implies the payment of higher exploitation fees compared to underground water resources, considered private when the captation occurs in private property;

- The licensing of water captation and use activities is a disperse process and, regarding desalination, 3 years were required for the development of the sole private project under operation in Portugal Mainland. On the other hand, no specific procedures exist for desalination;

- Yet, the new water framework directive, implying the compliance of ecological objectives for the coming years, may limit the exploitation of this common surface and underground resources. In this context, desalination might become a solution for overcoming limits in the exploitation of common resources, has previewed in the National Strategy for Sustainable Development;

- A new feed-in tariff regime is under preparation, allowing the access to feed-in tariffs for systems up to 500 kW in auto-consumption regime, which renders more viable the use of RE based desalination systems.

In conclusion, the present good development of the water production and distribution infrastructures, based on sufficient surface and underground resources, renders difficult the new investments. In this context, desalination is not viewed, at present, as an economically viable technology for large scale water production.

Private investment in desalination plants is restricted by the mandatory connection to the public distribution network, which presents high coverage rates.

Desalination is regarded as an alternative solution within the new water framework, which will impose restrictions to the exploitation of common water resources.

Changes in the feed-in tariff scheme for RE based electricity production will allow the access to medium range power systems in a grid disconnected mode, which will render easier the access of RE powered desalination to the subsidized tariffs.

Annex 4.1: Invitation Brochure

PRODES
http://www.prodes-project.org/

Intelligent Energy Europe

LNEG

DESSALINIZAÇÃO COM RECURSO A ENERGIAS RENOVÁVEIS

Seminário

Introdução

A dessalinização da água do mar ou de águas salobras apresenta-se hoje como uma tecnologia corrente para a produção de água em zonas com escassos recursos hídricos. As tecnologias disponíveis assentam, contudo, no consumo de consideráveis recursos energéticos, apresentando potenciais impactes associados ao consumo de fontes energéticas convencionais. Acresce a estes impactes que o custo da água produzida é fortemente afectado pelos custos da energia consumida.

Num contexto de aumento dos custos de energia, o desenvolvimento de tecnologias de dessalinização associadas à utilização de energias renováveis apresenta potenciais vantagens não apenas do ponto de vista económico como do ponto de vista ambiental, especialmente considerando a coincidência entre necessidades de água e recursos renováveis disponíveis.

PRODES

O Projecto "PRODES - Promotion of Renewable Energy for Water production through Desalination" (Ctr. Nr. IEE/07/781/S12.499059), co-financiado pelo Programa Intelligent Energy for Europe, promove a implementação de tecnologias de dessalinização com o recurso a energias renováveis através da aproximação das indústrias relacionadas à comunidade científica, promovendo o contacto entre indústria, investidores e potenciais utilizadores, propondo uma melhoria do quadro de políticas de promoção à implementação destas tecnologias e promovendo o conhecimento das suas vantagens entre o público em geral.

Seminário

No âmbito do projecto PRODES pretende-se uma discussão alargada sobre o enquadramento legal do licenciamento de sistemas de dessalinização e sobre a possibilidade de incentivos à utilização de energias renováveis no contexto da produção de energia eléctrica e/ou térmica nestes sistemas, considerando a sua possível utilização em sistemas de abastecimento público ou em sistemas privados de menor capacidade.

A dessalinização, não sendo uma tecnologia ainda explorada de uma forma consistente a nível nacional, vai sendo encarada como uma possibilidade de resolução de problemas de abastecimento em diferentes contextos, como reflecte já a Estratégia Nacional de Desenvolvimento Sustentável (ENDS) no seu objectivo de "Melhor Ambiente e Gestão Sustentável dos Recursos Naturais", onde a dessalinização é identificada como uma das possibilidades de utilização de origens alternativas de água.

Considerando a importância da identificação de obstáculos e oportunidades numa área com efectivo potencial de crescimento, pretende-se com este seminário uma reflexão conjunta das entidades com poderes executivos, regulatórios ou consultivos nos domínios da energia, do ambiente e dos recursos hídricos sobre questões como:

- o processo de licenciamento de instalações de dessalinização;
- a facilidade de acesso de consumidores individuais (e.g. indústrias hoteleira, química, petrolífera) ao licenciamento de sistemas de dessalinização para auto-consumo;
- o acesso ao domínio público marítimo em sistemas de dessalinização de água marinha;
- a descarga de efluentes de sistemas de dessalinização;
- a acessibilidade de acesso a regimes tarifários de produção de electricidade renovável em sistemas dedicados à produção eléctrica para auto-consumo em sistemas de dessalinização.

O Seminário terá uma pequena sessão de enquadramento do binómio dessalinização+Renováveis em países onde a utilização de sistemas de dessalinização é já uma realidade, casos da Espanha, Grécia e Itália, abrindo-se depois uma sessão de discussão em torno das questões centrais acima identificadas.

O Seminário terá lugar em Lisboa (local a confirmar em função do número de presenças), entre as 9.00 e as 13.00 do dia 20 de Setembro próximo.

Data e Local

20 de Setembro de 2010

LNEG - Lumiar
Edifício Solar XXI
Estrada do Paço do Lumiar, 22
Lisboa
(*http://www.lneg.pt/contactos/?contacto=17683*)

Programa

9.00	Abertura e Enquadramento	Hélder Gonçalves, LNEG, João Farinha Mendes, LNEG
9.10	Apresentação do Projecto PRODES	Michael Papapetrou, WIP
9:30	Enquadramento Nacional da Dessalinização e Energia Renováveis: Portugal	Pedro Horta, LNEG
9.45	Enquadramento Nacional da Dessalinização e Energia Renováveis: Espanha	Guillermo Zaragoza, PSA/CIEMAT
10.00	Enquadramento Nacional da Dessalinização e Energia Renováveis: Grécia	Eftihia Tzen, CRES
10.15	Enquadramento Nacional da Dessalinização e Energia Renováveis: Itália	Lucio Rizzuti, Univ.Palermo
10.30	Coffee Break	
10.50	Utilização da dessalinização com recurso a energias renováveis: algumas reflexões	Carlos Póvoa, AdP
11.10	Experiência de instalação de unidade de Osmose Inversa em Unidade Hoteleira	Ricardo Lopes, GE Power
11.30	Discussão	
12.30	Conclusões	
13.00	Encerramento	

As apresentações poderão ser realizadas em Português ou Inglês.

Contactos

Isabel Real
isabel.real@ineti.pt
tel: 210 924 600 - ext. 4297

Pedro Horta
pedro.horta@ineti.pt
tel: 217 127 061