

Congreso Nacional del Medio Ambiente
Madrid del 26 al 29 de noviembre de 2018



H2020 PROJECT ENERGY WATER: Improving energy efficiency in industrial water processes through benchmarking and benchlearning tools in Europe manufacturing industry

Yolanda Ballesteros Álvarez
Proyectos de agua, energía y ciudad
#conama2018



Supported by the Framework
Programme Horizon2020 European
Union under GA n° 696112



- 01** Introducción y objetivos
- 02** Participantes
- 03** Pilares del proyecto
- 04** Actividades formativas





01

INTRODUCCIÓN Y OBJETIVOS



Introducción

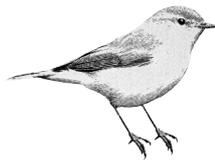
- Proyecto H2020, CSA Action
- Fecha: febrero 2016 – enero 2019
- 10 *partners*, 8 países





Objetivos generales

- Incrementar la eficiencia energética en los procesos industriales que son intensivos en el uso del agua.
- Aplicar innovación organizativa a través de dos acciones:
 - La creación de una herramienta para la autoevaluación de la eficiencia energética (Energy Management Self-Assessment Tool, EMSA), que ofrezca información fiable y esté accesible online de manera gratuita.
 - La creación de una red de Energy Angels (punto de encuentro de ESEs, auditores energéticos y otros proveedores de servicios energéticos).



El «core» del proyecto es la creación de la EMSA y de la red de Energy Angels asociada.



02 PARTICIPANTES



Participantes

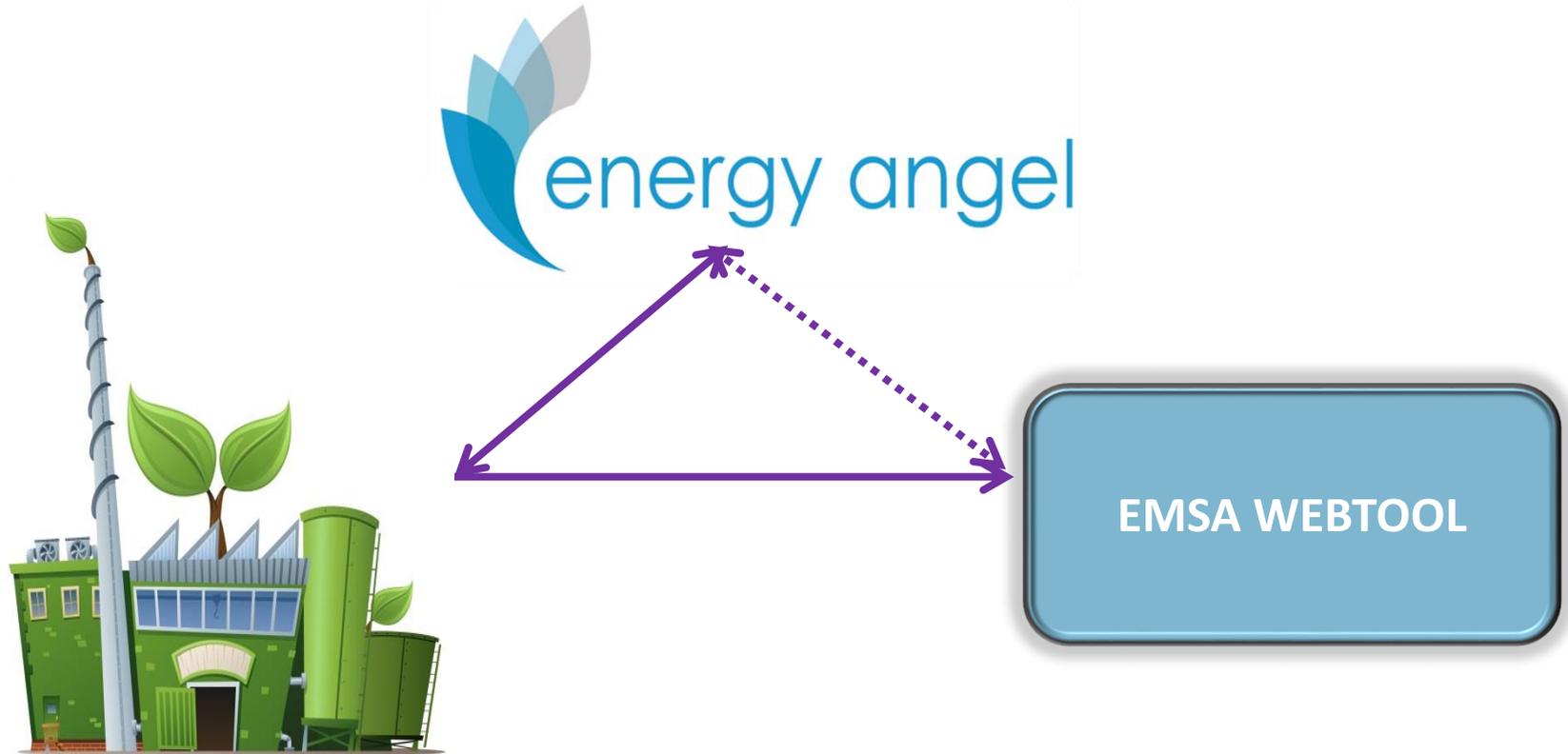




03 PILARES DEL PROYECTO



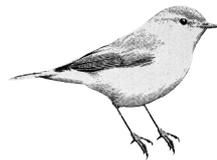
Pilares del proyecto





Pilar I: EMSA web-tool

- Herramienta para la autoevaluación de la eficiencia energética que ofrece información fiable y esté accesible online de manera gratuita.
- Ofrece la posibilidad de obtener distintos tipos de resultados:
 - Evaluación inicial de la eficiencia de los procesos que conllevan uso de agua y de la gestión de la energía.
 - Funciones de Benchmarking y posicionamiento en relación con otras empresas europeas.
 - Función de acciones de mejora y simulador de ahorros.
- Gratuita, uso online, tratamiento anónimo de los datos.



La herramienta EMSA mantiene la confidencialidad de los datos.



Pilar I: EMSA web-tool

energy water

Home About Partners Contact User Manual

Welcome to the Energy Management Self-Assessment Tool (EMSA) !

energy angel

If you wish to register in order to become an Energy Angel, please create a new account.

Angel Sign Up Help

Company registration

If you wish to register your company for using EMSA, please create a new account.

Company Sign Up Help

Username Password Remember Me Log In

If you already have an account, please login to the form at the right hand side.



Pilar I: EMSA web-tool

The screenshot displays the EMSA web-tool interface. At the top left is the 'energy water' logo. A navigation bar contains links for Home, About, Partners, Contact, User Manual, Account Settings, and Logout. On the right, a user selection area shows 'Now you are using:' with two buttons: 'EMSA Lite' and 'EMSA Professional' (which is highlighted in blue).

The main content area is titled 'Company Page'. Below the title is a red 'Help' button and a light blue information box stating 'Info! Your ID number is: 1466.'.

The interface features a grid of functional tiles, each with an icon and a brief description:

- Information** (circled in green): You can view or edit your information here.
- Data Evaluation**: You can view, create, modify scenarios here.
- Results**: You can view your performance results here.
- EMSA Support**: You can view, add, and manage your requests of Energy Angels here.
- Management of Users**: You can view, add, remove and edit users here.
- Energy Savings Simulator**: You can simulate your efficiency here.
- Benchmarking Results**: You can view and compare your results here.
- Improvements Management**: You can implement your 'Improvements' plan here.
- Messages** (with a '0' notification badge): You can view or send messages here.
- Alerts** (with a '6' notification badge): You can view, edit or delete your alerts here.



Pilar I: EMSA web-tool



[Home](#) [About](#) [Partners](#) [Contact](#) [User Manual](#) [Account Settings](#) [Logout](#)

← Back

Company Submission Form Help i

Contact Details

Company Logo Ningún archivo seleccionado
Please upload the Company logo

***Contact person** Please provide the contact's full name

***Position in the organization** Please provide the contact's current position

***Company** Please provide the name of your company

Company's VAT number
The VAT number will be used to easily identify Energy Angels that belong to your own company. You will find this option within the Energy Angels module, section "Company's Angels."

Status

***Telephone** Please provide the contact's Telephone number

***Email** Please provide the contact's E-mail address

***Country** Previously chosen:

Please choose Country
**Choose a Country if only you want to change your old selection.*



Pilar I: EMSA web-tool

Company Description

Company Size ▼
 Please confirm the number of employees within your organisation.

Company Sector ▼
 Please choose the Company's sector

Company Activities Description

 Please provide a description of all the company's current activities

Accreditations ▲ ▼
 Multiple choice is supported (please hold 'Ctrl' or 'Cmd' key and select values)

Other* Accreditations
 Please provide other Company's Accreditations *(if applicable)

Energy Management ▼
 Does your company or organisation have a person or individuals with responsibility for energy management?

Data Monitoring ▼
 Do you currently have metering systems installed that are capable of monitoring the key energy consuming systems operating on your site?

This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696112

*Fields with a red star are mandatory and should be filled in order to submit the form.



Pilar I: EMSA web-tool

[http://energywater-
emsa.eu/index.php/com-
pany-page](http://energywater-
emsa.eu/index.php/com-
pany-page)

The screenshot shows the EMSA web-tool interface. At the top left is the 'energy water' logo. To the right is a navigation menu with links: Home, About, Partners, Contact, User Manual, Account Settings, and Logout. Below the logo, it says 'Now you are using:' followed by two buttons: 'EMSA Lite' and 'EMSA Professional'. The main heading is 'Company Page'. Below this is a 'Help' icon and a notification bar: 'Info! Your ID number is: 438.'. The main content area contains a grid of 10 icons with corresponding text and descriptions:

- Information**: You can view or edit your information here.
- Data Evaluation**: You can view, create, modify scenarios here. (This icon is circled in green in the image)
- Results**: You can view your performance results here.
- EMSA Support**: You can view, add, and manage your requests of Energy Angels here.
- Management of Users**: You can view, add, remove and edit users here.
- Energy Savings Simulator**: You can simulate your efficiency here.
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At the bottom right, there is a European Union flag and the text: "EnergyWater project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 696112".



Pilar I: EMSA web-tool

The screenshot shows the EMSA web-tool interface. At the top, there is a navigation menu with links: Home, About, Partners, Contact, User Manual, Account Settings, and Logout. Below the menu, the breadcrumb trail reads: User page → All Company Scenarios → All Sections. The main heading is "Scenario: MEAT INDUSTRY V2 - Sections" with a "Help" icon. A table lists three sections of questions:

#	Title	Info	Last Modified	Last User Modified	Results
1	General Questions	Questions about production, water, electricity and/or fuel consumption	2018-05-09	SOCAMEX	View
2	Efficiency Questions	Data regarding processes, equipment and features of the company	2018-01-05	SOCAMEX	View
3	Management Questions	Data regarding management information of the company	2018-01-02	SOCAMEX	

Below the table are three buttons: "← Back", "Edit Data", and "Submit Scenario".

Preguntas generales:

- Producción
- Consumo de agua
- Consumo de electricidad/ combustibles

Preguntas de eficiencia:

- Definición de procesos
- Definición de equipos

Preguntas de gestión (carácter transversal):

- Recursos humanos
- Gestión del conocimiento
- Percepción social
- Otros



Pilar I: EMSA web-tool

The screenshot displays the EMSA web-tool interface. At the top left is the 'energy water' logo. A navigation bar contains links for Home, About, Partners, Contact, User Manual, Account Settings, and Logout. On the right, a user status section shows 'Now you are using:' with two buttons: 'EMSA Lite' and 'EMSA Professional'. The main content area is titled 'Company Page' and includes a 'Help' icon and a notification bar stating 'Info! Your ID number is: 438.' Below this are several functional tiles arranged in a grid:

- Information**: You can view or edit your information here.
- Data Evaluation**: You can view, create, modify scenarios here.
- Results**: You can view your performance results here. (This tile is circled in green in the image.)
- EMSA Support**: You can view, add, and manage your requests of Energy Angels here.
- Management of Users**: You can view, add, remove and edit users here.
- Energy Savings Simulator**: You can simulate your efficiency here.
- Benchmarking Results**: You can view and compare your results here.
- Improvements Management**: You can implement your improvements' plan here.
- Messages**: You can view or send messages here.
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Pilar I: EMSA web-tool

← Back

Scenario: MEAT INDUSTRY V2 Help

General

EFFICIENCY SCORE

25/100

Efficiency

Efficiency

General Ratios

Production energy efficiency comparison (kWh/unit production)

Real Value Optimum

Production water efficiency comparison (m³/unit production)

Real Value Optimum

Main Process	Process	Equipment	Production energy efficiency comparison (kWh/unit production)					Production water efficiency comparison (m ³ /unit production)						
			Real Value	Optimum	Efficiency Ratio (kWh/m ³)	Efficiency Ratio Nominal (kWh/m ³)	Energy Efficiency Ratio (kWh/m ³)	Overize Ratio	Real Value	Optimum	Efficiency Ratio	Efficiency Ratio Nominal	Energy Efficiency Ratio	Overize Ratio
Pretreatment	Pre-treatment - Pretreatment	PUMPS												
		GRID												
		SIEVE												
		SCREW CONVEYOR												
		SAND CLASSIFIER												
		GREASE CONCENTRATOR OIL SEPARATOR												
		PUMPS												
		PUMPS												

Management

Global Management Score

Real Value Optimum

Management Criteria

Management Criteria

← Back

Export Results



Pilar I: EMSA web-tool

← Back

User page → All Scenarios → General Results

Scenario: MEAT INDUSTRY V2 [Help](#)

General Efficiency Management

[Export Results](#)

EMSA SCORE 18/100 ⓘ

Benchmarking Score 47 % ⓘ

EFFICIENCY SCORE

★☆☆☆☆

25/100

Efficiency

MANAGEMENT SCORE

☆☆☆☆☆

0/100



Pilar I: EMSA web-tool

The screenshot displays the EMSA web-tool interface. At the top left is the 'energy water' logo. A navigation bar contains links for Home, About, Partners, Contact, User Manual, Account Settings, and Logout. On the right, it indicates the user is using 'EMSA Lite' or 'EMSA Professional'. The main section is titled 'Company Page' and includes a 'Help' icon and a notification: 'Info! Your ID number is: 438.' Below this are several tool cards:

- Information**: You can view or edit your information here.
- Data Evaluation**: You can view and modify your scenarios here.
- Results**: You can view your performance results here.
- EMSA Support**: You can view, add, and manage your requests of Energy Angels here.
- Management of Users**: You can view, add, remove and edit users here.
- Energy Savings Simulator**: You can simulate your efficiency here. (This card is highlighted with a green circle in the image.)
- Benchmarking Results**: You can view and compare your results here.
- Improvements Management**: You can implement your improvement plan here.
- Messages**: You can view or send messages here.
- Alerts**: You can view, edit or delete your alerts here.



Pilar I: EMSA web-tool

Efficiency ⓘ Management ⓘ

Main Process	Process	Equipment
	Pumping - Agua bruta	PUMPS
	Pumping - Purga	PUMPS
	Pumping - Recirculación	PUMPS

Process Improvement Actions	
Improvement Description	Select actions
Install measurement equipment in the main consumption points of energy and water.	<input type="checkbox"/>

Process Recommendation Actions	
*Recommendation = aspects identified as recommendations could run into improvement actions, The Energy Angel should study in detail to determine the best saving measures that could be applied	
Recommendation Description	Select actions
Regular monitoring of the pump system helps to keep the pump system running efficiently by detecting system blockages, impeller damage, inadequate suction, clogged or gas-filled pumps or pipes, pump wear, and if the pump clearances need to be adjusted	<input type="checkbox"/>
Consider installing measurement equipments in all the main parameters that affect the energy efficiency from the pumping process, such as energy consumption, water flow, production.	<input type="checkbox"/>
Consider installing measurement equipments in all the main parameters that affect the energy efficiency from the pumping process, such as water flow and water consumption.	<input type="checkbox"/>

Equipment Improvement Actions	
Improvement Description	Select actions

Equipment Recommendation Actions	
*Recommendation = aspects identified as recommendations could run into improvement actions, The Energy Angel should study in detail to determine the best saving measures that could be applied	
Recommendation Description	Select actions



Pilar I: EMSA web-tool

The screenshot displays the EMSA web-tool interface. At the top left is the 'energywater' logo. A navigation bar contains links for Home, About, Partners, Contact, User Manual, Account Settings, and Logout. On the right, it indicates the user is using 'EMSA Professional'. The main heading is 'Company Page'. Below this is a 'Help' button and a notification bar stating 'Info! Your ID number is: 438.'. The interface features a grid of tool icons: Information, Data Evaluation, Results, EMSA Support, Management of Users, Energy Savings Simulator, Benchmarking Results (circled in green), Improvements Management, Messages, and Alerts. Each icon includes a brief description of its function.



Pilar I: EMSA web-tool

The screenshot displays the EMSA web-tool interface. At the top, there is a navigation menu with links for Home, About, Partners, Contact, User Manual, Account Settings, and Logout. Below the menu, there are four tabs: General (selected), General Ratio, Efficiency, and Management. A 'Help' icon is visible in the top left corner of the main content area.

A filter section titled 'Select any Filter to apply:' contains three dropdown menus: 'Other Sector', 'Other Size', and 'Other Location'. A green 'Enviar' button is positioned below these filters. An information icon (i) is located to the right of the filter section.

Below the filters, a text block explains: '*Compare your performance with other companies using the filters provided. Examine your results in contrast with other companies that operate in the same sector, or have the same size based on their number of employees or are located in the same country as yours.'

The main dashboard is divided into three columns. The left column shows a water drop icon with a low fill level, representing the user's performance. Below it, the 'EMSA SCORE' is 18/100, with an information icon. Underneath, the 'EFFICIENCY SCORE' is 25/100, represented by 2.5 stars, and the 'MANAGEMENT SCORE' is 0/100, represented by 0 stars.

The middle column features a large blue box with the text: 'You are above the 93% of the EMSA Companies'. The percentage '93%' has an information icon next to it.

The right column shows a water drop icon with a high fill level, representing the 'Best Company Scenario'. Below it, the 'EMSA SCORE' is 54/100, with an information icon. Underneath, the 'EFFICIENCY SCORE' is 77/100, represented by 4.75 stars, and the 'MANAGEMENT SCORE' is 58/100, represented by 4.75 stars.



Pilar I: EMSA web-tool

Select Score to compare:

EMSA SCORE

EFFICIENCY SCORE

MANAGEMENT SCORE

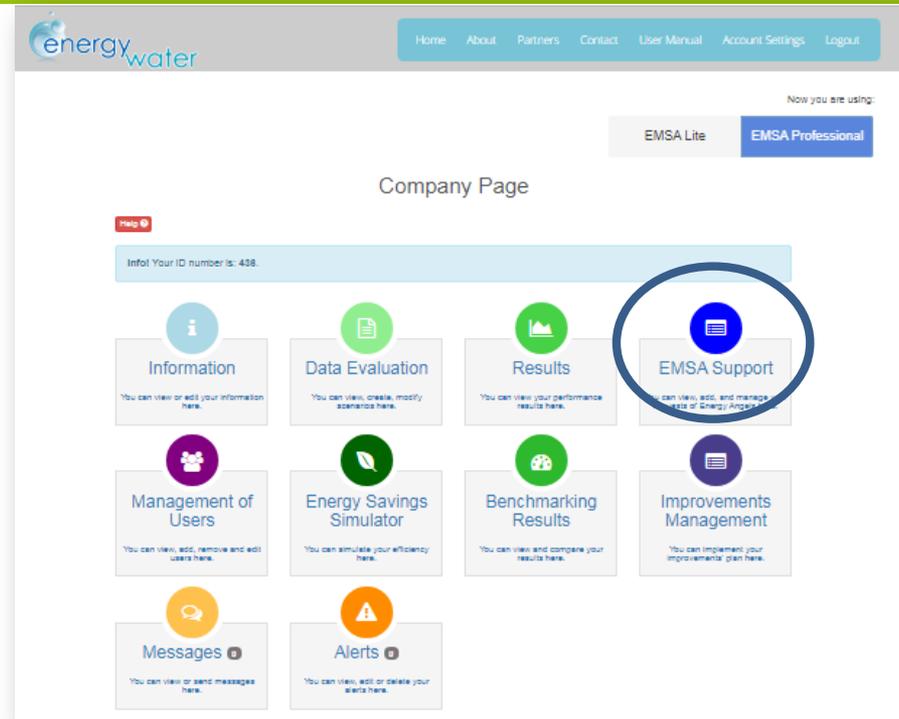
EMSA Score	Score
ESCENARIO 2 (EDAR ACTUAL)	23.1
Best Company Scenario	53.9
Average Company Scenario	22.87





Pilar II: Red de Energy Angels (EA NETWORK)

- Punto de encuentro entre expertos que trabajan en el campo de la eficiencia energética.
 - Profesionales que desarrollan su actividad en ESEs.
 - Profesionales que trabajan en empresas industriales.
- Está disponible en la página de inicio de la EMSA.



La EA NETWORK es un punto de encuentro entre profesionales de la eficiencia e industrias.



Pilar II: Red de Energy Angels (EA NETWORK)

SERVICIOS OFRECIDOS POR LOS ENERGY ANGELS



Servicio 1: SOPORTE EN LA UTILIZACIÓN DE LA EMSA WEB TOOL

Apoyo gratuito en el uso de la herramienta EMSA.



Servicio 2: CONSULTORÍA ENERGÉTICA

Consejo experto para la gestión de la energía y la identificación de oportunidades para el ahorro de energía.



Servicio 3: APOYO A LA IMPLEMENTACIÓN Y LA INNOVACIÓN.

Acceso a proveedores de energía y a nuevas soluciones innovadoras.



Servicio 4: PROVEEDOR DE SERVICIOS FINANCIEROS

Acceso a apoyo financiero para implementar iniciativas de eficiencia energética.



Formación específica para el uso y entendimiento de la EMSA web-tool (a partir de septiembre).



Pilar II: Red de Energy Angels (EA NETWORK)

- Para ser Energy Angel es necesario:
 - Registrarse como Energy Angel.
 - Seleccionar los servicios que se desea ofrecer.
 - Ser validado por el consorcio.
- Servicio 1: obligatorio formación específica (curso presencial, MOOC).



Para dar soporte en el uso de la EMSA, el EA debe haber cursado formación específica.



Pilar II: Red de Energy Angels (EA NETWORK)

energy water

Home About Partners Contact User Manual

Welcome to the Energy Management Self-Assessment Tool (EMSA) !

energy angel

If you wish to register in order to become an Energy Angel, please create a new account.

Angel Sign Up Help

Company registration

If you wish to register your company for using EMSA, please create a new account.

Company Sign Up Help

Username Password Remember Me Log In

If you already have an account, please use the form at the right hand side.



Pilar II: Red de Energy Angels (EA NETWORK)

Select Energy Angel

Energy Angel's EMSA
Energy Angel's Services
Angel's ID number
Company's Angels

Search for Country, City, Language, etc...

Please select your preferred Energy Angel!

#	Type of Energy Angel	Spoken Language	Country	City	Activities	Qualifications	Fields of Expertise
<input type="checkbox"/>	WINGS Angel Account		Greece	Athens			
<input type="checkbox"/>	Energy consultant	English, Spanish	Spain	Burgos	Energy audits, Energy efficiency studies, Energy Management System Implementation	Mechanical Engineering degree, Industrial Engineering	Decantation, Equalization
<input type="checkbox"/>	Technician	English, Italian	Italy	Monte di Malo (Vicenza)	Energy audits, Energy efficiency studies, Energy Management	Architect	



Pilar II: Red de Energy Angels (EA NETWORK)



[Home](#)
[About](#)
[Partners](#)
[Contact](#)
[User Manual](#)
[Account Settings](#)
[Logout](#)

User page → Company Requests page

← Back

EMSA Support [Help](#)

Replies to Requests i

Status	Angel Decision	Angel Name	Sector	Country	City	Activities	Fields of Expertise	Request Date	Reply Date	Angel Message	Message to Angel	Rating
Accepted	Accepted	SOCAMEX S.A.U.	Engineering services	Spain	Valladolid			2018-10-30	2018-10-30		-	<div style="display: flex; align-items: center;"> ★ </div> <div style="font-size: 0.8em; text-align: center; color: #e69d00;"> Rating Submitted </div>

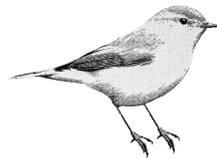
Final Acceptance

Final Rejection



Pilar III: Empresas

- Empresas manufactureras que usan el agua de manera intensiva (industria del papel, alimentación y bebidas, química, farmacéuticas).
- Acceso gratuito a la EMSA y a la EA NETWORK.
- Pueden utilizar la versión completa de la EMSA si son apoyadas (de manera gratuita) por un Energy Angel de la EA NETWORK.



Las empresas de la base de datos de la EMSA son un pilar fundamental para realizar un análisis fiable.



Pilar III: Empresas

The screenshot displays the 'energywater' user interface. At the top left is the logo, and at the top right is a navigation menu with links: Home, About, Partners, Contact, User Manual, Account Settings, and Logout. Below the navigation is a user selection area with the text 'Now you are using:' and two buttons: 'EMSA Lite' and 'EMSA Professional'. The 'EMSA Professional' button is highlighted with a green oval. The main content area is titled 'Company Page' and includes a 'Help' icon and a notification bar stating 'Info! Your ID number is: 438.'. Below this are several functional tiles: Information, Data Evaluation, Results, EMSA Support, Management of Users, Energy Savings Simulator, Benchmarking Results, Improvements Management, Messages, and Alerts. Each tile contains an icon, a title, and a brief description of its function.

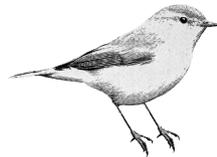


04 FORMACIÓN



Formación

- MOOC:
<https://www.cognitoforms.com/OIEau1/EnergyWaterMOOCRegistration>
- WORKSHOPS
LEÓN
22 noviembre
VALLADOLID
27 noviembre
BURGOS
Fecha por determinar



La formación gratuita para EA es una de las prioridades del proyecto.

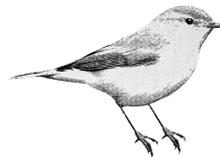


MOOC GRATUITO

MOOC:

<https://www.cognitofrms.com/OIEau1/EnergyWaterMOOCRegistration>

- 4 semanas.
- 4 secciones.
 - SECCIÓN 1: Introducción y conceptos básicos de la gestión energética.
 - SECCIÓN 2: Auditorías energéticas.
 - SECCIÓN 3: La herramienta EMSA.
 - SECCIÓN 4: Un caso de estudio con la EMSA.
- Clases compuestas por vídeos (1 hora).
- Test final → certificado como Energy Angel.



Al final del MOOC se otorga un certificado que permite registrarse como Energy Angel Tipo 1.



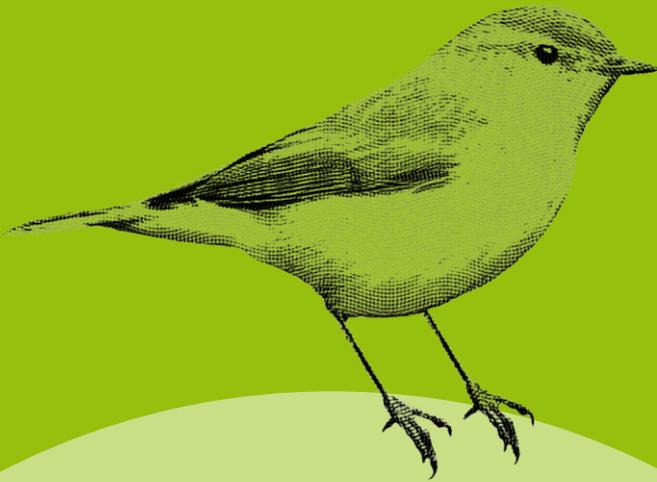
WORKSHOP GRATUITO

WORKSHOP BURGOS (próximamente):

- INSCRIPCIONES: formacion@itcl.es o 947298471.
- Programa preliminar:
 - Mejora energética en los procesos del agua en la industria. Proyecto EnergyWater.
 - Herramienta EMSA: caso práctico.
 - Casos de éxito en la identificación e implantación de medidas de ahorro energético en procesos de agua.
- Duración: 4 horas.



Asistirá el director de operaciones de la empresa caso de éxito.



¡Gracias!

#conama2018