D2.3: EMSA Web-Tool User Guide

H2020-EE-2015-3 Market Uptake · Project nr: 696112 · Coordinator: ITCL

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WP2: Methodology development and EMSA web-tool design.

Task 2.2.:– EMSA web-tool design to compare and benchmark energy performance.

Del. 2.3: EMSA web-tool user guide.

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Abstract :	This document guides the user in amongst the Energy Management Self-Assessment (EMSA) web-tool.
Status:	X ☐ PU (Public) ☐ PP Restricted to other programme participants (including the Commission Services) ☐ Restricted to a group specified by the consortium (including the Commission Services) (please specify the group) ☐ Confidential, only for members of the consortium (including the Commission Services)

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CONTENTS

1 INTRODUCTION

The EnergyWater project provides assessment to companies as well as a list of improvement actions for those fields that have achieve the lowest scores or that are working below their optimum conditions.

Deliverable 2.3: "EMSA web-tool user guide" contains the information regarding the operation of the EMSA web-tool that has been developed during Task 2.2 of the EnergyWater project.

In order for the users to be able to get the most of the tool, this user guide has been created, where it appears information concerning:

- How should users introduce access the tool, depending if they want to become and Energy Angel or if they want to perform an assessment of a certain company.
- How the Energy Angel's platform works.
- The introduction of information and the contact details of a user into the tool.
- Steps to follow in order to relate an Energy Angel with a company that wants to perform an assessment.
- Details about how a company should introduce their information in order to perform an accurate assessment, as well as the most relevant information that needs to be implemented.
- Results that will appear for a company once the assessment has been completed.

1.1 Objectives and outputs

The objectives of this Work Package (WP2) are the following:

- Introduce into the project work flow all existing information about energy efficiency in industrial water processes.
- Identify cross-cutting innovative technologies that can be applied to different companies and processes.
- Cooperate with stakeholders previously working on energy efficiency in industrial water processes.
- Provide methods and tools to companies, ESCOs and energy auditors for self-assessment and to benchmark energy performance in water process, identifying cost saving potential.
- Develop a methodology to identify excellence in industrial water management and energy savings potential.
- Develop an Energy Management Self-Assessment (EMSA) web-tool to compare and benchmark energy performance and facilitate the Benchlearning.
- Develop a guide for the EMSA web-tool so that the future users of the tool have a manual regarding how to get the maximum benefit from the EMSA tool.

The WP2 is split into two different Tasks:

- **Task 2.1. Methodology development for a self-assessment energy efficiency evaluation:**

  The development of this task provides the creation of a methodology structure that calculates the score and the improvement of different energy models. It is based on 4 different models: CAF, EVO, ISO 50.001 and CARBON TRUST Energy Management self-assessment tool.

  For this methodology structure to function it has to be created a list of information that the Energy Angels should demand the companies; this list of information will vary depending on the kind of that that is being collected.

- **Task 2.2. EMSA web-tool design to compare and benchmark energy performance:**

  EMSA web-tool will be designed, a collaborative tool that will allow the spread of best energy efficiency strategies in water management among manufacturing companies.

  In this task it will be designed a Benchlearning database that will compare all the management and energy performances in an anonymous way.

  The information that will be stored in this web page will use comparative algorithms to facilitate the tasks of creating rankings, as well as to propose improvement actions to the processes that get the lowest scores.

2 INITIAL BASIS

The aim of this Deliverable is to explain how to perform an assessment in the EMSA Web Tool whether the user is a company who wants to perform a self-assessment or if it's an Energy Angel who wants to perform an assessment.

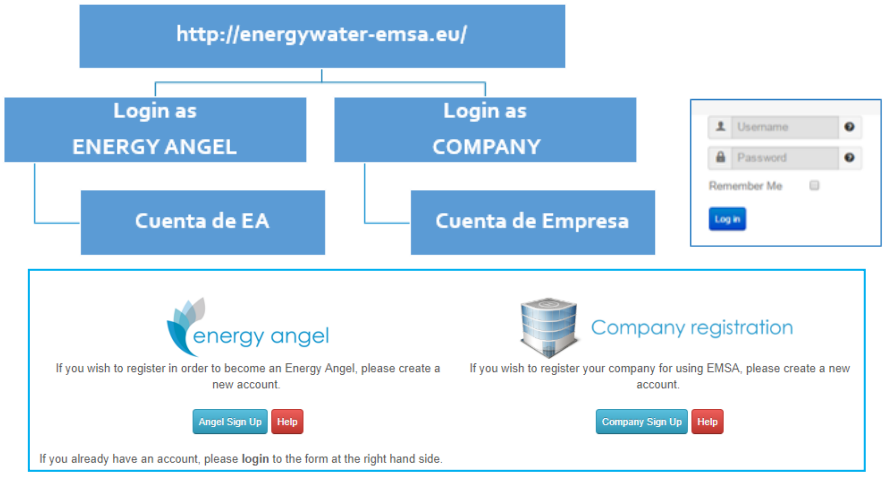
Depending on what the user is going to use the tool for, there are two different paths that a user can choose if he/she wants to access into the tool.

- Companies: If a company registers into the tool they will be guided in the path to perform a complete assessment of the working conditions of the company, regarding those processes and equipment owned by a company which are related to water use and energy consumption. The company will be allowed to introduce their data into the tool up to a point, where an energy expert will help the company to end the introduction of data.

  After all the information is completed, the tool will provide results about the level of efficiency of the company as well as a list of possible improvement measures. If the company performs the already mentioned saving measures, they will be able to increase their efficiency level. To do this; they will also be able to contact experts in different fields who can guide them into the implementation process.

- Energy Angels: If a person registers as an Energy Angel, they will need to introduce their personal data and working experience in order to be validated as an Energy Angel. They will be given information about courses related to water and energy efficiency and they will be able to establish contact with different companies and create business opportunities by performing assessments with the EMSA tool and the Energy Angels network.

This document includes screenshots, as well as written steps to follow that will guide both groups of interest through the EMSA Web-Tool.



2.1 EMSA web tool features

As we have mentioned in the project deliverables, the EMSA web tool is designed to acquire the following features:

1. Simplicity: The tool has to be simple regarding its use. For the company to use the company correctly it has to be simple and easy to use.
2. Clarity: The information presented in the tool has to be clear and organised to provide a better use of the tool, this is why the Energy Angel has to be correctly trained and they should ask the required information in a clear way.
3. Easy to use: Depending on who is going to use the tool, the implemented features need to be easy to work with, in order to widen the use of the tool. The information that the tool requires need to be of easy access for the company in order not to invest a lot of time in the assessment.
4. Quick: Following with the topic of the previous point, a good feature that the tool and the assessment need to have in common is that they cannot be time consuming. The idea is to create a rapid assessment that can be completed in a short period of time.
5. Efficient: The tool has to be efficient; with the minimum information needed the tool will calculate and display the most information possible about the state of the company.
6. Useful: This feature is one of the most important ones, because for the companies to use the tool, they need to see that the tool is useful and that the procedures are necessary to achieve the final goal.
7. Adaptable: The EMSA tool needs to adapt to each company's processes. Depending on each company, the tool will have to deal with different sectors, processes and equipment; because of that reason, the tool needs to be suitable for these different conditions.
8. Wide range scope: The EMSA should perform a proper assessment process regardless the size of the company or their level of information. It should adapt to the existing information and provide useful results in every case of study.

This guide has been created to ensure the already mentioned features as well as a correct use of the tool from its users.

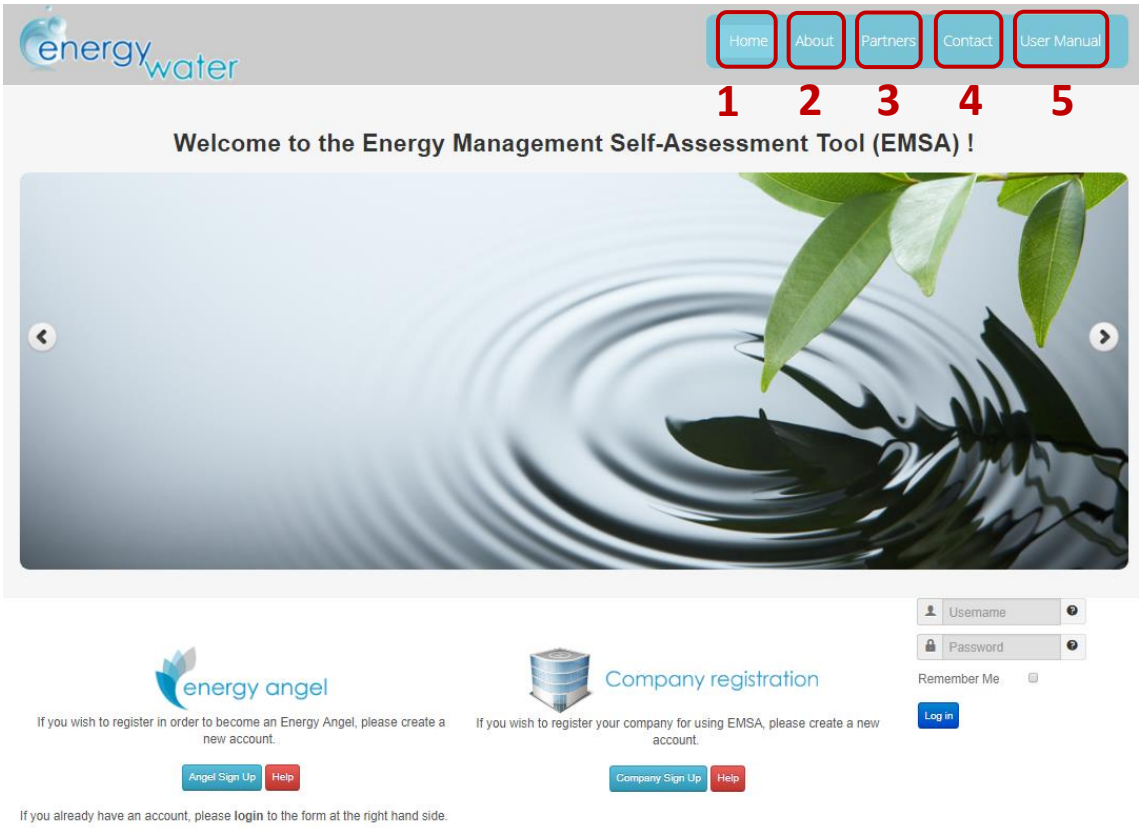
3 GENERAL ACCESS

The link to access the EMSA web tool is the following:

http://energywater-emsa.eu

Once a user has entered in the link presented above, there are some functionalities offered by the tool before any registration.

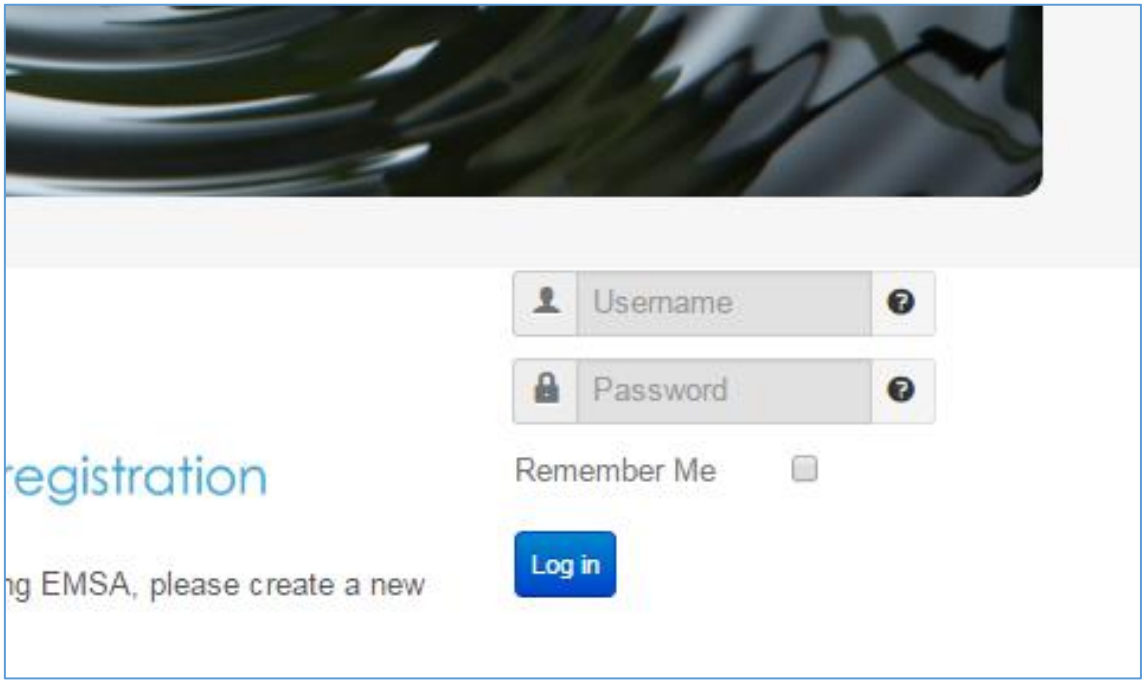
The following screenshot corresponds to the main page of the EMSA, and there are 5 different tabs that give different information and functionalities.



3.1 Home

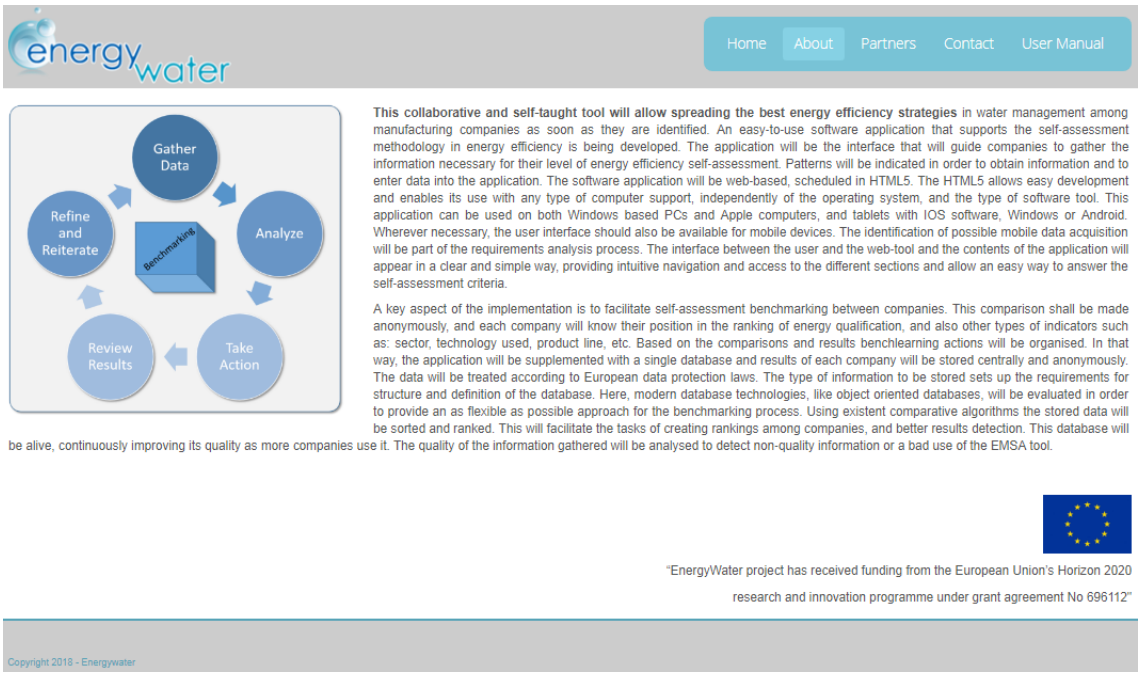
In the home tab, people are able to freely register as Energy Angels or Companies just clicking in the sing up button.

If the users already have an account, they are able to sign up directly from the home page.



3.2 About

In the “about” tab it is shown some information that explains the EMSA tool’s way of working as well as a brief summary of how the tool has been created and the language that has been used to program it.



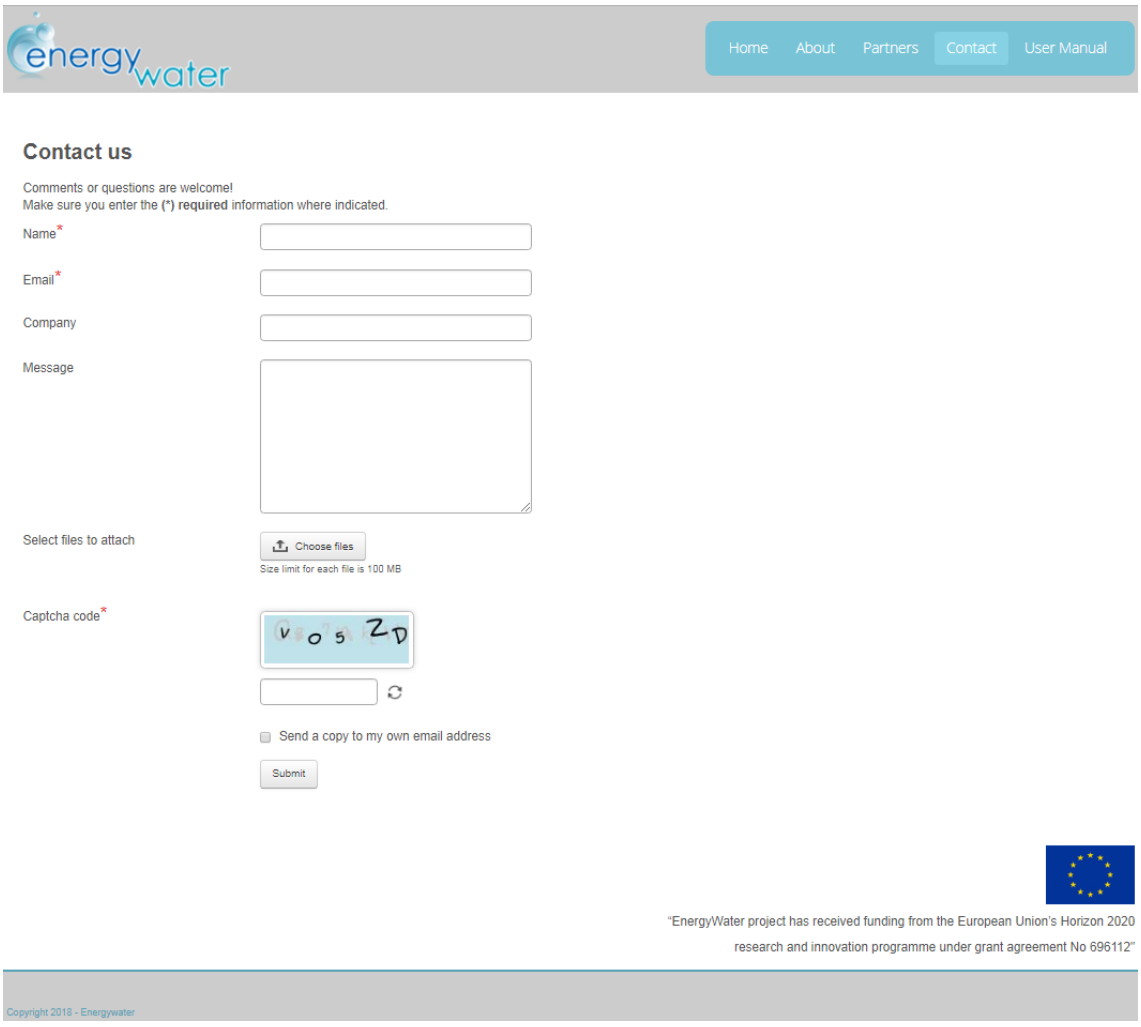
3.3 Partners

In the “partners” tab, the users can find information about the members of the consortium that has created the EMSA web tool. If the users click in the logos, the page will redirect them to each of the members’ webpage.

3.4 Contact

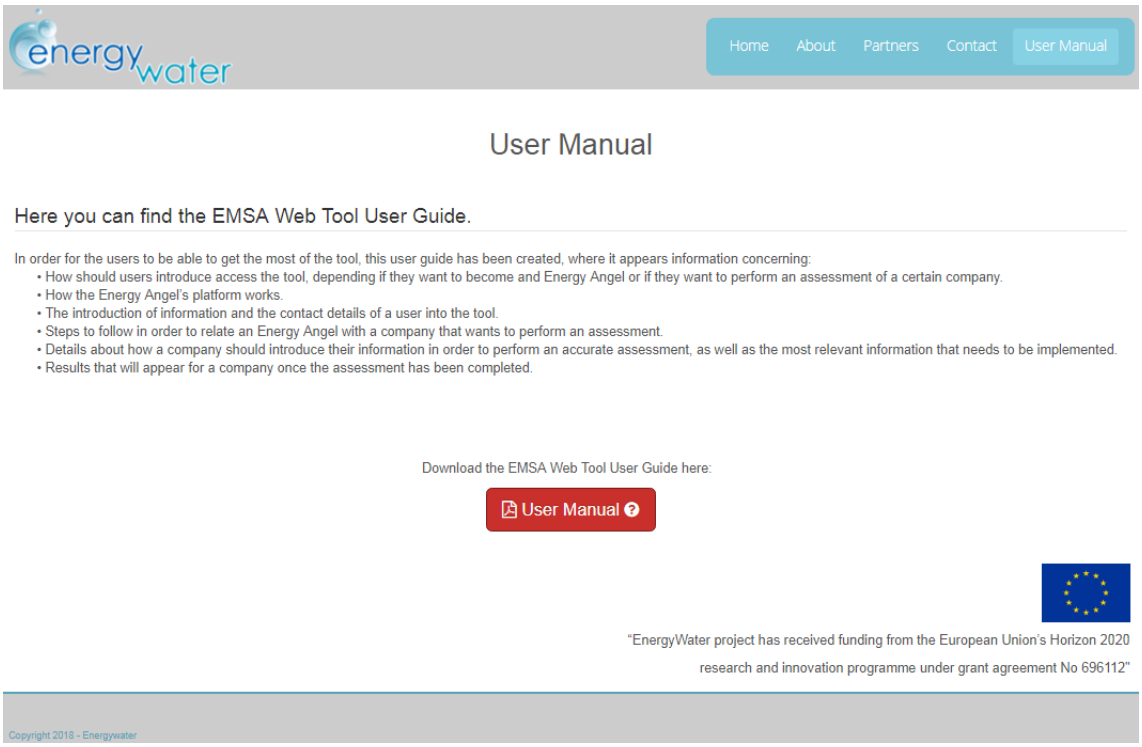
In the “Contact” tab, the users are able to contact the network administrator if they need advice about the tool or if they have more specific questions.

They procedure to send a message implies introducing at least the name and the email of the interested user, followed by the message that this person wants to send to the admin. Additionally, the interested person will also be allowed to introduce the name of his/her company, it case this fact can provide more useful information.



3.5 User Manual

In the “User Manual” tab, the users are able to download the EMSA Web Tool User Guide by clicking the “User Manual” button (in red). The User will get the present document in a pdf format.

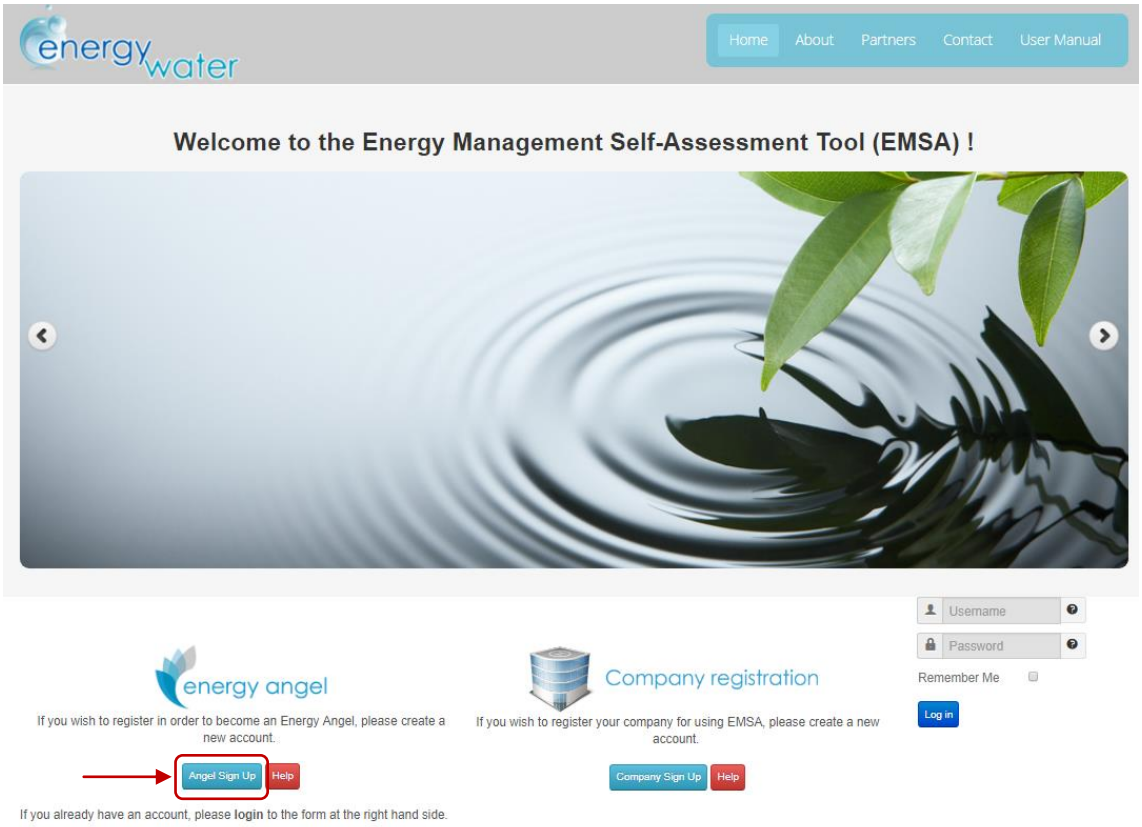


4 ENTER AS AN ENERGY ANGEL

If a user wants to be part of the tool as an Energy Angel, by following this section of the guide he/she will be able to benefit from all the possibilities that the EMSA web-tool offers.

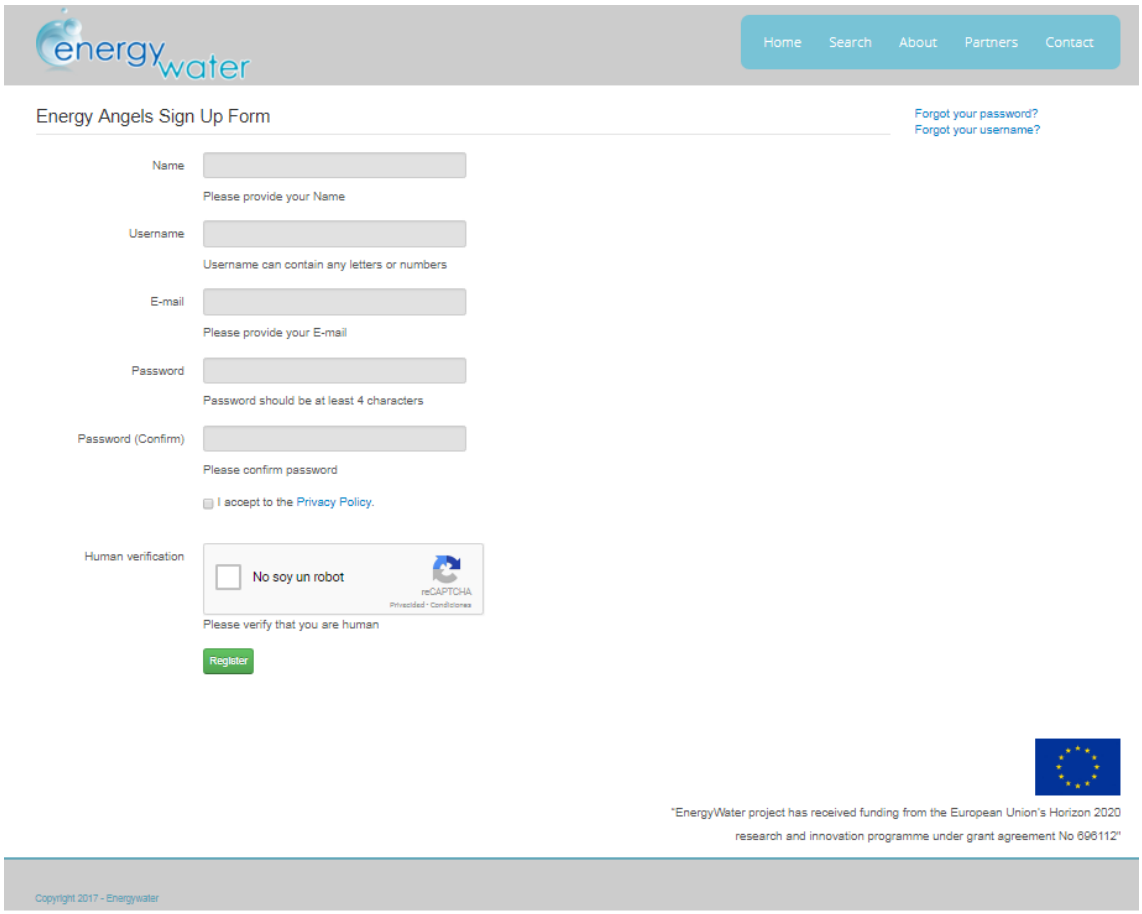
4.1 Access to the EMSA

The future Energy Angels, who want to benefit from the EMSA tool and join in the Energy Angels network, will have to firstly sign up as an Energy Angel candidate in the main page of the EMSA.



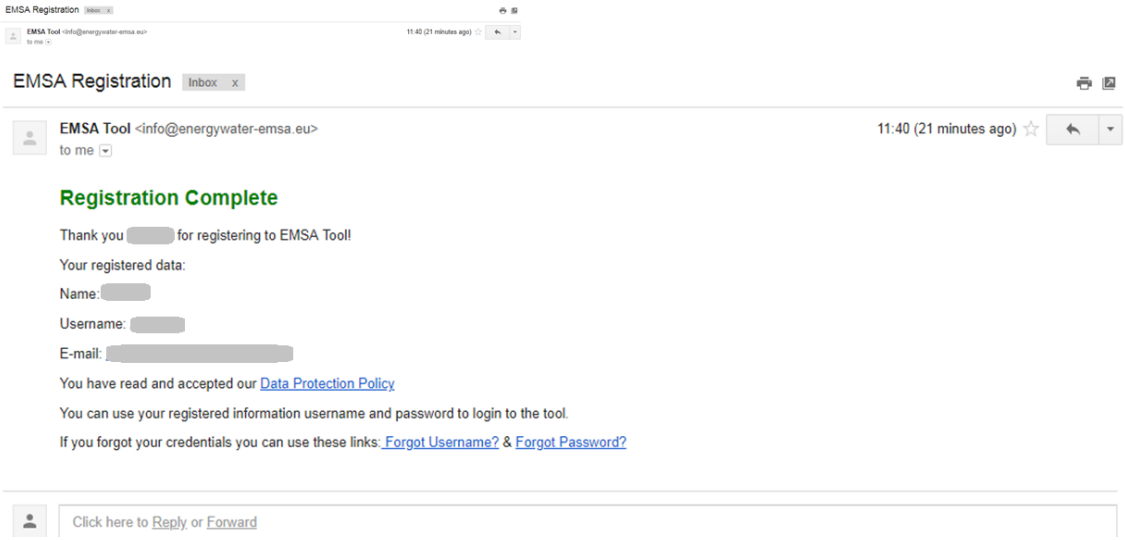
Once the future Energy Angel has decided to sign up into the tool, they will need to fill in a simple form in order to be granted access to the tool.

Click the "*Angel Sign Up*" button to start registering in the tool and start the process of becoming an Energy Angel.

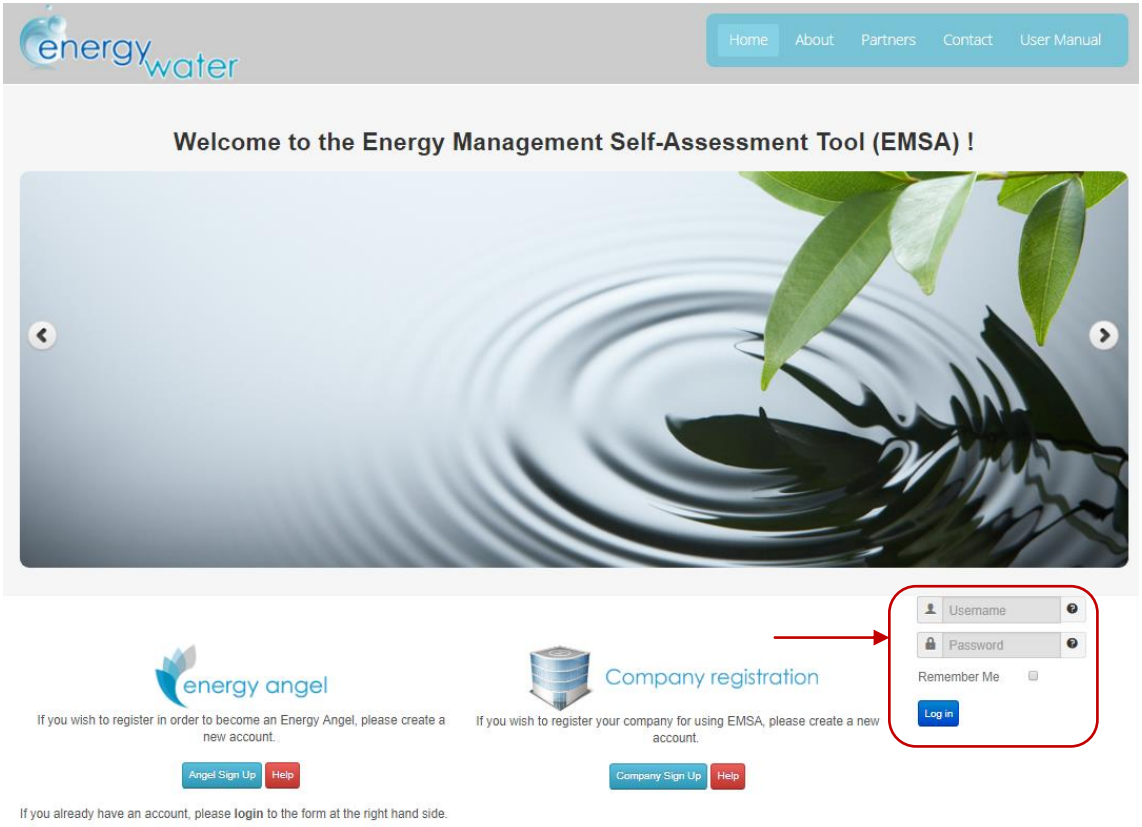


Fill in the "*Energy Angels Sign up Form*" create an account in the EMSA Web tool.

When the users register, they will receive a "Registration complete" notification email granting them access to the tool. This access doesn't ensure the user becoming an Energy Angel, it only confirms the creation of an Energy Angel User account.



After receiving the confirmation by email, the user will be able to access to the EMSA tool with the previously defined username and password.

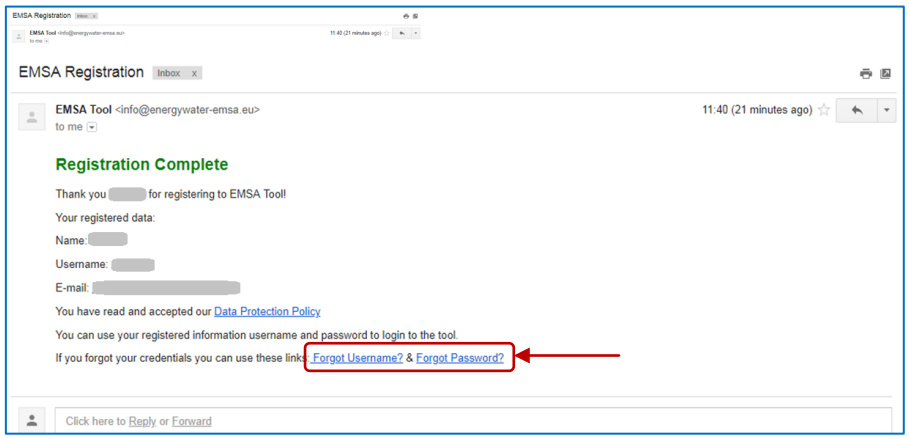


Introduce in the main page of the EMSA the username and password to enter the tool.

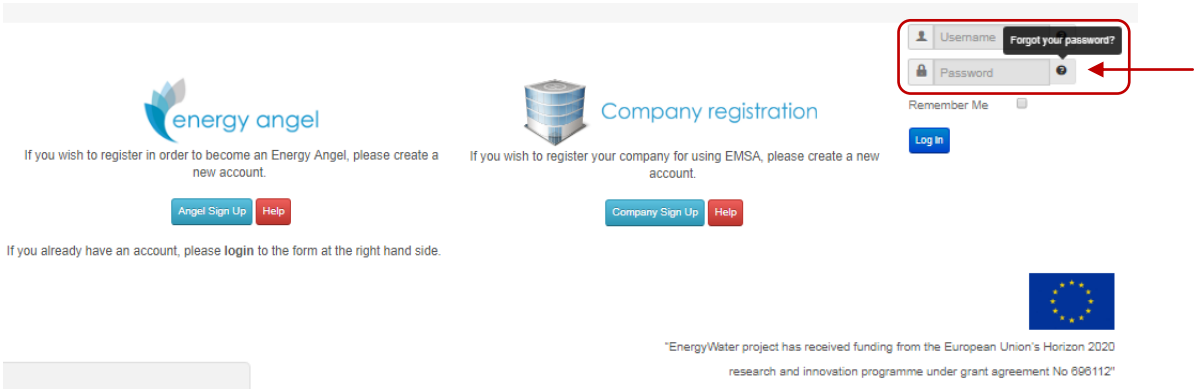
4.2 Forgotten Credentials

If the user has forgotten his password or his username, they will have two different options to recover them.

1. Recover the forgotten credentials by searching the registration email as it has a permanent link to the recovery page.
   Click the redirection link "*Forgot Username*" or "*Forgot Password*" for being redirected to the EMSA tool.



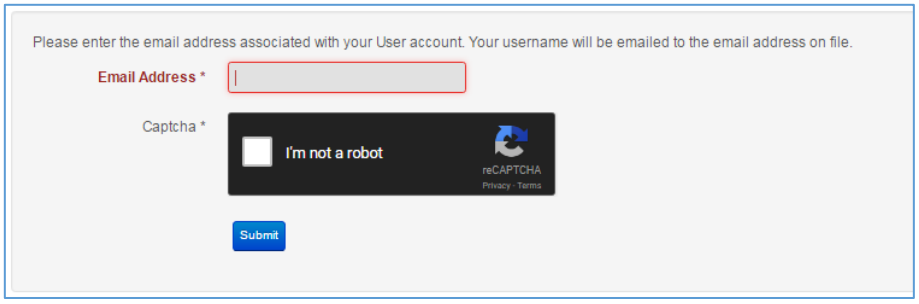
2. If the user has deleted the registration email, the recovery page can also be reached by clicking in the interrogation sign next to the username or password in the EMSA Main Page



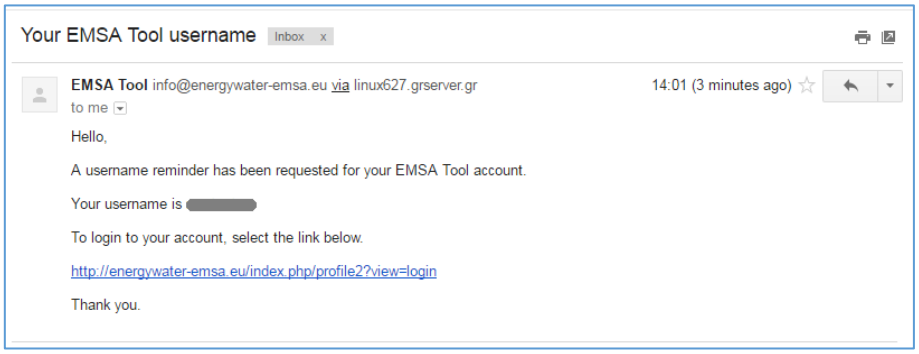
The recovery page will ask the user to type the email where linked to the Energy Angel account and the EMSA will send an email to this account with a new password.

4.2.1 Forgotten username

Use one of the options listed above to enter to the recovery page of the EMSA web tool.



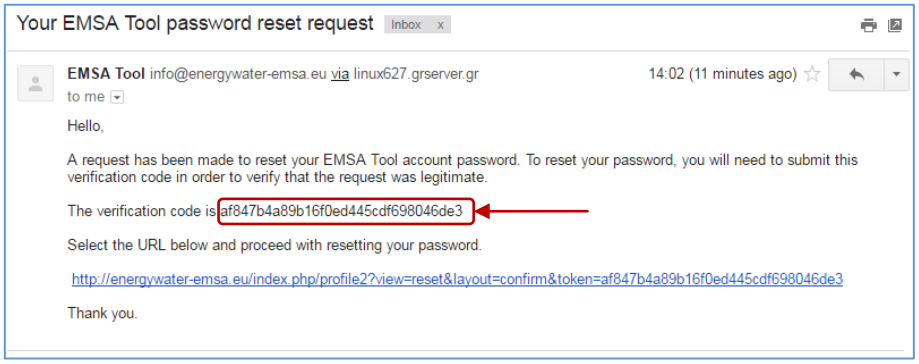
Introduce the email address related to the Energy Angel Account, then click submit and the EMSA will automatically send an email to this account reminding the username. EMSA will also provide a link to re-enter the tool

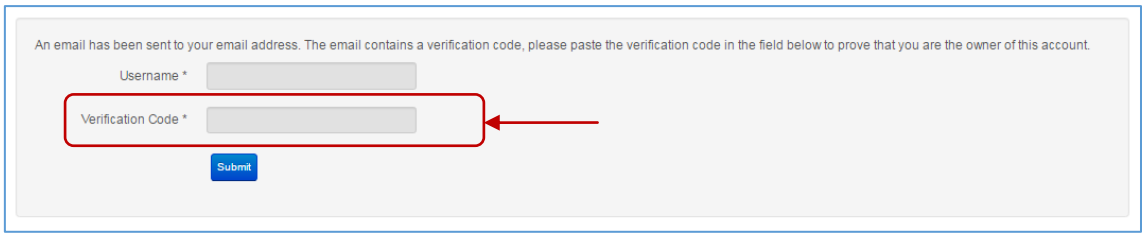


4.2.2 Forgotten password

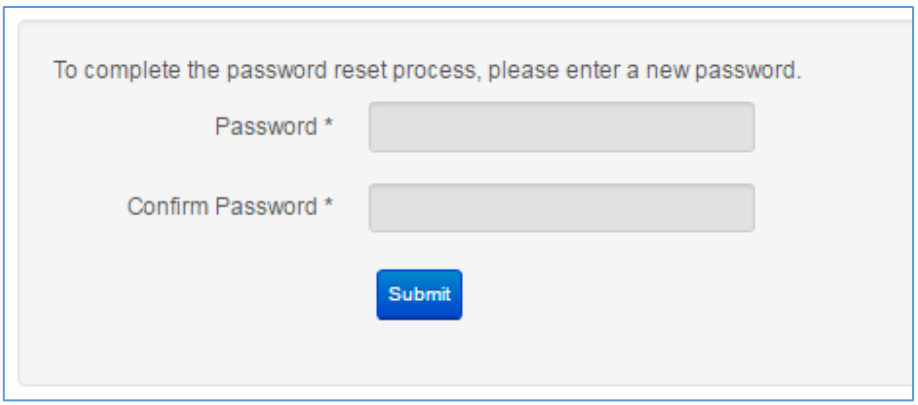
If the future Energy Angel **forgot the password**, the procedure is the same as for a forgotten username.

EMSA will send a link to the tool as well as a verification code by email. Enter the link and introduce both the username and the verification code in the corresponding boxes. Then press the submit button.





EMSA will verify the code and, if it's correct, the user will be able to change the password in the following page:

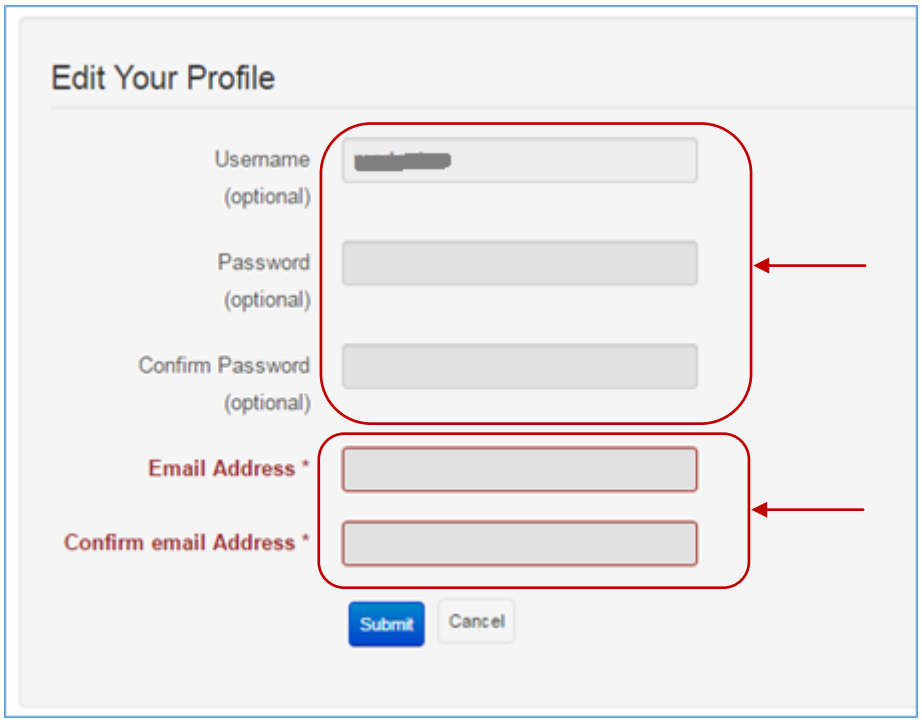


After that, the user will be able to re-enter in the EMSA tool again.

4.3 Modify Password or email

Once the Energy Angel has successfully registered into the tool, the Energy Angel's page will be unlocked. If an Energy Angel wants to modify password or email, he should enter in the "*Edit Account*" tab in the Account Settings tab.

Once inside the tab, introduce the new information in the corresponding boxes. Make sure that the confirmed information matches the principal one.

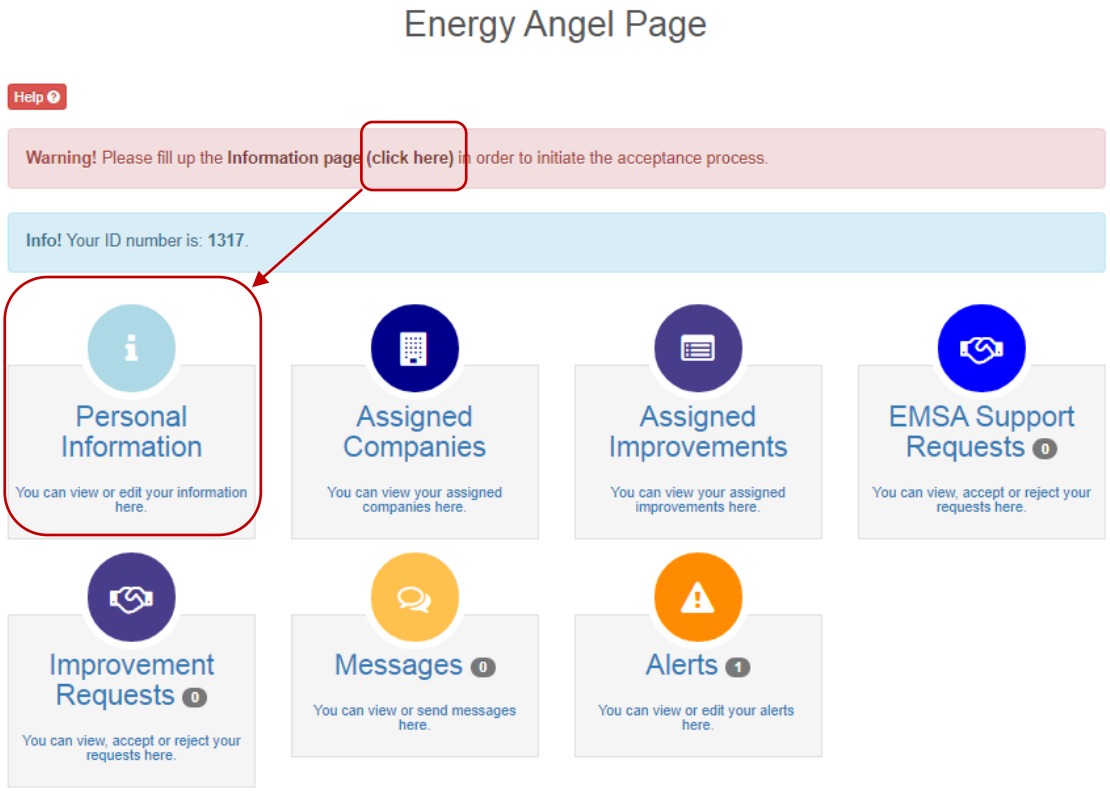


Click the submit button to save changes.

4.4 Introduce Information

Once the Energy Angel's page is unlocked, the first step to do is to fill in the "Personal Information" page. Information included in this section is decisive to become an Energy Angel.

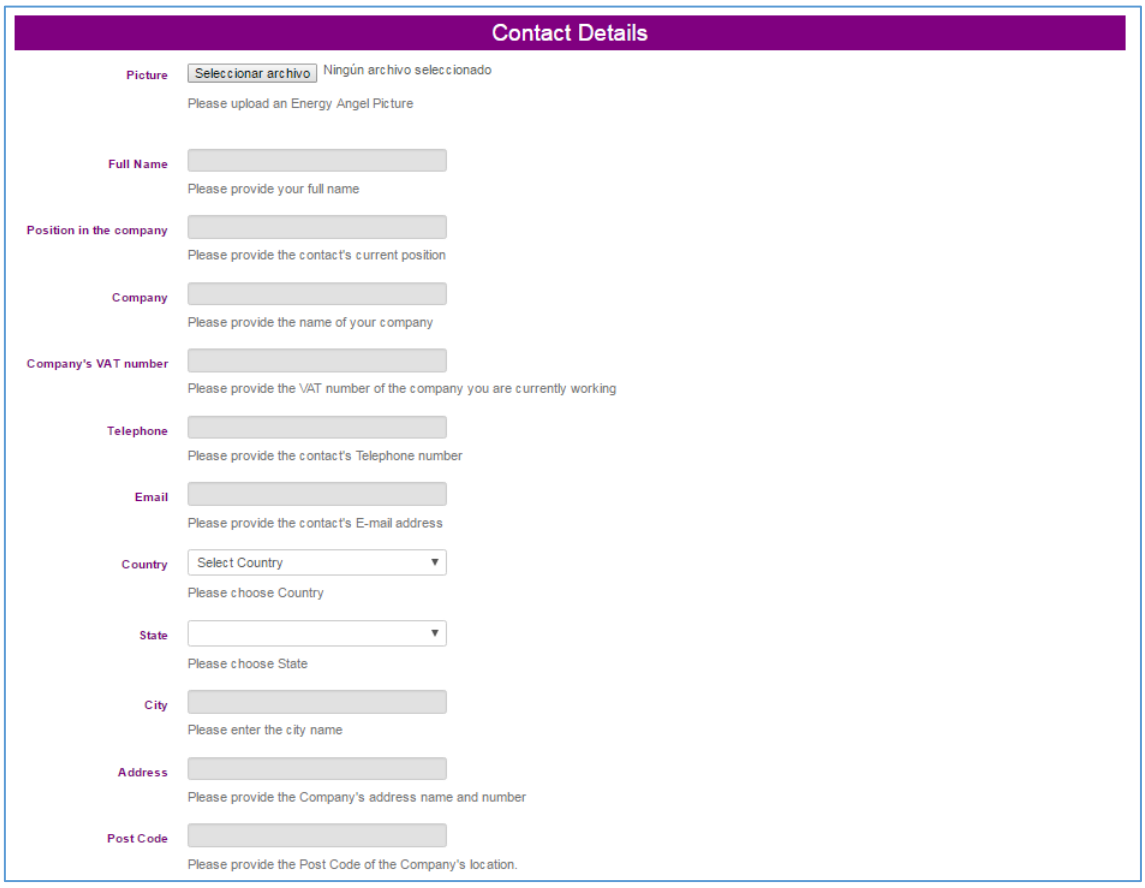
A Warning message will appear until the user has introduced all the information the corresponding tab. Once the information is completed, the Network Administration will decide if the user meets the requirements of becoming an Energy Angel. If the "*Information*" tab remains empty, the account will remain inactive, and the acceptance procedure will not start.

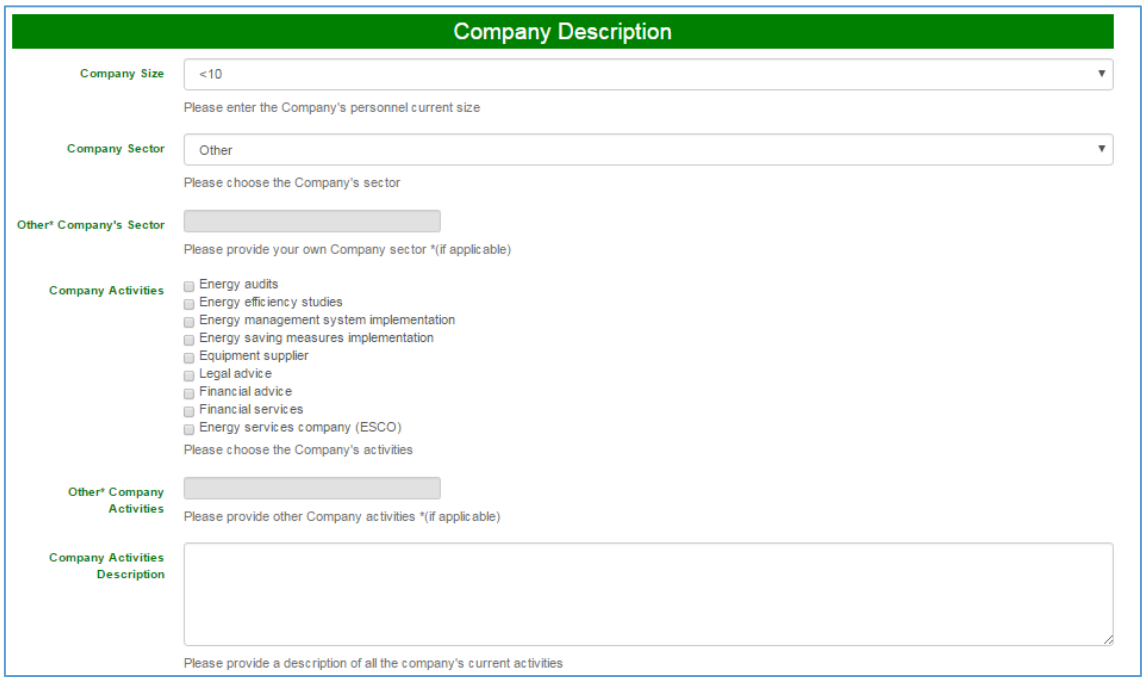


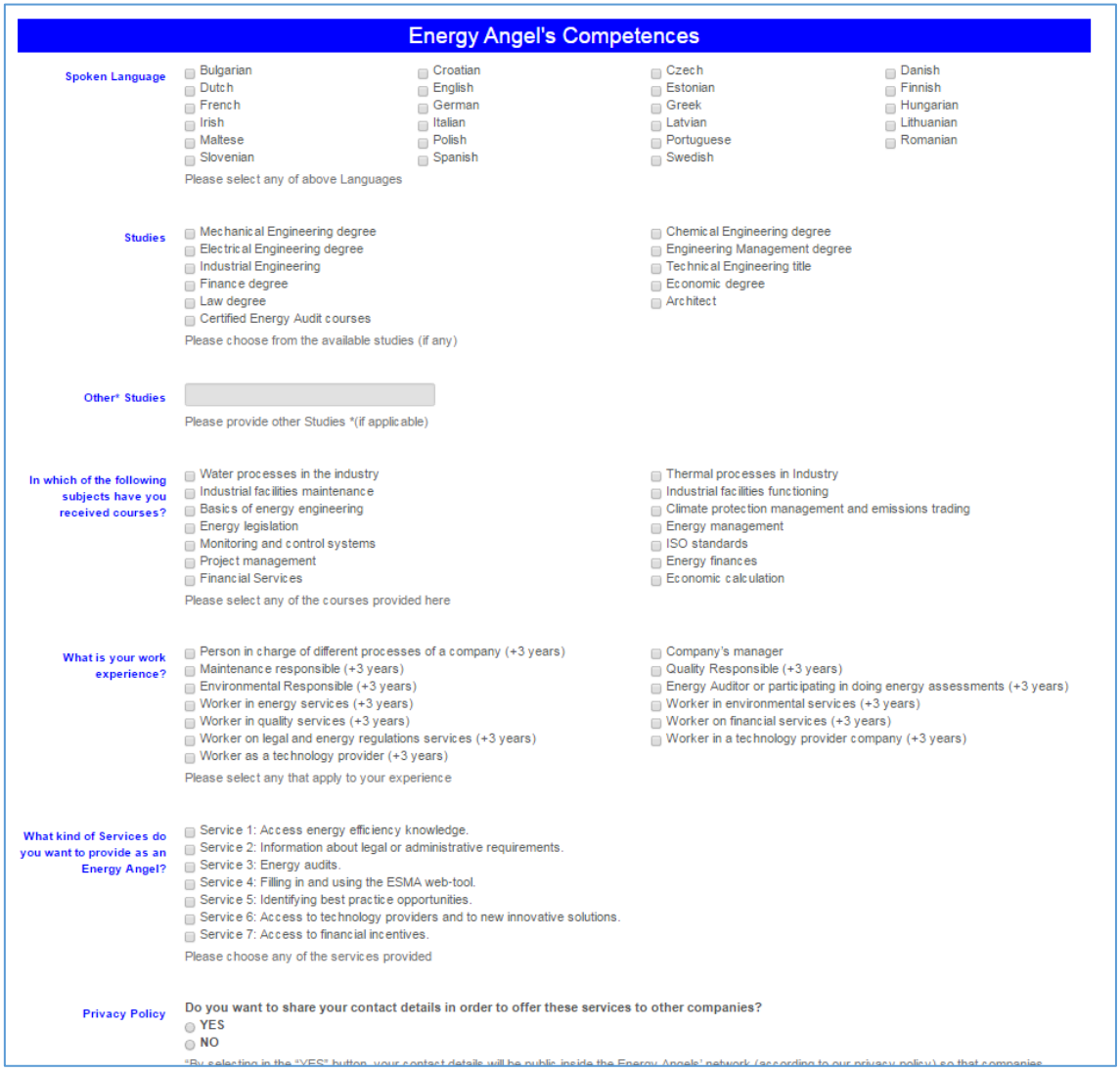
Click in the "Personal Information" tab to complete all the information required by the EMSA. This will enable the Energy Angel's Network to determine if the applicant has the necessary skills to become an Energy Angel.

Complete all the questions with the most accurate information possible, in order to ease the validation process of the applicant's competences.

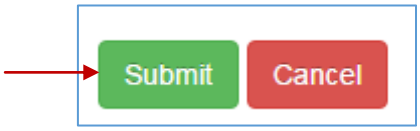
The information required for the company is the following:


Contact Details
Picture
Seleccionar archivo
Ningún archivo seleccionado
Please upload an Energy Angel Picture
Full Name
Please provide your full name
Position in the company
Please provide the contact's current position
Company
Please provide the name of your company
Company's VAT number
Please provide the VAT number of the company you are currently working
Telephone
Please provide the contact's Telephone number
Email
Please provide the contact's E-mail address
Country
Select Country
Please choose Country
State
Please choose State
City
Please enter the city name
Address
Please provide the Company's address name and number
Post Code
Please provide the Post Code of the Company's location.


Company Description
Company Size
<10
Please enter the Company's personnel current size
Company Sector
Other
Please choose the Company's sector
Other* Company's Sector
Please provide your own Company sector *(if applicable)
Company Activities
Energy audits
Energy efficiency studies
Energy management system implementation
Energy saving measures implementation
Equipment supplier
Legal advice
Financial advice
Financial services
Energy services company (ESCO)
Please choose the Company's activities
Other* Company Activities
Please provide other Company activities *(if applicable)
Company Activities Description
Please provide a description of all the company's current activities



After concluding the questionnaire, the applicant should submit the changes performed. The information that has been introduced will be saved in a database and a request to become an Energy Angel will be sent to the Network Administrator.



4.5 Acceptance and Rejection

The Network Administration will revise the information presented by the applicant, and will accept or deny his application as an Energy Angel.

They will revise all the information that the Energy Angel will has introduced, and they will also validate the services that the future Energy Angel is able to provide, as well as its acceptance or denial in the tool.

The list of services that the Energy Angel will be able to provide are the following ones:

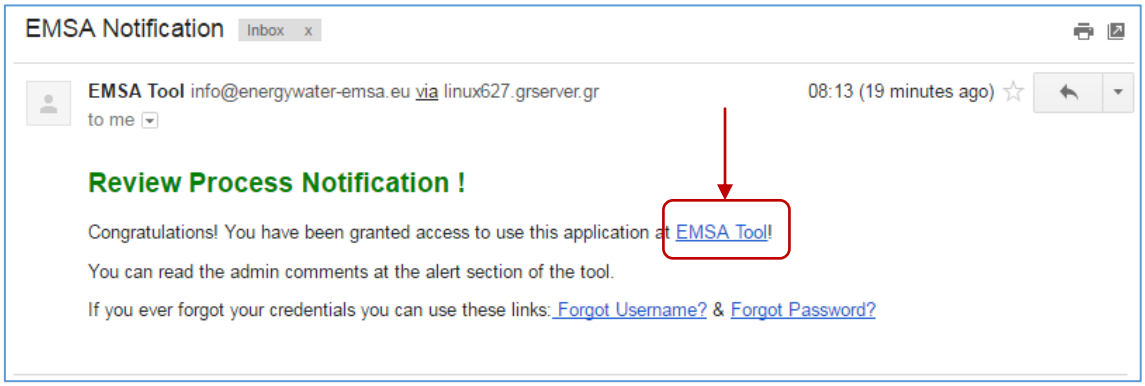
Icon of the service.	Number , name and description of the service.
	**Service 1: EMSA tool support.** The EMSA web tool is an **E**nergy **M**anagement **S**elf-**A**ssessment methodology that allows any industrial company to input data and receive an initial energy efficiency evaluation. This evaluation will be based on quantitative and qualitative data about their water processes. Results obtained include: - Initial energy efficiency assessment. - Benchmarking and ranking position between industrial companies by sector, size, country, etc. - List of improvement actions. - List of related Energy Angels with required knowledge. The Energy Angels will provide the companies not only with advertasing but also with an understanding of the EMSA web tool and guidance to input data after a short training session.
	**Service 2: Energy audits and consultancy.** Expert advice on energy management and identifying energy-saving opportunities. This service is related to the necessity of informing manufacturing companies about their potential implementing energy efficiency measures. Information about specific regulatory requirements linked to energy efficiency will be provided. The EU has mandates in place for each of the member states to have energy efficiency legislation in place. In addition, there may be further country-specific regulations requiring additional action for companies. Energy audits could be provided as the most effective way to identify energy-saving opportunities. The Energy Angels network will provide a quality mark to the companies with recognised accreditations for energy audits, ESCOs' services, etc.
	**Service 3: Implementation and innovation support.** Each Energy Angel will provide advisory services in fields such as: - Advising on suitable technology providers. - Highlighting possible innovative solutions. - Facilitating contact with ESCOs and other relevant providers.
	**Service 4**: **Provider of financial advice.** One of the main barriers to implementing energy efficiency measures is availability of finance. Energy Angels will provide advice about different financial options, contact with financial entities, as well as financial incentives in each geographical area.

Depending on the future Energy Angel's training and experience, they will be validated the services they selected in the "Information" tab.

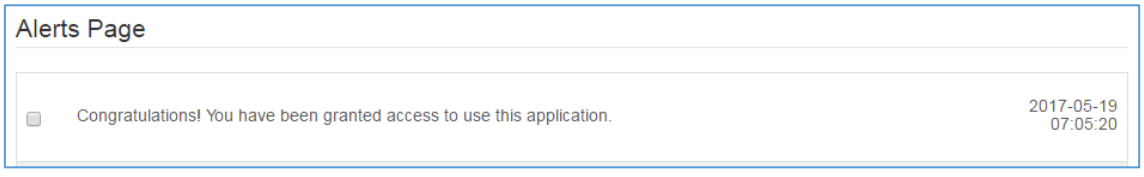
The Energy Angel's will be able to see which services they have been accepted to provide. If they want to provide more services, they will need to have more experience in a certain subject or attend to a certain course, which will give them a certain accreditation.

4.5.1 Acceptance

If all the information provided by the Energy Angel is correct and his skills enable him to perform assessments to the companies within the EMSA methodology, the applicant will be accepted. The user will receive an email from the Network with the following information:



If they enter into the tool and go to the "Alerts" tab, they could also see the message of acceptance.



Since this moment, the Energy Angel will be able to perform the services that appear in the "Accepted services" list in his Information from. He will also be able to take courses for being able to acquire more skills and perform more services to the companies and therefore to create more business opportunities.

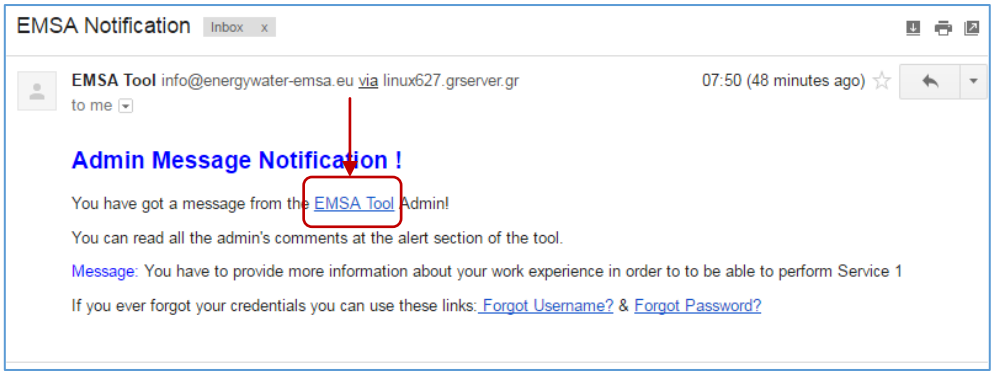
4.5.2 Pending

When an Energy Angel introduces data in the information form, the status of the account of the Energy Angel will be pending. A pending status means that:

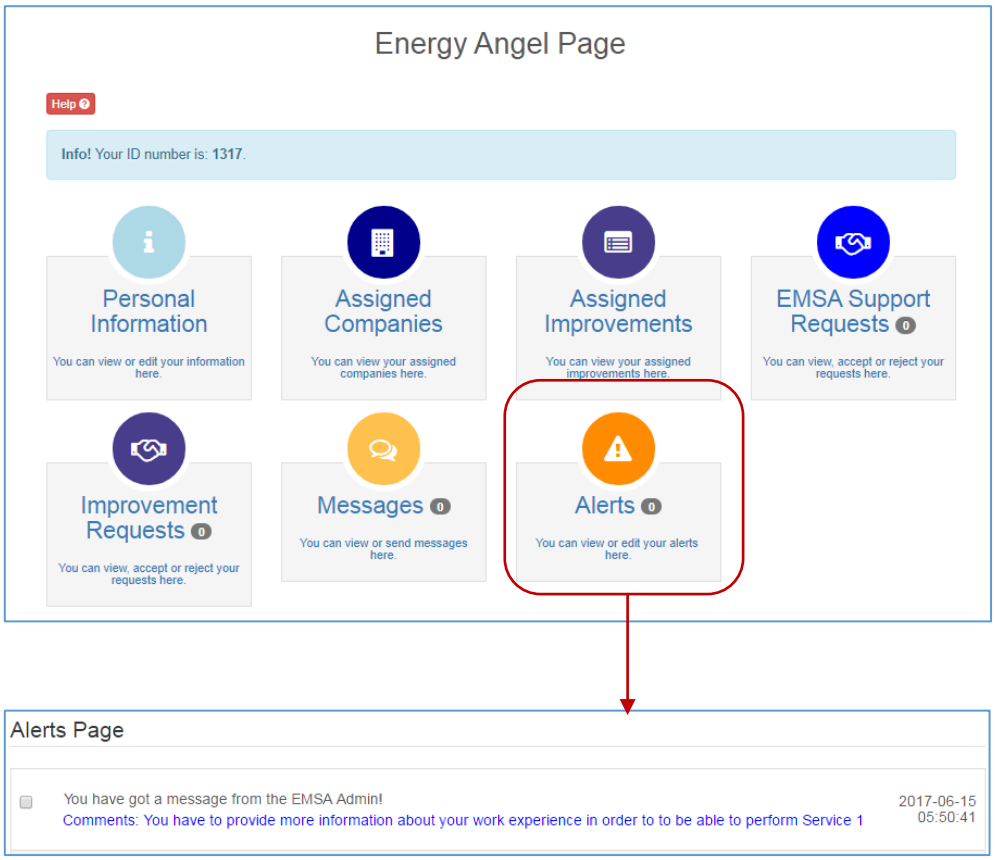
- The Network Administration has not decided yet if the user is suitable for becoming an Energy Angel.
- The certifications or the professional experience are not detailed enough and they need to be explained in a more precise way. In this case, the Network Administration will request the information missing to the applicant via EMSA web tool.
- The Energy Angel does not have enough skills to provide any of the services proposed. In this case, the status of the Energy Angel will remain pending until he performs some of the courses proposed by the tool or he gains enough experience to be accepted definitively in the tool.

The Network Administrator is able to send comments to the applicants if any missing information is identified, or need more detailed data is needed to full validate the Energy Angel's competences.

The applicant will be able to receive the comments via email or in the alerts tab. To enter in the EMSA, click in the link provided by the email or enter directly through the Internet browser.



Click the alerts tab and revise the most recent alert, to see the message from the Network's Administration.



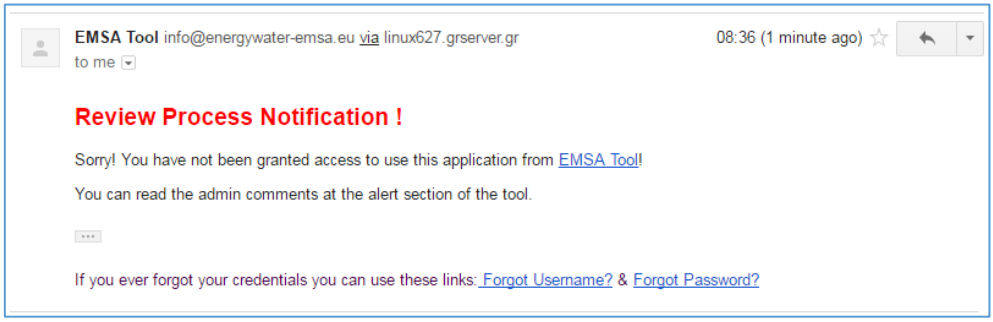
The applicant is able to modify the information presented in the questionnaire and will be given the opportunity to take some complimentary courses proposed by the EMSA to compensate any lack of skills to be finally accepted as an Energy Angel.

4.5.3 Rejection

An Energy Angel application can be rejected if:

- The information provided by the candidate is not enough to certificate his skills and he refuses repeatedly to provide the requested data to demonstrate his competences in the services that he wants to provide.
- The Network Administration decides that an Energy Angel should leave the network because he is not fulfilling his duties as he should (See: "Energy Angels User Manual")

In this case, the applicants will receive the following notification in his email:



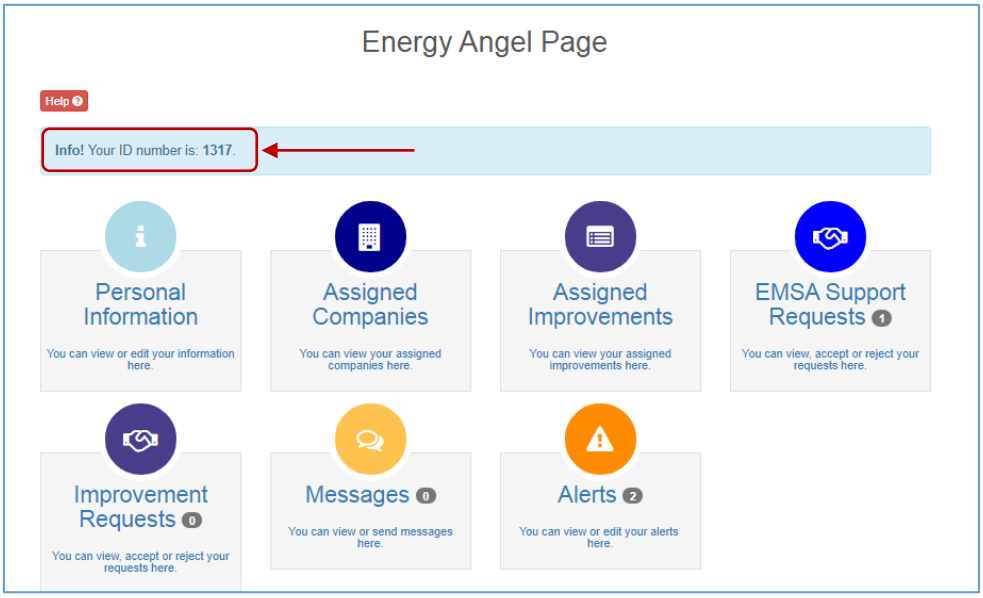
If they enter the tool and if they go to the "Alerts" tab, they will receive a message of rejection, and the reason why the Administration has performed this action.

4.6 EMSA Support Requests

If an Energy Angel wants to evaluate a company in order to develop its business activity, the first step will be performing an assessment and giving support to a certain company. To do this, he should be certified in the service 1 “EMSA web-tool support”.

Then, the Energy Angel could provide to the company his personal ID number to establish a direct contact between them.

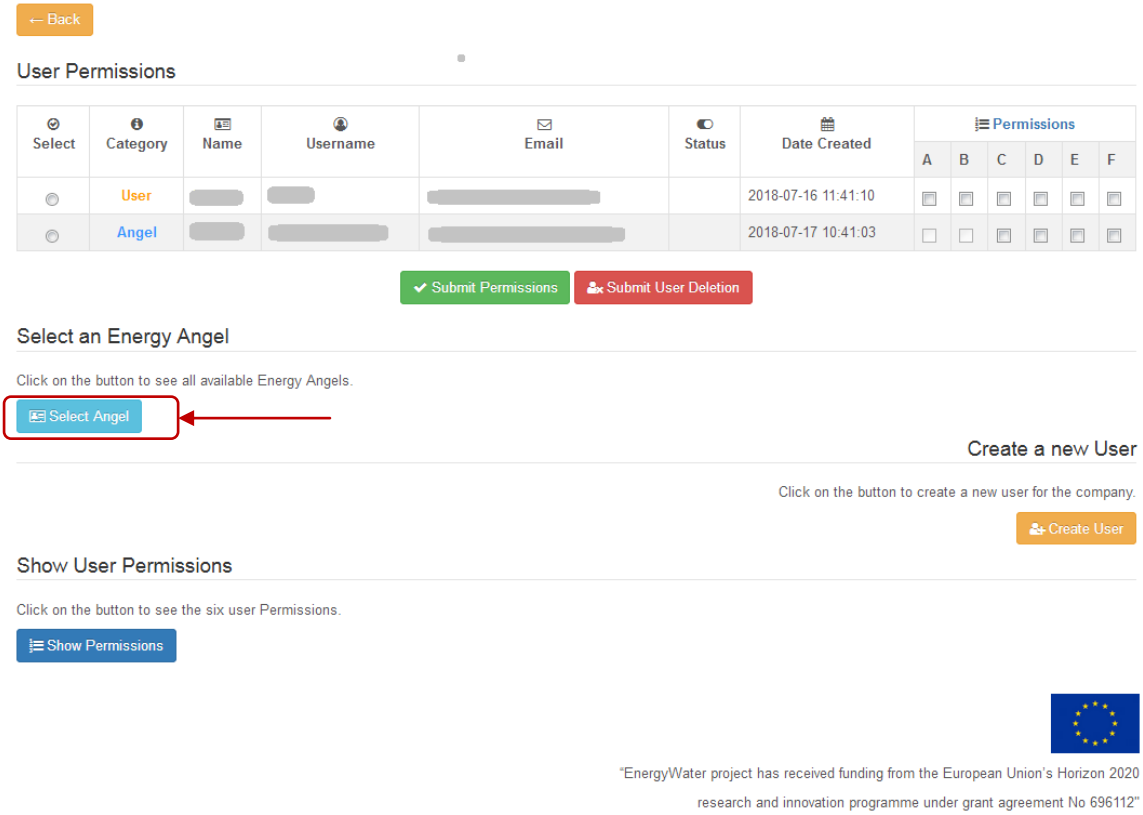
An Energy Angel can check his ID number in the main page.



In order to perform an assessment, companies need to make the first contact to request the services of an Energy Angel, but the Energy Angel can also guide them in that process.

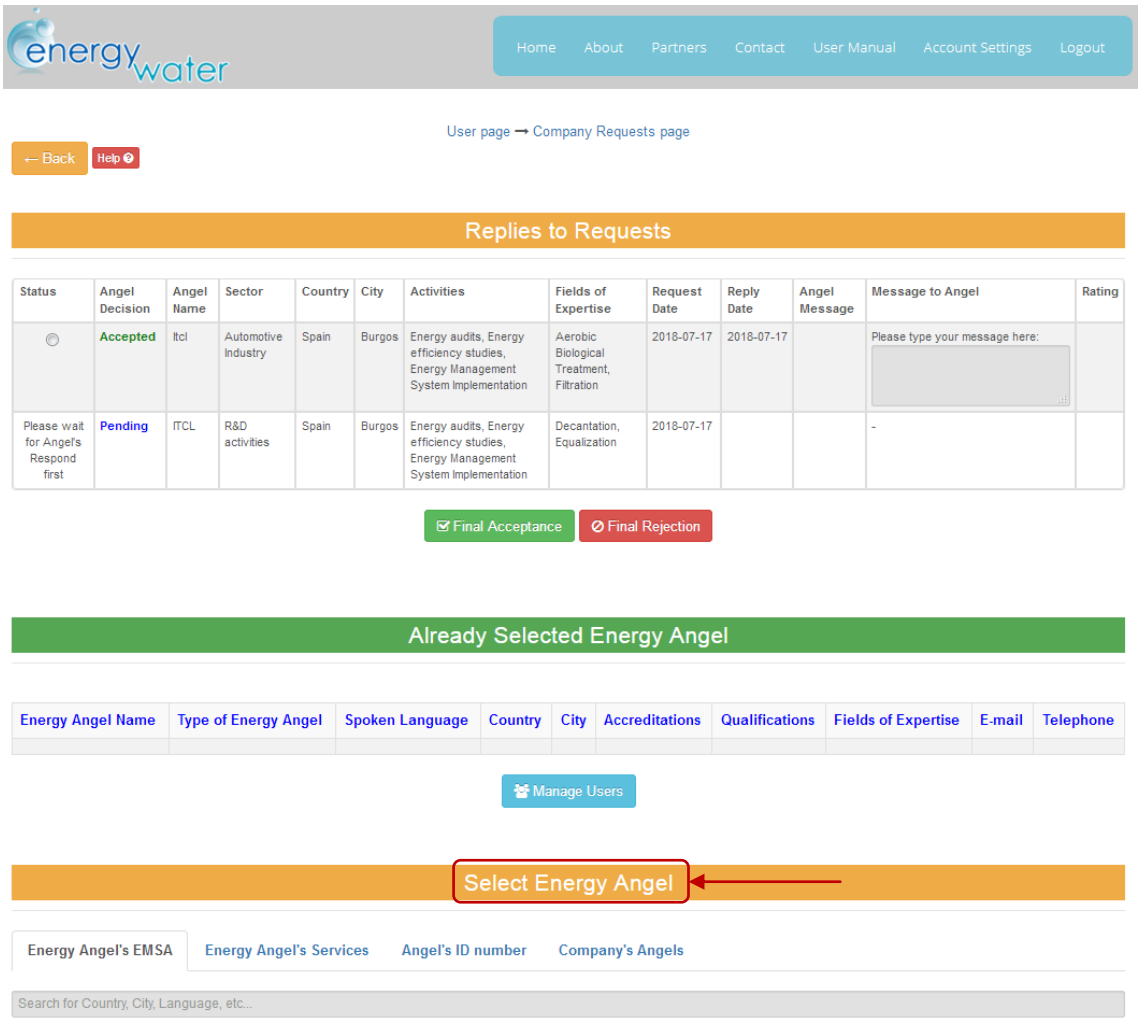
To choose a certain Energy Angel, the company can introduce the ID number in the “EMSA Support” section of the companies’ account.

There is also a shortcut where, if the Company goes to the “Management of Users” module, are able to go to the Energy Angel selection module, as we can see in the following picture:



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

Once in the "EMSA Support" module, a Company can search an Energy Angel using different methods. All this processes will be explained in more detail in the section "*Enter as a Company*".



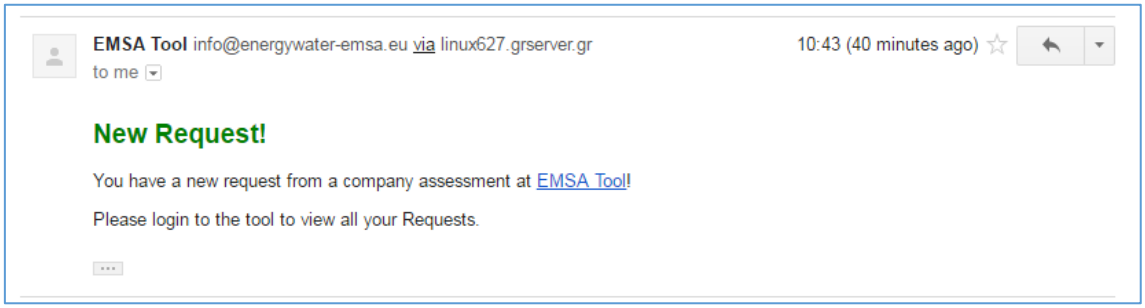
The company can select a certain Energy Angel through the "Angel's ID Number".

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

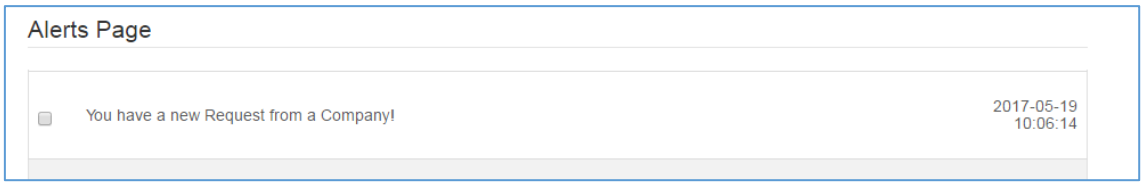
4.6.1 Procedure of acceptance

Only companies can contact Energy Angels, and this contact is done by sending them a request for a certain service.

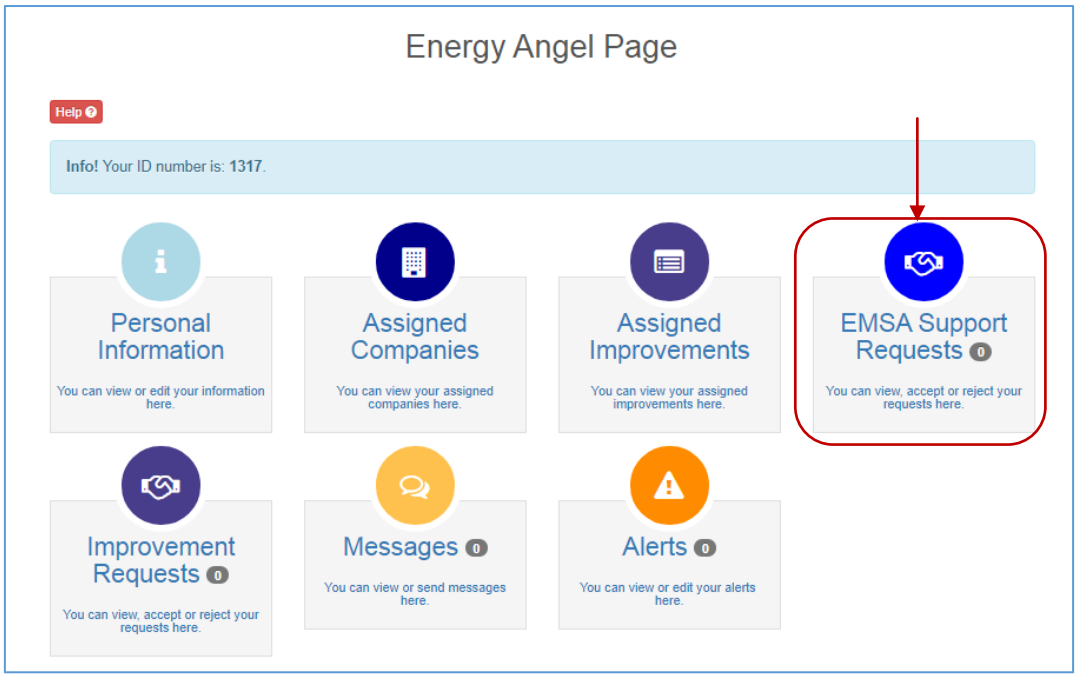
Once the company has sent an assessment request, the Energy Angel will receive a notification email from the EMSA web tool informing that a company demands his services to perform an assessment.



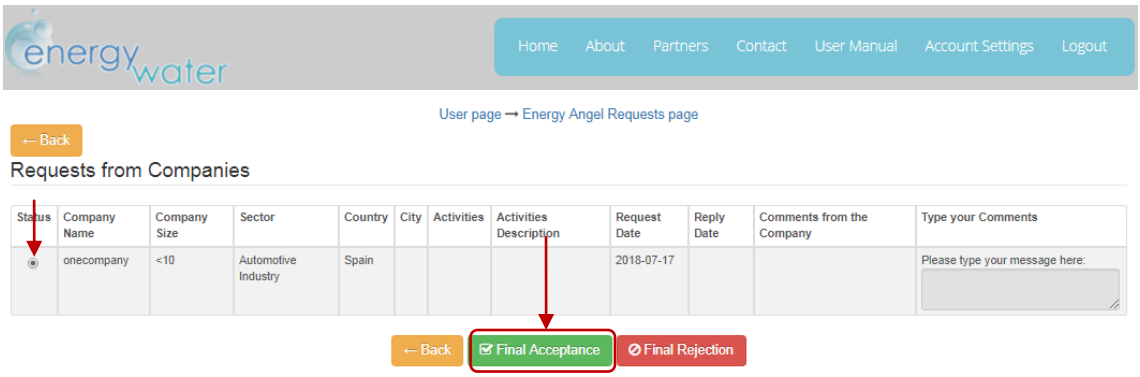
The "Alerts" tab will also display a message informing the user that a company has requested the Energy Angel's services



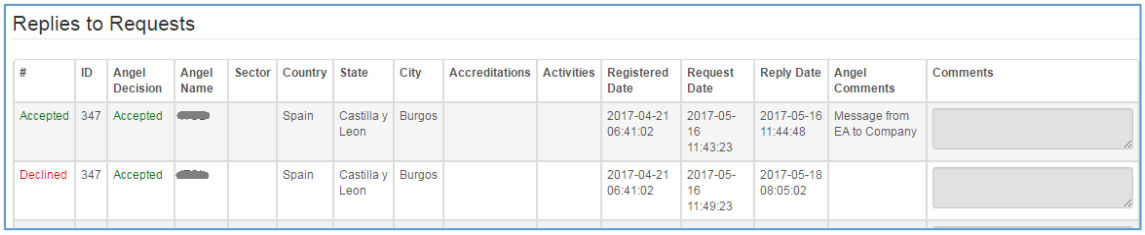
By entering in the "EMSA Support Requests" tab, the Energy Angel will be able to see what companies have requested his services.



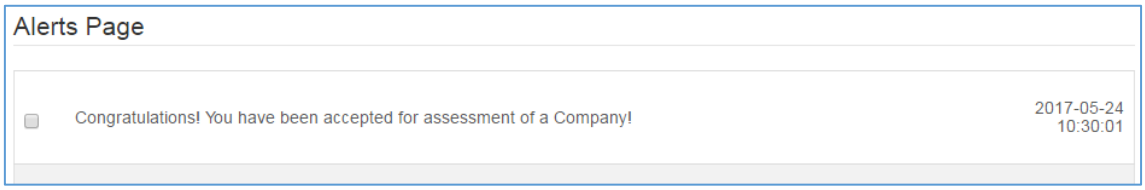
To accept a request, the Energy Angel has to select the company's request by clicking in the selection circle. Then press the "Final acceptance" button, and wait for the company to follow the same "Final acceptance" procedure as part of a double check.



In general, companies can accept or decline the Energy Angel acceptance, as they have the last word in term of selecting an Energy Angels to do the assessment. If a company accepts or denies an Energy Angel, the state of the request will appear in the "request" tab as Declined.



The "Alerts" tab will also display a message informing the user that a company has accepted the Energy Angel's services



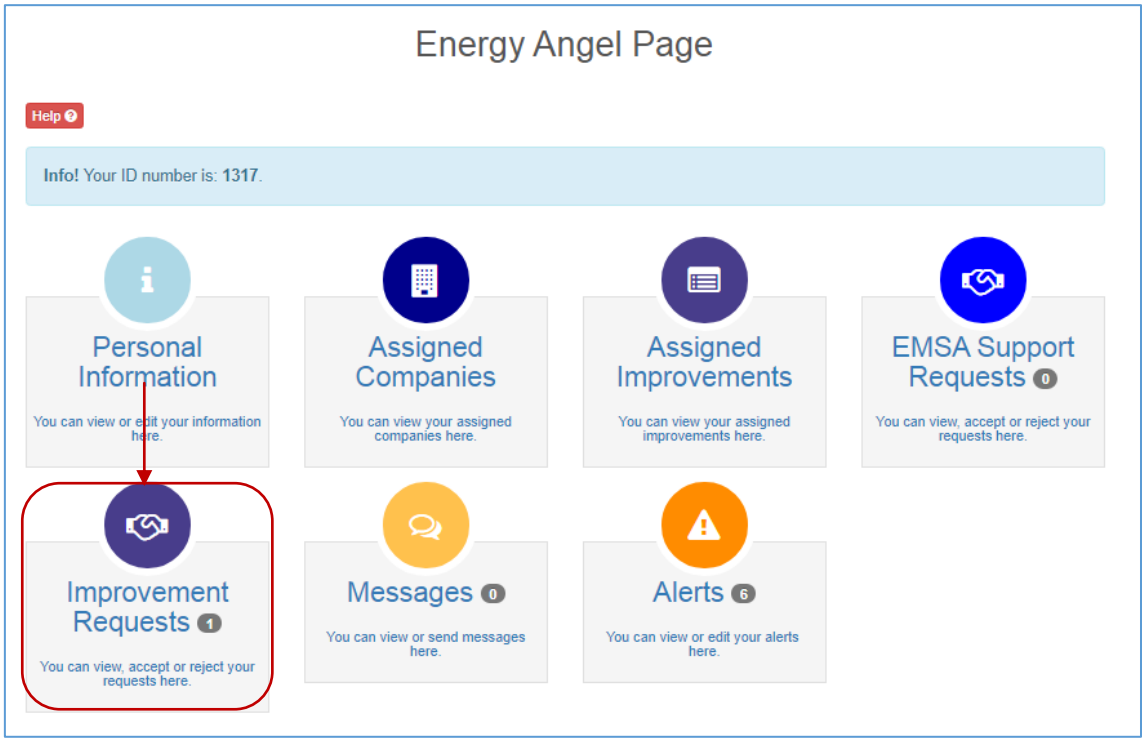
If a company **declines** an Energy Angel, the procedure stops and this user will not be able to perform an assessment for the company.

If a company **accepts** an Energy Angel by the "Final acceptance" button, the procedure of performing the assessment starts and both Company and Energy Angel can contact each other by the "Messages" section of the tool or by their own contact details.

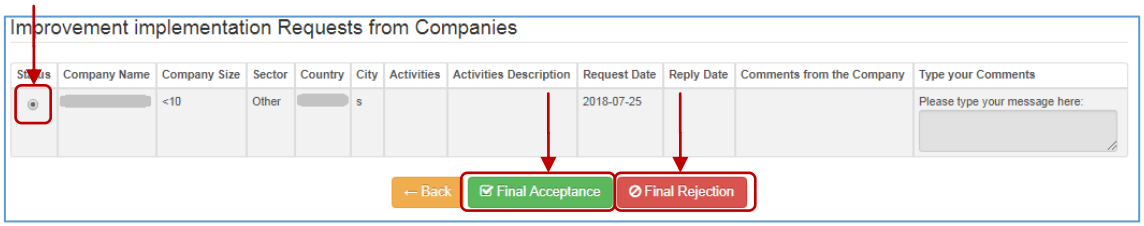
4.7 Improvement Requests

When an Energy Angel is required to implement an improvement, he will receive an improvement request.

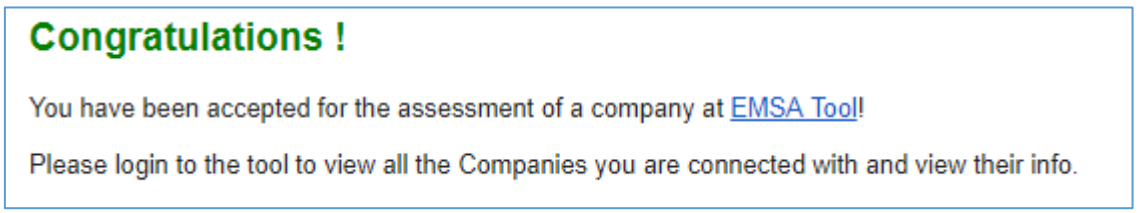
To enter in the Energy Angel's improvements request, the Energy Angel should go to the *Improvements Request"* tab in the Energy Angels Account.



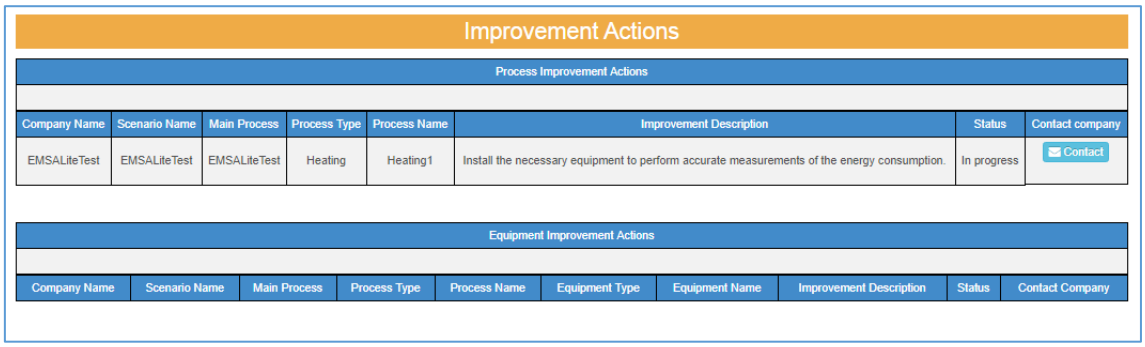
Then, all the improvement implementation requests from companies will appear. The Energy Angel has to analyze the request and the company, this module allows the Energy Angel to send messages to the company. Once the Energy Angel has decided what to do, he can accept or reject the request.



As the company has the last word, if the Energy Angel is accepted, the user will receive an email from the Network with the following information:



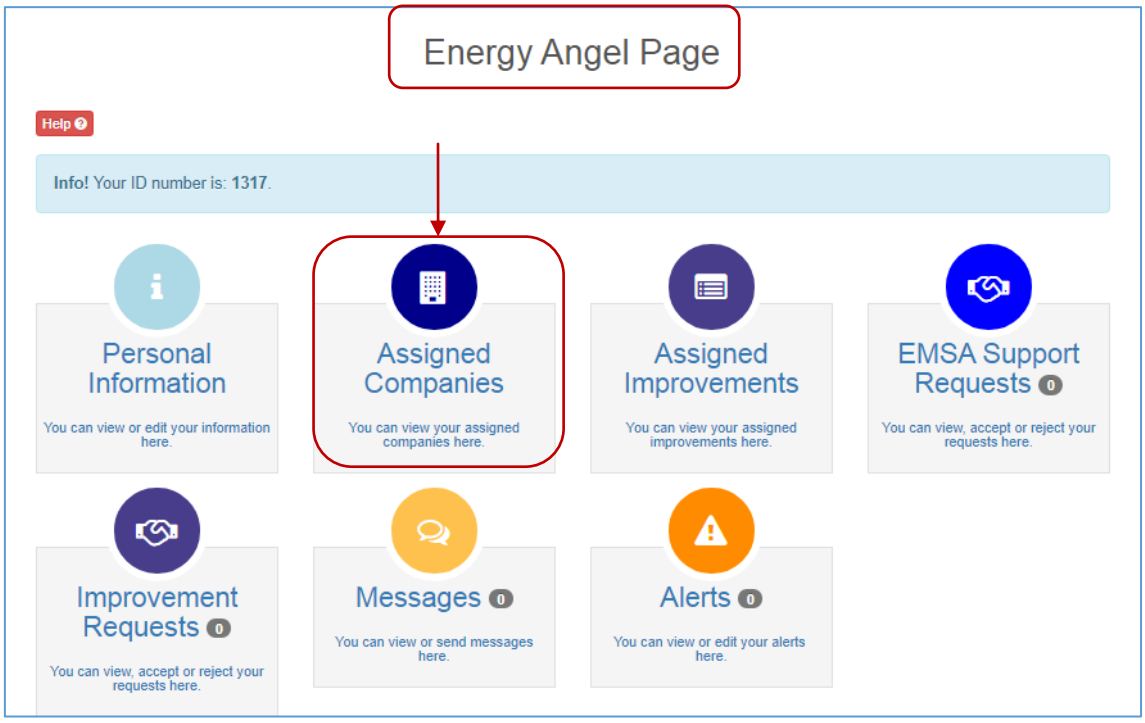
In the “Improvements Management” module will appear the improvement that has been accepted,



4.8 Assigned Companies

In order to perform an assessment for the companies, the **Energy Angel** needs to have granted access to the part of the Company's account where all the information is introduced.

To enter in the Energy Angel's assigned companies go to the *"Assigned Companies"* tab in the Energy Angels Account.

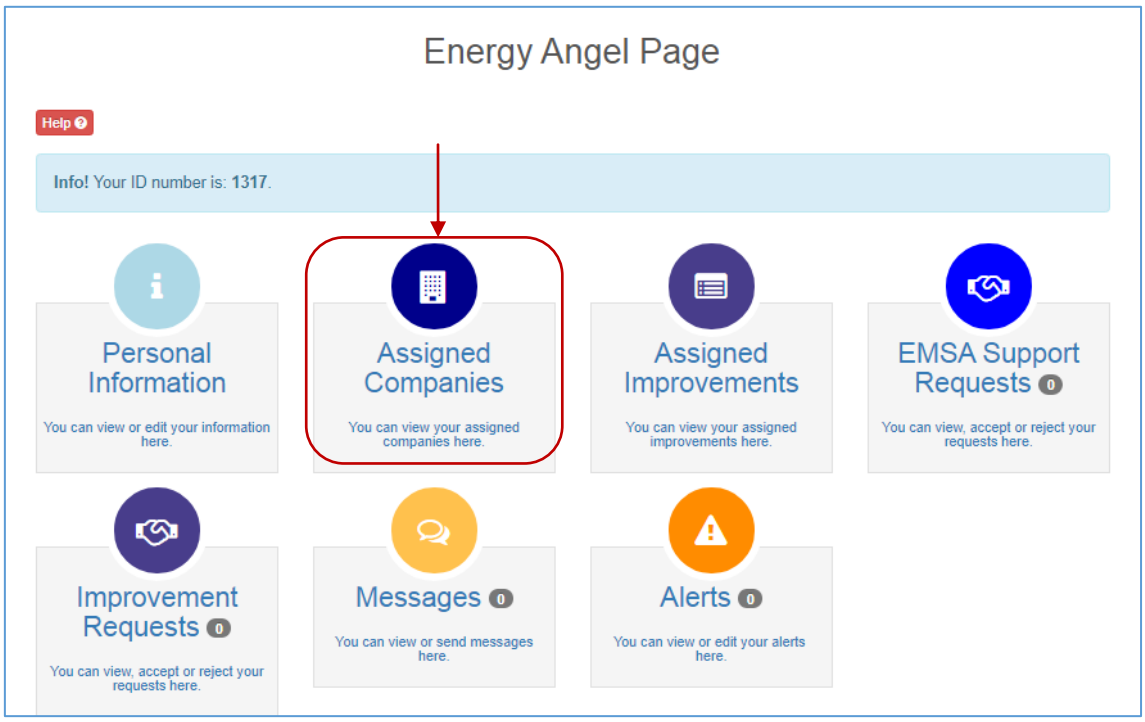


An Energy Angel is able to perform several assessments at the same time. To enter to a certain company, the Energy Angel can choose different options.

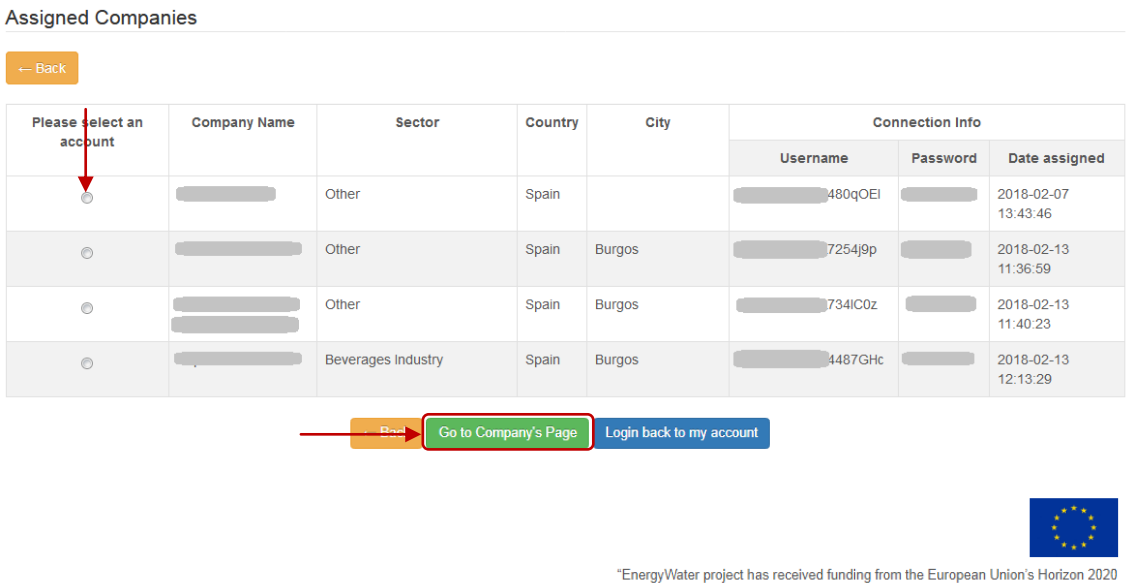
An Energy Angel can enter in the Company's page by following these steps:

4.8.1 Enter via "Assigned Companies" Tab

Enter in the *"Assigned Companies"* tab



Select from the list of companies one to assess, and click "*Go to Company's Page*"



"EnergyWater project has received funding from the European Union's Horizon 2020

This will enable the Energy Angel to quick-access to the Company's account. The Energy Angel will not have default permissions, so the Company should give him some permissions depending on the information that he is going to be allowed to access.

By doing this, Companies give their explicit permission to access to their data.

It is important to note that if the company does not grant any permission to the Energy Angel, he is not going to be able to access to any tabs.

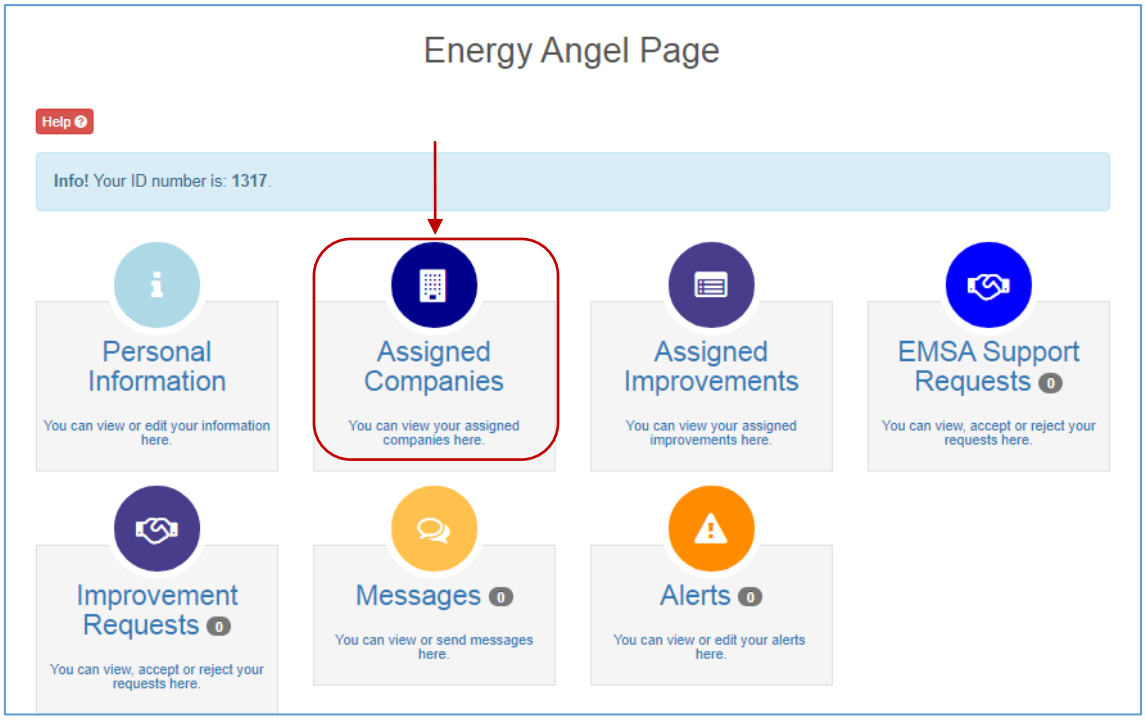
With no permissions, the Energy Angel will see the following screen when he access to the company's account:

To perform the assessment, both company and Energy Angel will work in the "Scenarios" tab to enter information and the "Results" tab to supervise the result of the assessment.

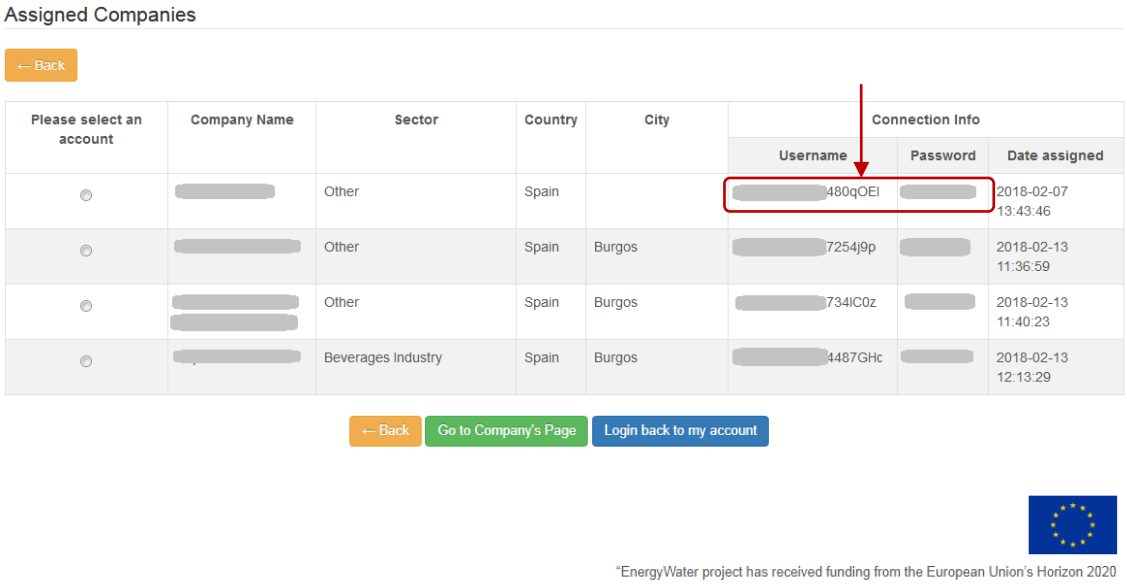
4.8.2 Enter via the Company's Username

If the "Go to Company's Page" button does not work, a second option to access Company's page is to go to EMSA main page and introduce the credential of our specific user assigned to the Company

To know those credential, enter in the *"Companies"* tab

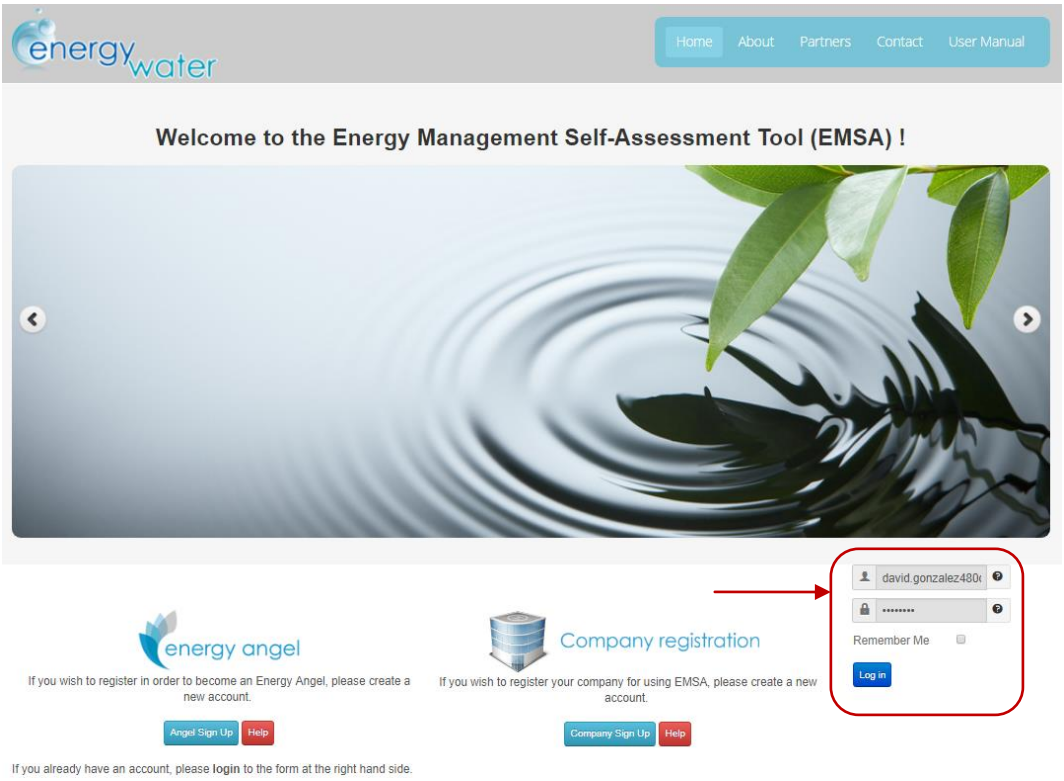


In the "Companies" page for Energy Angels, EMSA will automatically create a new username and password that belongs to the assigned Company but contains the login details for the Energy Angel to grant him the access to the Company's account.



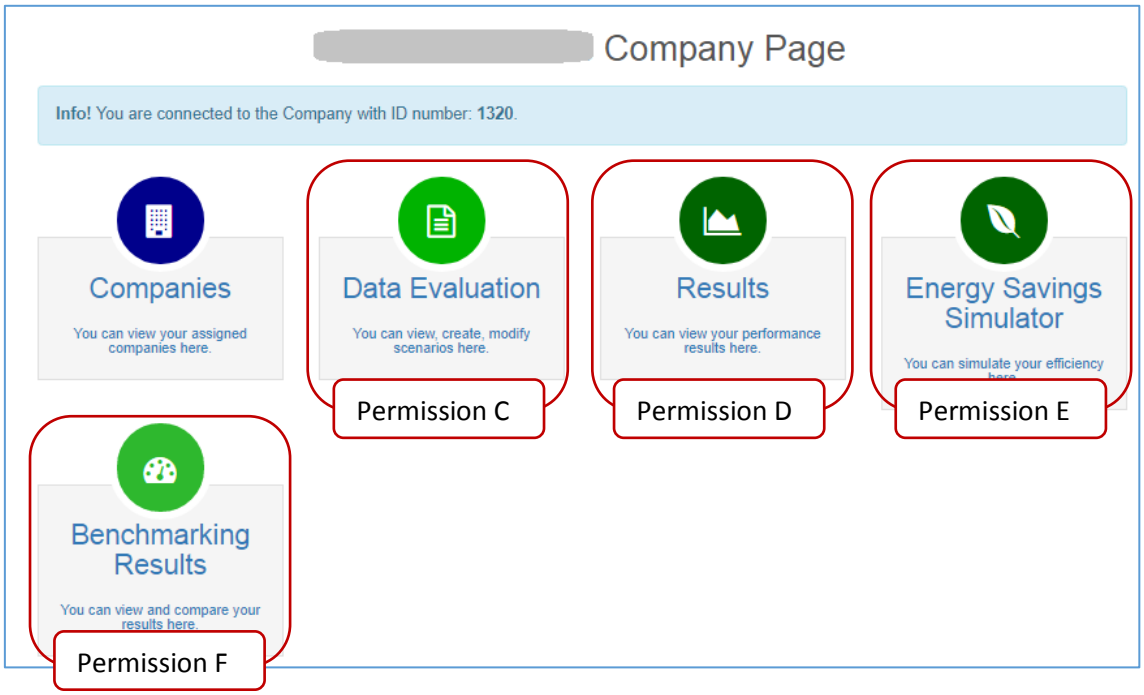
"EnergyWater project has received funding from the European Union's Horizon 2020

If the "Go to Company's page" link does not work or if the Energy Angel wants to enter to the Company's page from the EMSA main page, he should introduce this new username and password in the EMSA login textbox.



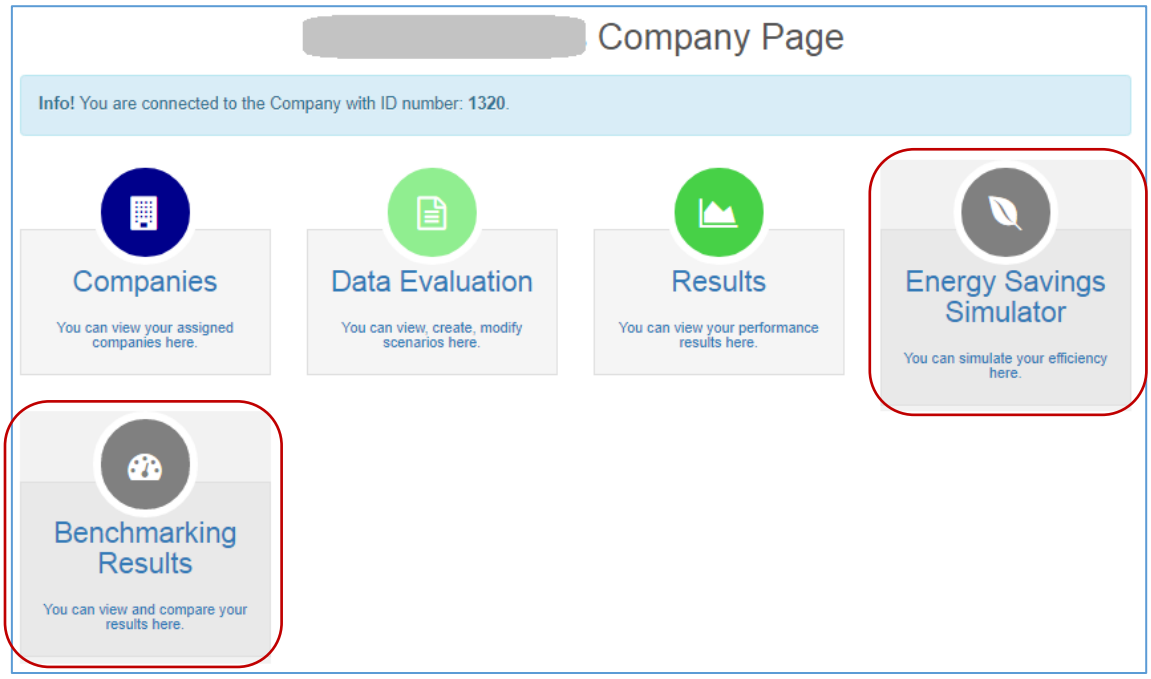
This will enable the Energy Angel to enter in the Company's page.

The Energy Angel will be able to see Company's information depending on the permissions the company has selected for them. **With all the permissions**, the Energy Angel will see the following page:



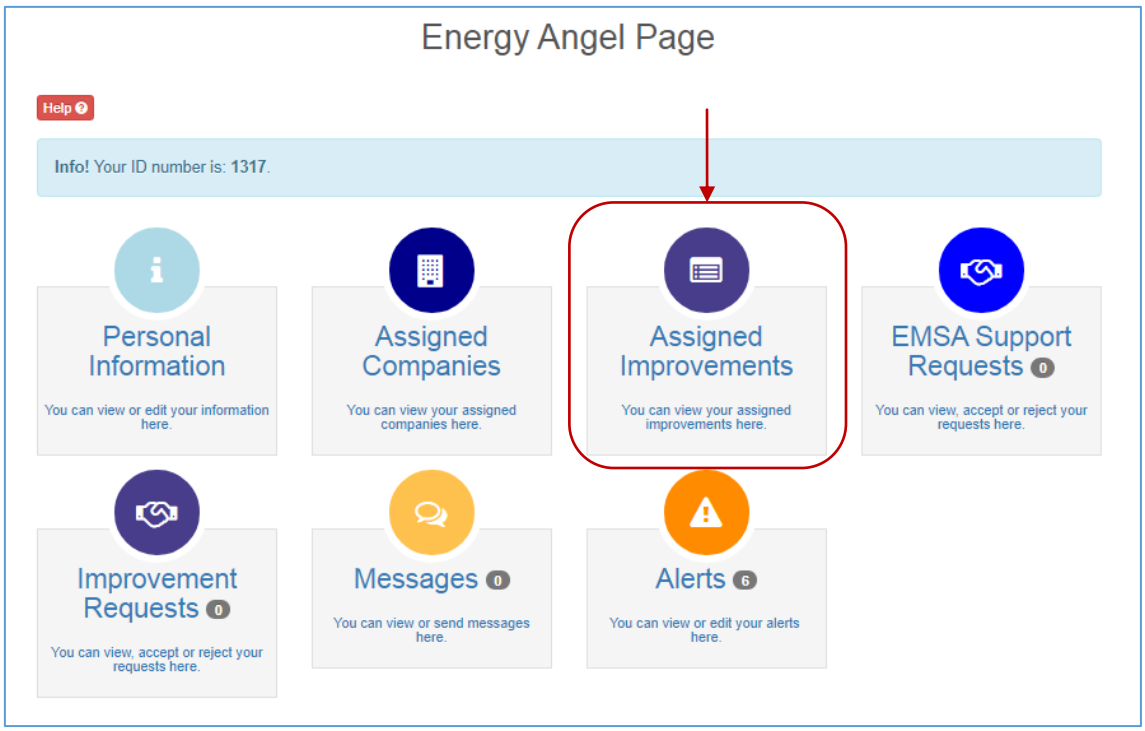
The A and B permissions only can be granted to Company's Users, not to Energy Angels.

If the company has not enabled the "EMSA Professional" option, the "Energy Savings Simulator" and the "Benchmarking Results" tabs will appear gray.

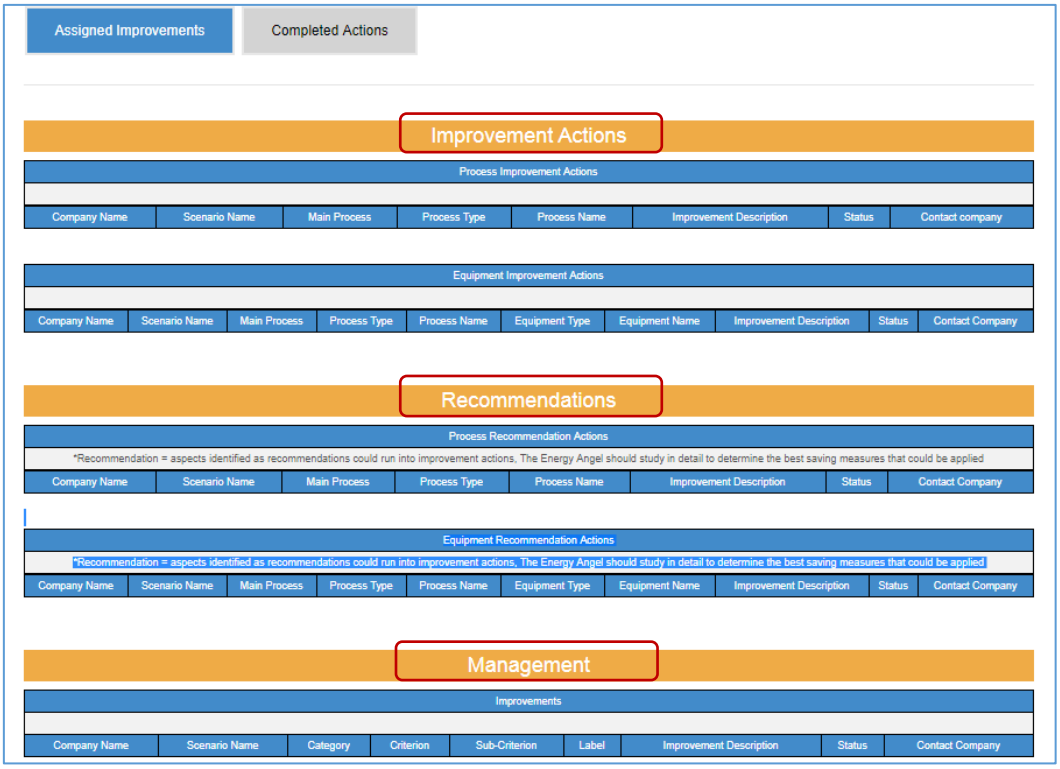


4.9 Assigned Improvements

To enter module, the Energy Angel should click the “Assigned Improvements” tab.



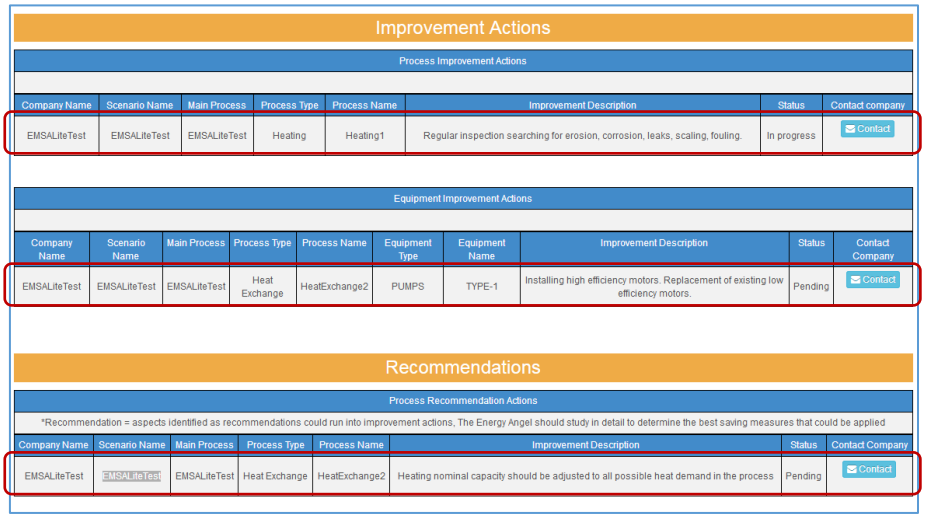
In this tab appears the complete list of all the improvements requested for the companies to be implemented with the support of the Energy Angel.



The assigned improvements are divided in three types:

1. **Improvement Actions**
   - Process Improvement Actions
   - Equipment Improvement Actions
2. **Recommendations**
   - Process Recommendation Actions
   - Equipment Recommendation Actions
3. **Management**

Then, the Energy Angel is free to contact the company in order to start the implementation of the improvements.



Improvement Actions

Process Improvement Actions

Company Name	Scenario Name	Main Process	Process Type	Process Name	Improvement Description	Status	Contact company
EMSALiteTest	EMSALiteTest	EMSALiteTest	Heating	Heating1	Regular inspection searching for erosion, corrosion, leaks, scaling, fouling.	In progress	Contact

Equipment Improvement Actions

Company Name	Scenario Name	Main Process	Process Type	Process Name	Equipment Type	Equipment Name	Improvement Description	Status	Contact Company
EMSALiteTest	EMSALiteTest	EMSALiteTest	Heat Exchange	HeatExchange2	PUMPS	TYPE-1	Installing high efficiency motors. Replacement of existing low efficiency motors.	Pending	Contact

Recommendations

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

Company Name	Scenario Name	Main Process	Process Type	Process Name	Improvement Description	Status	Contact Company
EMSALiteTest	EMSALiteTest	EMSALiteTest	Heat Exchange	HeatExchange2	Heating nominal capacity should be adjusted to all possible heat demand in the process	Pending	Contact

When the company considers that the improvement is implemented, he set the improvement status to “Done”. The complete actions are shown in the “Complete Action” tab.

Assigned Improvements | Completed Actions

Improvement Actions

Process Improvement Actions

Company Name	Scenario Name	Main Process	Process Type	Process Name	Improvement Description	Status	Contact company
EMSALiteTest	EMSALiteTest	EMSALiteTest	Heating	Heating1	Install the necessary equipment to perform accurate measurements of the energy consumption.	Done	Contact

Equipment Improvement Actions

Company Name	Scenario Name	Main Process	Process Type	Process Name	Equipment Type	Equipment Name	Improvement Description	Status	Contact company

Recommendations

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

Company Name	Scenario Name	Main Process	Process Type	Process Name	Improvement Description	Status	Contact company

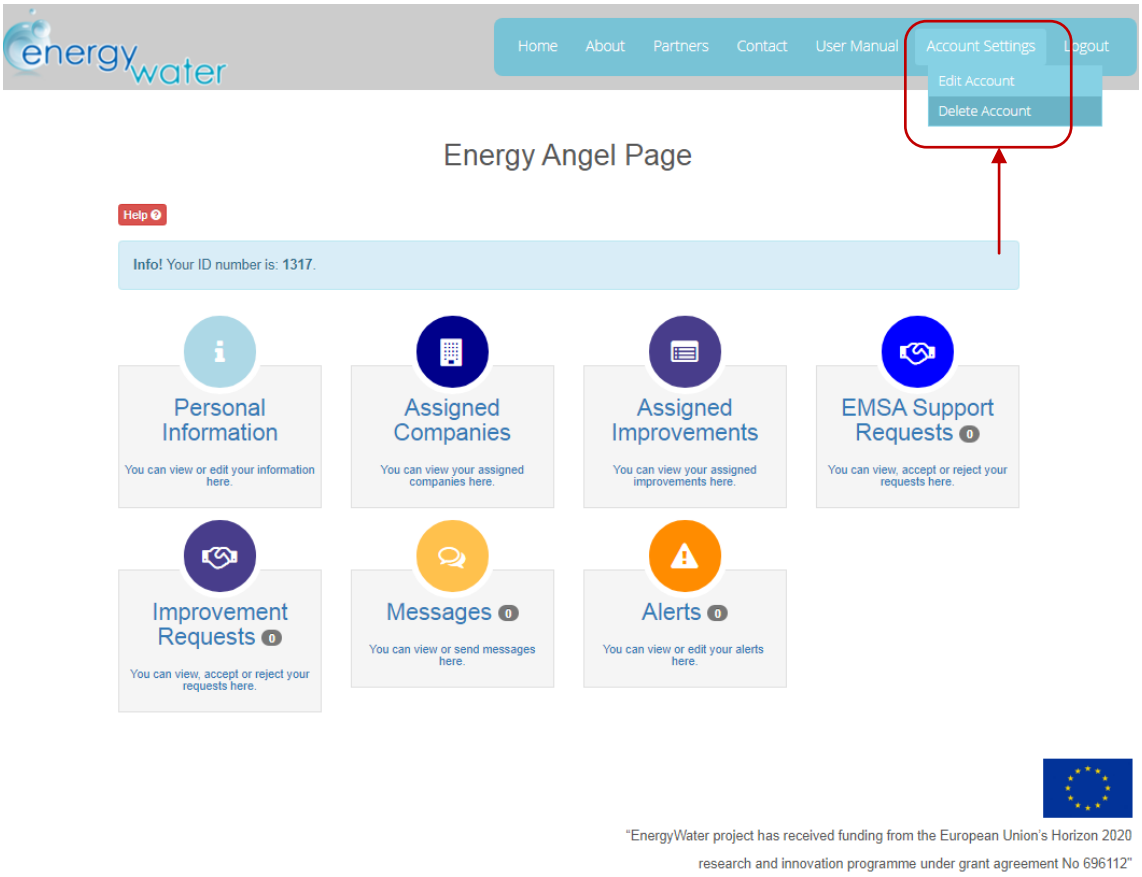
Equipment Recommendation Actions

*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

Company Name	Scenario Name	Main Process	Process Type	Process Name	Equipment Type	Equipment Name	Improvement Description	Status	Contact company

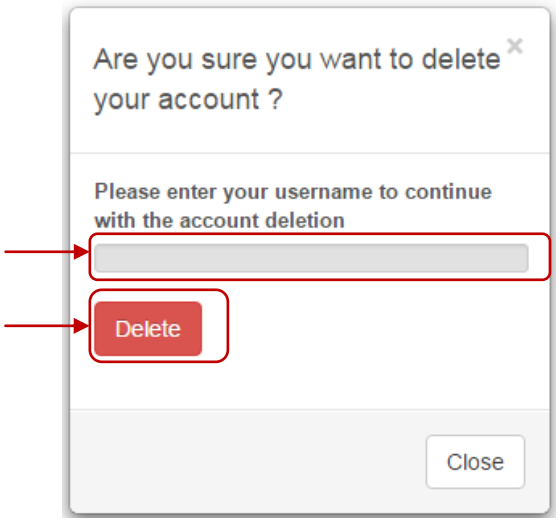
4.10Delete Account

If a user no longer wants to be a part of the Energy Angels Network, it exists the possibility of deleting the account by the "*Delete account"* section.



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

To fully erase the account the user should write the Energy Angel's user name and then click the "Delete" button

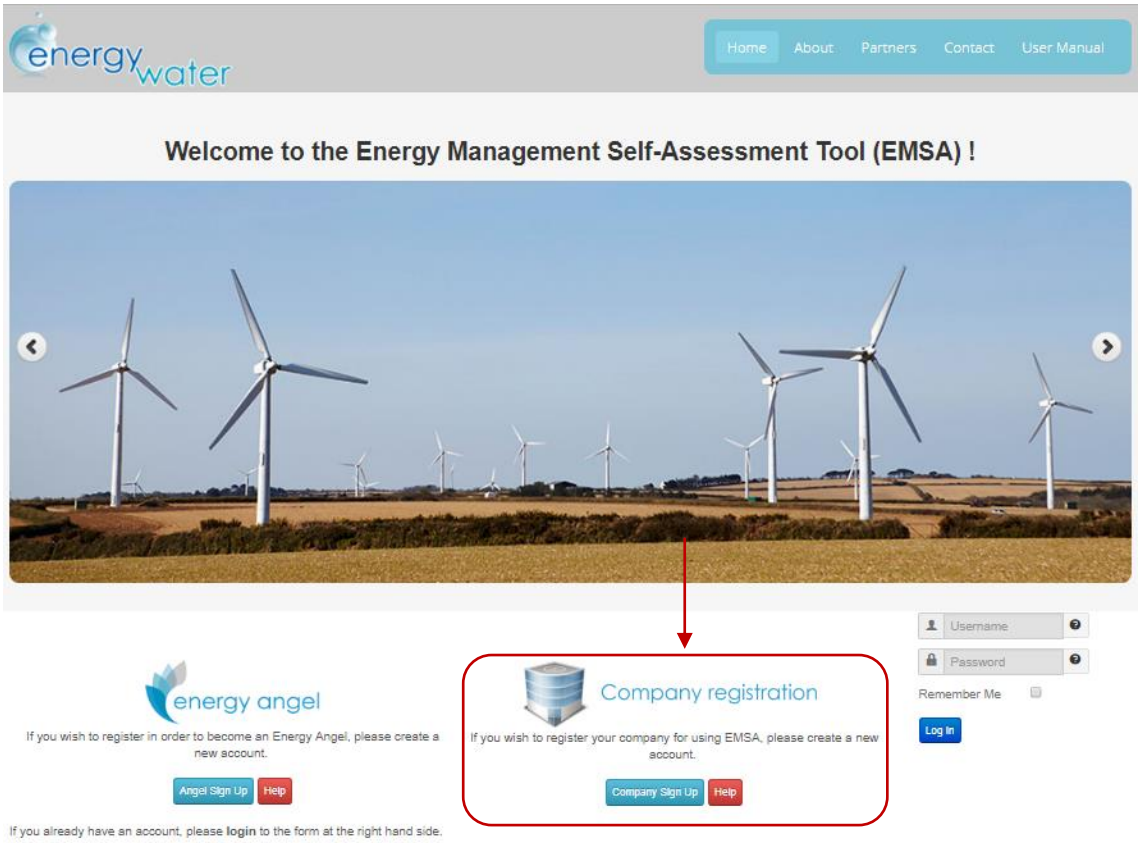


5 ENTER AS A COMPANY

If an energy manager or a person working inside an industrial company want to become an user of the EMSA web-tool and wants to perform an assessment in his company within the EMSA framework, by following this section of the guide he/she will be able to benefit from all the possibilities that the EMSA web-tool offers.

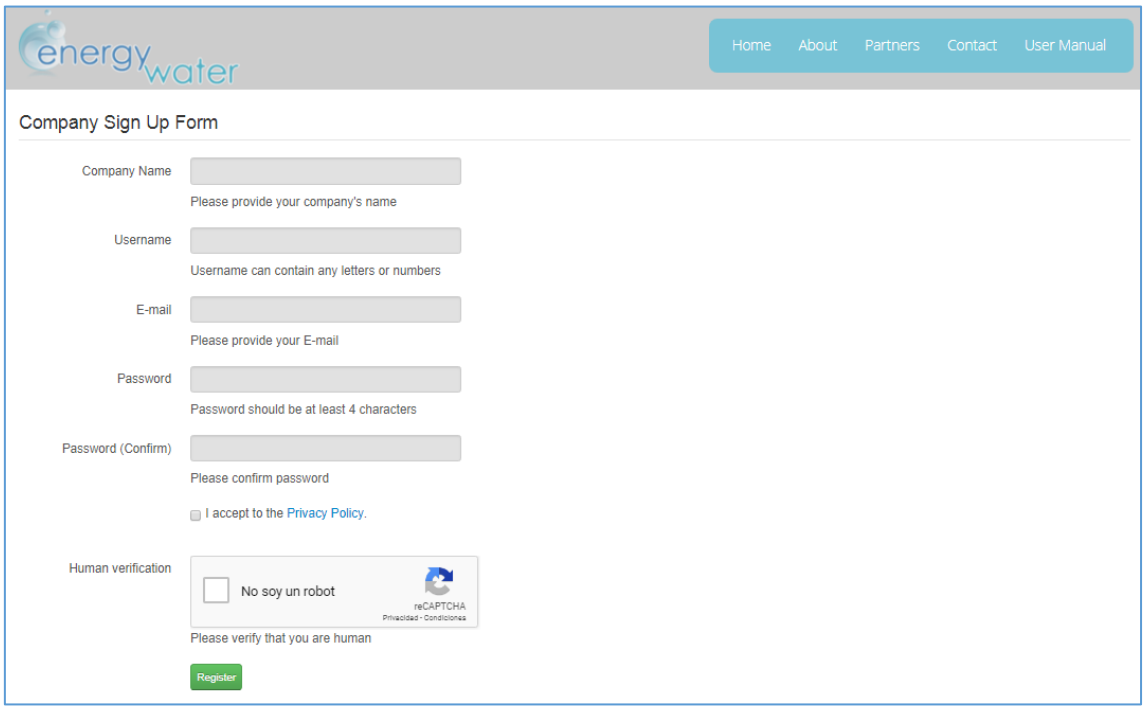
5.1 Access to the EMSA

If companies want to take advantage of the EMSA tool, first they will have to sign up as a company in the main page of the EMSA.

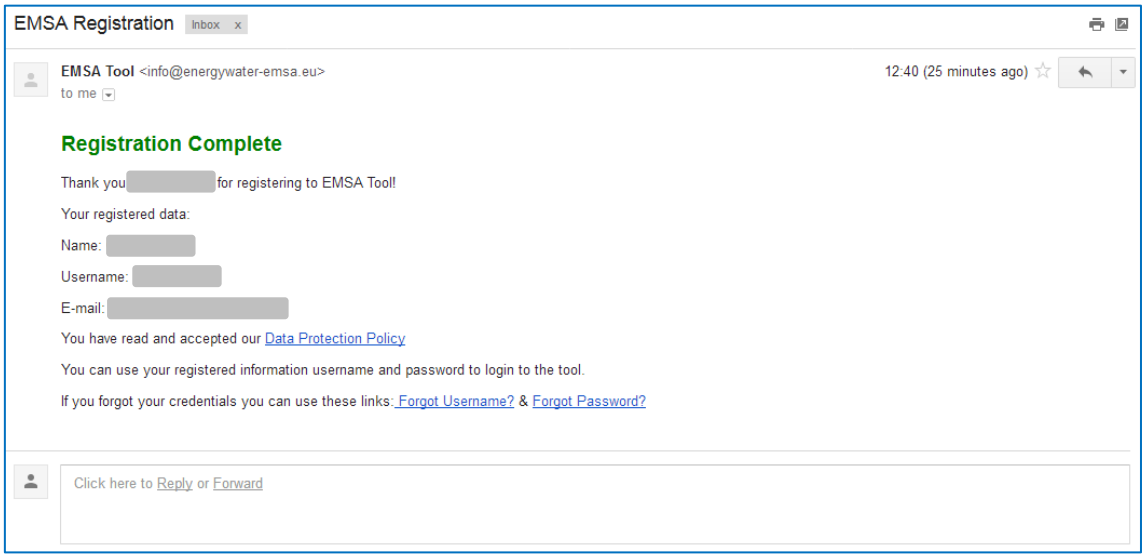


Once a company has decided to register into the tool, they will need to fill in a simple form in order to be granted access to the tool.

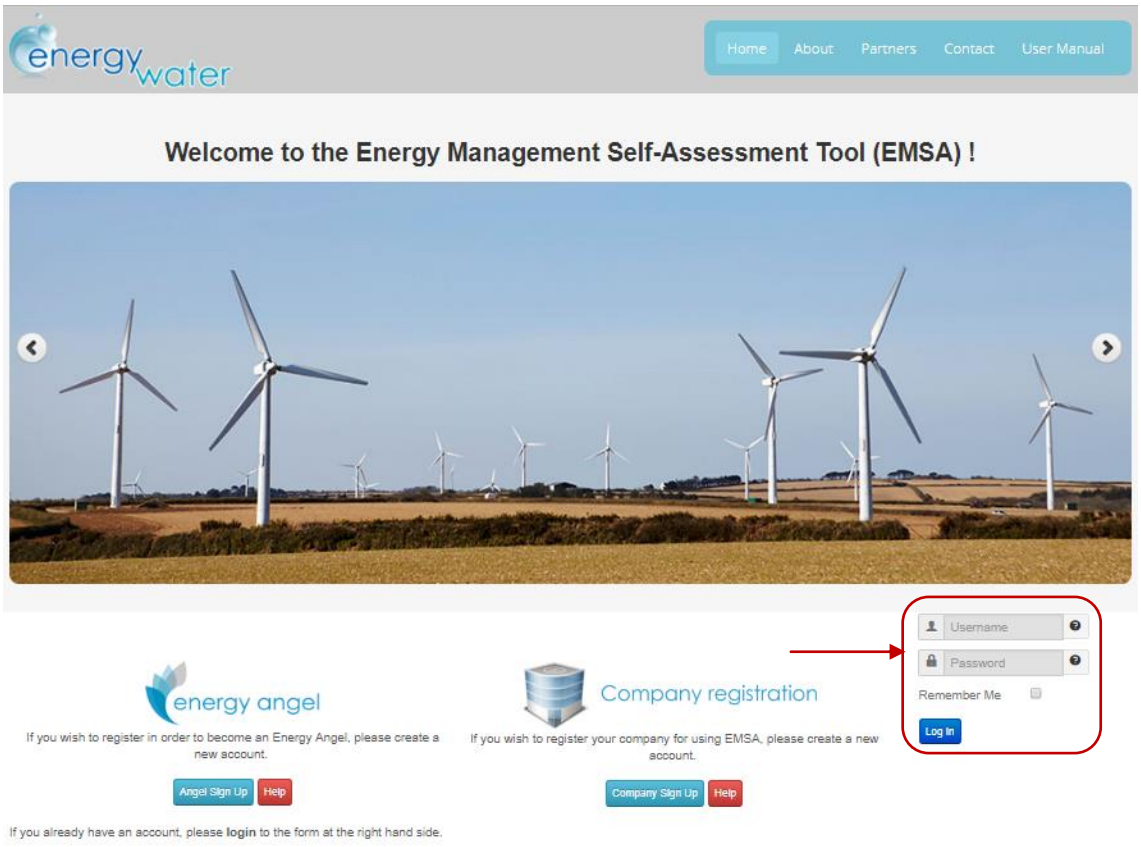
Click the "*Company Sign Up*" button to start registering in the tool and start the process of entering the EMSA web tool.



When the company registers in this previous page their basic information, they will receive an email granting them access to the tool.



After receiving the confirmation by email, the company will be able to access to the EMSA tool with the previously defined username or password.

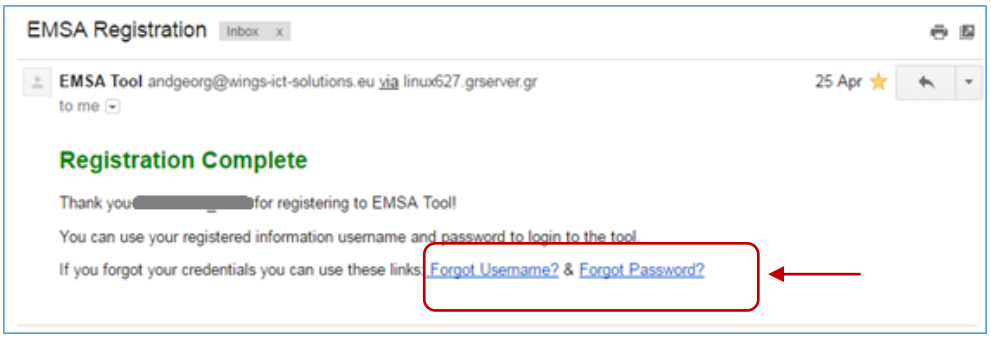


Introduce in the main page of the EMSA the username and password to enter the tool.

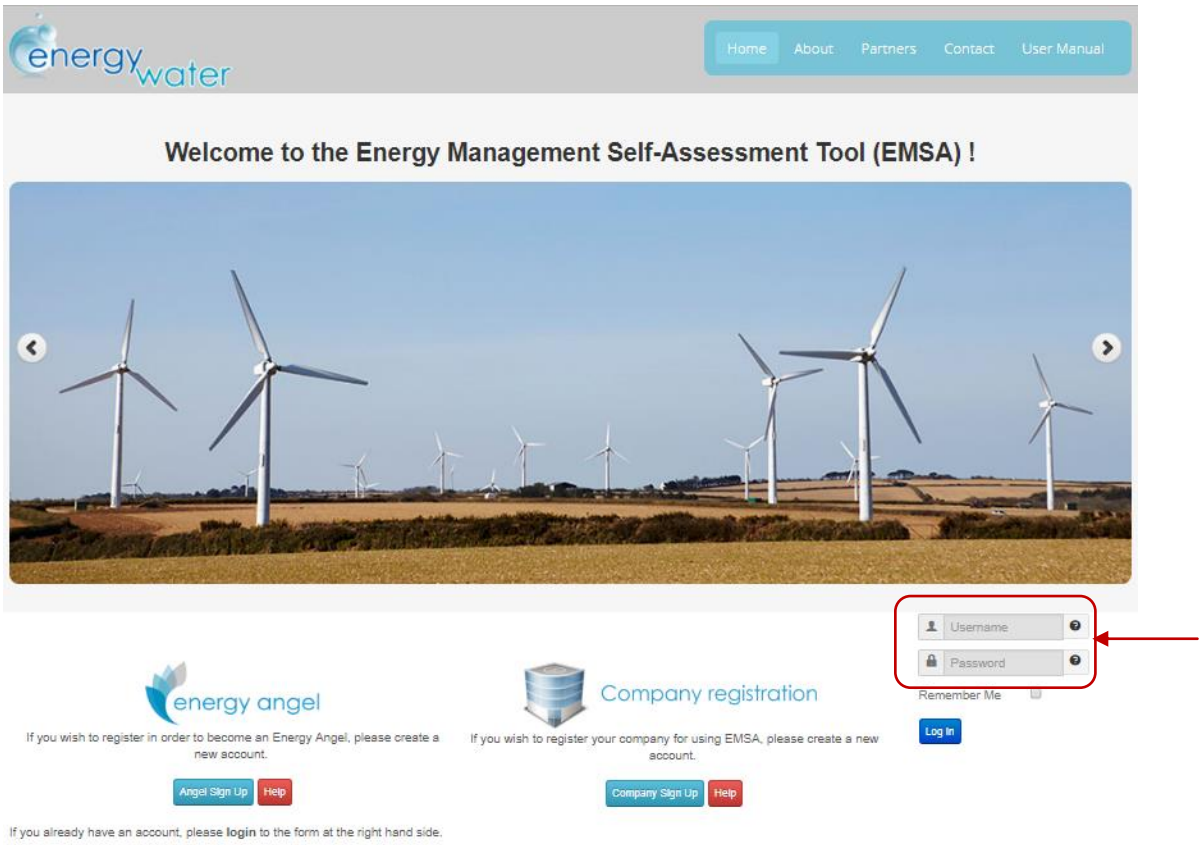
5.2 Forgotten Credentials

If the user has forgotten his password or his username, they will have two different options to recover them.

1. Recover the forgotten credentials by searching the registration email as it has a permanent link to the recovery page.
   Click the redirection link "*Forgot Username*" or "*Forgot Password*" for being redirected to the EMSA tool.



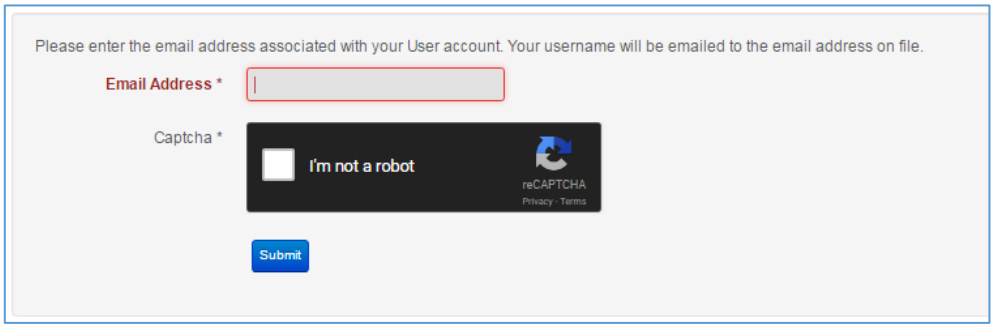
2. If the company has deleted the registration email, the recovery page can also be reached by clicking in the question mark icon next to the username or password in the EMSA Main Page



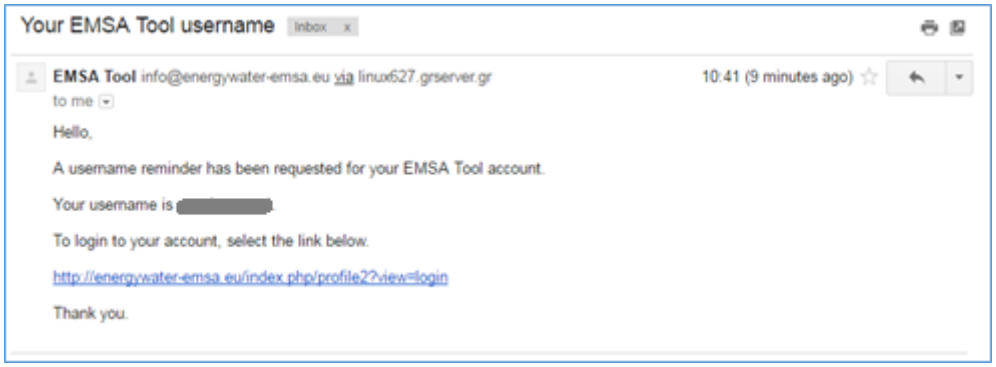
The recovery page will ask the user to type the email that the company has linked to the EMSA account and the EMSA will send an email to this account with a new password.

5.2.1 Forgotten username

Use one of the options listed above to enter to the recovery page of the EMSA web tool. Introduce the email address related to the Company's Account,



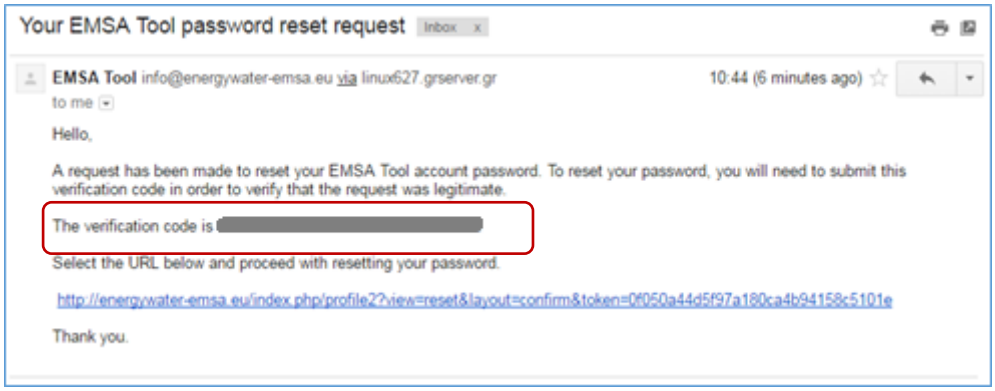
Then click submit and the EMSA will automatically send an email to this account reminding the username. EMSA will also provide a link to re-enter the tool

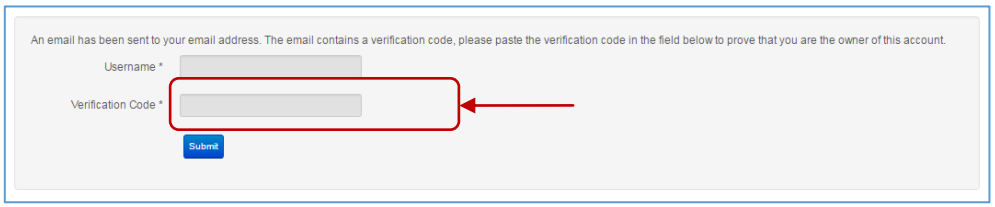


5.2.2 Forgotten password

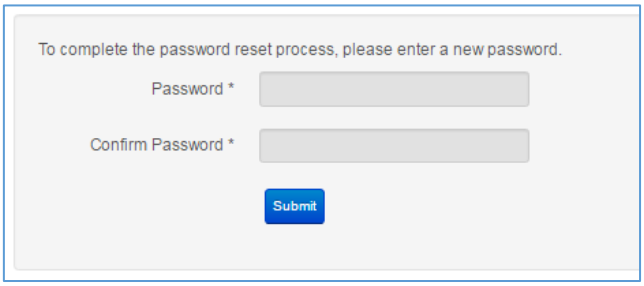
If the company **forgot the password**, the procedure is the same as for a forgotten username.

EMSA will send a link to the tool as well as a verification code by email. Enter the link and introduce both the username and the verification code in the corresponding boxes. Then press the submit button.





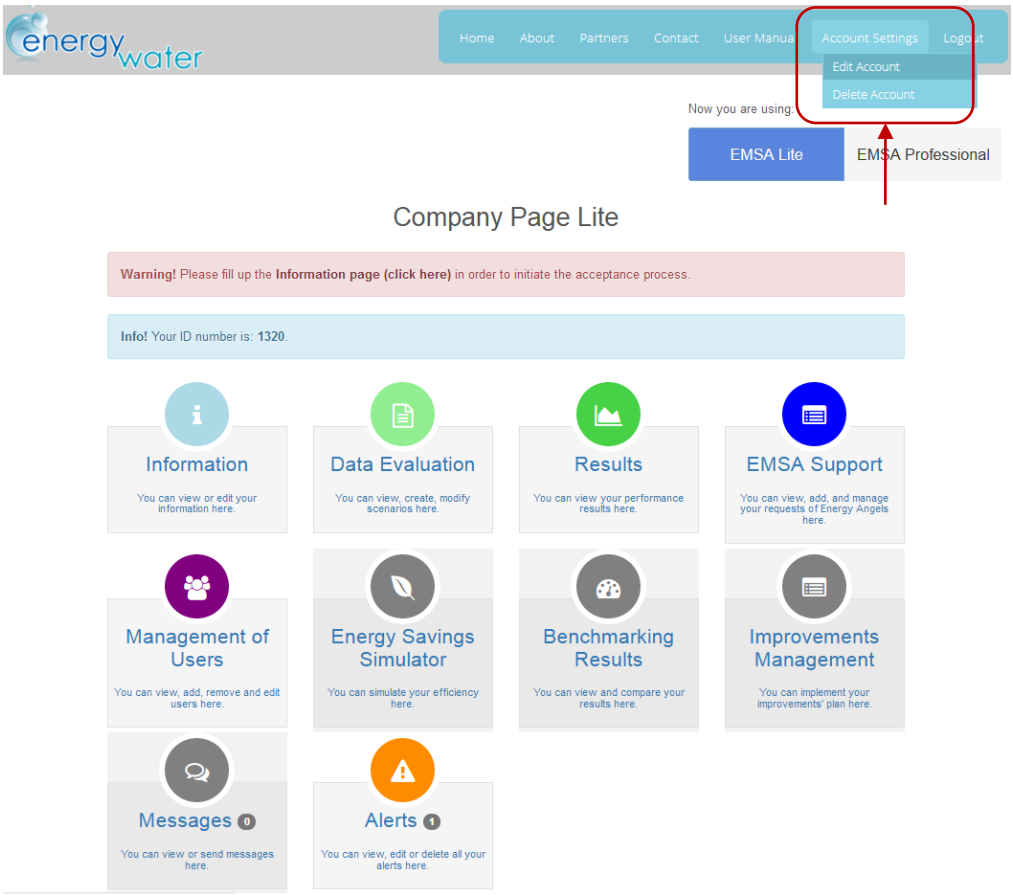
EMSA will verify the code and, if it's correct, the company will be able to change the password



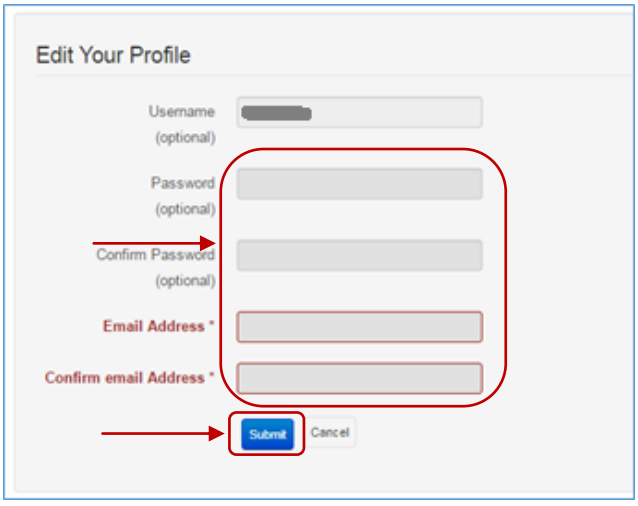
After that, the company will be able to re-enter in the EMSA tool again.

5.3 Modify Password or email

After a successful registration in the tool, the Company's page will be unlocked. If a company wants to modify password or the email, enter in the "*Edit Account*" tab in the Account Settings.



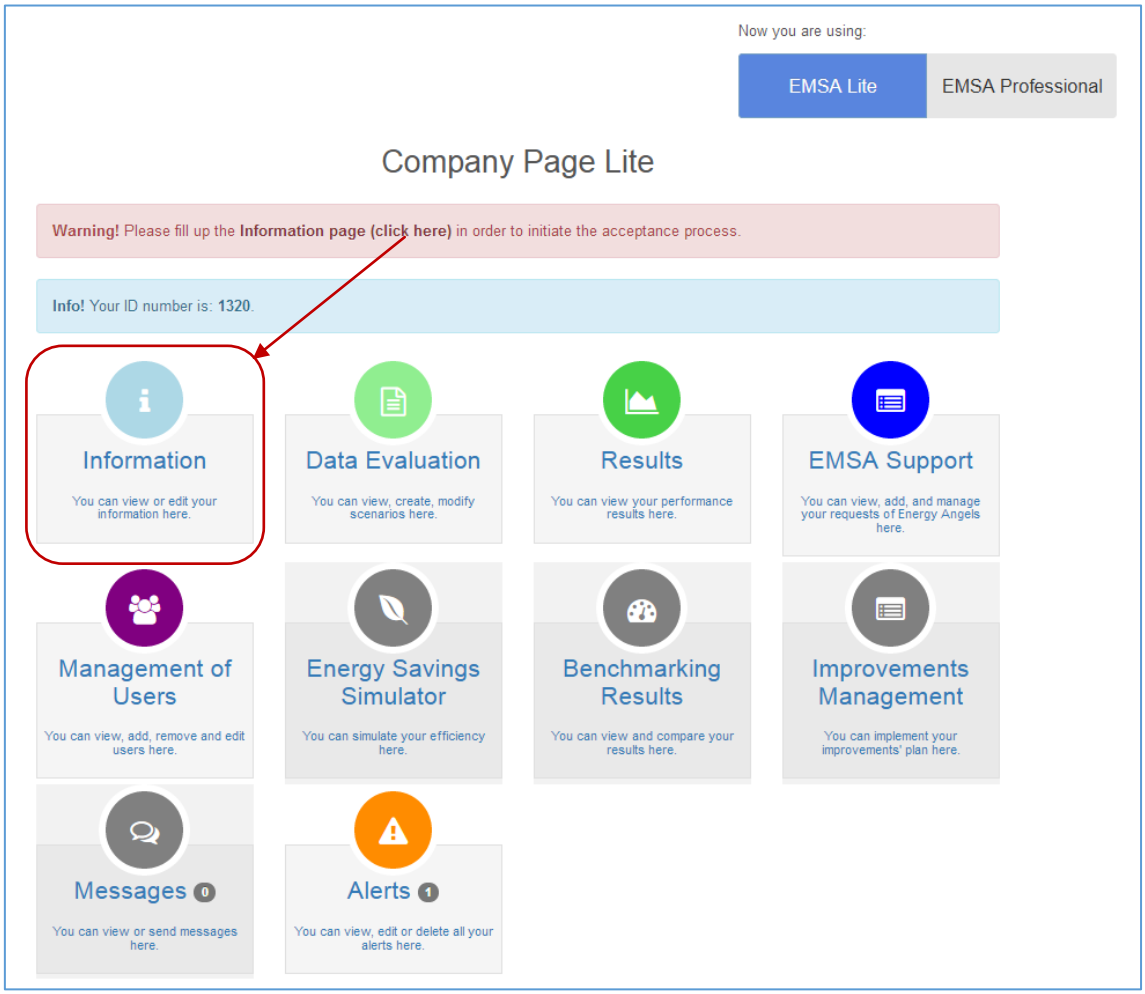
Once inside the tab, introduce the new information in the corresponding boxes. Make sure that the confirmed information matches the principal one.



Click the submit button to save all the changes performed.

5.4 Introduce Information

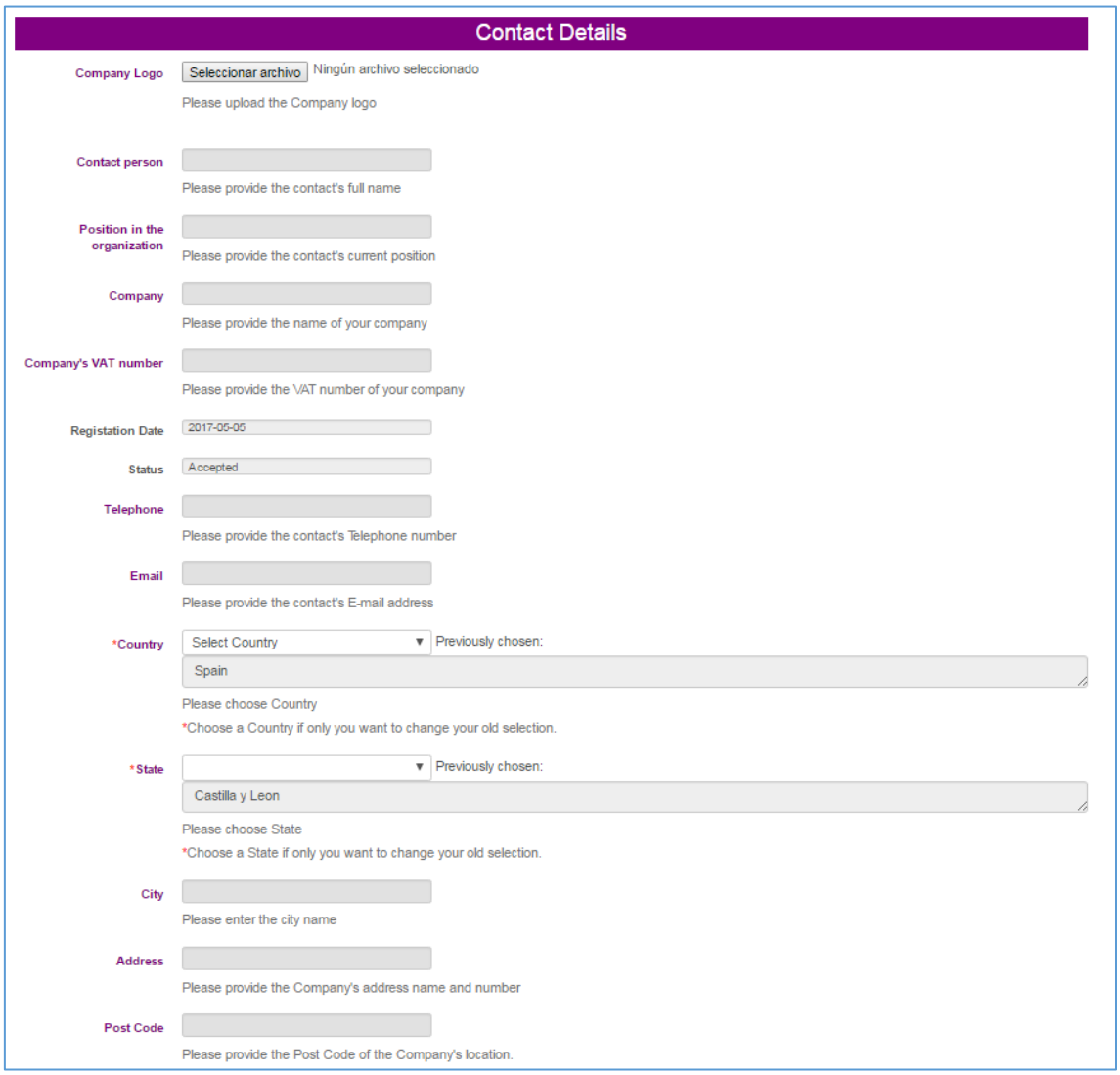
The first step to do is to fill in the information page, because the information that it's included here will be decisive to be fully accepted in the tool.

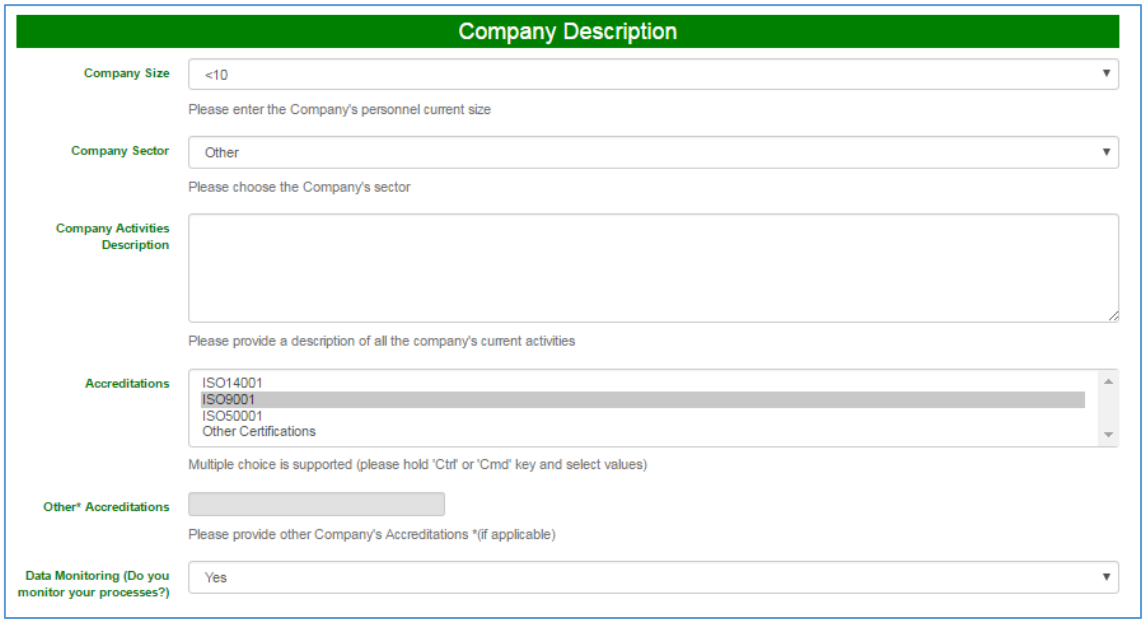


Click in the "Information" tab to complete all the information required by the EMSA. This will enable the Energy Angel's Network to determine if a company is accepted and enabled to be assessed. Before being accepted, companies would have limited access to some sections if the account.

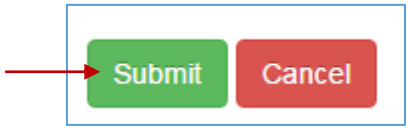
Complete all the questions with the most accurate information possible, in order to ease the validation process.

The information required for the company is the following:


Contact Details
Company Logo
Seleccionar archivo
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
Please provide the VAT number of your company
Registation Date
2017-05-05
Status
Accepted
Telephone
Please provide the contact's Telephone number
Email
Please provide the contact's E-mail address
*Country
Select Country
Previously chosen:
Spain
Please choose Country
*Choose a Country if only you want to change your old selection.
*State
Previously chosen:
Castilla y Leon
Please choose State
*Choose a State if only you want to change your old selection.
City
Please enter the city name
Address
Please provide the Company's address name and number
Post Code
Please provide the Post Code of the Company's location.


Company Description
Company Size
<10
Please enter the Company's personnel current size
Company Sector
Other
Please choose the Company's sector
Company Activities Description
Please provide a description of all the company's current activities
Accreditations
ISO14001
ISO9001
ISO50001
Other Certifications
Multiple choice is supported (please hold 'Ctrl' or 'Cmd' key and select values)
Other* Accreditations
Please provide other Company's Accreditations *(if applicable)
Data Monitoring (Do you monitor your processes?)
Yes

After completing the questionnaire, the company should submit the changes performed. The information that has been introduced will be saved in a data base and a request will be sent to the Network.

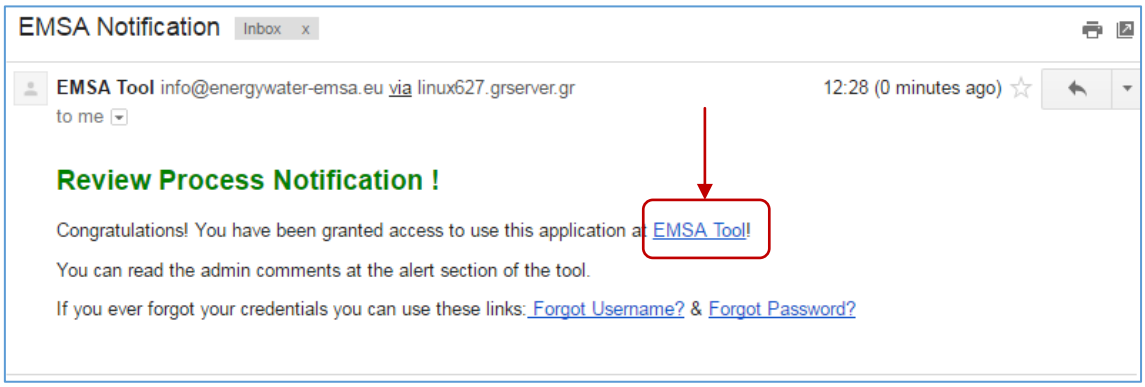


5.5 Acceptance and Rejection

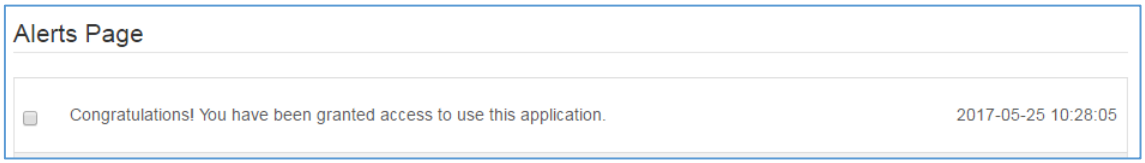
The Network Administration will revise the authenticity of the information presented by the company, in order to accept or deny the entrance of the company's entrance in the tool.

5.5.1 Acceptance

If all the information provided by the company is correct and their identity is validated, the company will be accepted. They will receive an email from the Network with the following information:



If they enter the tool and if they go to the alerts tab, they will receive a message of acceptance.



Since this moment, the company is able to start an assessment as well as to choose an Energy Angel to guide them among the tool.

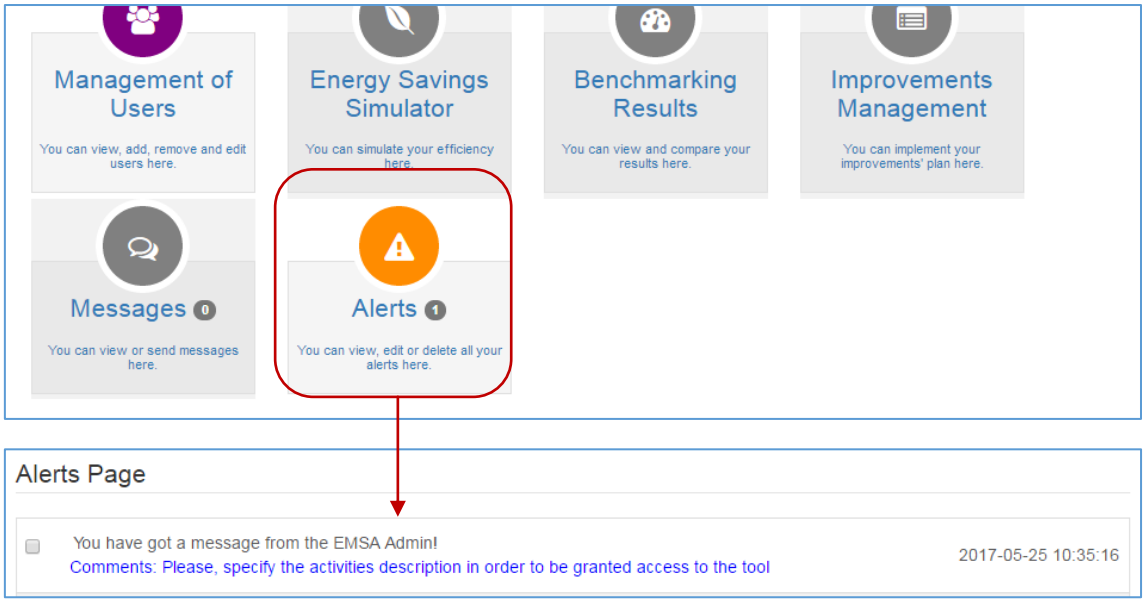
5.5.2 Pending

If a company hasn't been accepted or denied, means that the Network Administration has not started the acceptance process.

The Network Administration can send comments to the companies if they identify any missing information in order to verify its identity.

The company will be able to receive the comments via notification email or the alerts tab. To enter in the EMSA, click in the link provided by the email or enter directly through the browser.

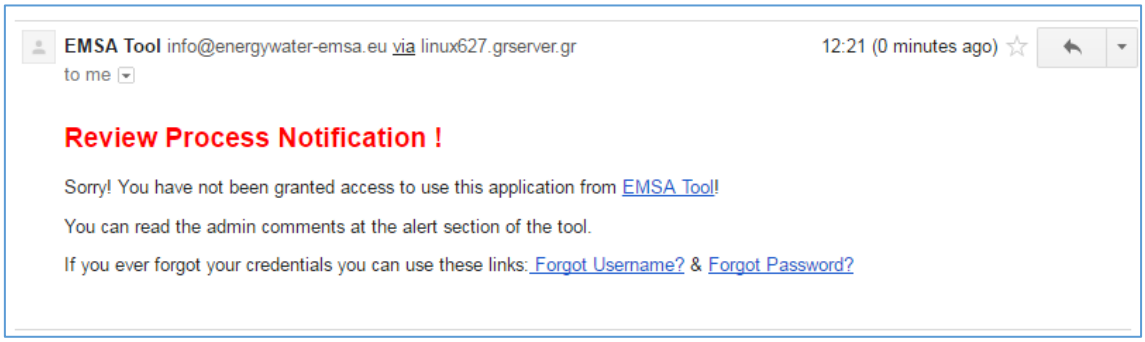
Click the alerts tab and revise the most recent alert, to see the message from the Network Administration.



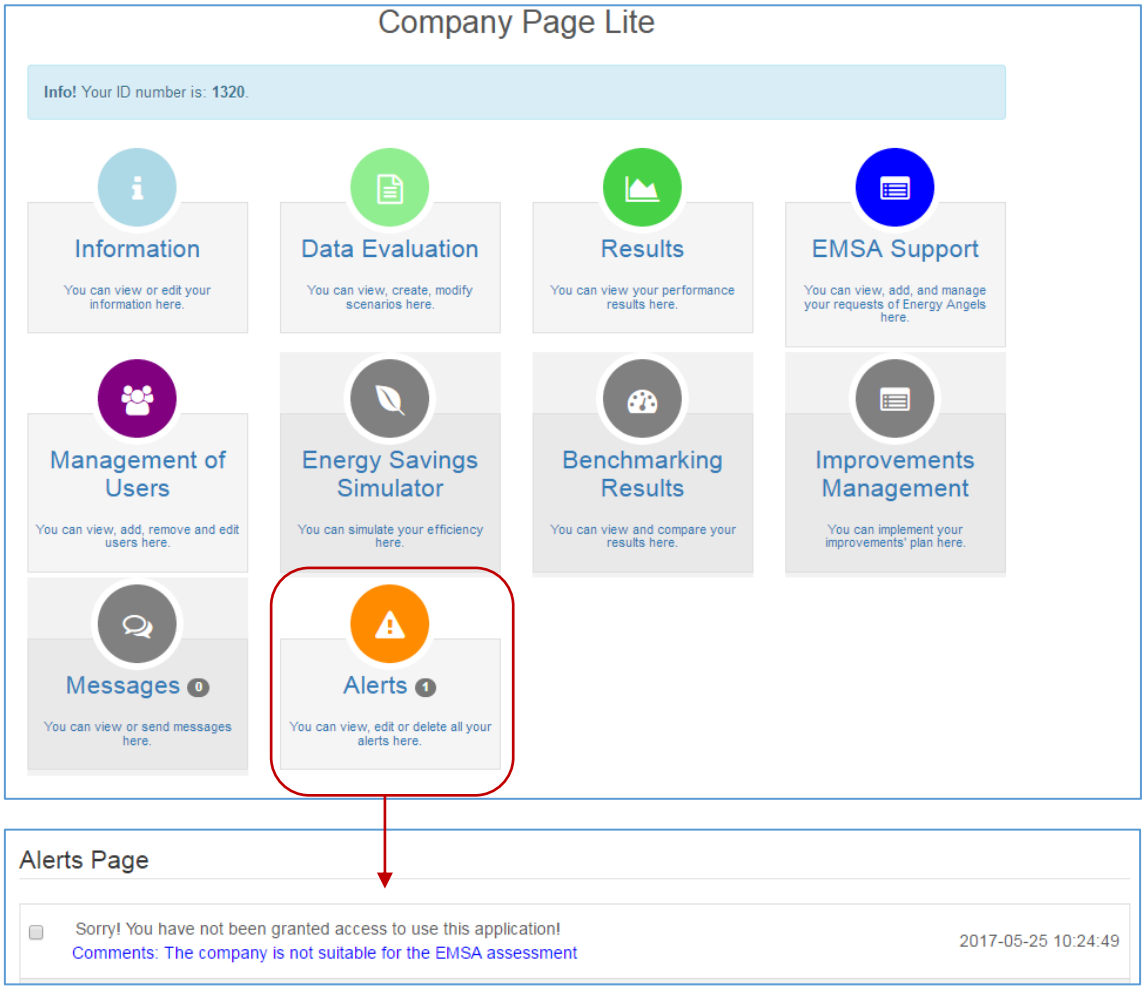
In order for the company to be accepted, they have to include all the information required by the tool.

5.5.3 Rejection

If all the information provided by the company means a problem of impersonation of the identity or the information is not trusted, the Network will reject the company's entrance.



Companies will receive the email presented above. If they enter the tool and if they go to the alerts tab, they will receive a message of rejection, and the reason why the network has performed this action.



5.6 EMSA Lite and EMSA Professional

To facilitate the access to the EMSA web tool contents, two versions have been developed:

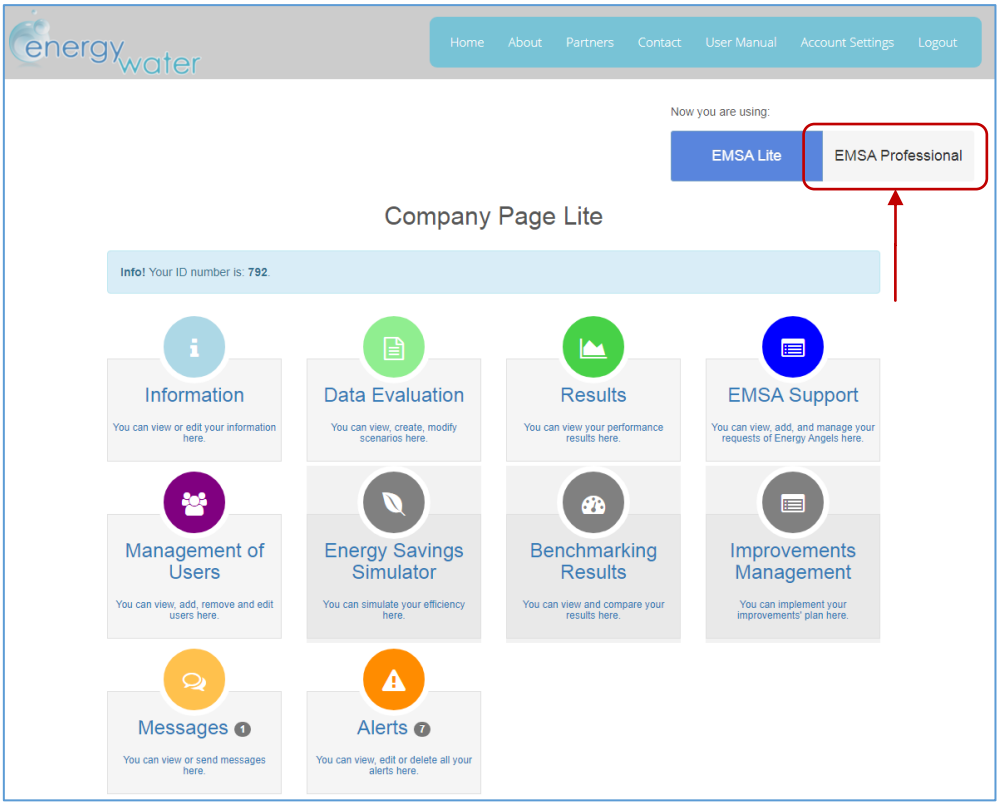
- EMSA Lite
- EMSA Professional

After registration, Companies will arrive to the "EMSA Lite" dashboard, were they will have access to the basic modules of EMSA, being able to use them on their own, giving them an easy-to-use methodology to evaluate themselves and obtain quick useful results.

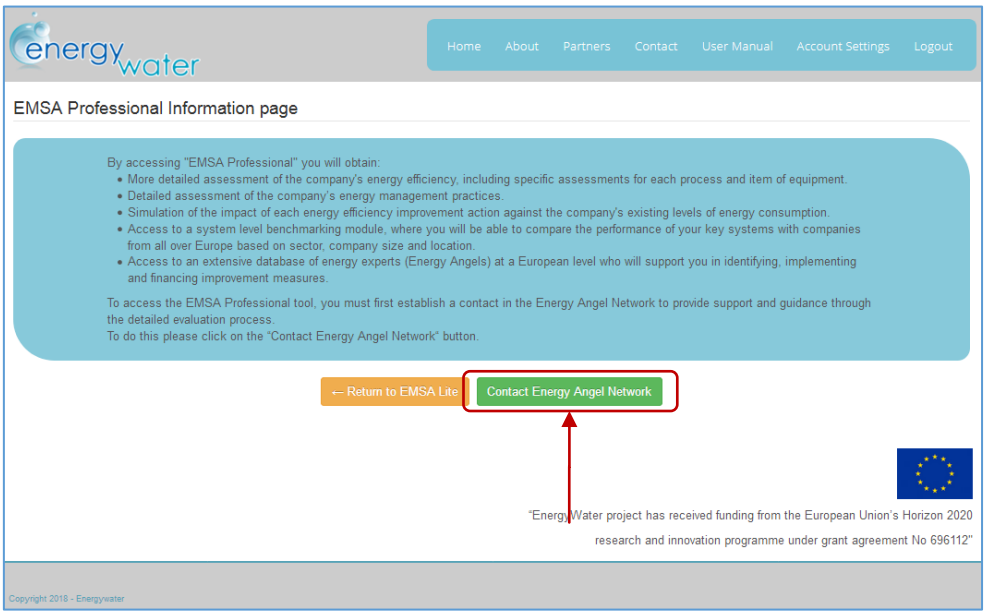
They will notice that some other modules are coloured in grey. These ones are modules that belong to the "EMSA Professional" version, where the tools displays their whole functionalities, and some technical knowledge are required to use them, that why the support on an Energy Angel is needed.

Thus far we have seen that some of the modules were in greyscale. This is due to we are in the EMSA Lite version. In order to obtain the complete version of the tool the user has to access "EMSA Professional".

For this purpose the user should click in the "EMSA Professional" Button.



If it is the first time, this page will appear:



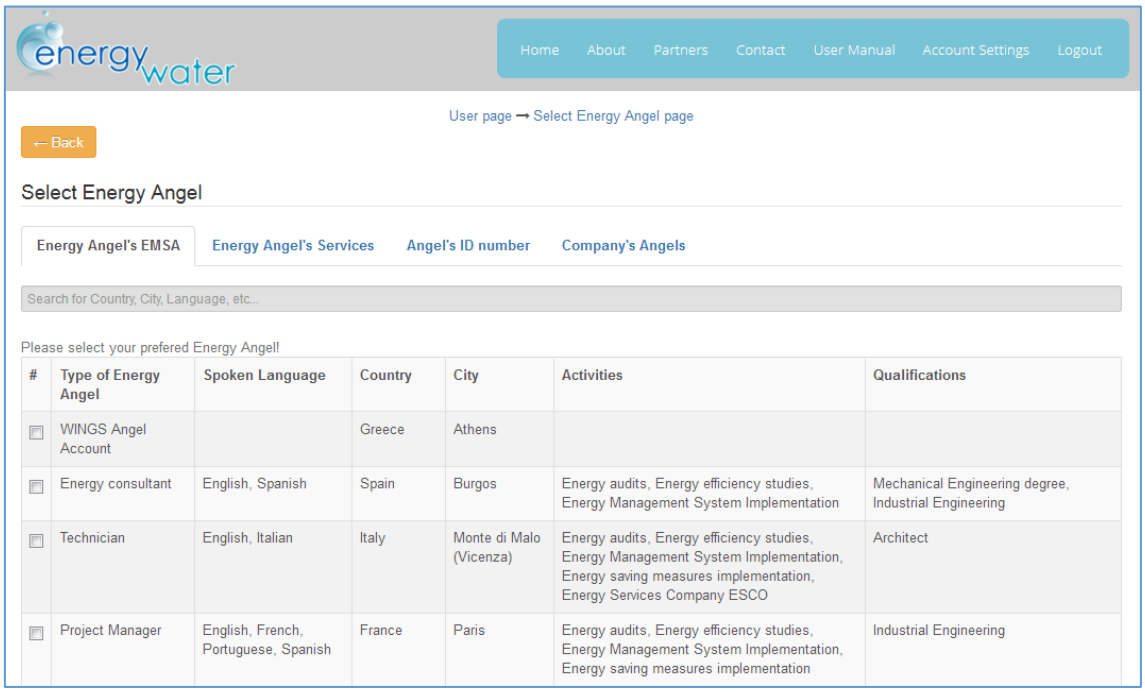
This screen explain that, by accessing the "EMSA Professional" you will obtain:

- More detailed assessment of the company's energy efficiency, including specific assessment for each process and item of equipment.
- Detailed assessment of the company's energy management practices.
- Simulation of the impact of each energy efficiency improvement action against the company's existing levels of energy consumption.
- Access to a system level benchmarking module, where you will be able to compare the performance of your key systems with companies from all over Europe based on sector, company size and location.
- Access to an extensive database of energy experts (Energy Angels) at a European level who will support you in identifying, implementing and financing improvement measures.

To access the EMSA Professional tool, you must first establish a contact with an Energy Angel form the Energy Angel Network to provide you support and guidance through the detailed evaluation process.

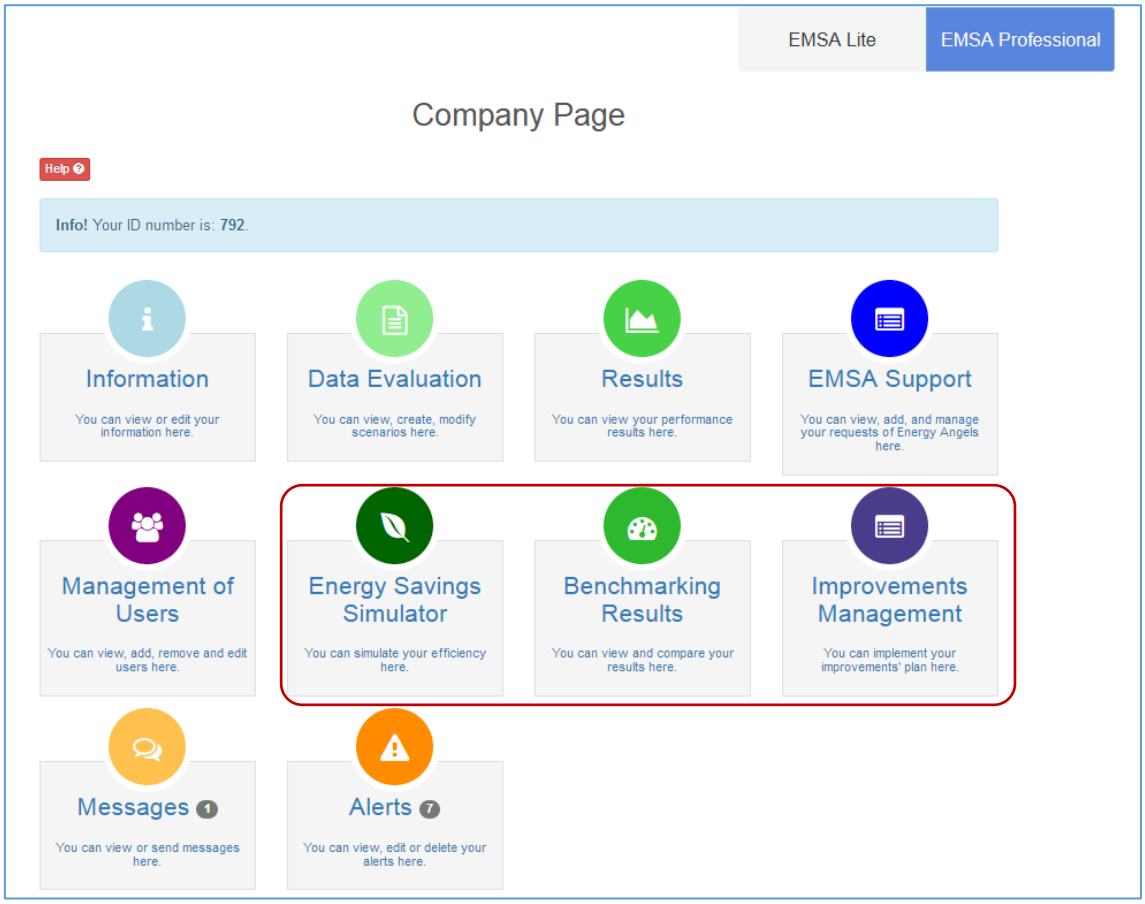
To do this you should click on the "Contact Energy Angel Network" button. Also, we can select an Energy Angel form the "EMSA Support" module.

Then, the next screen will appear:

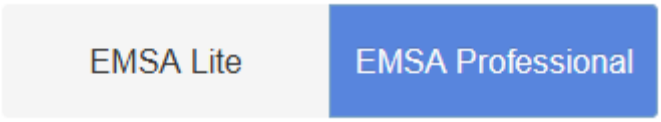


There, you will be able to search and select an Energy Angel, this process is explained in the point 5.7 “Energy Angel’s Request”.

Once the Energy Angel has accepted the request, both the Company and the Energy Angel will obtain access to the EMSA Professional, and all the tabs for the complete assessment.



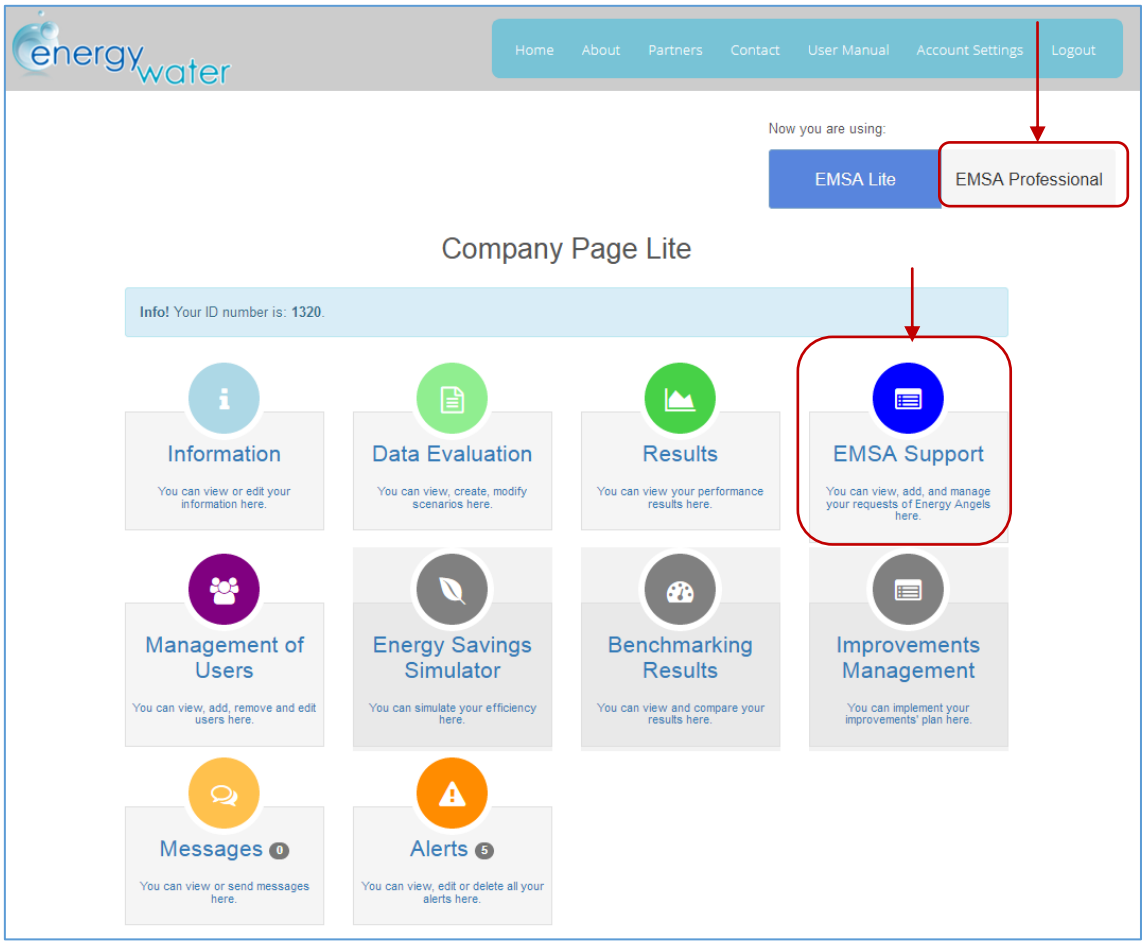
If for any circumstance the company wants to change his EMSA version, the company has the option of switch from EMSA Professional to EMSA Lite and from EMSA Lite to Professional always he wants. To do it, the company user should click the buttons at the top right of the page.



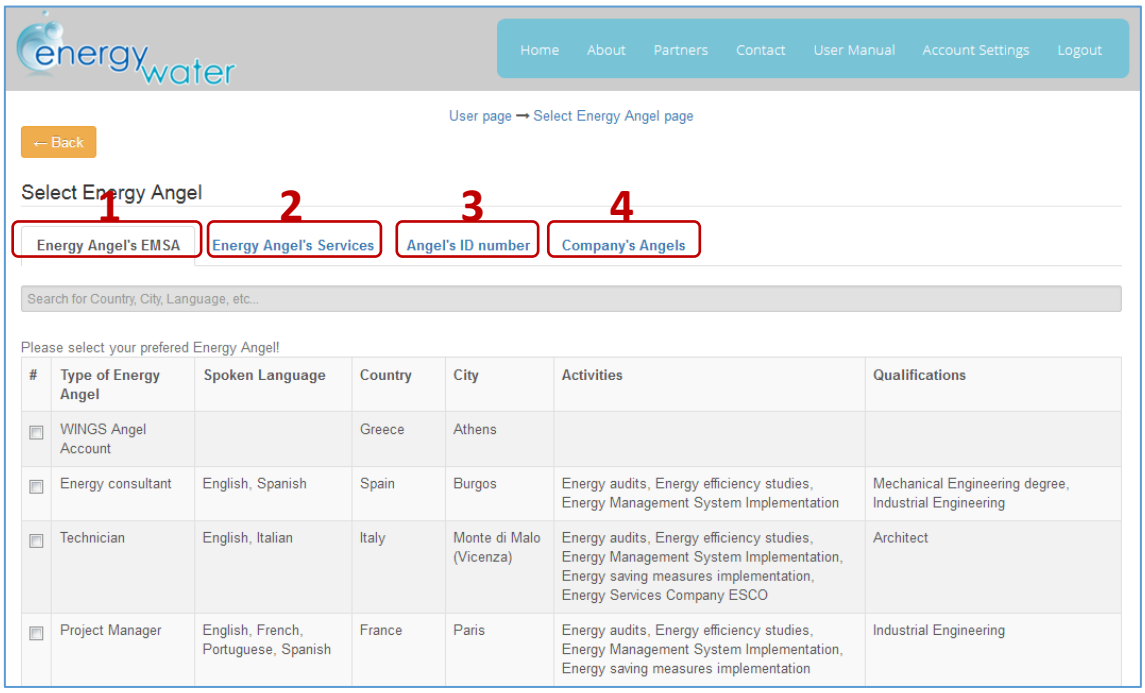
5.7 Energy Angel's Request

In order to get access to the EMSA Professional and perform a complete assessment a company needs to choose an Energy Angel from the EA Network, in order to guide them along the assessment process within the tool.

Enter in the "*EMSA Support*" tab to select an Energy Angel to perform an assessment or click in the EMSA PRO button in the company's page.



Once in the tab, there are four different paths of selecting an Energy Angel.

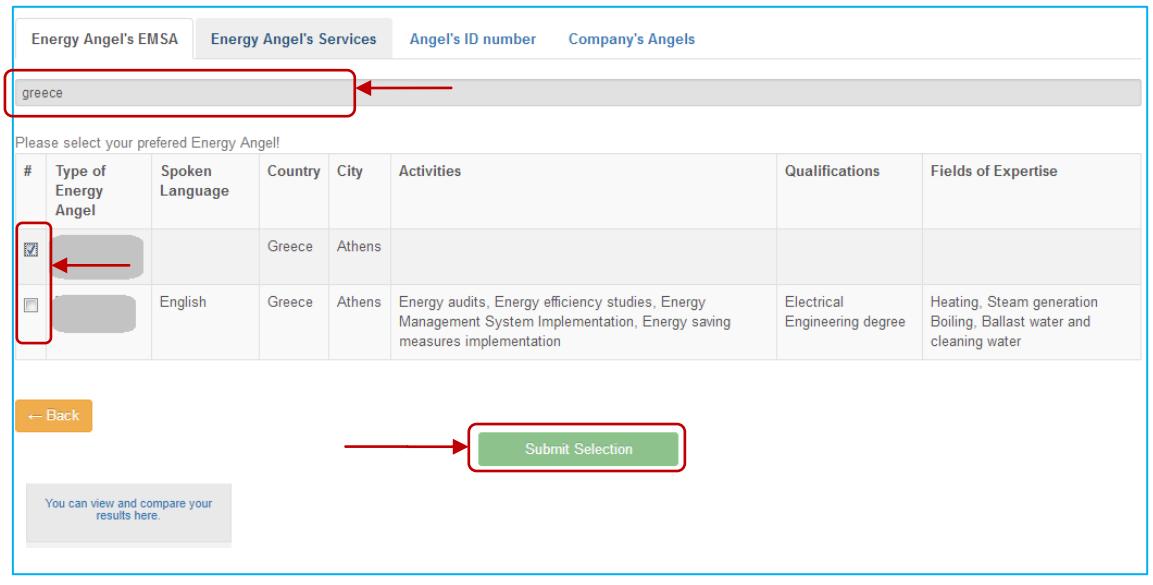


5.7.1 Energy Angel's EMSA

If a company wants to select an Energy Angel from the whole list of Energy Angels, enter in the "*Energy Angel's EMSA*" tab.

Read the description of each Energy Angel and click in the selection box of the most suitable Energy Angel for you and press the "Submit Selection" button.

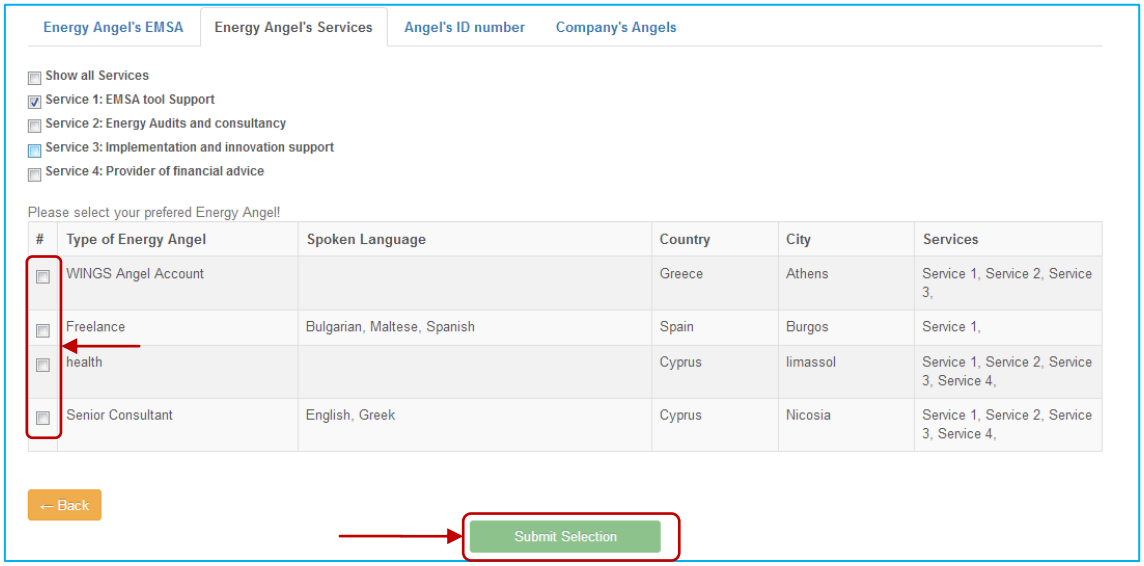
Companies can also use the search bar to filter Energy Angels by country, city or language.



5.7.2 Energy Angel's Services

If a company wants to select an Energy Angel according to the services provided for him, enter in the "*Energy Angel's Services*" tab.

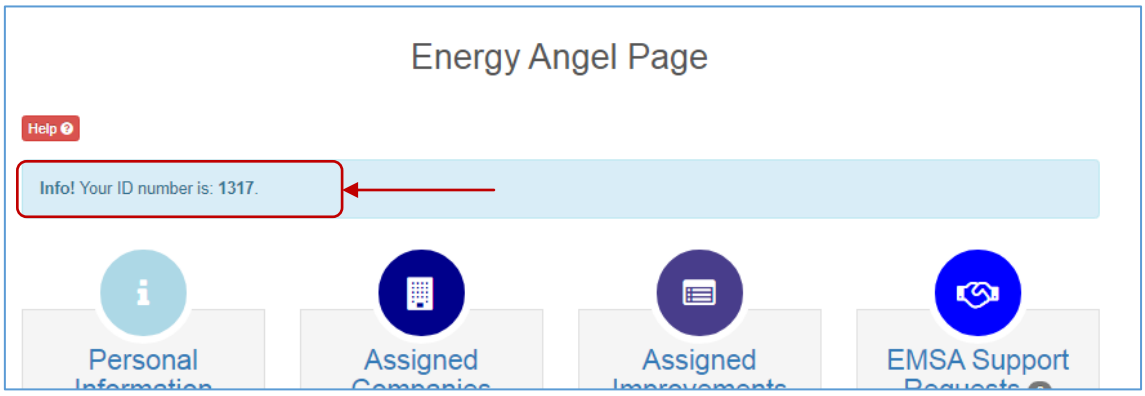
Select the services desired and will only appear Energy Angels with those services and click in the selection box of the most suitable Energy Angel for you and press the "Submit Selection" button.



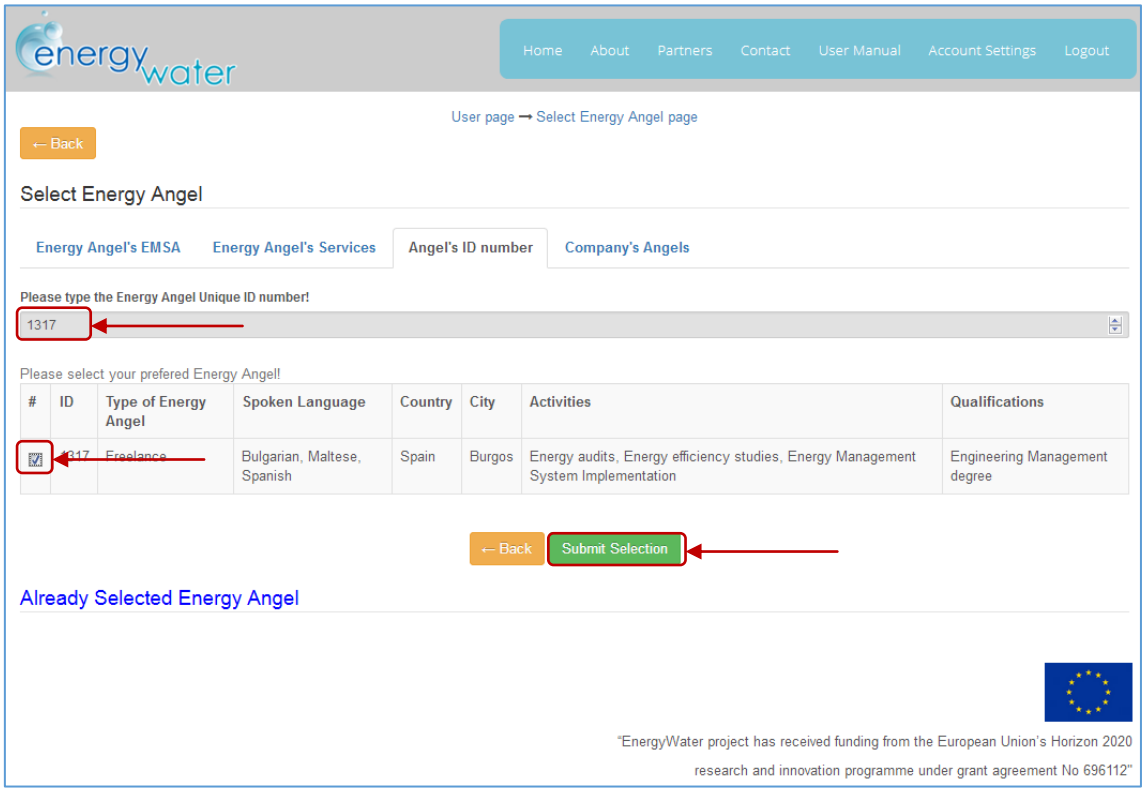
5.7.3 Energy Angel's ID number

If a Company knows the Energy Angel's ID and wants to select this specific person to guide them, they will be able to select this Energy Angel by introducing the ID number in the tool.

An Energy Angel can check his number in the main page.



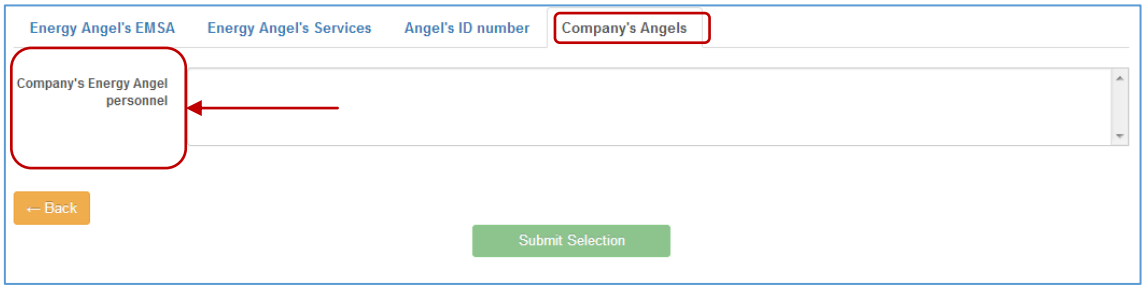
To choose a certain Energy Angel, the company has to introduce the ID in the *"Angel's ID number*" tab.



5.7.4 Company's Angel

This path can be applied if a company has an Internal Energy Angel, to do this, a person from the Company's staff need to follow the EMSA training and thus be certificated in the services no.1 "EMSA web-tool support"

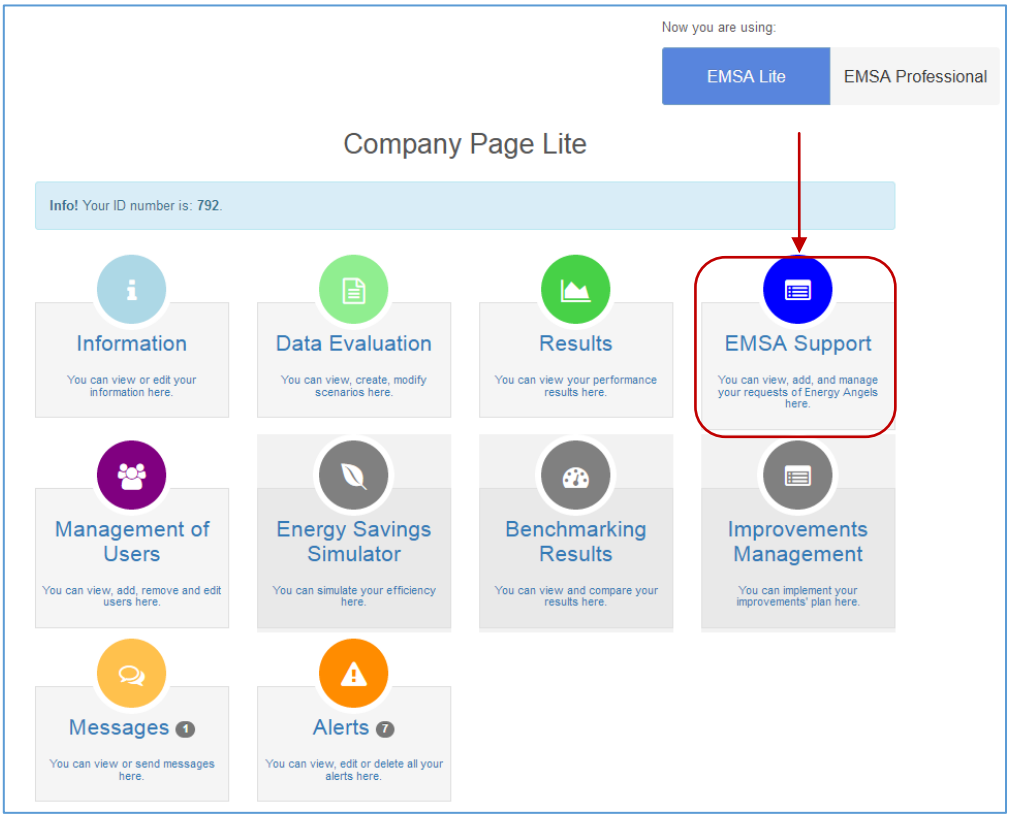
Also, both the company and the Energy Angel should have introduced the same VAT number to link them with the same company's identity, then, they will automatically appear in the box named: "*Company's Energy Angel*"



Select an Energy Angel from the "*Company's Energy Angel*" box and click the button "*Submit Selection*" to send a request to the selected Energy Angel.

5.7.5 Procedure of acceptance

After asking for an Energy Angel, a new request is generated. To see it, enter in the "*EMSA Support*" tab and consult "**Replies to Requests**" section.

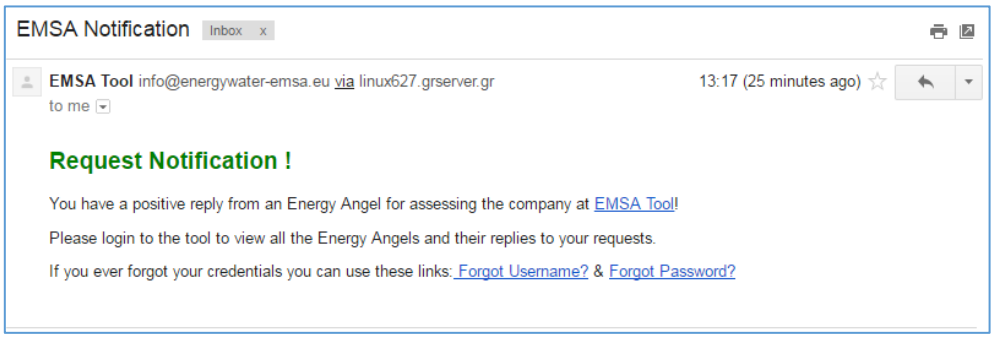


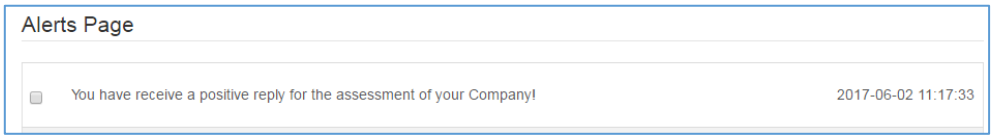
This pending message should appear on screen

When this information appears, means that the request has been sent to the Energy Angel. The company has to wait for the Energy Angels answer.

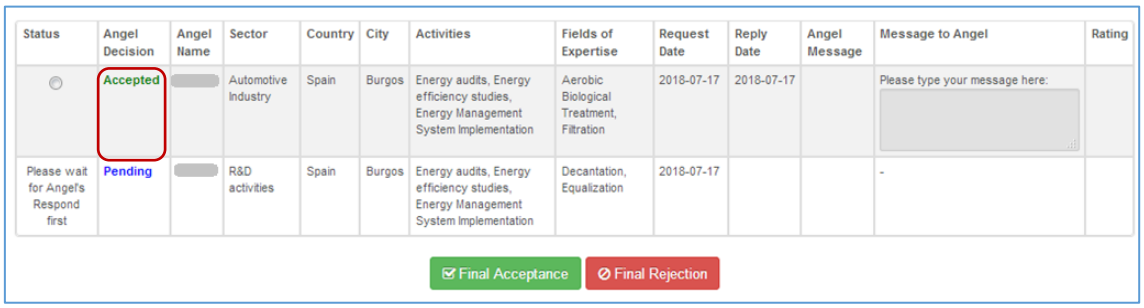
5.7.5.1 Energy Angel's acceptance

If an Energy Angel accepts the company's request, the company will receive an reponse via email, as well as a notification in the alerts page.

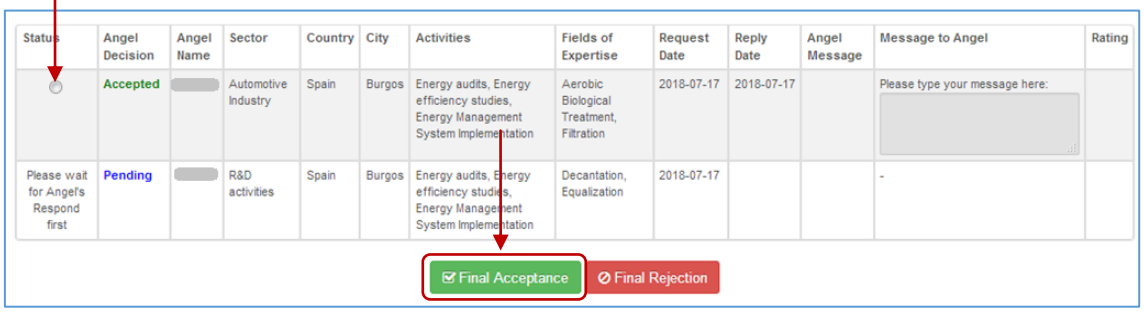




If the user of the Company enters in the "*EMSA Support*" tab again, it will be shown the positive answer of the Energy Angel.

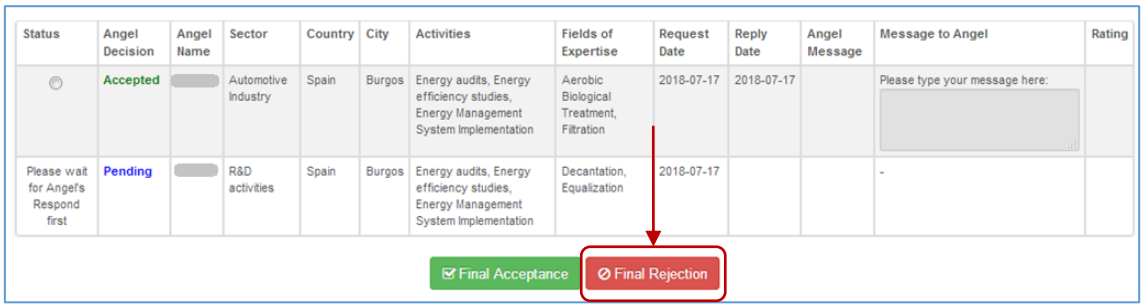


The company is the one that has to make the final acceptance of the Energy Angel, by selecting the specific Energy Angel and clicking in the "Final Acceptance" button.



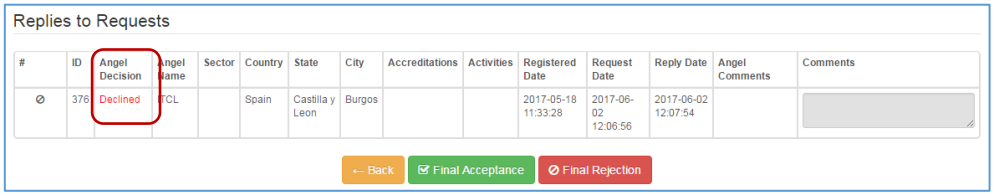
It is important to note that, even if the company makes the final acceptance of an Energy Angel, if they do not grant any permission to the Energy Angel, he is not going to be able to access to any data form the company. To give permissions, go to the "Manage Users" module.

If the company does not want an Energy Angel to perform the assessment, by clicking the "Final Rejection" button, the Energy Angel will be denied access to the company's information.



5.7.5.2 *Energy Angel's refusal*

If an Energy Angel does not accept the company's request, in the "*EMSA Support*" tab it will appear that the Energy Angel has declined the proposal of the company.



In this case, and in order to perform an assessment, the company will be required to send another request to a different Energy Angel.

5.8 Managing the EMSA users

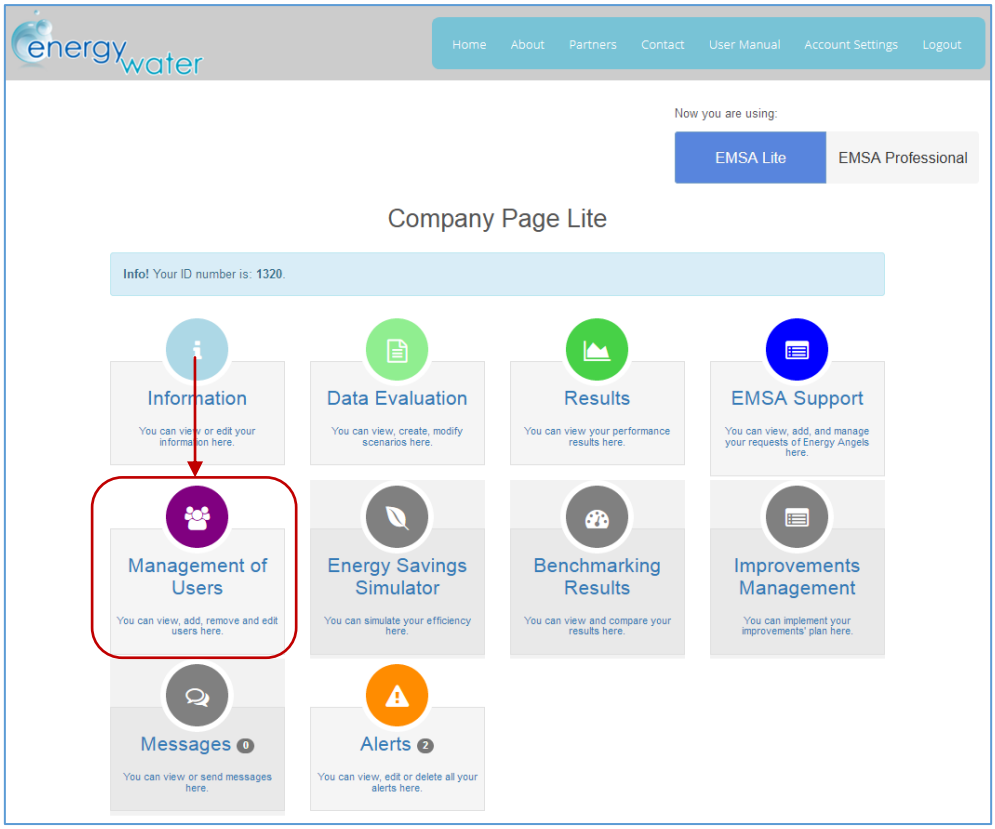
To register the Company in the EMSA, a contact person is needed. This contact person will act as the Admin User of the company and he/she will have all the permissions and access to all the functionalities of the Company's EMSA account.

One of these Admin permissions is the Management of different Users in the Company's account, that is to say, the Admin User is able to add more user to the Company's account in order to help him to introduce data or to see some specific results, for instance.

Here exists an exceptional case in the Company's Users: the **Energy Angel.** Once an Energy Angel has been finally accepted by the Company, becomes automatically a user from the Company's account in order to facilitate the support to the company. In this case, the Company's Admin User is always able to modify its permissions and control how deep does the Energy Angel participates in the assessment process.

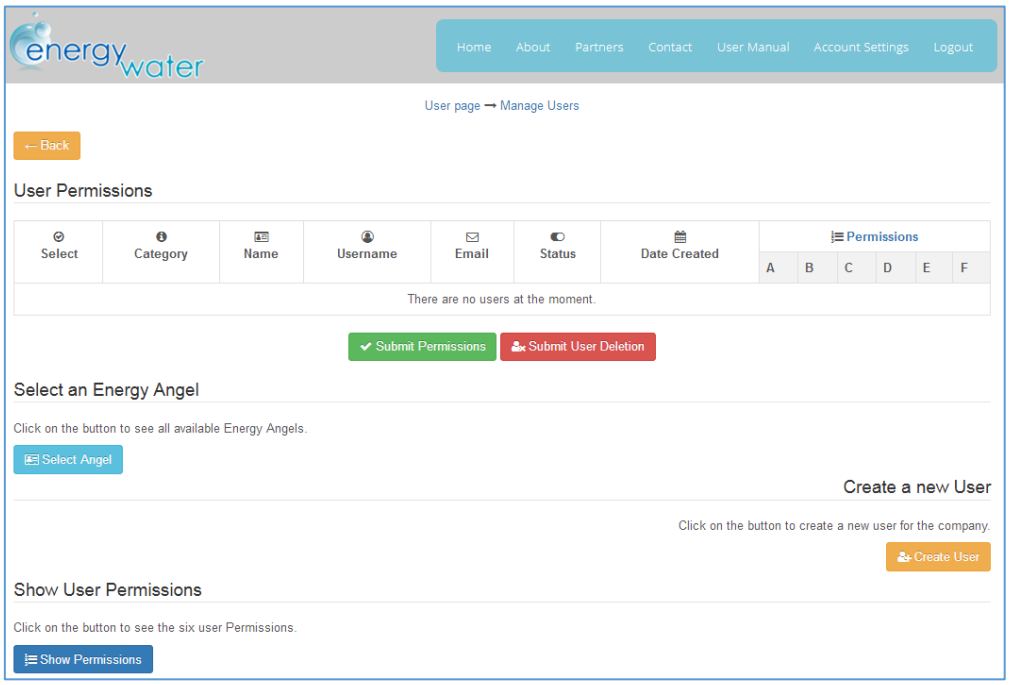
Then, the Company's Admin User can add as many new users as he considers and also, once the Company and an Energy Angel have confirmed the acceptance proposal, the company will select what type of access the Energy Angel will have to the company's information inside the EMSA tool.

This can be performed in the *"Management of Users"* Tab.



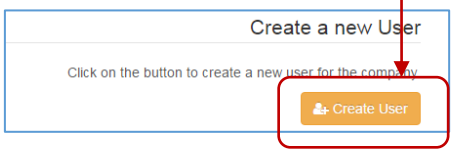
There, the companies can select the permissions of each user of the company.

This is the initial page that appears:

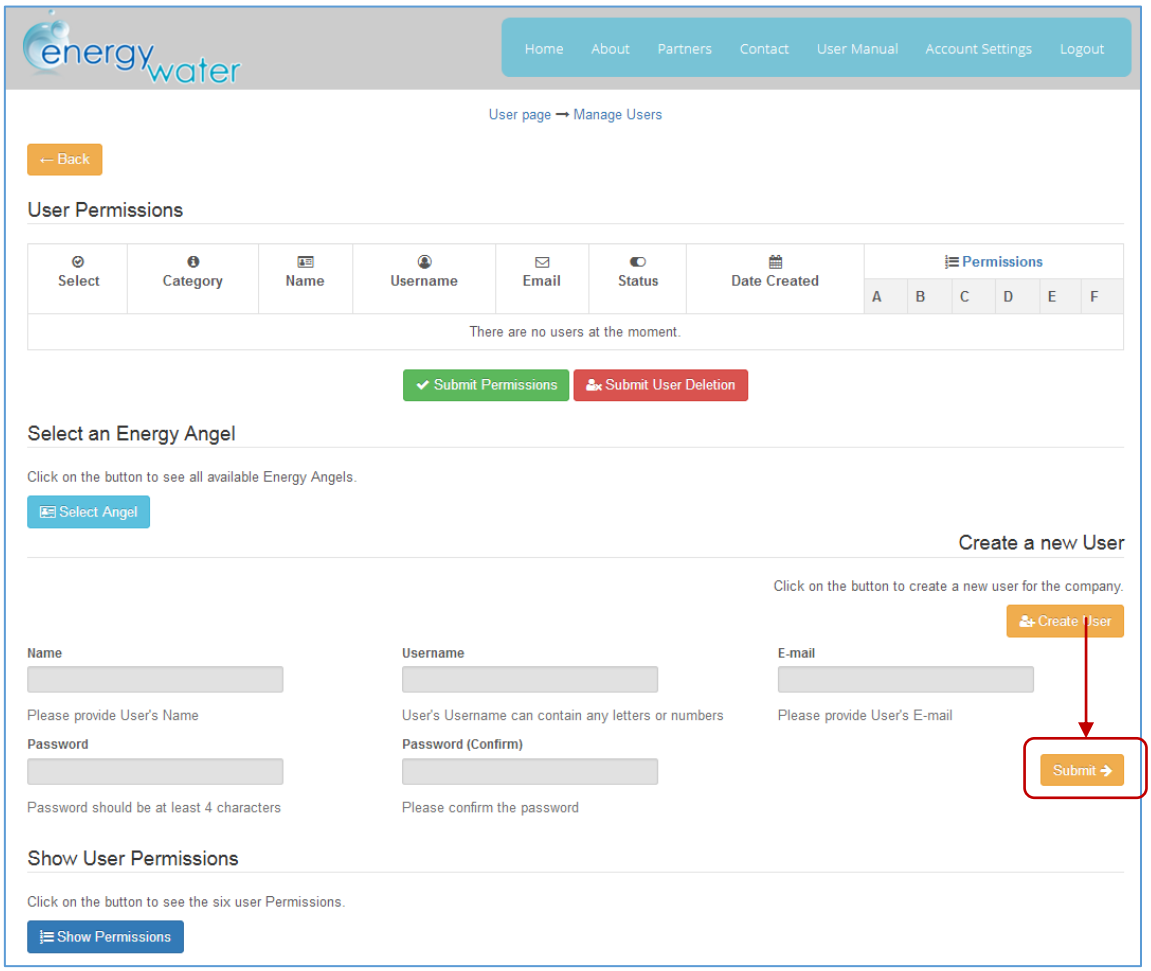


5.8.1 Create a new User

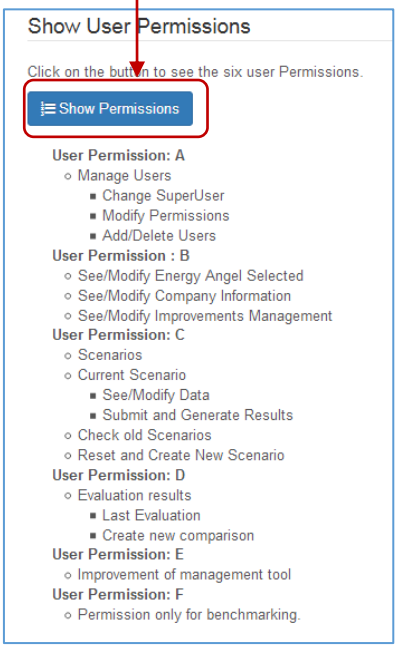
The Company's Admin User is able to create New Users within the Company's account. The users can access to the company's account with a different username and password and fill in information inside the tool, which will be corroborated by the Energy Angel.



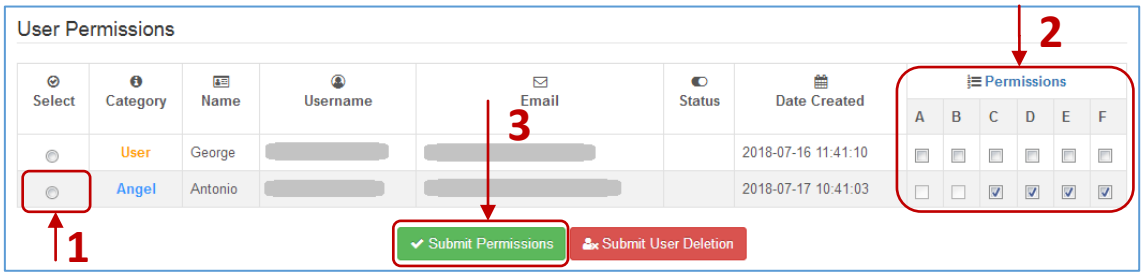
If the company selects the options of creating a new user, they will have to introduce the user's data to give this person access to the EMSA tool. Then press the "submit" button



When the Company has different users as well as an assigned Energy Angel, the Admin User will be able to give different permissions to the different users. The permissions are the following ones, and can be checked in the option called "*Show User Permissions*".



Any new user of the company has no permissions in the tool. The Company's Administrator will select the permissions of each user individually, by introducing them the in right side of the table. A new Energy Angel accepted by the company also has no permissions. Moreover, Company's Administrator can modify those permissions anytime he considers.

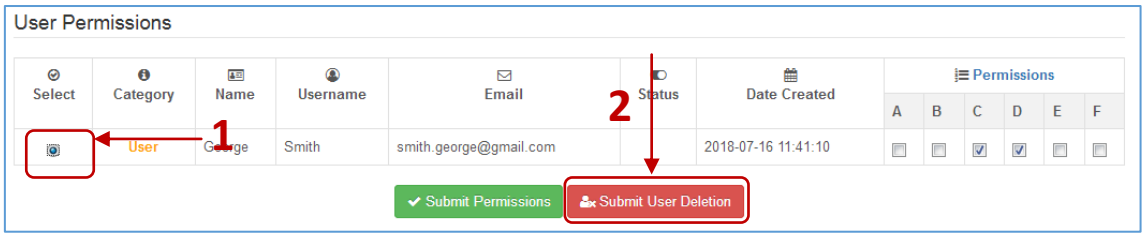


The A and B premises only can be granted to Users, not to Energy Angels.

Select those users whose permissions are going to be modified, modify their permissions and press the "*Submit Permissions*" button to save all the permissions provided by the company to a certain user or an Energy Angel.

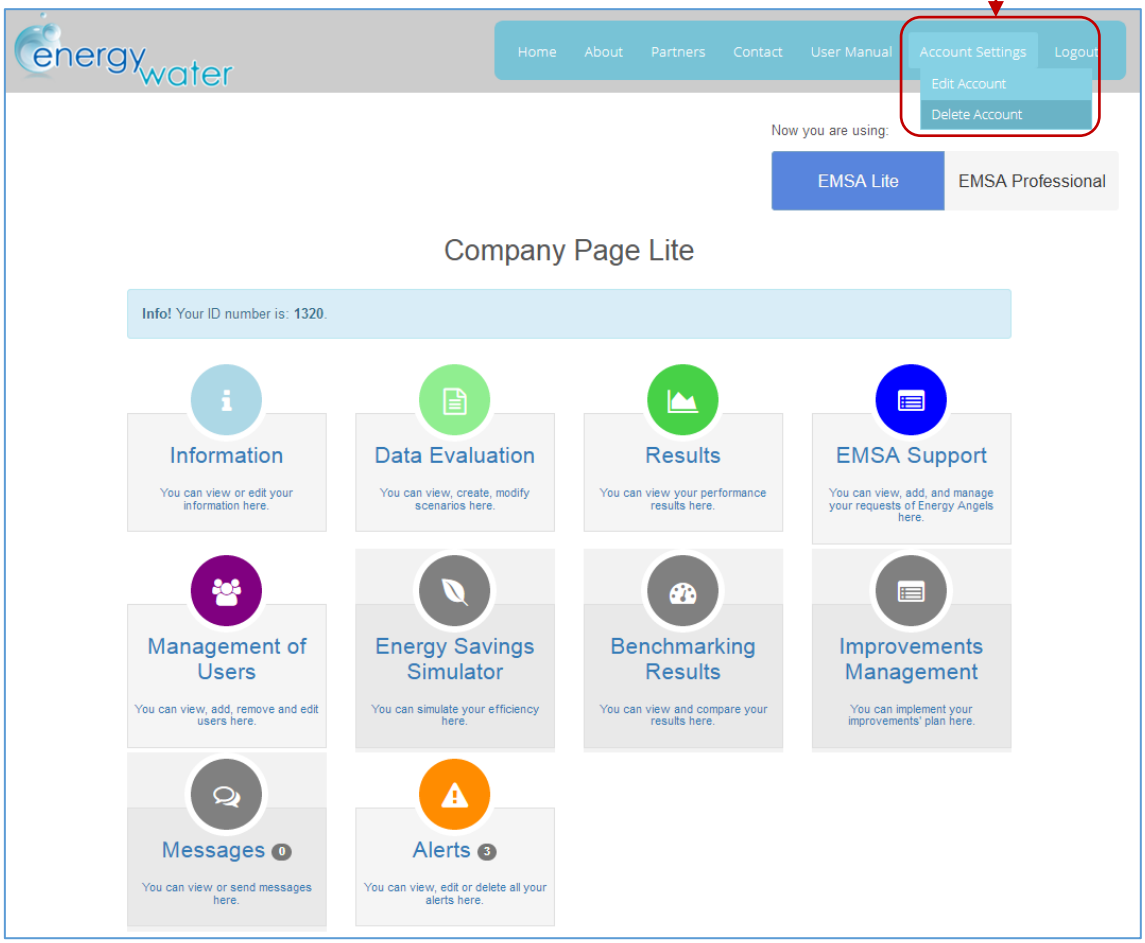
5.8.2 Delete a User

In order to delete a user, the company has to select a certain user and press the "*Submit User Deletion*" button.

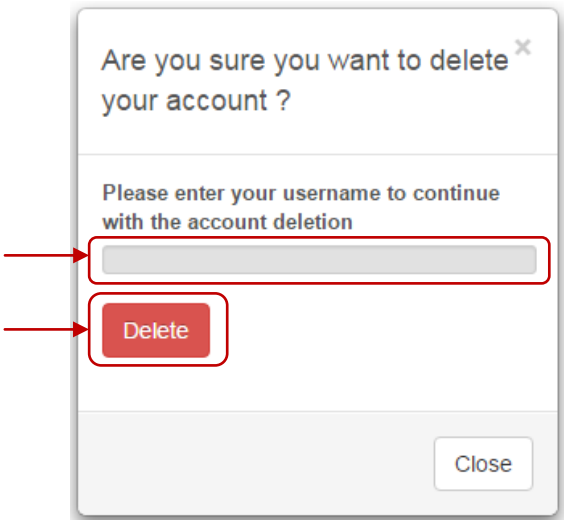


5.9 Delete Company's Account

If a company no longer wants to perform any more assessments and wants to leave the network, it exist the possibility of deleting the account by entering in the "*Account Settings*" tab and clicking in the "Delete Account" option.

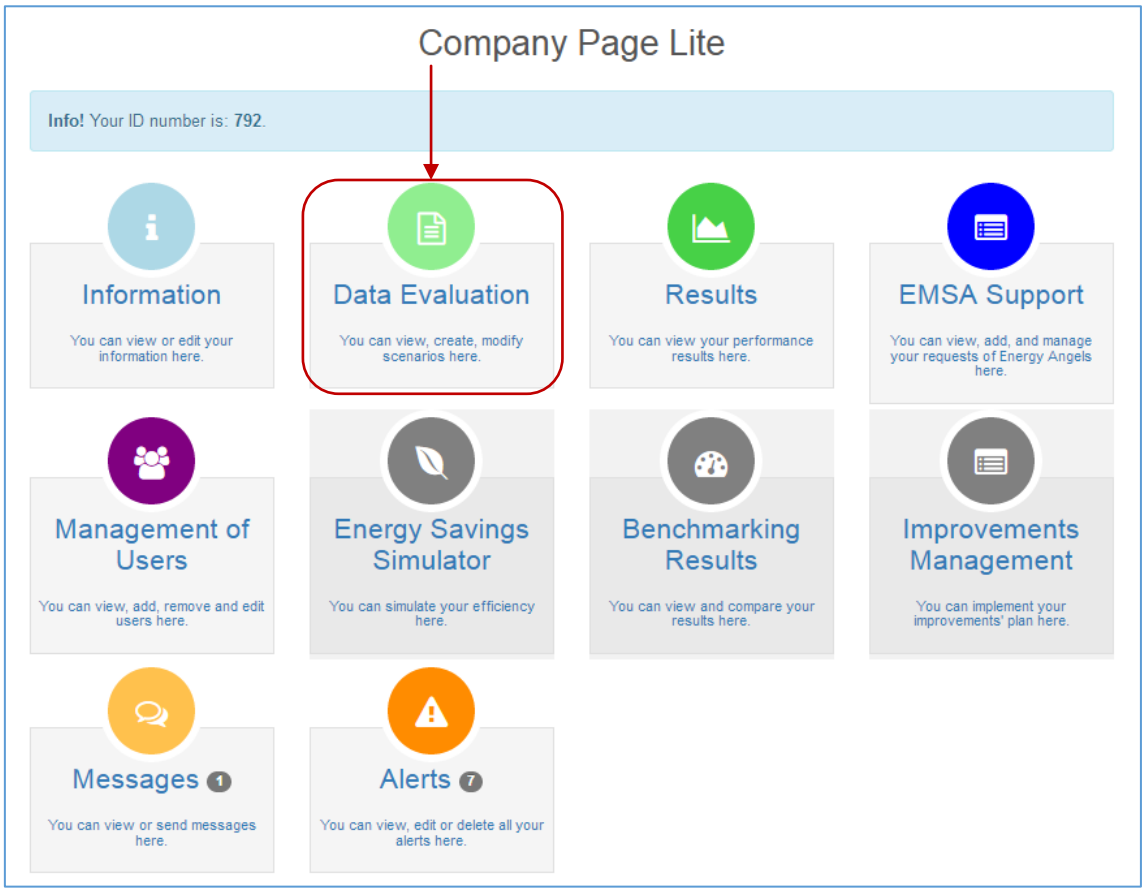


Click in the "*Delete account*" option, and to fully erase the account the user should write the Company's user name and then click the "Delete" button

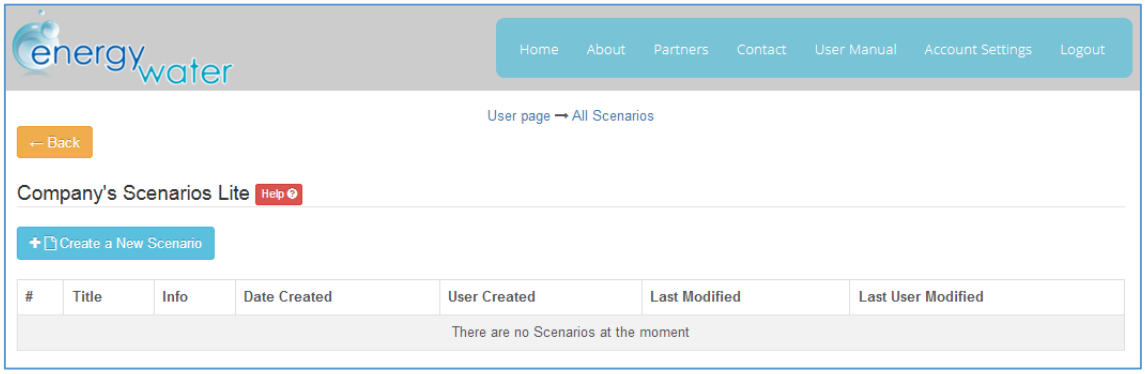


6 EMSA LITE ASSESSMENT

A general EMSA assessment can be performed without an Energy Angel. To start with the assessment, the user should click the "Data Evaluation" tab.



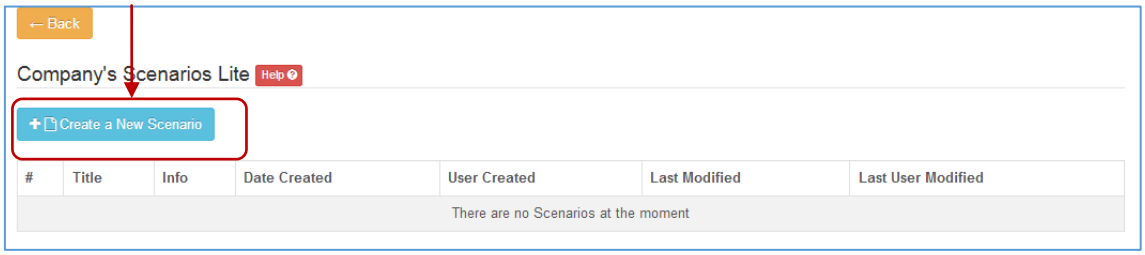
Once we enter to the "*Data Evaluation*" tab for the first time, the following screen appears:



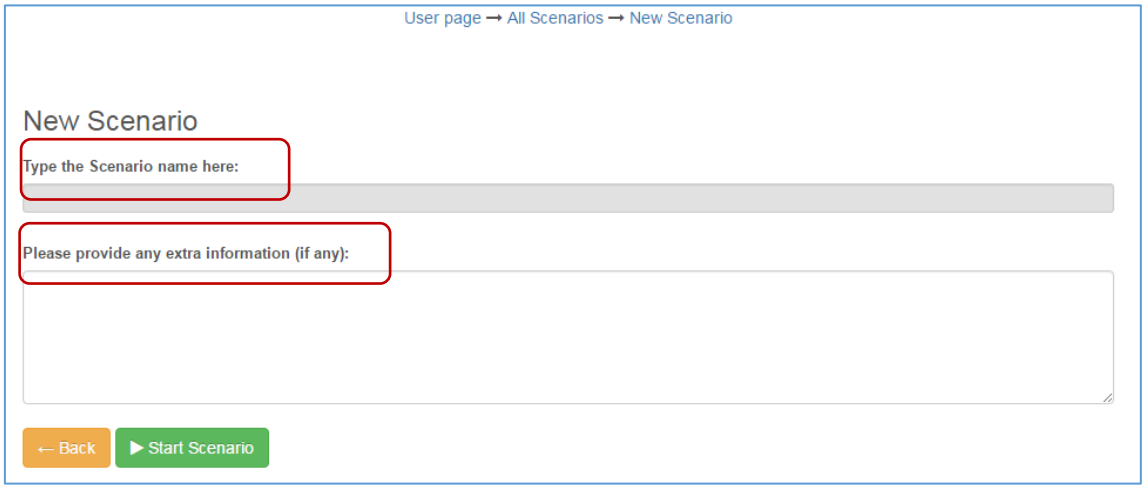
Firstly, in order to start the EMSA Assessment, a "New Scenario" needs to be created. This scenario will contain all the company's information from a certain period of time.

The EMSA methodology considers a period of **one year** as a period which is representative enough to show a Company's Energy Efficiency status.

To introduce the first scenario press the "*Create a New Scenario*" button.



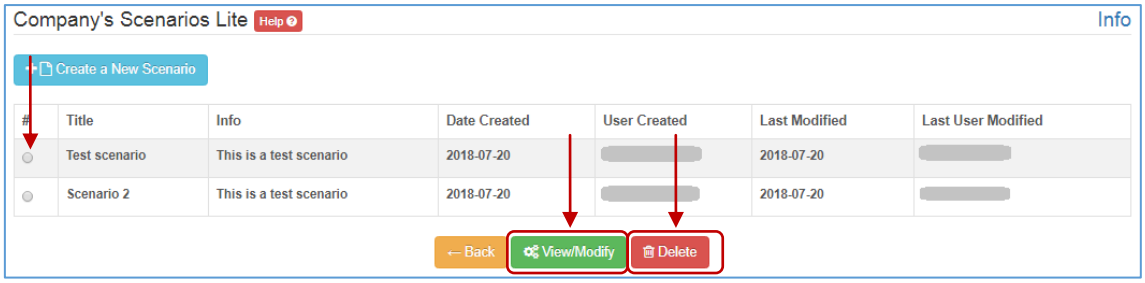
Then we should introduce a name for this new scenario and a brief description if necessary. Finally, to submit this new scenario press "*Start Scenario*"



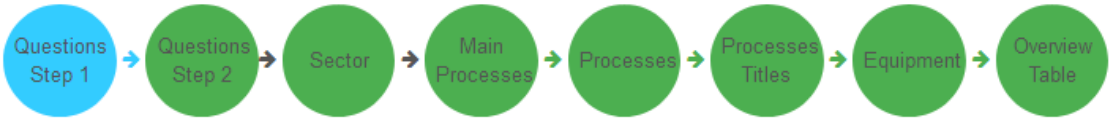
When a new scenario has been created, the company can edit its information or delete the whole scenario.

In order to **delete** a Scenario permanently, select the scenario and press the "Delete" Button.

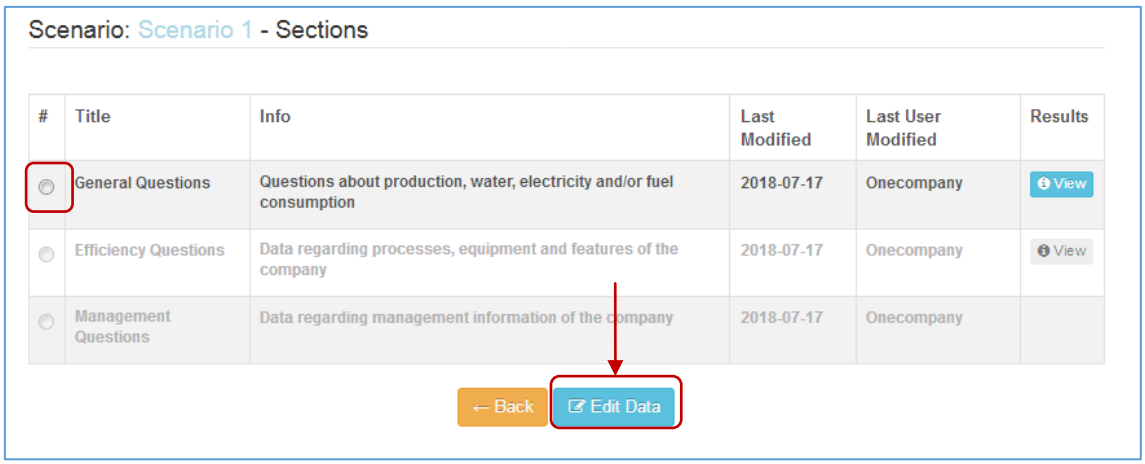
In order to **modify** the internal information of a Scenario, select the scenario and press the "View/Modify" Button.



To perform a new assessment, the company has to complete a series of sets of Questions that will evaluate the company as a whole. The sets of questions are shown in the next picture.



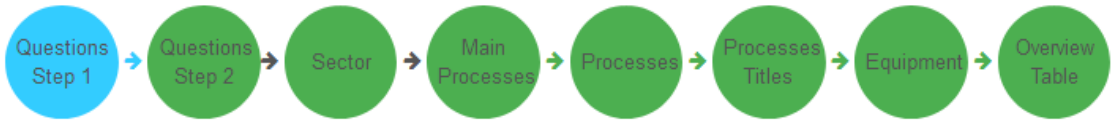
The company has to select the "General Questions" section, and answer them with the most accurate information as possible for obtaining the most representative results for the assessment.



To modify the information of the "General Questions" section, select the section and then press the "Edit Data" Button.

In this section, Companies need to introduce their data relative to their yearly production, water consumption, electricity consumption, gas consumption and their associated costs, in addition, companies also need to introduce information of their main processes to build a general picture of the company status in terms of energy consumption and cost.

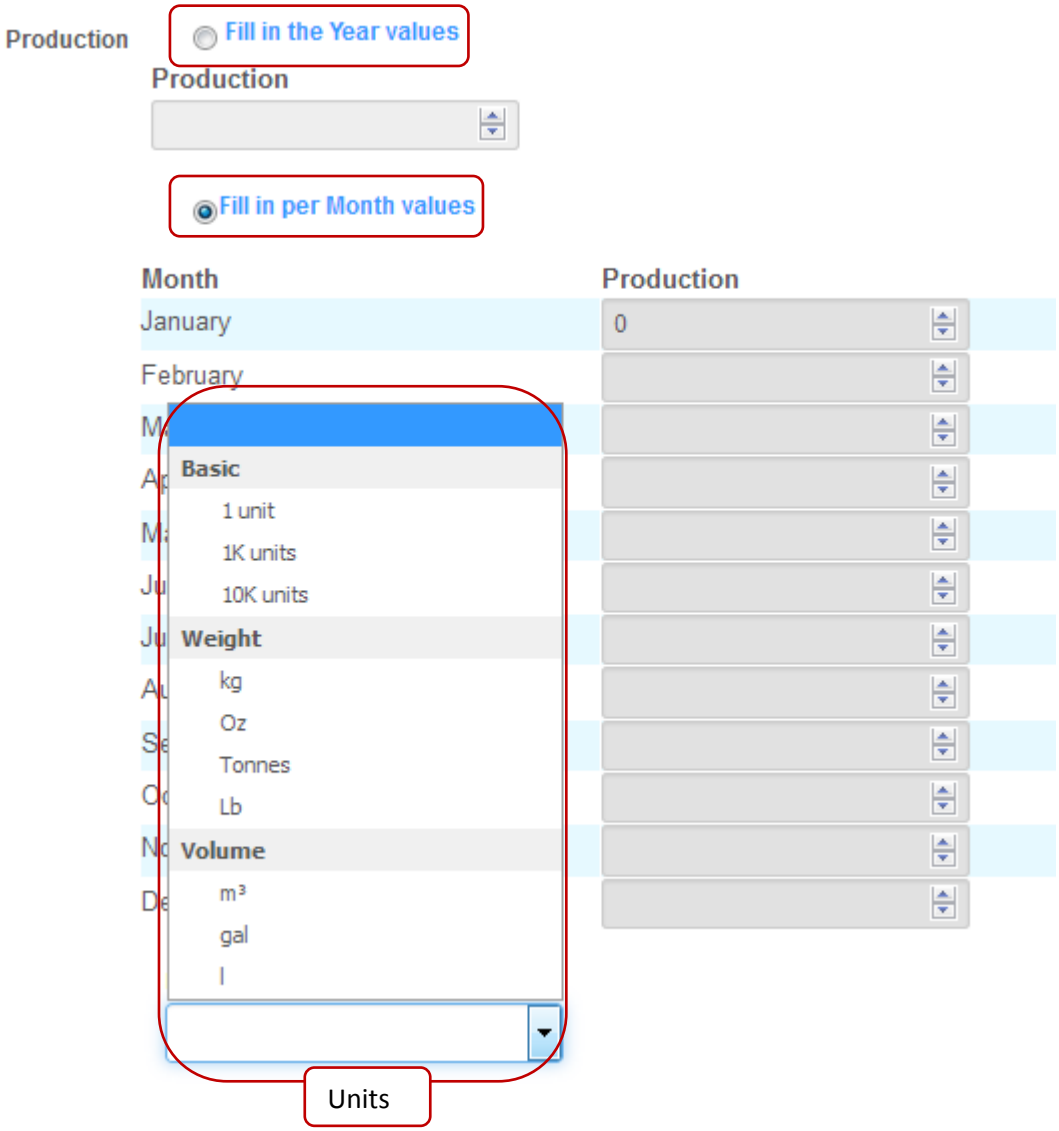
6.1 Questions Step 1



Firstly, the company has to enter the year of the scenario's data that are going to be introduced, as well as the currency that it is going to be used. There currency can be introduced in Euros (EUR - €), Pounds (GBP - £) or United States Dollars (USD - $).

For the production part, companies need to select the units of the production of the company, in weight, volume or production units.

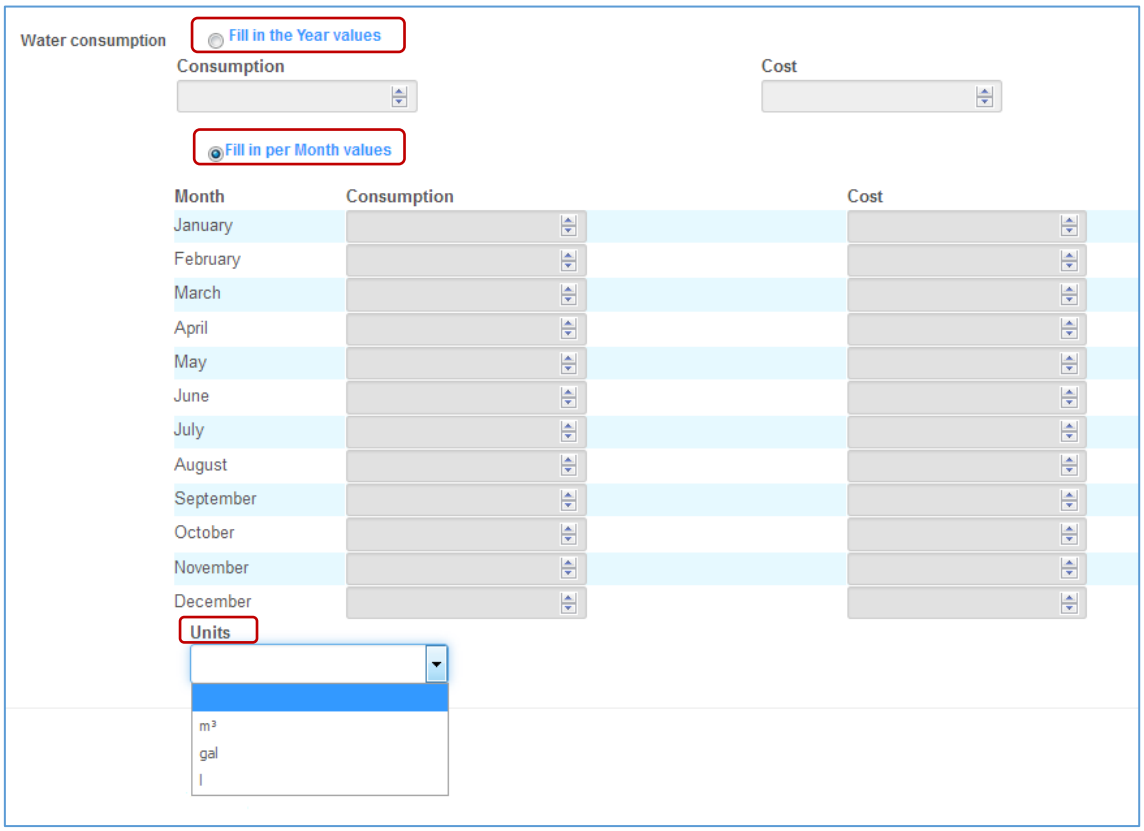
Besides, the production can be filled in per year or per month. When introducing the information per month, the yearly production will be automatically calculated by adding all the productions of the twelve months of the year.



For the water consumption part, companies need to select the consumption units of the company, in volume units (m^3, litres or gallons).

Besides, the water consumption can be filled in per year or per month. When introducing the information per month, the yearly water consumption will be automatically calculated by adding all the different consumptions of the year.

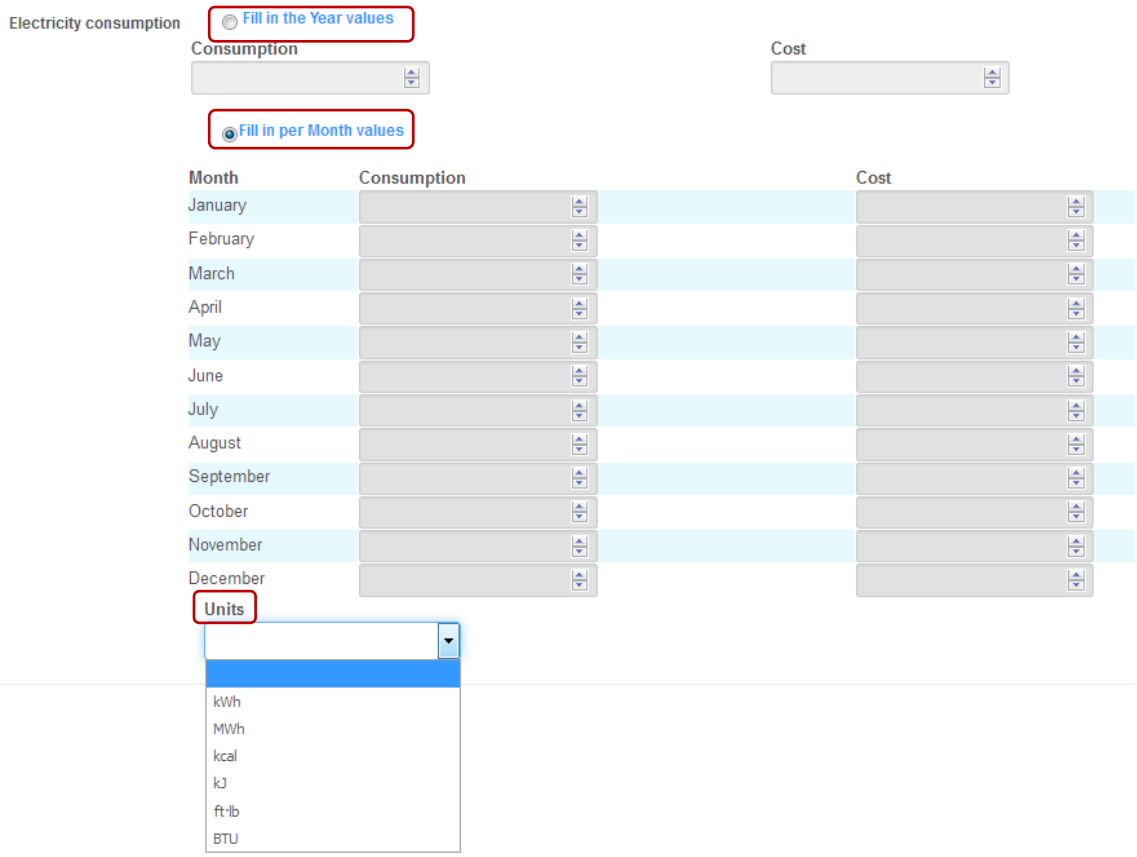
The same happens with the cost of the water consumption, which can be introduced yearly or monthly, in the currency previously selected.



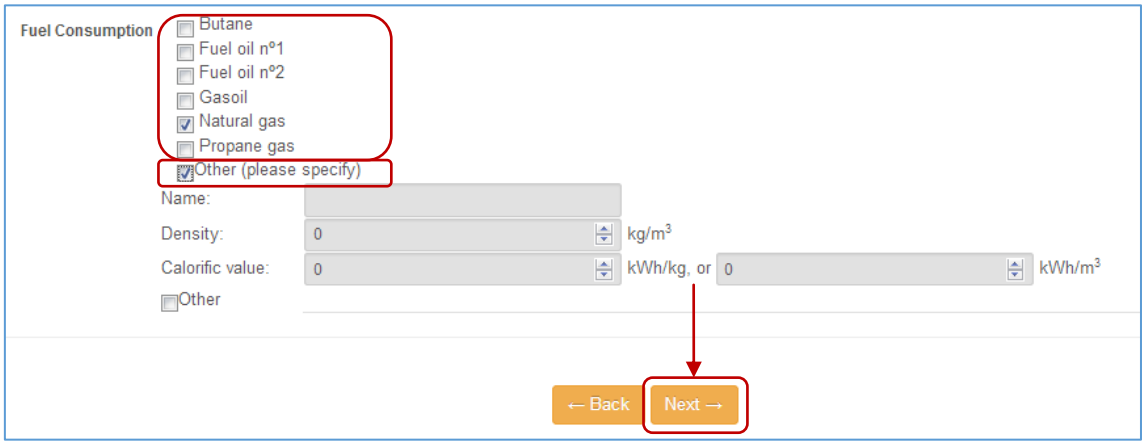
For the electricity consumption part, companies need to select the consumption units of the company in energy units (kWh and its variants).

Besides, the electricity consumption can be filled in per year or per month. When introducing the information per month, the yearly electricity consumption will be automatically calculated by adding all the different consumptions of the year.

The same happens with the cost of the electricity consumption, which can be introduced yearly or monthly, in the currency previously selected.



For the fuel consumption, firstly there has to be selected the main type of fuel used in the company (they can be one or more).

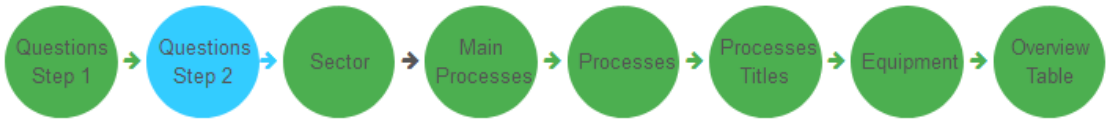


In the event that the fuel used does not appear in the list, the user will have to select the "Other" option, where it exists the possibility of introducing all the necessary data to perform the fuel consumption calculations.

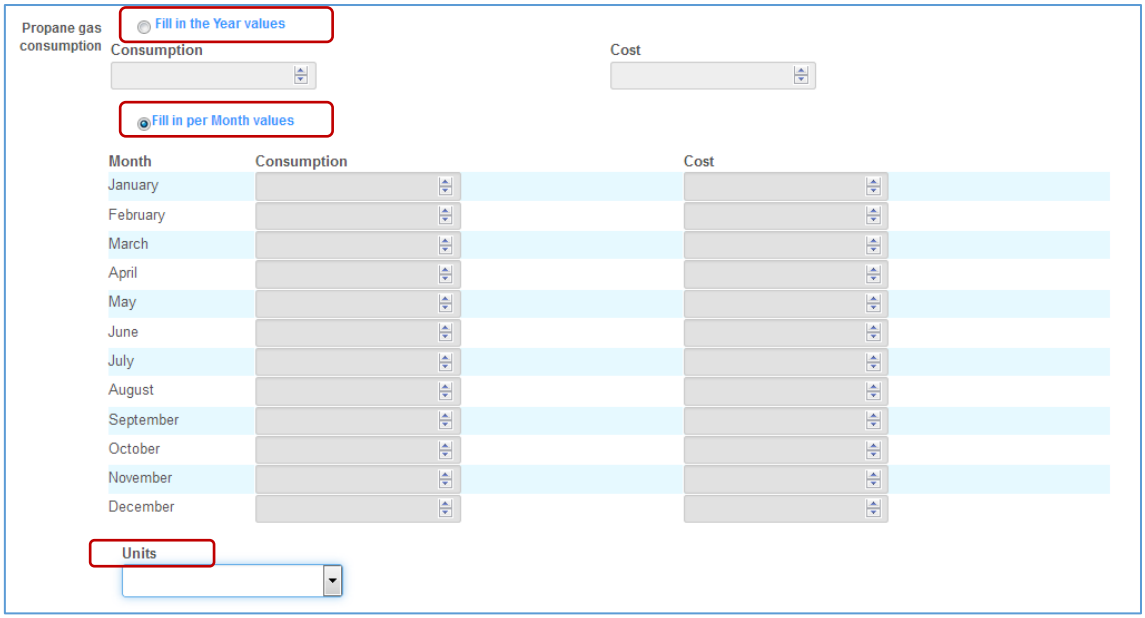
If the "Other" fuel option has been selected, the user is required to introduce the name of the fuel as well as two of the three options that include the density (kg/m^3), mass heating power

(kWh/kg) and volume heating power (kWh/m^3), depending on the magnitude which the "Other" fuel consumption is measured (mass or volume).

6.2 Questions Step 2



Finally, press the "Next" button and the following window will appear:



For the fuel consumption part, companies can select the consumption units in energy, volume or weight units and its variants.

Besides, the fuel consumption can be filled in per year or per month. When introducing the information per month, the yearly fuel consumption will be automatically calculated by adding all the different consumptions of the year.

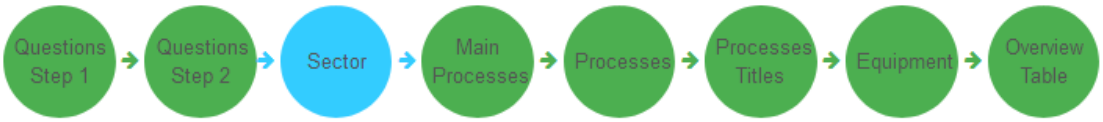
The same happens with the cost of the fuel consumption, which can be introduced yearly or monthly, in the currency previously selected.

When all of the information has been implemented, press the "Continue with Data Evaluation" button.

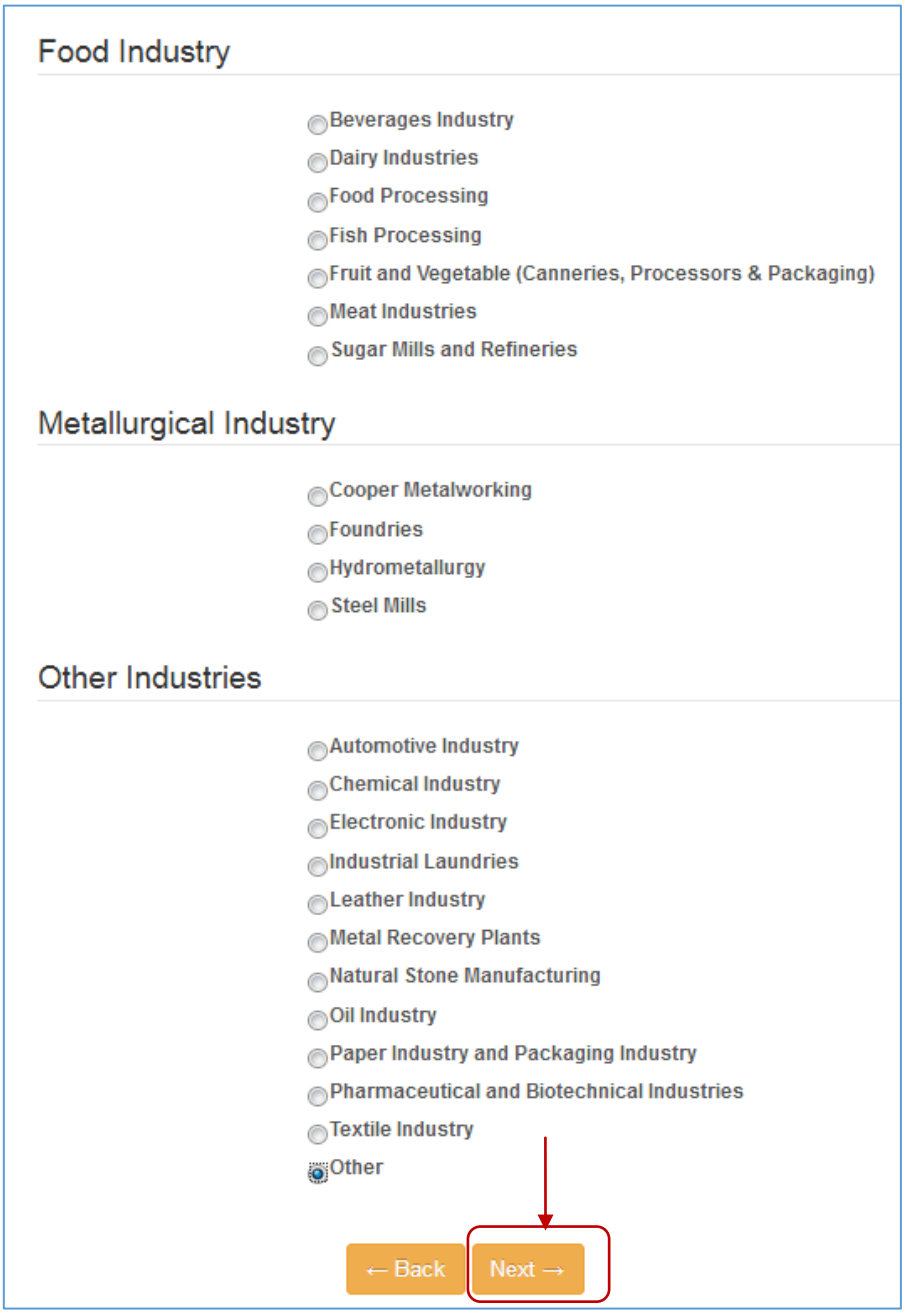
Here, the companies need to introduce their data relative to their different processes and equipment of the company which are related to water use and energy consumption

6.3 Verification of the sector

Before start introducing numerical data in the tool, the user needs to validate the company's sector.



This step is crucial, as every sector has some specific equipment. The tool considers the information that has been introduced and then proposes the different processes of the equipment.



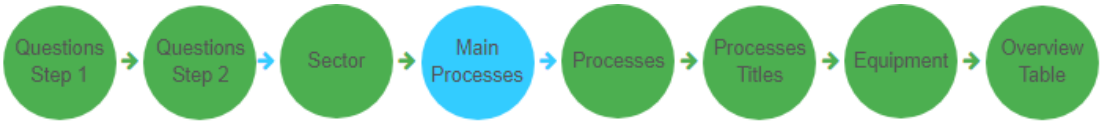
6.4 Main Processes

First of all, to answer this questions that belongs to the section of efficiency questions we need to define all the processes inside the Company that are related to water use and energy consumption.

It is really important to define all the processes that use water inside the company, even if the company does not have enough information to assess them or the company does not want to answer their efficiency questions

Then, with the list of processes, we need to define the equipment related to each process. With that information, the EMSA builds the "overview table", where the staff involved in the assessment process will be able to select, one by one, processes and equipment and answer their related efficiency questions.

The following steps represent how to build the "Overview table" and how to answer efficiency questions:



Here, companies should enter what are their main production lines or sections in which their facilities can be divided. Each section could aggregate a main use for energy and water, a production line, a building, etc. They are called **"Main processes".** The idea is to identify the company's main energy consumption groups.

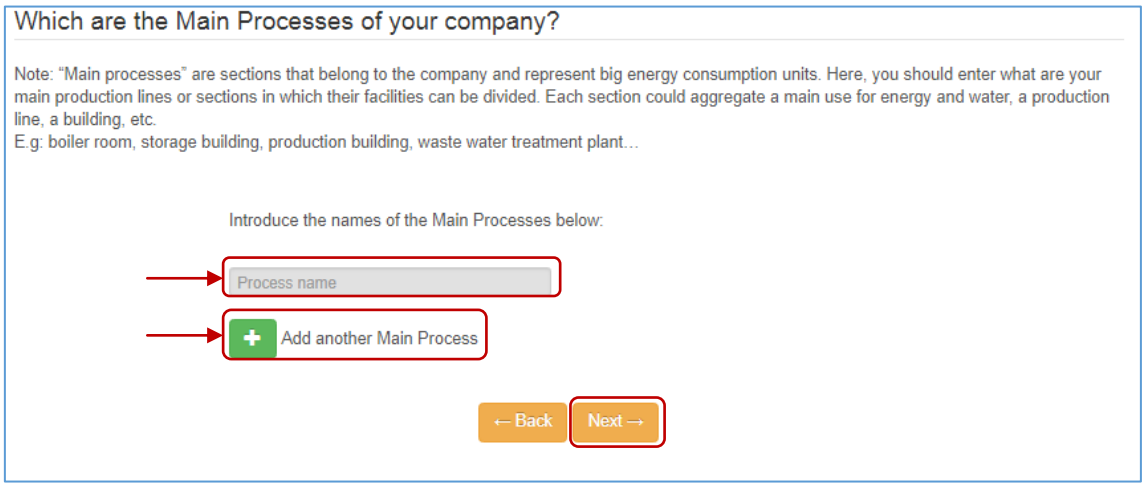
These "main processes" are sections that belong to the company and represent big energy consumption units, regarding at their process of energy consumption from the primary energy to final energy.

This information will act as a label that will help to group processes, but it will not affect to the calculations. It has been created so that companies can have a better understanding about in which process and equipment are they introducing data.

In this section, companies should only register the name of the main process by typing it on the screen.

The main idea is to group the processes of the company, to do this the User should introduce names or labels of the main processes of the system. Then, press the "Add another Main Process" to keep completing the list.

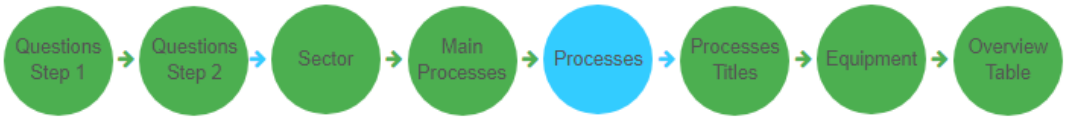
They can introduce the name of as many main processes as present in the company.



Once the user has introduced the principal main processes of the company, press "Next".

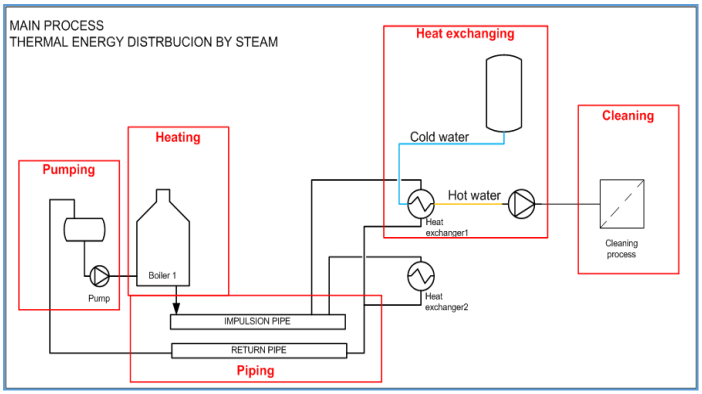
6.5 Set Processes

After selecting the Main Processes of the company, inside of each of them the user should also select the specific processes of the company.



In this section, for every "main process", companies should register their real processes related to water use and energy consumption.

Before describing the procedure of how to introduce data in the tool, it is included an explanatory figure to explain what the EMSA considers as a process.



- Main process: "Thermal Energy Distribution by steam"
- Related processes:
  - Pumping
  - Piping
  - Heating
  - Heat exchanging
  - Cleaning

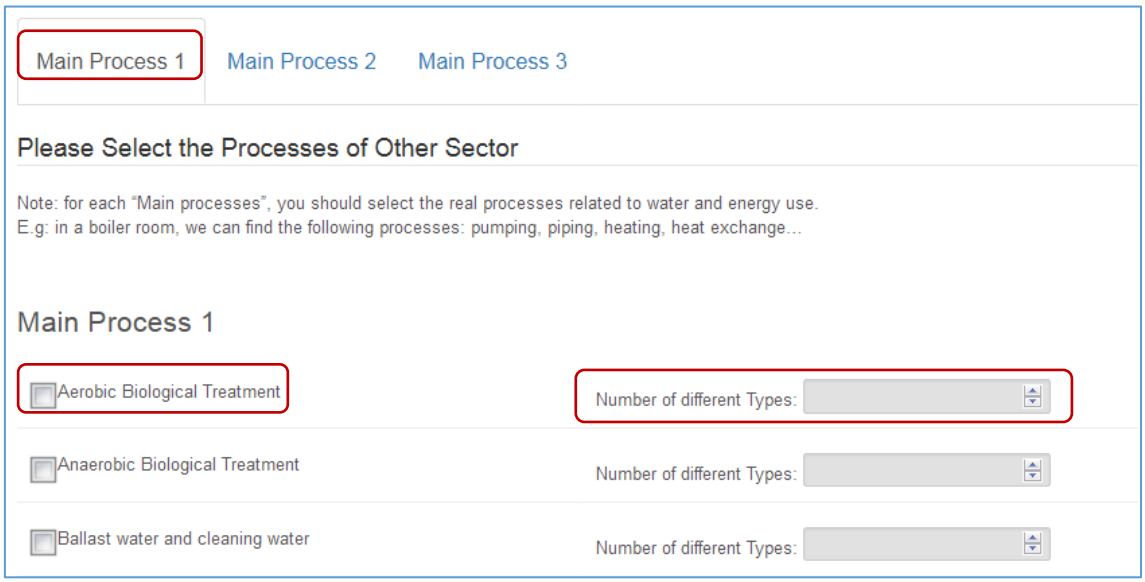
A process is a system (formed by one or more equipment) that uses or consumed energy that can be considered as a single unit, taking into account their piping system until the next point of energy use or consumption. For instance, in a boiler room, we can find the following processes:

- Heating process (boiler, pipes, filter, etc.): converts fuel into thermal energy to produce steam
- Pumping process (pump, pipe, storage, etc.): pump water into the boilers
- Heat exchange units (heat exchanger): converts thermal energy from steam into thermal energy into the working fluid of a process.

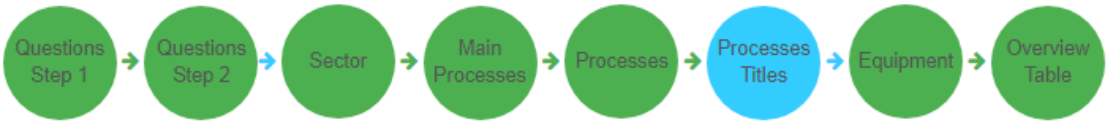
The User should select the type process and its quantity.

For each main process, there could be selected different processes.

The upper tabs correspond with the different “Main processes”, selected in the previous step. When finished press the “Next” button.

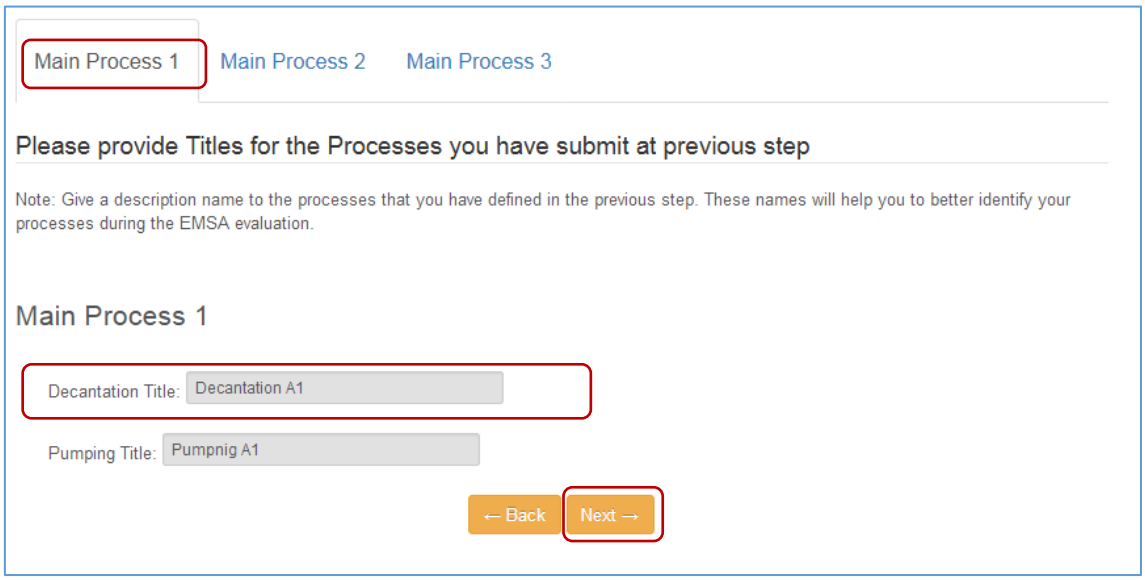


6.6 Processes Titles



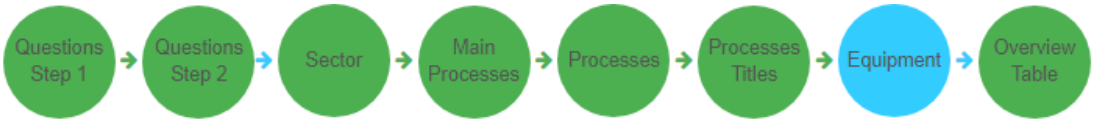
After selecting all the different processes, the tool gives the user the option to name them or to leave them with the default name.

This feature has been created to ease the companies the recognition and introduction of data in the tool.



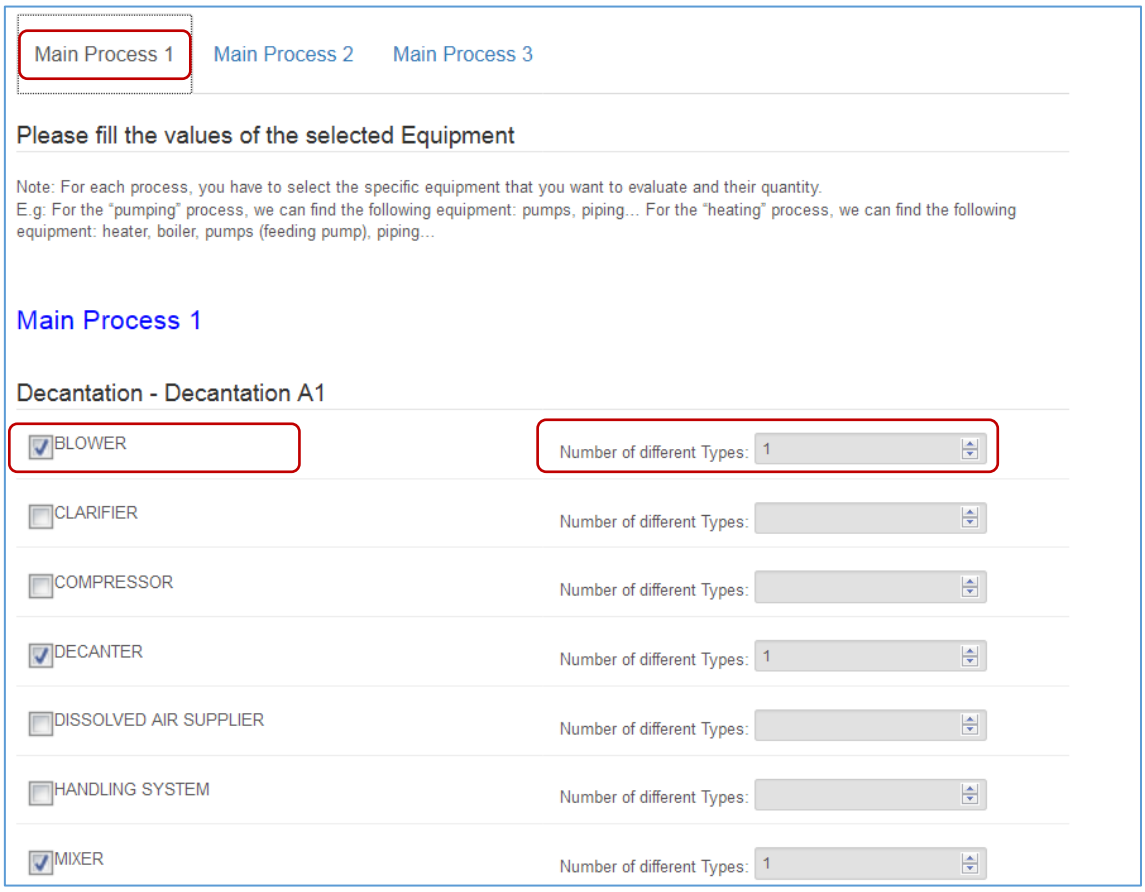
Once the user has finished, press the "Next" button to start including the equipment information.

6.7 Equipment



This selection of the equipment will be the same as in the process part. Depending on the processes selected previously, the EMSA tool will propose different equipment to them.

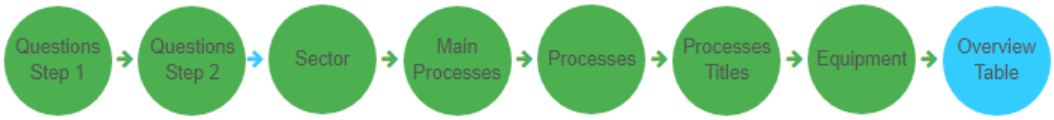
For each of the processes, it has to be selected the specific equipment and their quantity. In this section, for every "process", the user should register the related equipment according to the existing procedure that is implemented in the tool.



Once the user has finished, press the "Next" button to start including the equipment information.

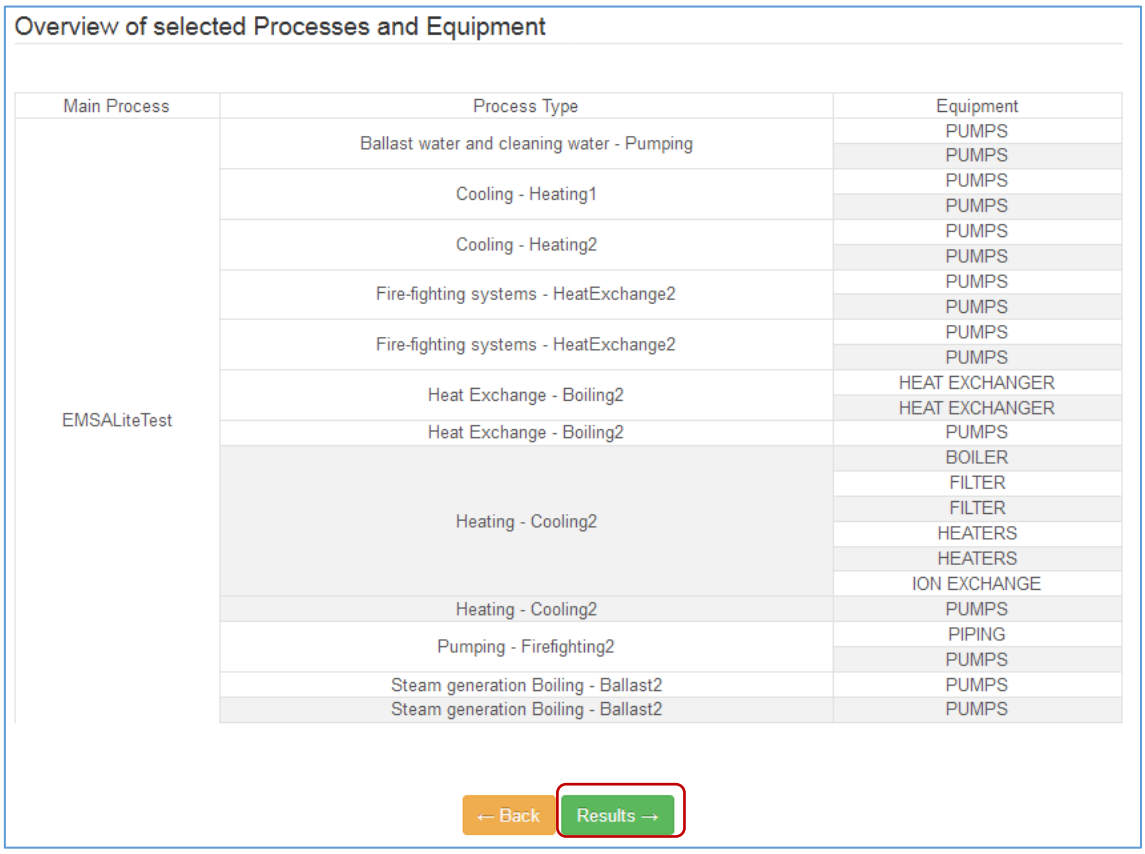
EMSA tool is prepared if a company has some repeated equipment working at different states, or if it has different kinds of the same equipment. For instance: a company can have different type of pumps in each of the processes, or the same pump working at different pressures throughout the whole company.

6.8 Overview Table



After introducing the data relative to both processes and equipment, there is presented a table that serves as overview of all the information that has been introduced.

It displays the relationships between the main processes, processes and the equipment.



Finally, the user should click the "Results" button, in order to see all the results of the assessment. The "Results" tab of the EMSA Lite is explained in the point 8 of this user guide.

7 EMSA PROFESSIONAL ASSESSMENT

The complete EMSA assessment can be performed after an Energy Angel has been assigned to a company and he has granted access to the Company's EMSA page.

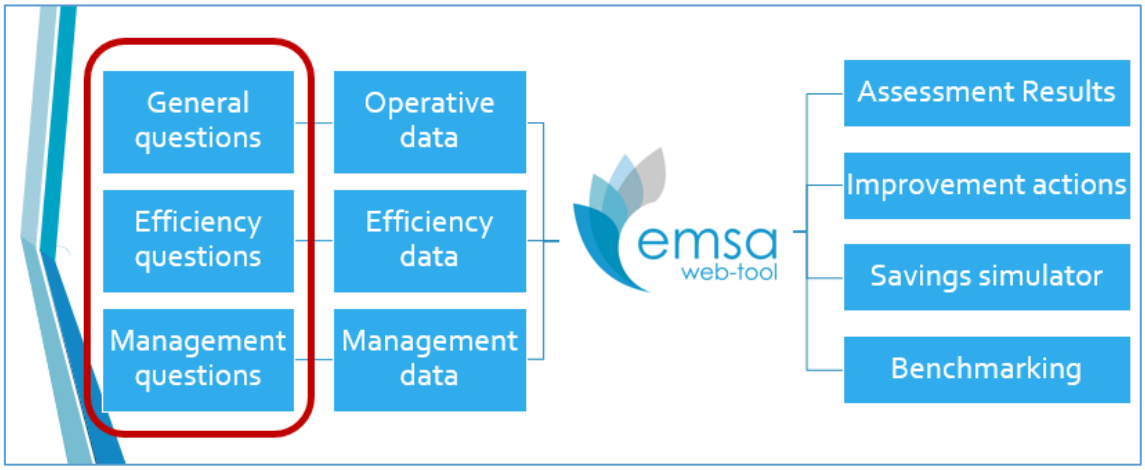
Once they are in contact, and the Energy Angel has the necessary permissions from the company to perform the assessment, the Energy Angel can explain the process to the company and demand the necessary information to start filling in the data in the tool.

The company users can also fill in some of the information on their own to speed up the assessment process, in order to the more independent from the Energy Angel, but taking into account that this process should be supervised and the information will be revised afterwards by the Energy Angel.

The EMSA assessment consists in three differentiated sets of questions:

- General Questions
- Efficiency Questions
- Management Questions

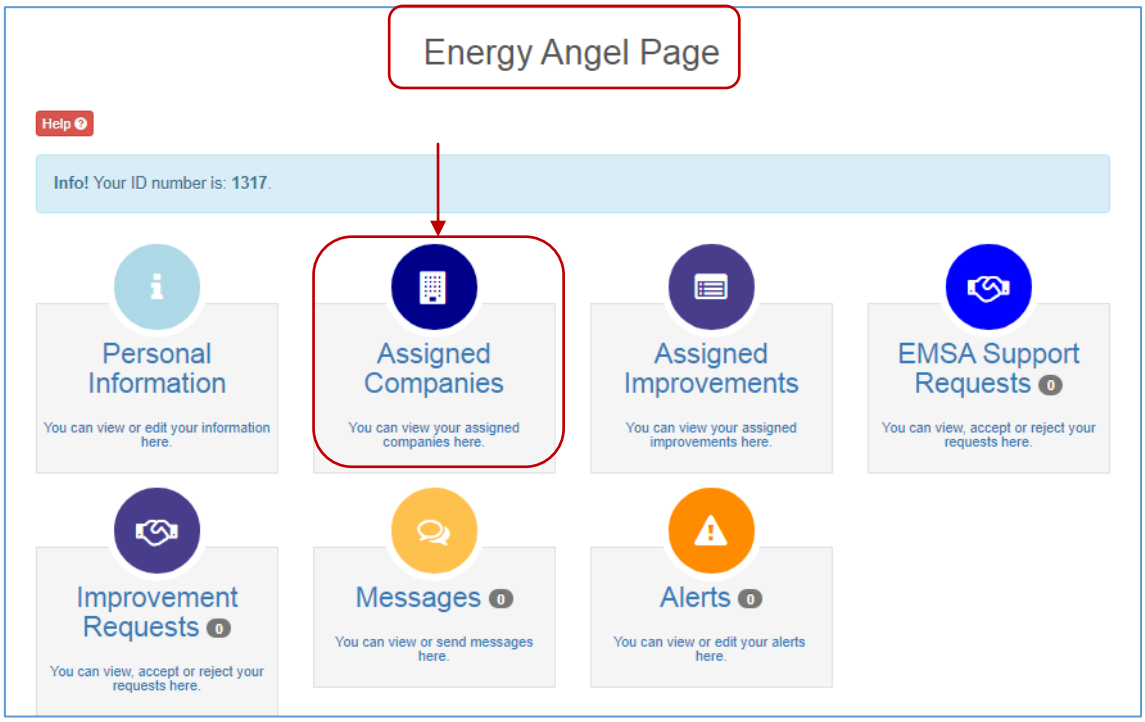
That evaluates the Company from different points of view, which lead to different results regarding energy efficiency, improvement actions and benchmarking options.



7.1 Enter the Company's Page as Energy Angel

In order to perform an assessment for the companies, the **Energy Angel** needs to have granted access to the part of the Company's account where all the information is introduced.

To enter in the Energy Angel's assigned companies go to the *"Assigned Companies"* tab in the Energy Angels Account.

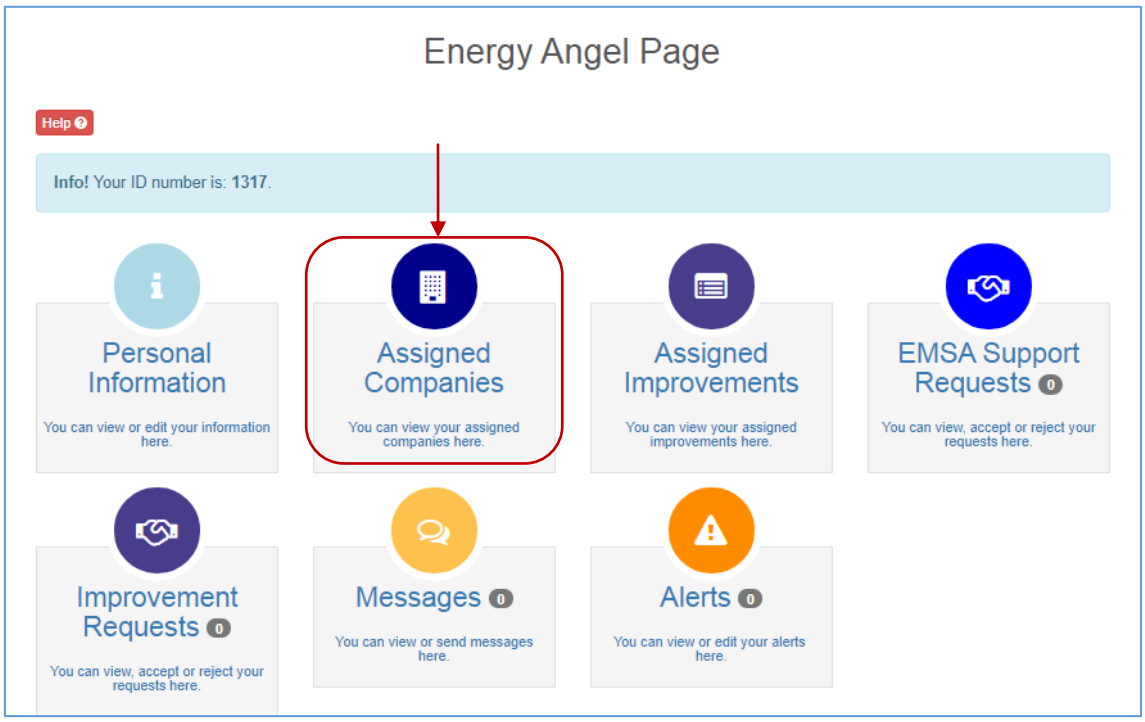


An Energy Angel is able to perform several assessments at the same time. To enter to a certain company, the Energy Angel can choose different options.

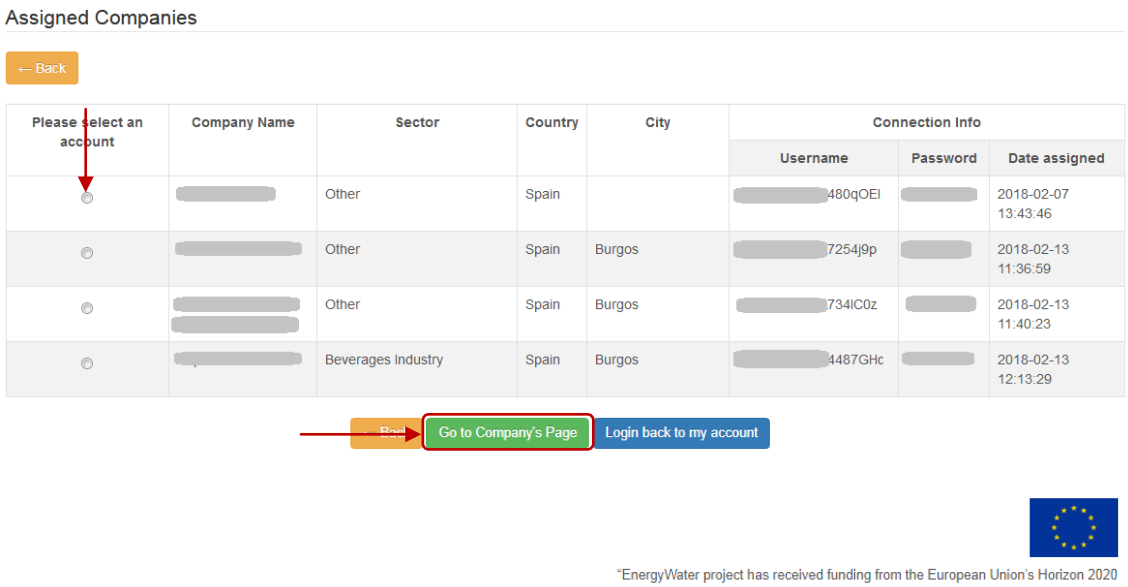
An Energy Angel can enter in the Company's page by following these steps:

7.1.1 Enter via "Assigned Companies" Tab

Enter in the *"Assigned Companies"* tab



Select from the list of companies one to assess, and click "*Go to Company's Page*"



"EnergyWater project has received funding from the European Union's Horizon 2020

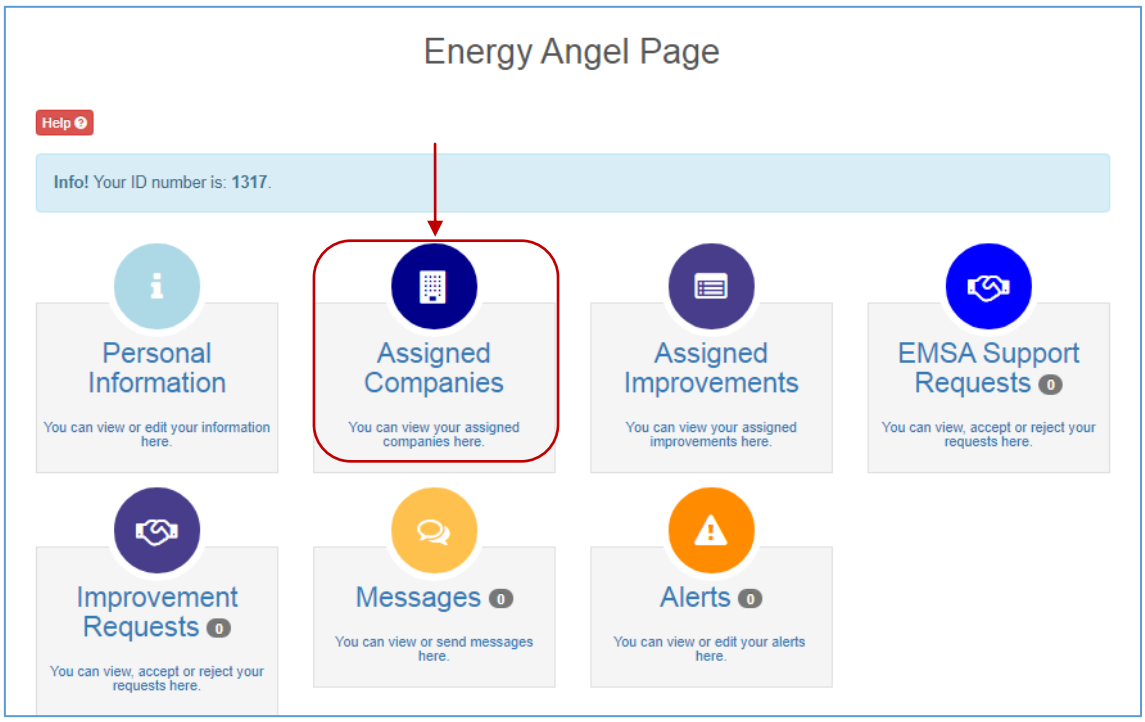
This will enable the Energy Angel to quick-access to the Company's account. The Energy Angel will not have default permissions unless the company has assigned them for him. It is important to note that if the company does not grant any permission to the Energy Angel, he is not going to be able to access to any data.

With the no permissions, the Energy Angel will see the following screen when he access to the company's account:

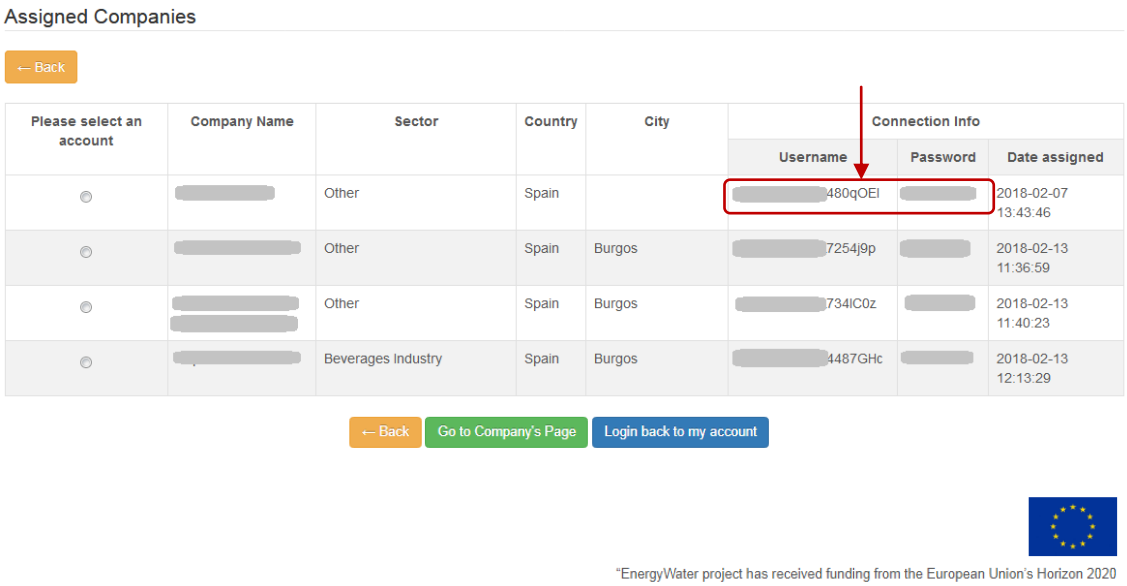
To perform the assessment, both company and Energy Angel will work in the "Scenarios" tab to enter information and the "Results" tab to supervise the result of the assessment.

7.1.2 Enter via the Company's Username

Enter in the *"Companies"* tab

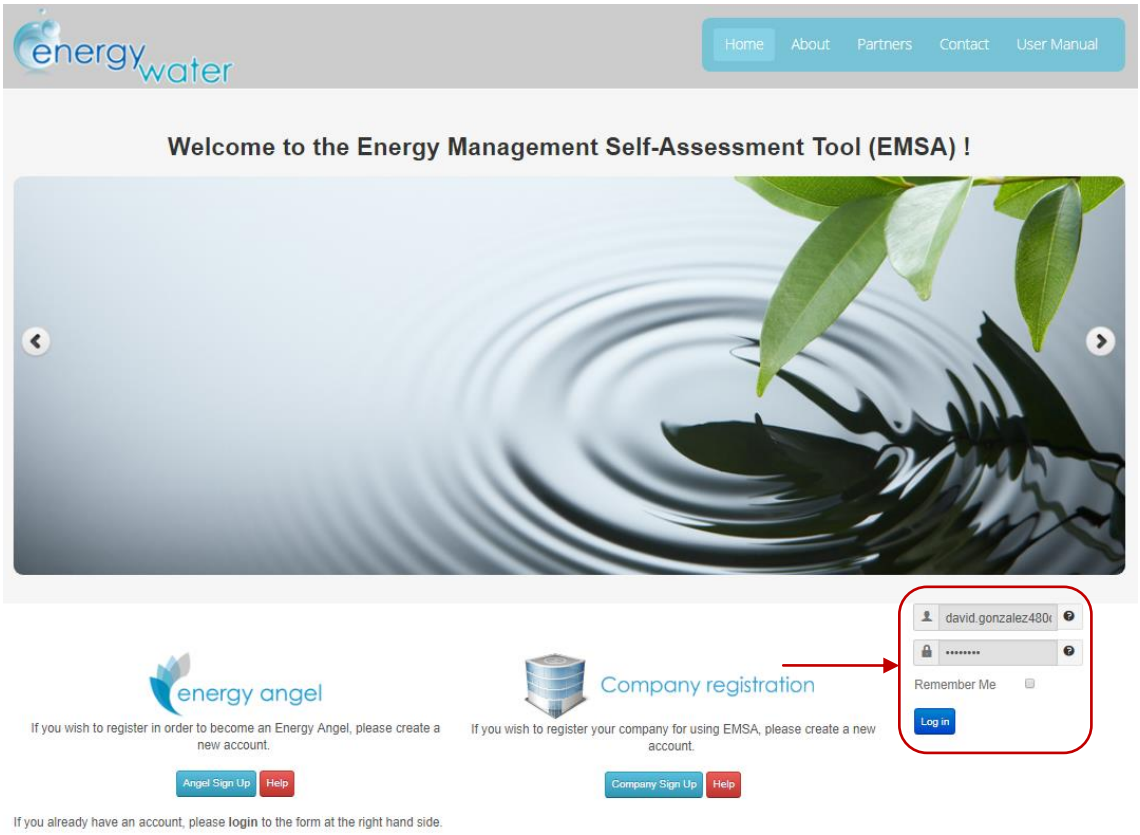


In the "Companies" page for Energy Angels, EMSA will automatically create a new username and password that belongs to the assigned Company but contains the login details for the Energy Angel to grant him the access to the Company's account.

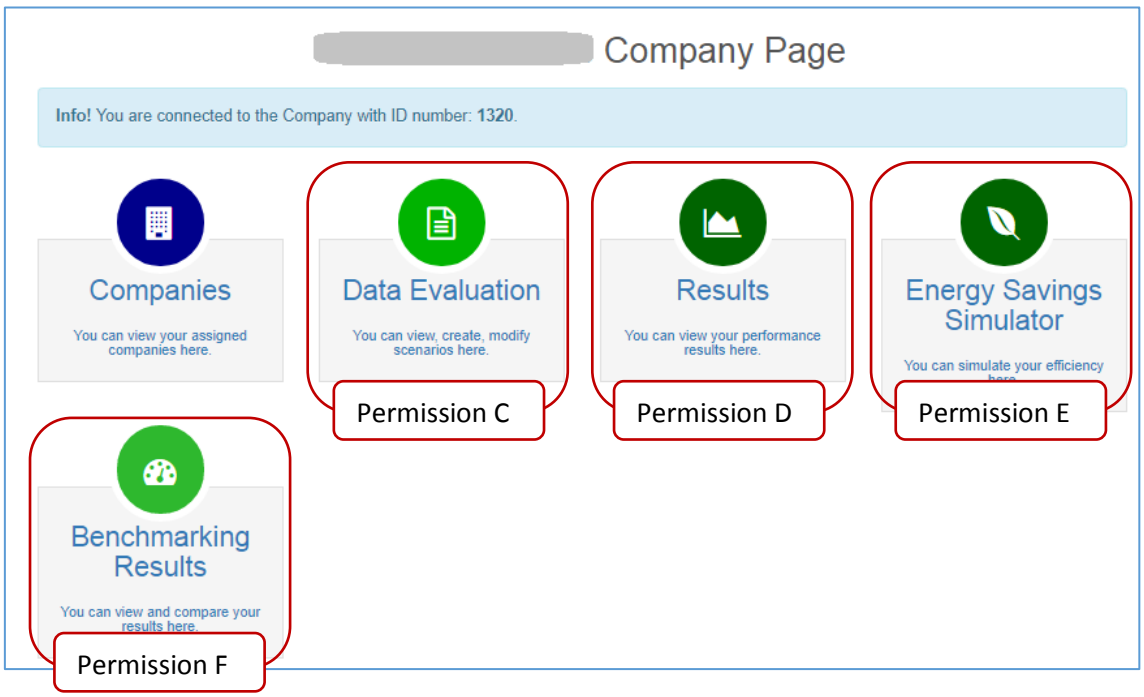


"EnergyWater project has received funding from the European Union's Horizon 2020

If the "Go to Company's page" link does not work or if the Energy Angel wants to enter to the Company's page from the EMSA main page, he should introduce this new username and password in the EMSA login textbox.

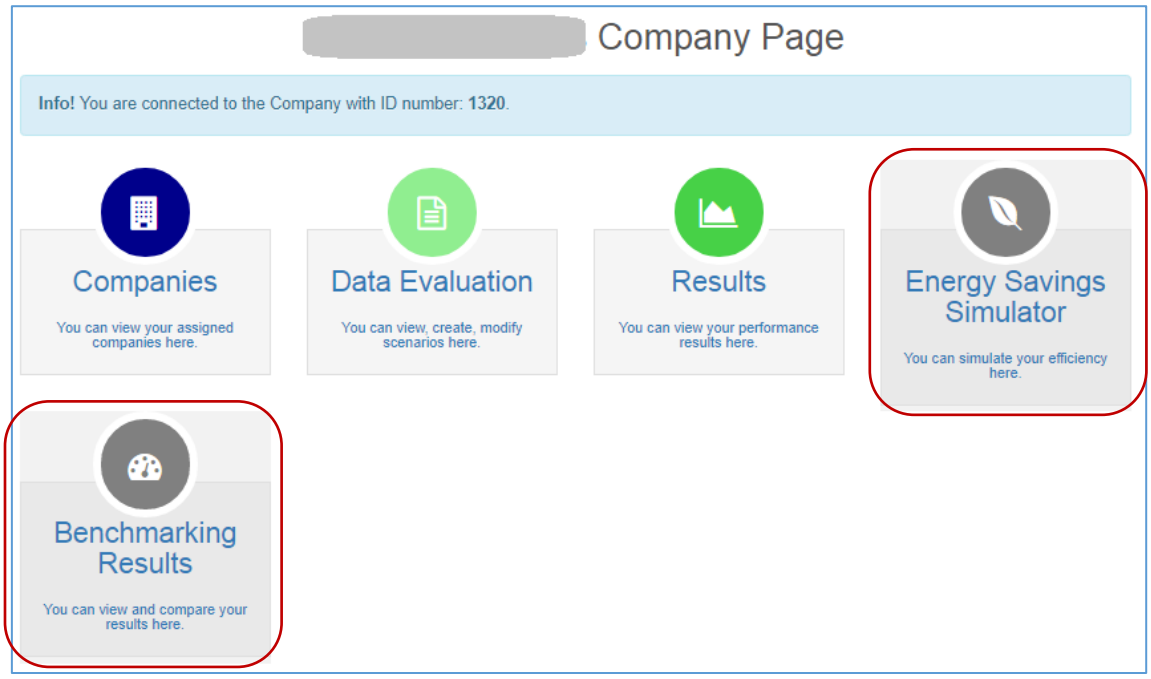


This will enable the Energy Angel to enter in the Company's page. The Energy Angel will have the permissions the company has selected for them. With all the permissions, the Energy Angel will see the following page:



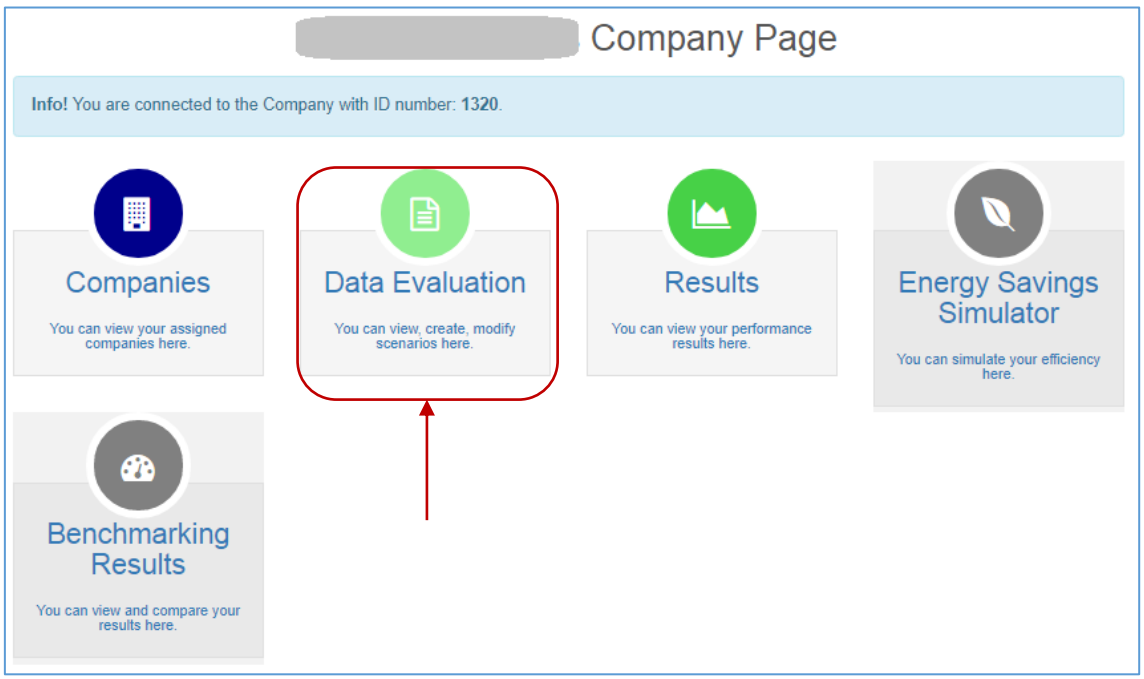
The A and B permissions only can be granted to Company's Users, not to Energy Angels.

If the company has not enabled the "EMSA Professional" option, the "Energy Savings Simulator" and the "Benchmarking Results" tabs will appear gray.



7.2 Creation of a Scenario

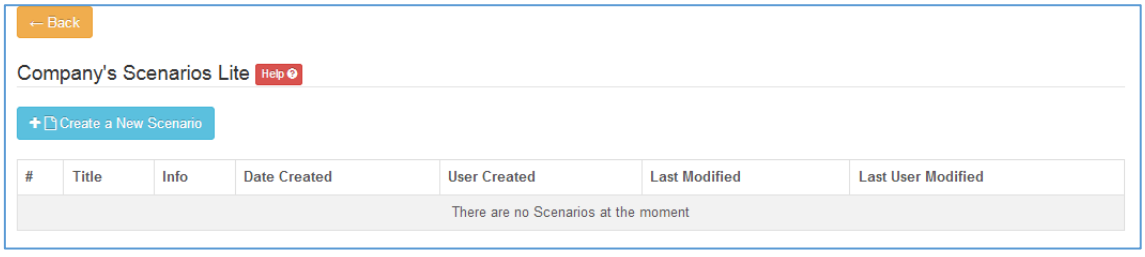
Once the Energy Angel has entered in the company's page, the Energy Angel has to enter in the "*Data Evaluation*" tab to start the assessment.



This tab is accessible to:

- The Assigned Energy Angel of the company
- The Company's Administrator
- A company's user with the specific permission to create a new scenario

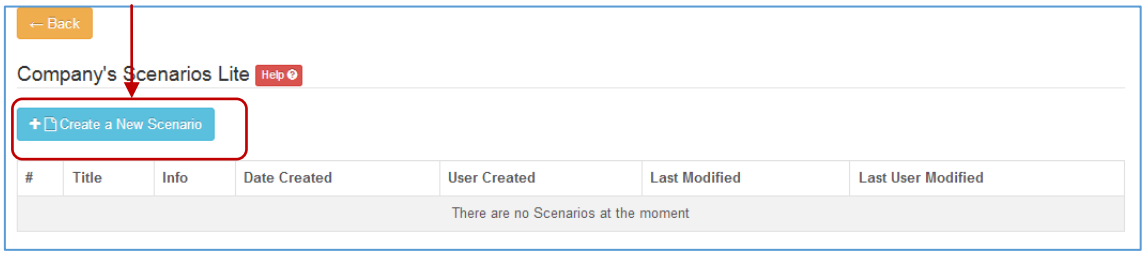
Once we enter to the "*Data Evaluation*" tab for the first time, the following screen appears:



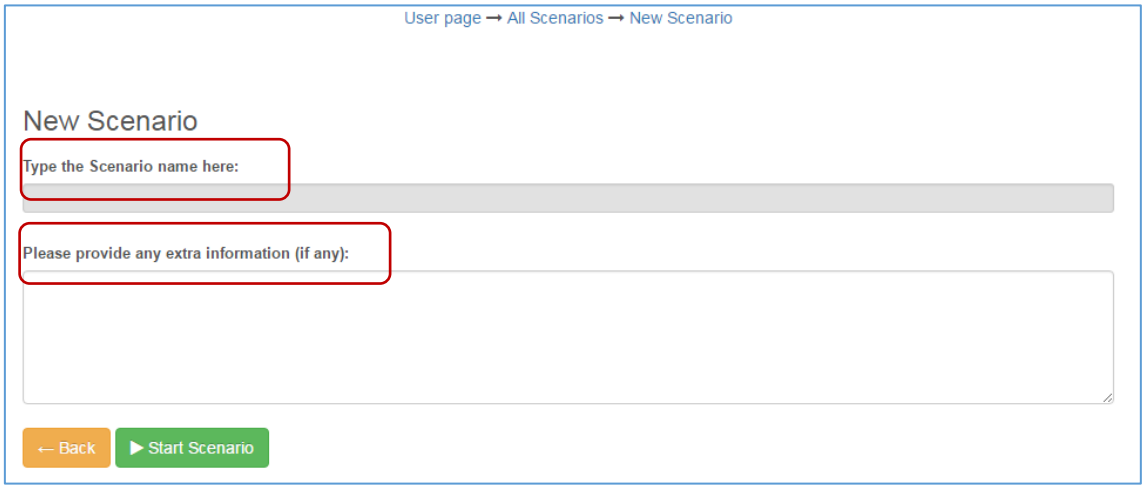
Firstly, in order to start the EMSA Assessment, a "New Scenario" needs to be created. This scenario will contain all the company's information from a certain period of time.

The EMSA methodology considers a period of **one year** as a period which is representative enough to show a Company's Energy Efficiency status.

To introduce the first scenario press the "*Create a New Scenario*" button.

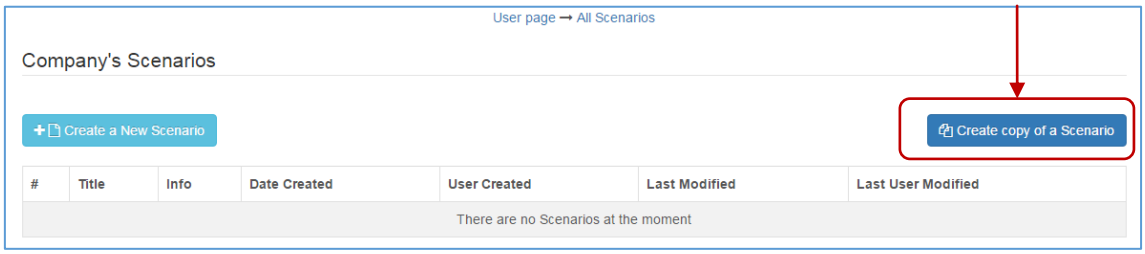


Then we should introduce a name for this new scenario and a brief description if necessary. Finally, to submit this new scenario press "*Start Scenario*"



If there is an existing Scenario and the company wants to start another one, they have the option to create a new scenario from a copy on the basis of a previous one.

The main advantage of this option is that all the information about process, equipment and consumption will be already implemented and the only thing that the user needs to do is update those data that has changed from one scenario to another.

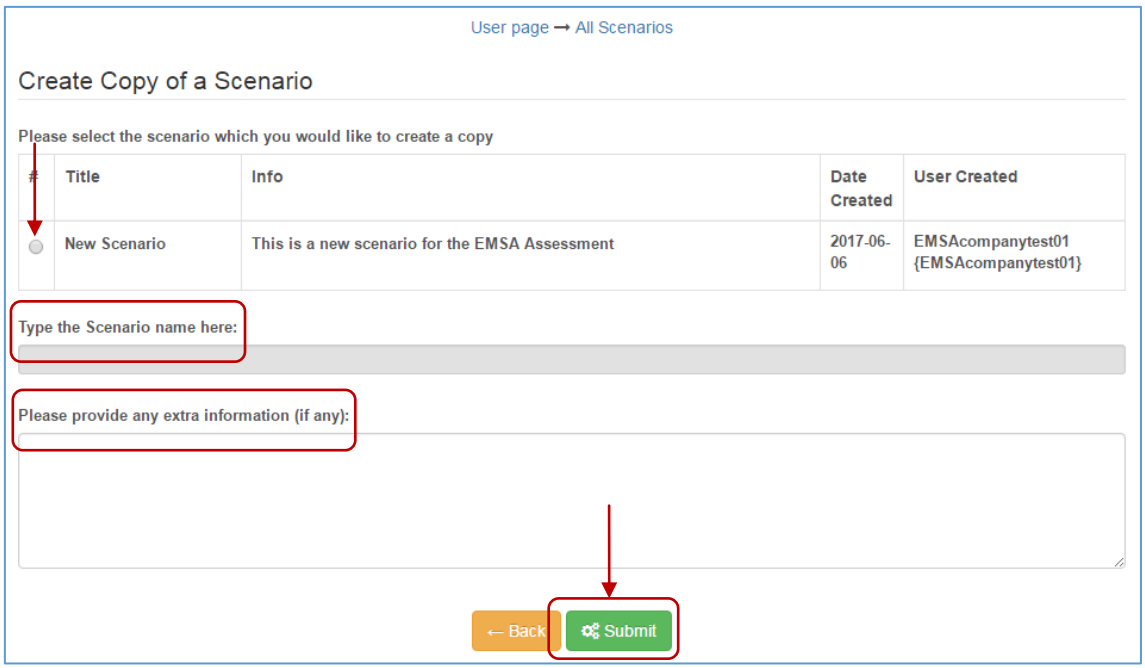


In this case, the information in the New Scenario will be the same as in the old one, so the users will only need to modify the specific information that has changed.

This option has been designed in order to ease the introduction of information. As the EMSA demands a large amount of information, this option will ease the process.

In order to copy a new scenario, firstly, the company needs to select which of the scenarios wants to copy. After selecting the chosen one, they will need to give a name and provide a description for this new scenario in the box below.

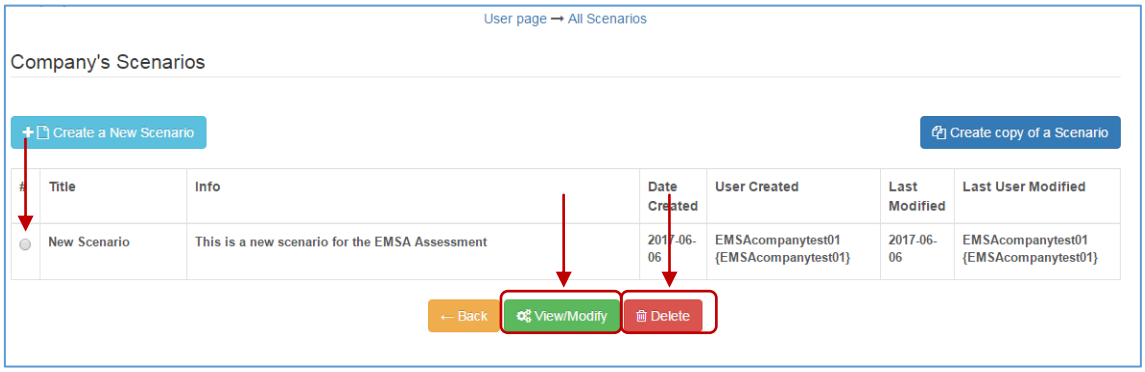
In order to save the new copied scenario click in the "Submit" button.



When a new scenario has been created, the company can edit its information or delete the whole scenario.

In order to **delete** a Scenario permanently, select the scenario and press the "Delete" Button.

In order to **modify** the internal information of a Scenario, select the scenario and press the "View/Modify" Button.

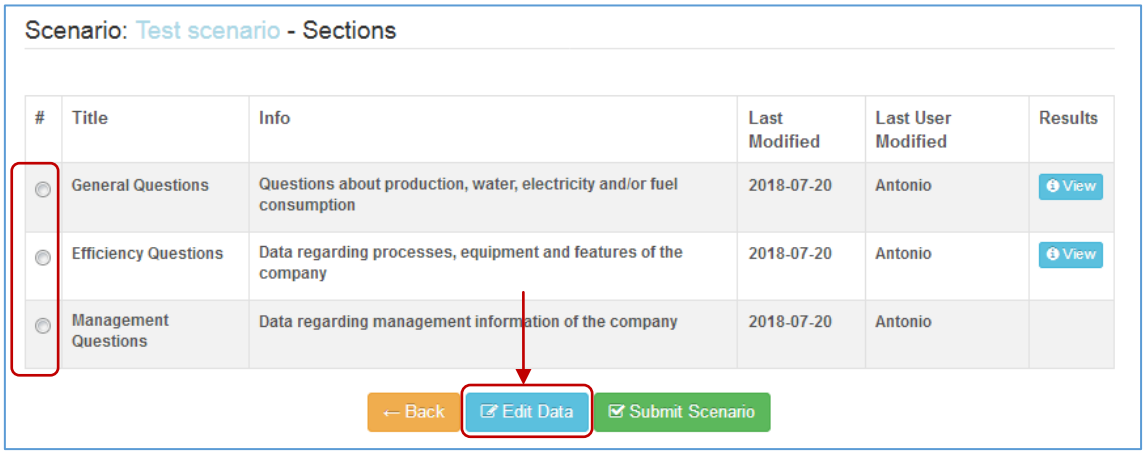


To perform a new assessment, the company has to complete three main general sets of Questions that will evaluate the company as a whole:

- **General questions**
- **Efficiency Questions**
- **Management Questions**

The management questions and a part of the efficiency questions are only available in the EMSA Professional.

The company has to select (one by one) the three sets of questions, and answer them with the most accurate information as possible for obtaining the most representative results for the assessment.

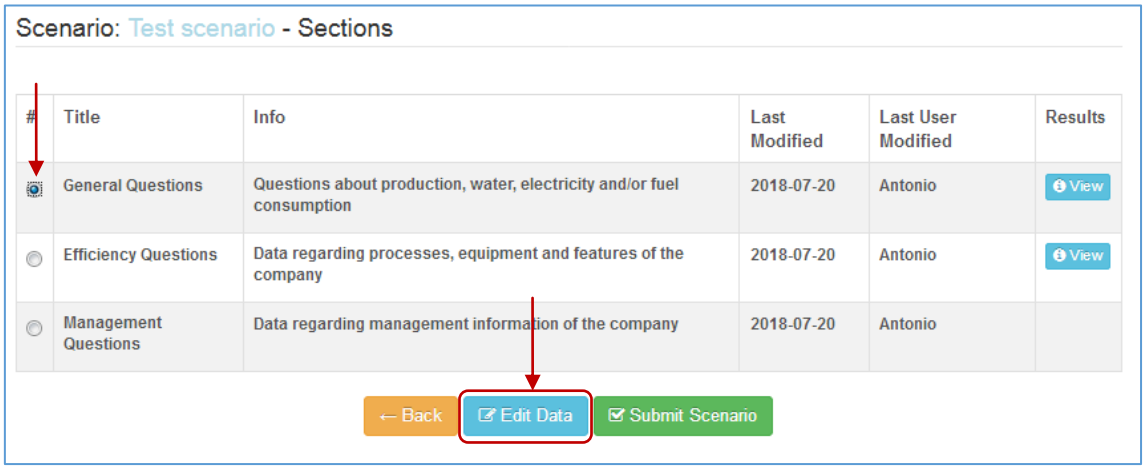


To modify the information of a section in particular, select the section and then press the "Edit Data" Button.

7.3 General Questions

In this section, Companies need to introduce their data relative to their yearly production, water consumption, electricity consumption, gas consumption and their associated costs, in addition, companies.

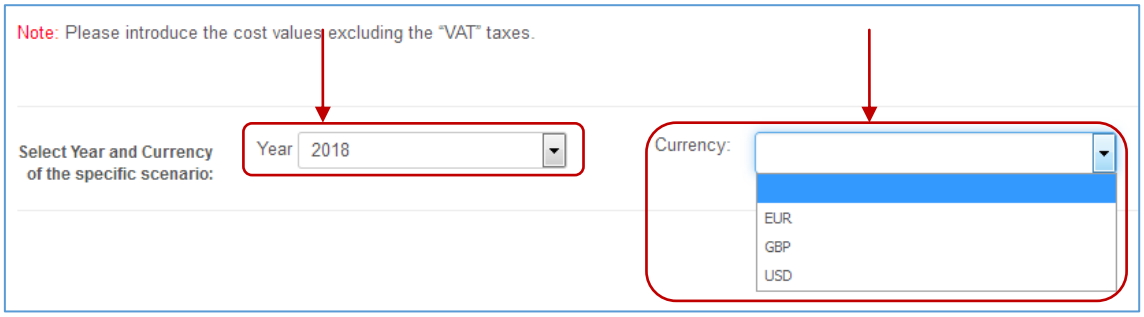
To introduce the general questions, select the "General Questions" section and press the "Edit data" Button.



This set of questions follow the nest process:

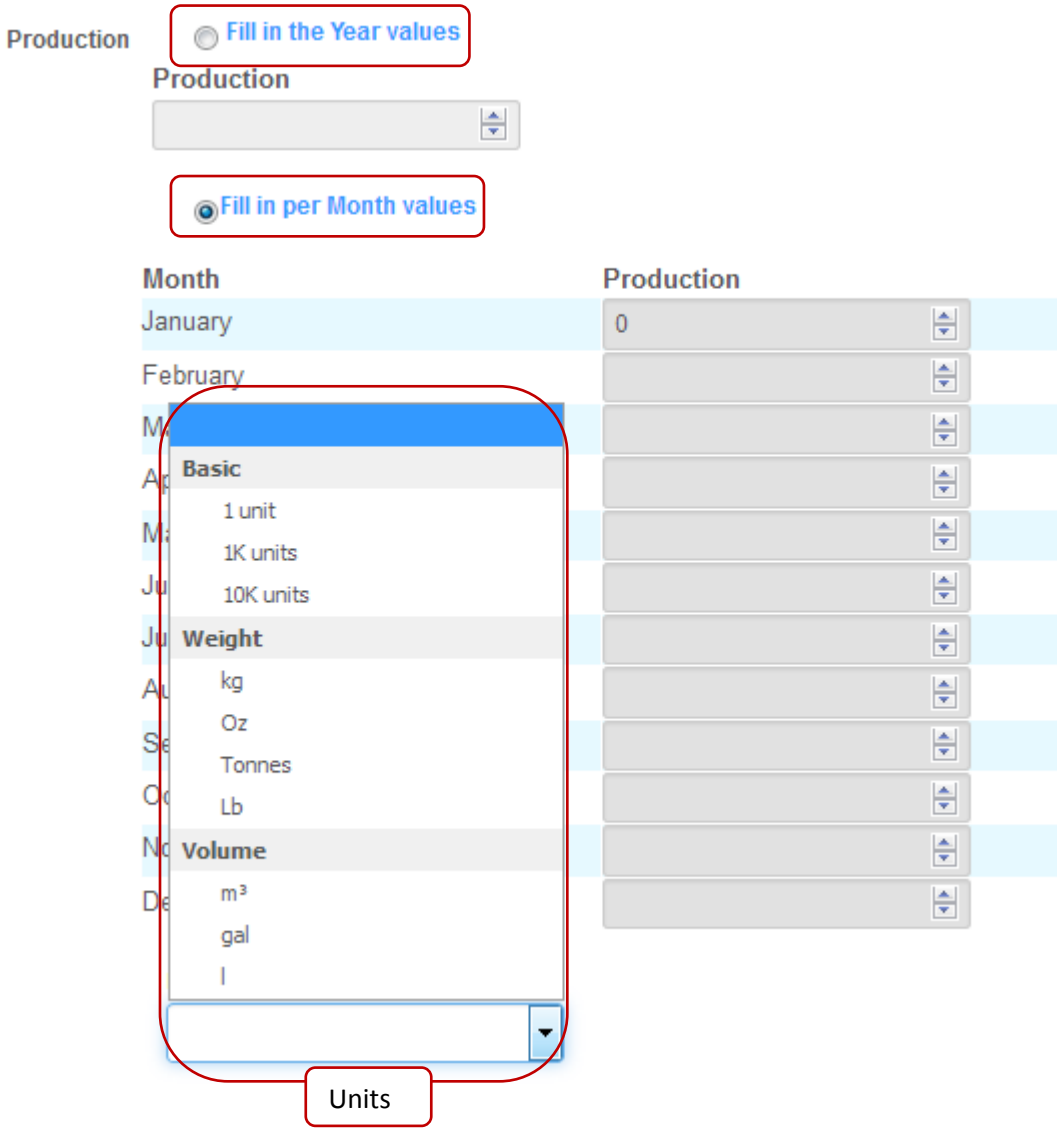
7.3.1 Questions Step 1

Firstly, the company has to enter the year of the scenario's data that are going to be introduced, as well as the currency that it is going to be used. There currency can be introduced in Euros (EUR - €), Pounds (GBP - £) or United States Dollars (USD - $).



For the production part, companies need to select the units of the production of the company, in weight, volume or production units.

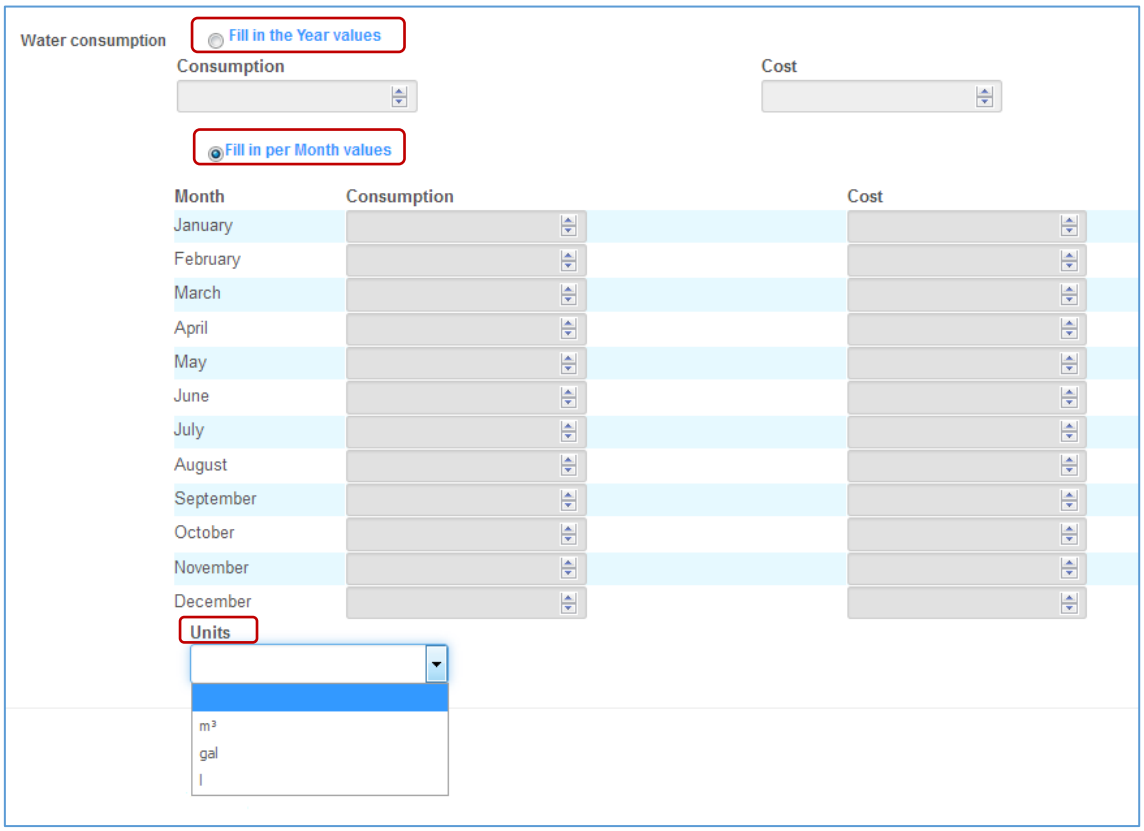
Besides, the production can be filled in per year or per month. When introducing the information per month, the yearly production will be automatically calculated by adding all the productions of the twelve months of the year.



For the water consumption part, companies need to select the consumption units of the company, in volume units (m^3, litres or gallons).

Besides, the water consumption can be filled in per year or per month. When introducing the information per month, the yearly water consumption will be automatically calculated by adding all the different consumptions of the year.

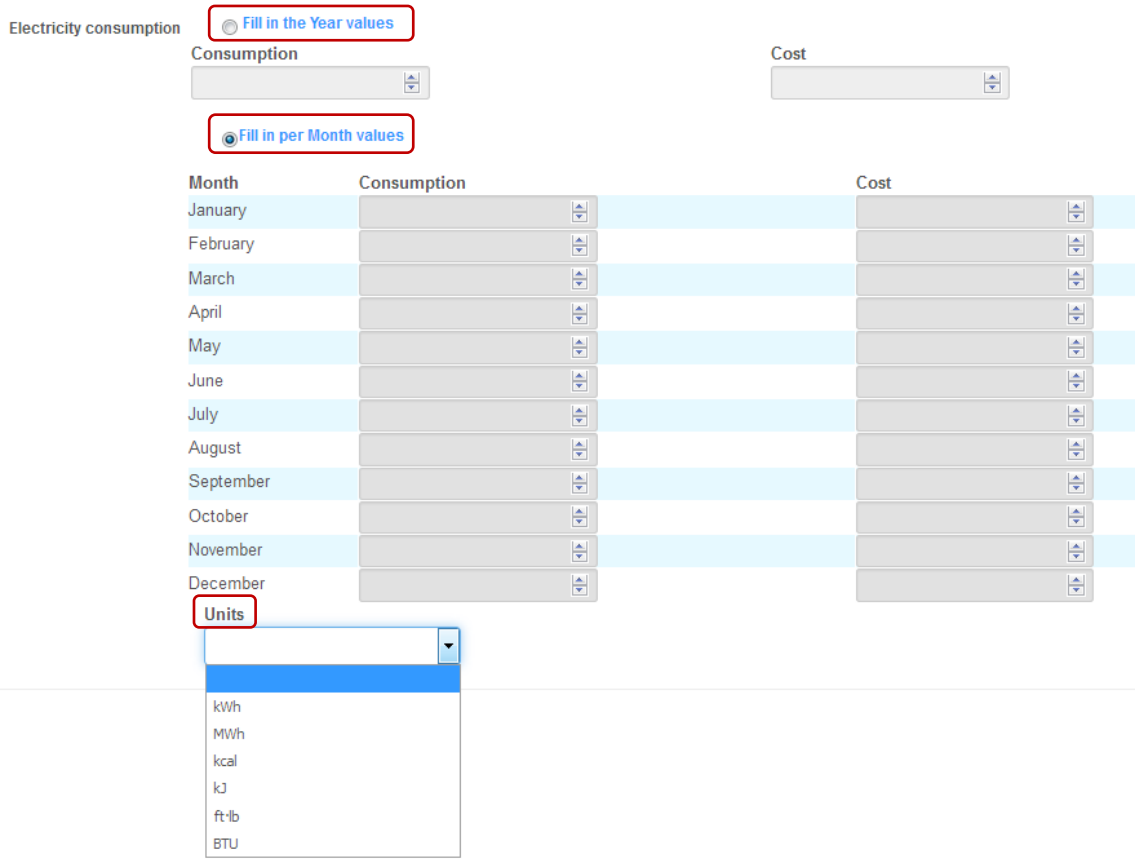
The same happens with the cost of the water consumption, which can be introduced yearly or monthly, in the currency previously selected.


Water consumption
Fill in the Year values
Consumption
Cost
Fill in per Month values
Month
Consumption
Cost
January
February
March
April
May
June
July
August
September
October
November
December
Units
m³
gal
l

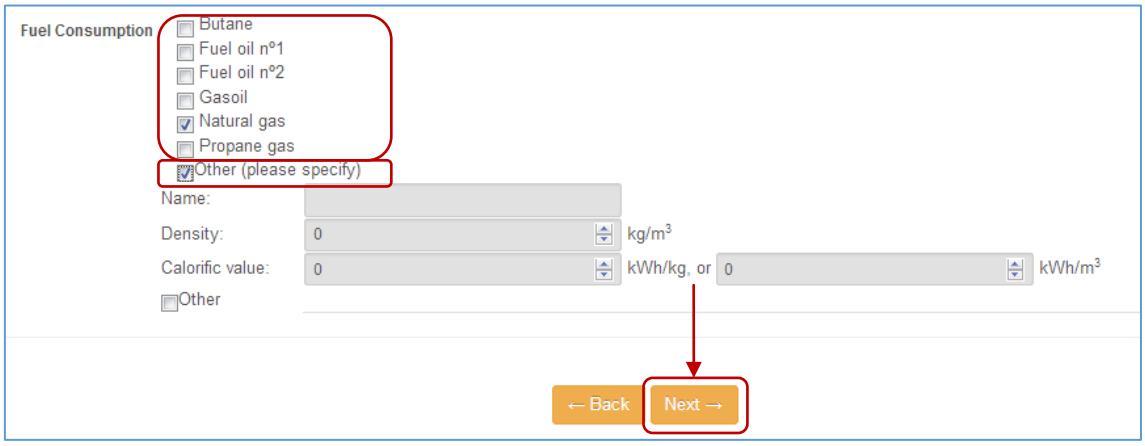
For the electricity consumption part, companies need to select the consumption units of the company in energy units (kWh and its variants).

Besides, the electricity consumption can be filled in per year or per month. When introducing the information per month, the yearly electricity consumption will be automatically calculated by adding all the different consumptions of the year.

The same happens with the cost of the electricity consumption, which can be introduced yearly or monthly, in the currency previously selected.



For the fuel consumption, firstly there has to be selected the main type of fuel used in the company (they can be one or more).

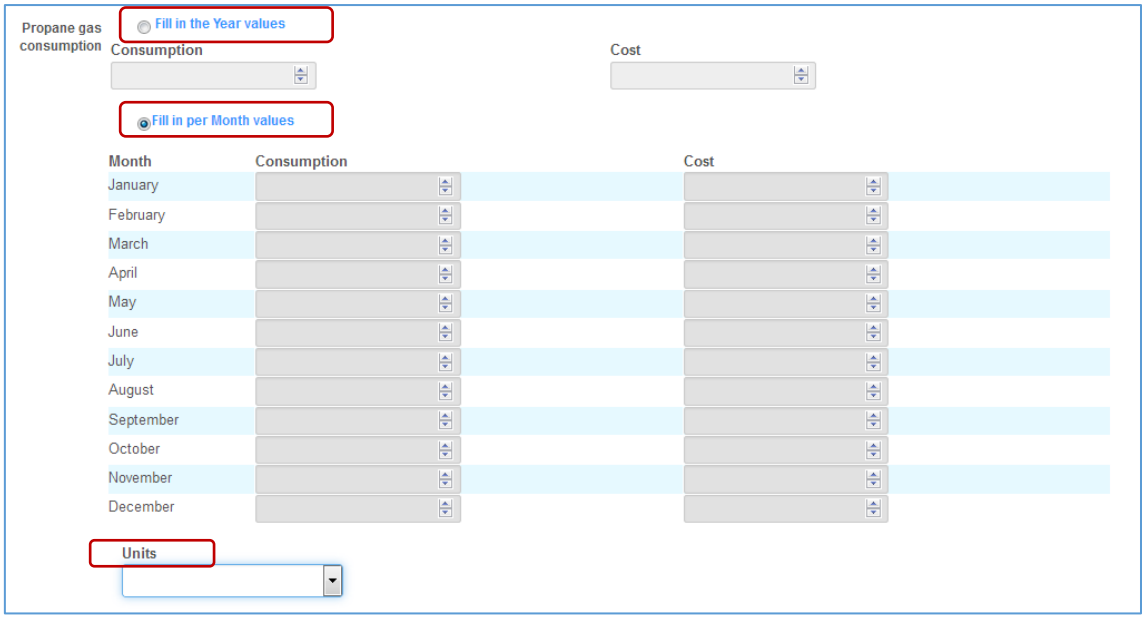


In the event that the fuel used does not appear in the list, the user will have to select the "Other" option, where it exists the possibility of introducing all the necessary data to perform the fuel consumption calculations.

If the "Other" fuel option has been selected, the user is required to introduce the name of the fuel as well as two of the three options that include the density (kg/m^3), mass heating power (kWh/kg) and volume heating power (kWh/m^3), depending on the magnitude which the "Other" fuel consumption is measured (mass or volume).

7.3.2 Questions Step 2

Finally, press the "Next" button and the following window will appear:

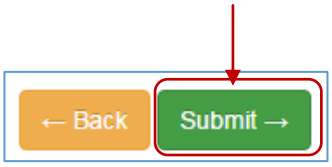


For the fuel consumption part, companies can select the consumption units in energy, volume or weight units and its variants.

Besides, the fuel consumption can be filled in per year or per month. When introducing the information per month, the yearly fuel consumption will be automatically calculated by adding all the different consumptions of the year.

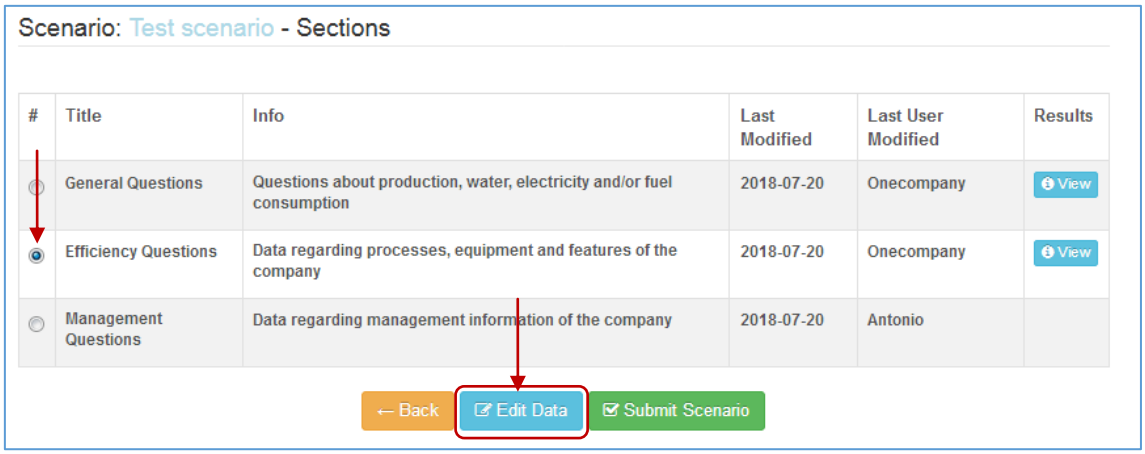
The same happens with the cost of the fuel consumption, which can be introduced yearly or monthly, in the currency previously selected.

When all of the information has been implemented, press the “Submit” button.



7.4 Efficiency Questions

To answer the efficiency questions, select the "Efficiency Questions" section and press the "Edit Data" Button.



Here, the companies need to introduce their data relative to their different processes and equipment of the company which are related to water use and energy consumption.

To evaluate energy efficiency, the tool needs numerical data of features and consumptions, these data are required for every process and equipment that the company wants to include in the evaluation process. As an example, features required are:

- For each process
  - Production
  - Energy consumption
  - Water consumption
  - Working hours
  - Etc.

- For each equipment
  - Energy consumption
  - Water consumption
  - Working hours
  - Working conditions: pressure, temperature...

The tool will calculate the difference in percentage between the actual values (introduced during the evaluation process) with respect to the recommended values (reference data from best practices), showing the improvement potential in each process and equipment related to water and energy.

7.4.1 How to enter data in the "efficiency questions" section

First of all, to answer the efficiency question we need to define all the processes inside the Company that are related to water use and energy consumption.

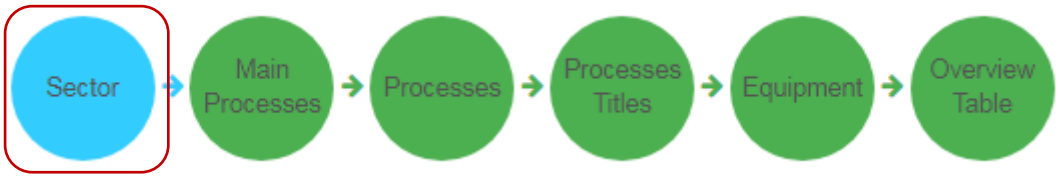
It is really important to define all the processes that use water inside the company, even if the company does not have enough information to assess them or the company does not want to answer their efficiency questions

Then, with the list of processes, we need to define the equipment related to each process. With that information, the EMSA builds the "overview table", where the staff involved in the assessment process will be able to select, one by one, processes and equipment and answer their related efficiency questions.

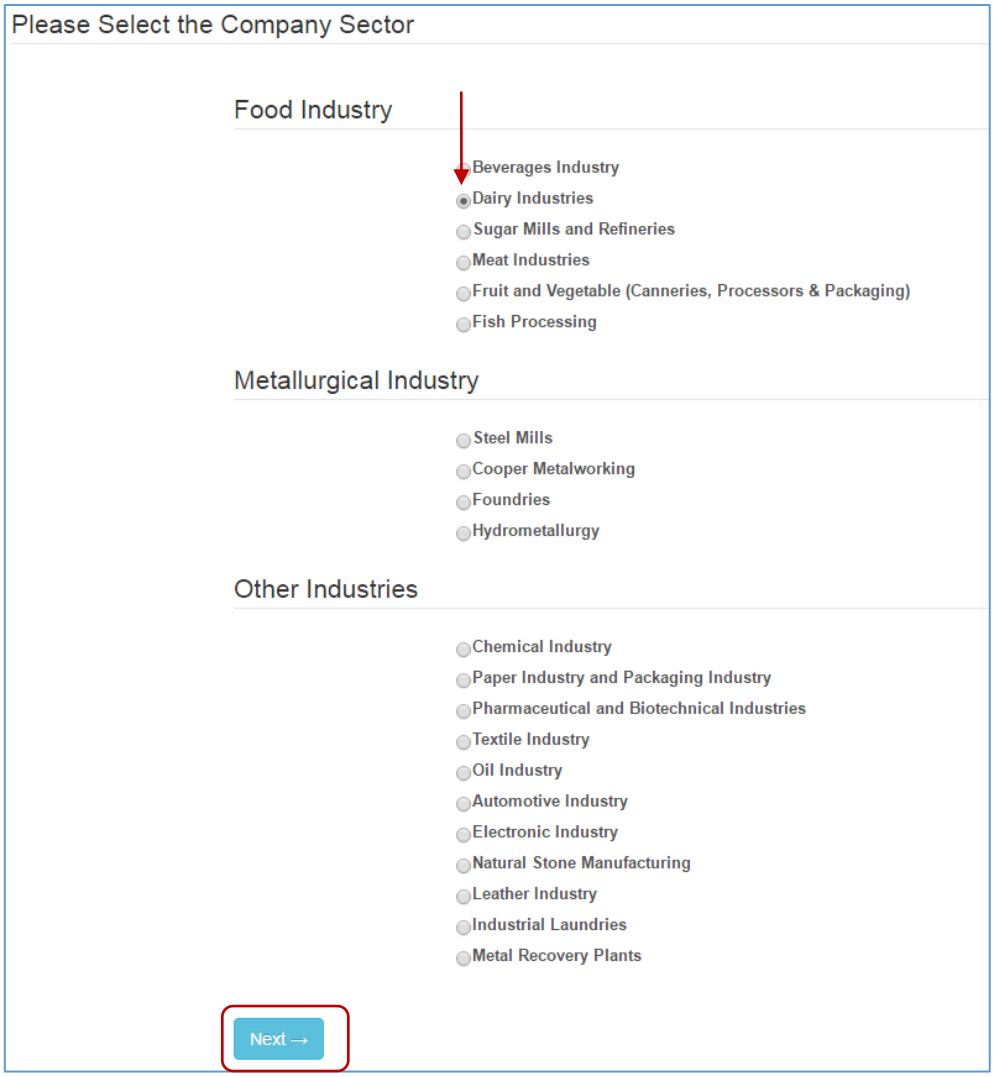
The following steps represent how to build the "Overview table" and how to answer efficiency questions:

7.4.1.1 Verification of the sector

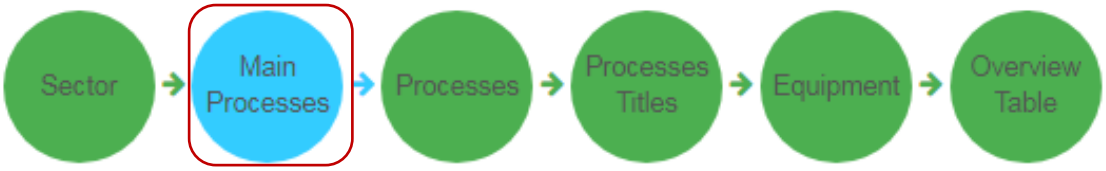
Before start introducing numerical data in the tool, the user needs to validate the company's sector.



This step is crucial, as every sector has some specific equipment. The tool considers the information that has been introduced and then proposes the different processes of the equipment.



7.4.1.2 Set Main processes



This is the first step of the efficiency questions. Here, companies should enter what are their main production lines or sections in which their facilities can be divided. Each section could aggregate a main use for energy and water, a production line, a building, etc. They are called **"Main processes".** The idea is to identify the company's main energy consumption groups.

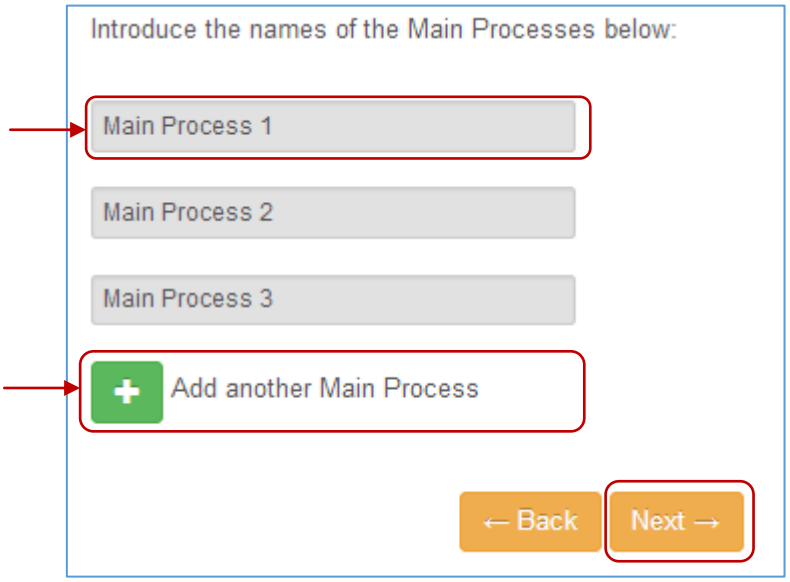
These "main processes" are sections that belong to the company and represent big energy consumption units, regarding at their process of energy consumption from the primary energy to final energy.

This information will act as a label that will help to group processes, but it will not affect to the calculations. It has been created so that companies can have a better understanding about in which process and equipment are they introducing data.

In this section, companies should only register the name of the main process by typing it on the screen.

The main idea is to group the processes of the company, to do this the User should introduce names or labels of the main processes of the system. Then, press the "Add another Main Process" to keep completing the list.

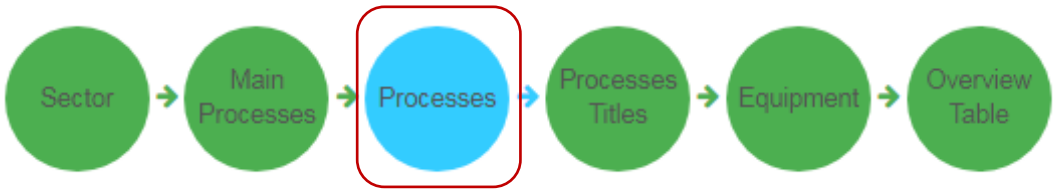
They can introduce the name of as many main processes as present in the company.



Once the user has introduced the principal main processes of the company, press "Next".

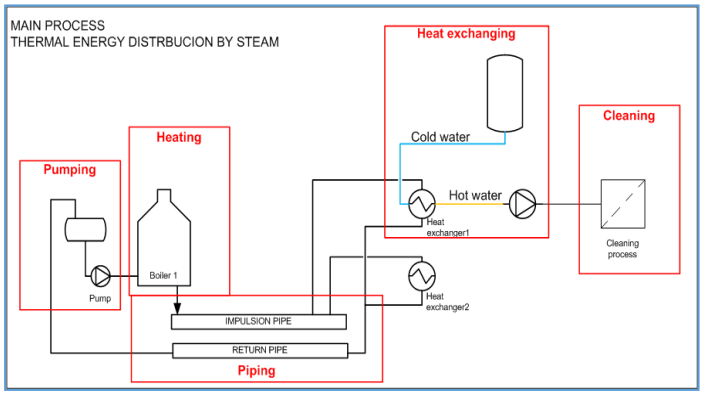
7.4.1.3 Set Processes

After selecting the Main Processes of the company, inside of each of them the user should also select the specific processes of the company.



In this section, for every "main process", companies should register their real processes related to water use and energy consumption.

Before describing the procedure of how to introduce data in the tool, it is included an explanatory figure to explain what the EMSA considers as a process.



- Main process: "Thermal Energy Distribution by steam"
- Related processes:
  - Pumping
  - Piping
  - Heating
  - Heat exchanging
  - Cleaning

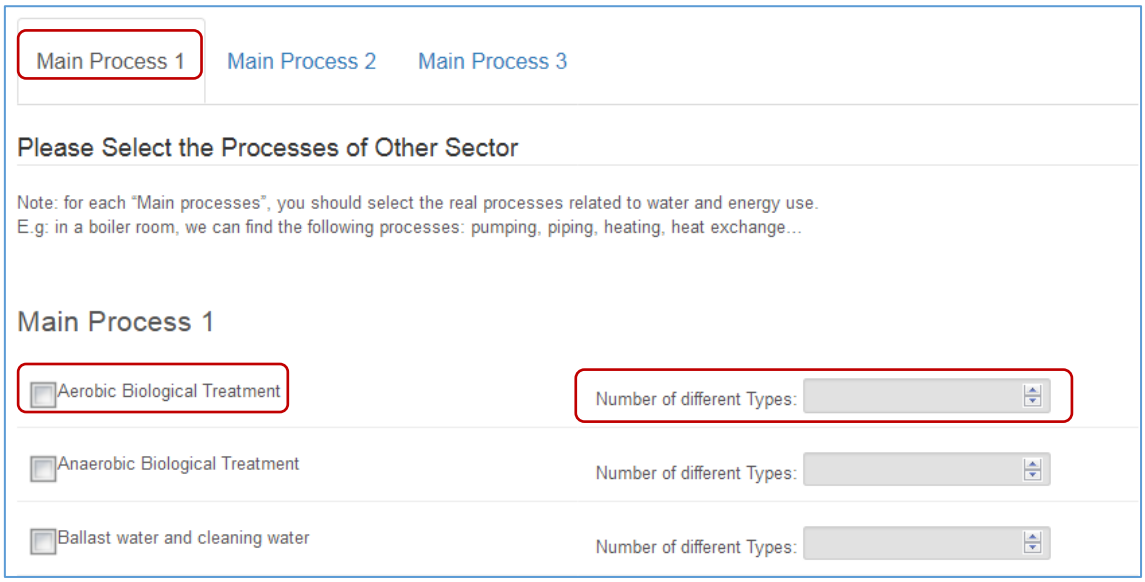
A process is a system (formed by one or more equipment) that uses or consumed energy that can be considered as a single unit, taking into account their piping system until the next point of energy use or consumption. For instance, in a boiler room, we can find the following processes:

- Heating process (boiler, pipes, filter, etc.): converts fuel into thermal energy to produce steam
- Pumping process (pump, pipe, storage, etc.): pump water into the boilers
- Heat exchange units (heat exchanger): converts thermal energy from steam into thermal energy into the working fluid of a process.

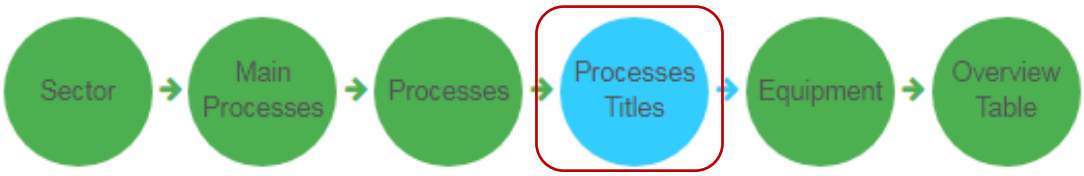
The User should select the type process and its quantity.

For each main process, there could be selected different processes.

The upper tabs correspond with the different “Main processes”, selected in the previous step. When finished press the “Next” button.

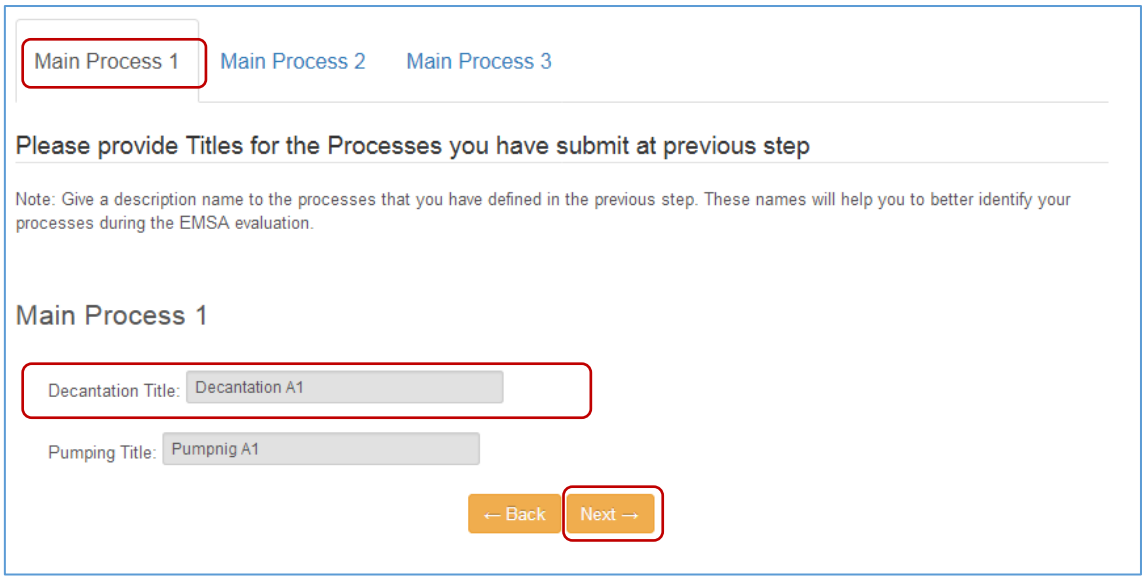


7.4.1.4 Name the Processes



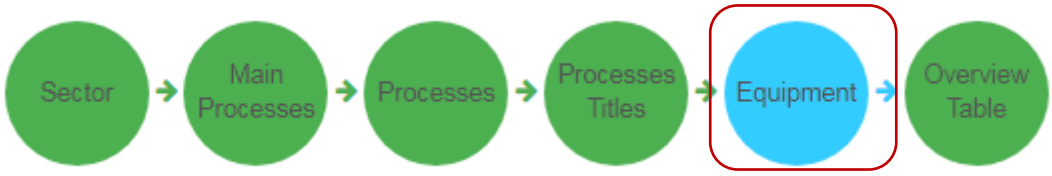
After selecting all the different processes, the tool gives the user the option to name them or to leave them with the default name.

This feature has been created to ease the companies the recognition and introduction of data in the tool.



Once the user has finished, press the "Next" button to start including the equipment information.

7.4.1.5 Set Equipment

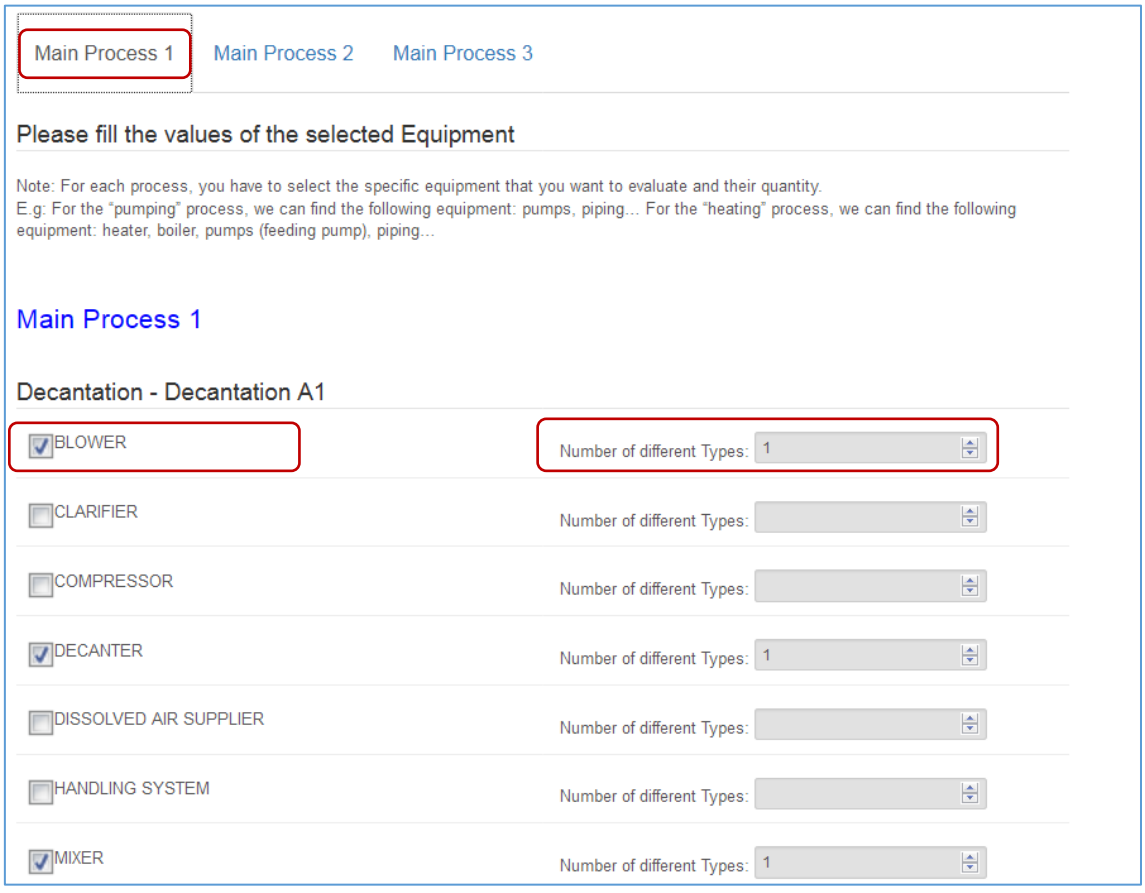


In general, the introduction of the equipment and completing all its information should only be completed if the company has an assigned Energy Angel.

Due to the complexity of that, it is recommended that users of the company will only introduce this information when the company has contacted an Energy Angel authorised to perform "Service 1: EMSA support", and this person will guide the user about how to introduce data in the tool.

This selection of the equipment will be the same as in the process part. Depending on the processes selected previously, the EMSA tool will propose different equipment to them.

For each of the processes, it has to be selected the specific equipment and their quantity. In this section, for every "process", the user should register the related equipment according to the existing procedure that is implemented in the tool.

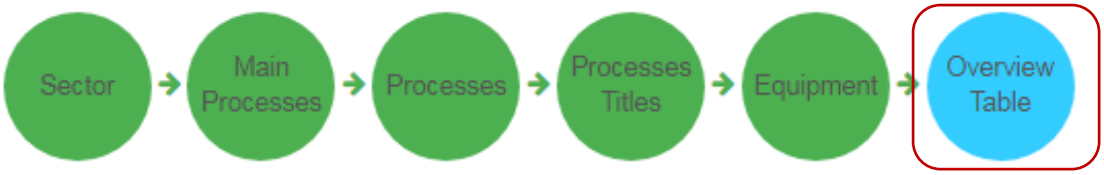


Once the user has finished, press the "Next" button to start including the equipment information.

EMSA tool is prepared if a company has some repeated equipment working at different states, or if it has different kinds of the same equipment. For instance: a company can have different type of pumps in each of the processes, or the same pump working at different pressures throughout the whole company.

Besides, EMSA is able to incorporate the same equipment several times, as later on each equipment will be characterized in the tool.

7.4.2 Overview Table

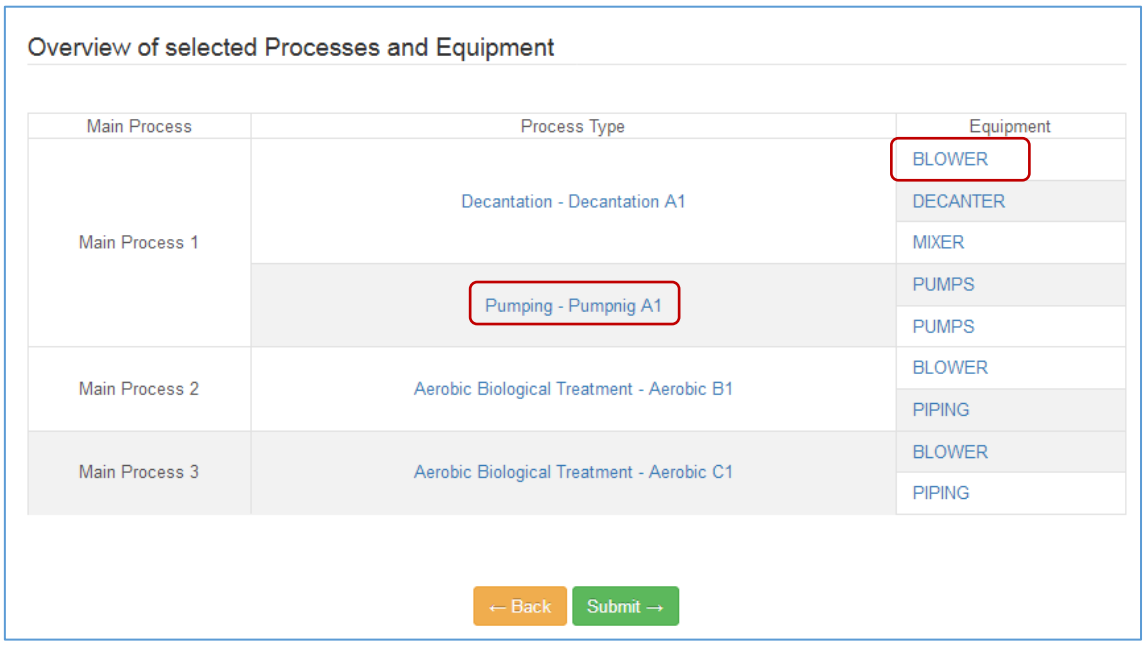


After introducing the data relative to both processes and equipment, there is presented a table that serves as overview of all the information that has been introduced.

It displays the relationships between the main processes, processes and the equipment .By clicking in each of the titles, EMSA redirects the user to the questions of the assessment relative to each part.

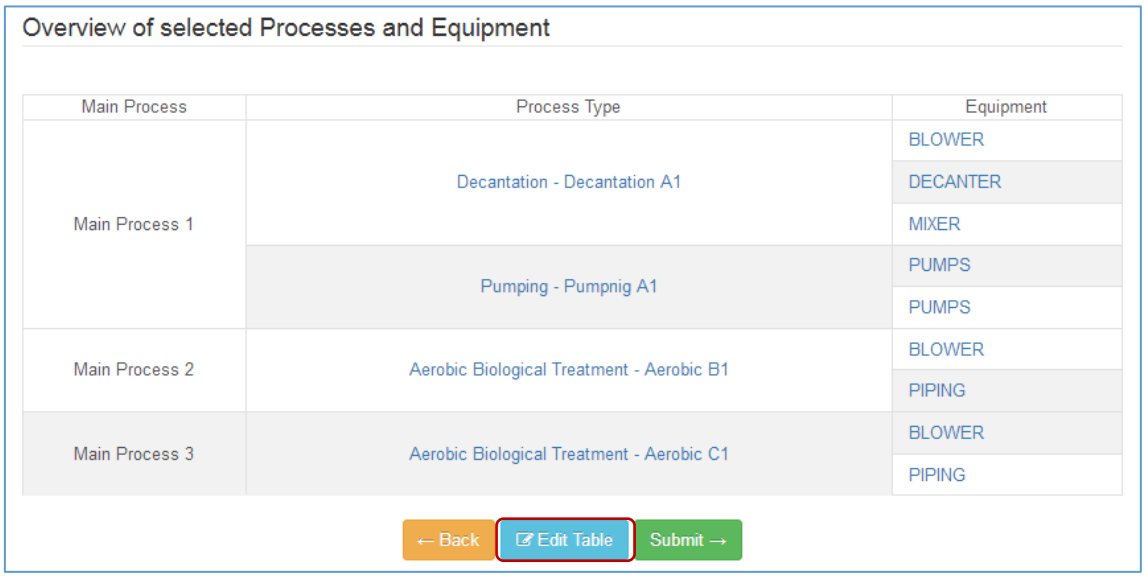
For instance, to answer the “efficiency questions” of the Decantation process, just click in the name of the process and it will redirect you to the “Process questions”.

The same happens with the equipment questions, to answer them, the user just need to click on its name and the “Equipment questions” tab appears.



7.4.2.1 Edit "Overview table"

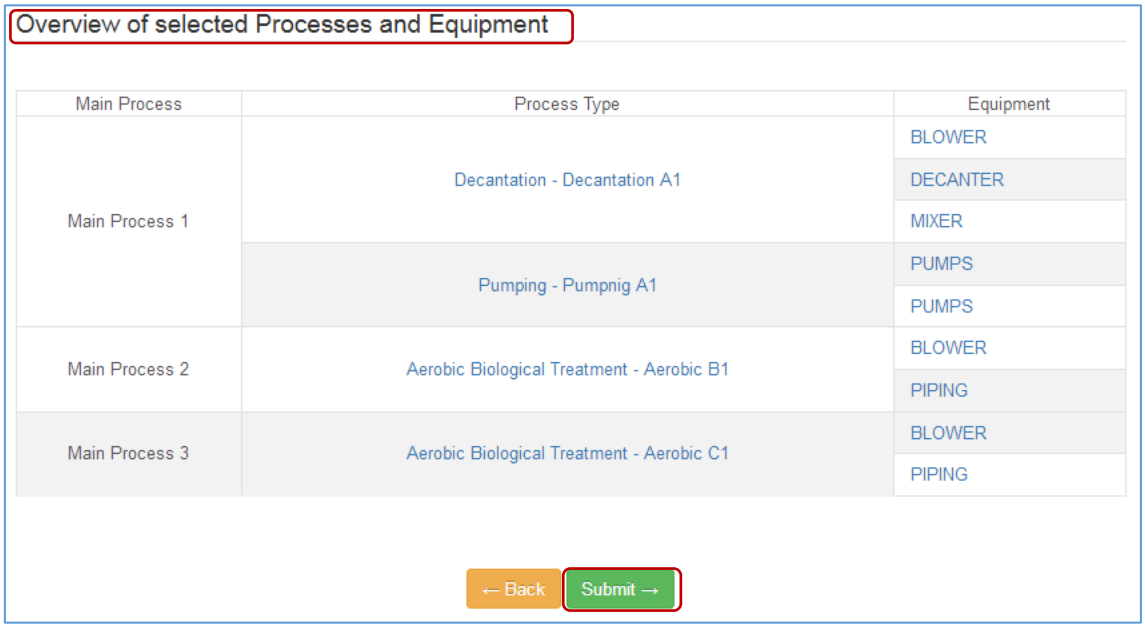
There is the option to "Edit" the Overview table if the Company wants to add/delete items from it. To do this, the User should click in the "Edit table" button.



By clicking on this button, the setting processes/equipment step-by-step method appears, and the user should go again through it to modify the information required.

To do this, the User can quick navigate through the different step with the "Back" and "Next" button on the top of the screen, but these buttons will not save any change in the Overview table.

To save the changes made, the user should click in the "Submit" button on the bottom on the screen



7.4.2.2 Process Questions

After all the processes that the company wants to assess are selected and distributed amongst the main processes in the Overview table, the next step is to complete a questionnaire with numerical and Y/N questions relative to each of the processes selected.

To access this questionnaire the user has to click in the names of the processes presented in the overview table.

There will be asked different questions in order to define completely each of the processes as well as to obtain more customized results.

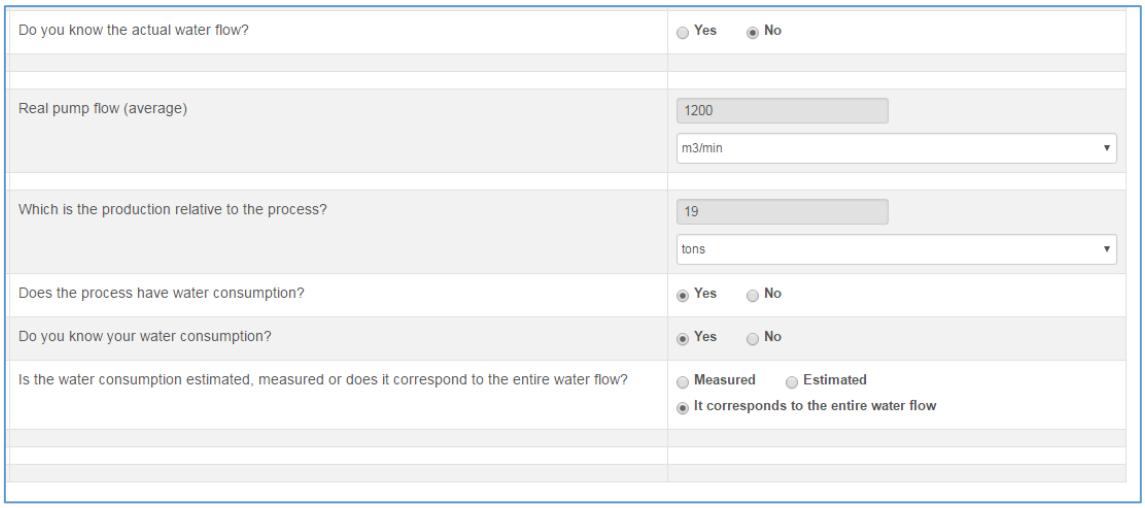
To answer all the questions, select the correct option or type the answer in the blank boxes and select the units. If the company does not know the data that are being asked, leave the question unanswered.

To save a result, click the "Save" button and the data that has been introduced will be automatically saved. To continue answering more processes, click in the "Submit" button to continua the assessment.

This is an example of the Y/N questions that are required for the pumping process assessment:

Questions	Answer
Is demand fluctuation correctly controlled and optimised by a VSD and an equipment in sequence?	Yes No
Is the pumping system designed to achieve minimum pressure losses?	Yes No
Does your process have any pressure excess where energy can be recovered	Yes No
Has your process incorporated any monitoring systems?	Yes No
Is your processes correctly insulated?	Yes No
Is the equipment cleaned regularly?	Yes No
Have you ensured a correct dimensioning of the installations?	Yes No
Do you regularly maintain the equipment and detect any possible leaks?	Yes No
Do you know the energy consumption of the process?	Yes No

This is an example of the numerical questions that are required for the pumping process assessment:



When all the questions are completed click the submit button to “Save and continue”.

7.4.2.3 Equipment Questions

After all the equipment that the company wants to assess are selected and distributed amongst the different processes in the Overview table, the next step is to complete a questionnaire with numerical and Y/N questions relative to each of the equipment selected.

To access this questionnaire the user has to click in the names of the equipment presented in the overview table. There will be asked different questions in order to define completely each of the equipment as well as to obtain more customized results.

To answer all the questions select the correct option or type the answer in the blank boxes and select the units. If the company does not know the data that are being asked, leave the question unanswered. To save a result, click the submit button, and the data that has been introduced will be automatically saved.

This is an example of the numerical questions that are required for the pump equipment assessment:

Equipment Pump Questions

Process	Questions	Answer
P01E01F01	Number of equipment units	
P01E01F46	Type of pump	○ Positive displacement ○ Centrifugal
P01E01F47	Use of the pumping system	○ Sludge ○ High pressure pumping ○ Condensate pumping (boilers) ○ Heater water feeding ○ Water feeding (previous treatment evacuation) ○ Fire-tube boiler water feeding ○ Wastewater or water wells ○ Drinking water ○ Other
P01E01F02	Type of fluid	○ Water ○ Wastewater ○ Sludge ○ Other
P01E01F16	Which is the motor's nominal power?	
P01E01F17	Do you know your energy consumption?	○ Yes ○ No
P01E01F22	Nominal flow	

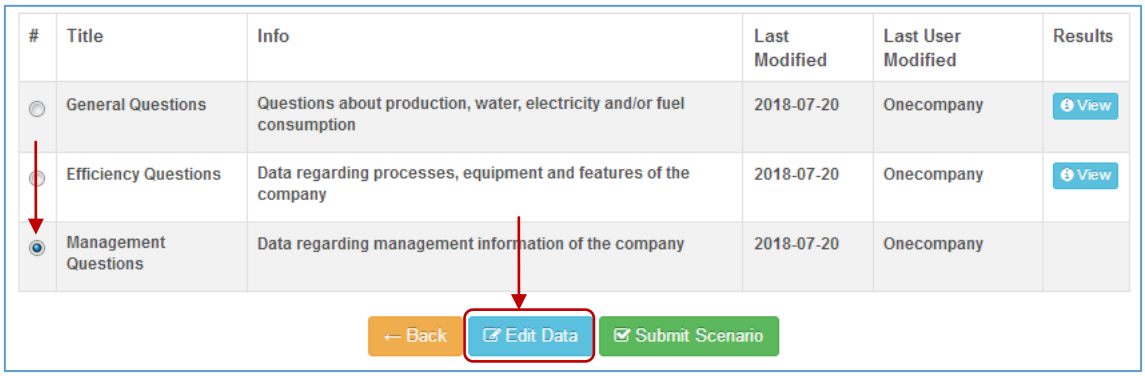
This is an example of the Y/N questions that are required for the pump equipment assessment:

P01E01F39	Does your process have any holding tanks to equalize the pump flow?	Yes No
P01E01F40	Has this equipment incorporated any monitoring systems?	Yes No
P01E01F41	Is the impeller properly maintained?	Yes No
P01E01F42	Does your pumping system have any bypass loops?	Yes No
P01E01F44	Value of the demand fluctuations/variable loads	Yes No
P01E01F45	Type of control on demand fluctuations/variable loads	Valve Regulation - manual operation Valve Regulation - automatic VSD - manual tuning VSD - automatic Multiple pumps/stages - manual operation Multiple pumps/stages - automatic
P01E01F49	Does the equipment handle any corrosive fluid?	Yes No
P01E01F50	Does the equipment have to handle viscous liquids?	Yes No
P01E01F51	Does the equipment have ATEX restrictions?	Yes No
P01E01F52	Does the equipment have high pressure pumping needs?	Yes No
P01E01F53	Does the equipment have to handle liquid with large solid content (Over 500 mg/l)?	Yes No

To save a result, click the "Save" button and the data that has been introduced will be automatically saved. TO continua answering more processes, click in the "Submit" button to continua the assessment.

7.5 EMSA Management Questions

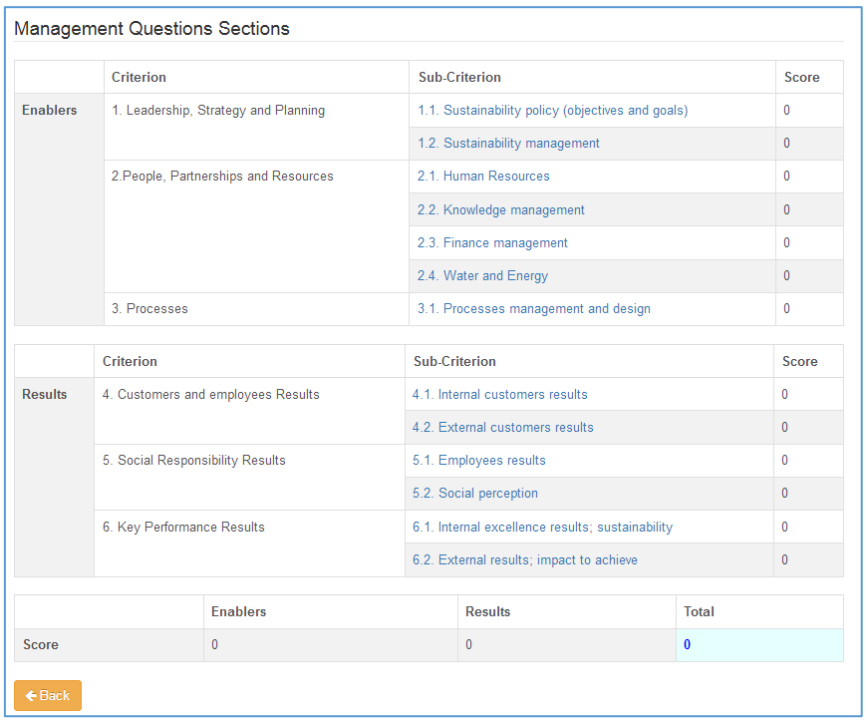
To introduce the management questions, select the "Management Questions" section and press the "Edit Data" Button.



#	Title	Info	Last Modified	Last User Modified	Results
○	General Questions	Questions about production, water, electricity and/or fuel consumption	2018-07-20	Onecompany	View
○	Efficiency Questions	Data regarding processes, equipment and features of the company	2018-07-20	Onecompany	View
◉	Management Questions	Data regarding management information of the company	2018-07-20	Onecompany	

← Back | Edit Data | Submit Scenario

Here, the companies need to introduce their data relative to their internal management aspects relative to the different parts of the company's operation regarding water use and energy consumption. Then, the following window will appear:



Management Questions Sections

	Criterion	Sub-Criterion	Score
Enablers	1. Leadership, Strategy and Planning	1.1. Sustainability policy (objectives and goals)	0
		1.2. Sustainability management	0
	2.People, Partnerships and Resources	2.1. Human Resources	0
		2.2. Knowledge management	0
		2.3. Finance management	0
		2.4. Water and Energy	0
	3. Processes	3.1. Processes management and design	0

	Criterion	Sub-Criterion	Score
Results	4. Customers and employees Results	4.1. Internal customers results	0
		4.2. External customers results	0
	5. Social Responsibility Results	5.1. Employees results	0
		5.2. Social perception	0
	6. Key Performance Results	6.1. Internal excellence results; sustainability	0
		6.2. External results; impact to achieve	0

	Enablers	Results	Total
Score	0	0	0

← Back

In this part, there are two different types of Criteria that will be assessed:

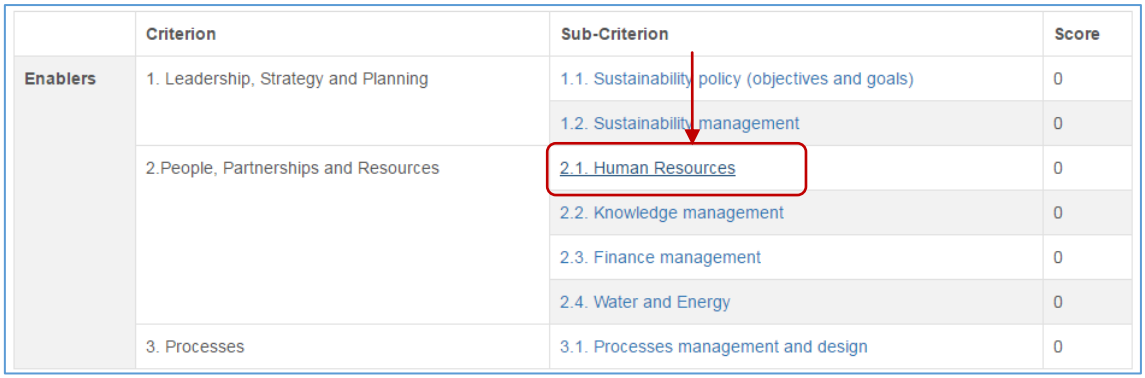
- Enablers: The enablers criteria include criteria from 1-3. They are focused on how the company approaches their responsibilities in most of the company's activities.
- Results: The results criteria include from 4-6. They are focused in the expected results provided by the strategies implemented in the "Enablers" criteria.

7.5.1 Enablers Criteria

The enablers' criteria are the following:

1. Leadership, Strategy and Planning
2. People, Partnerships and Resources
3. Processes

They are divided in different Sub-Criteria, which can be easy scored by click in each or their titles.

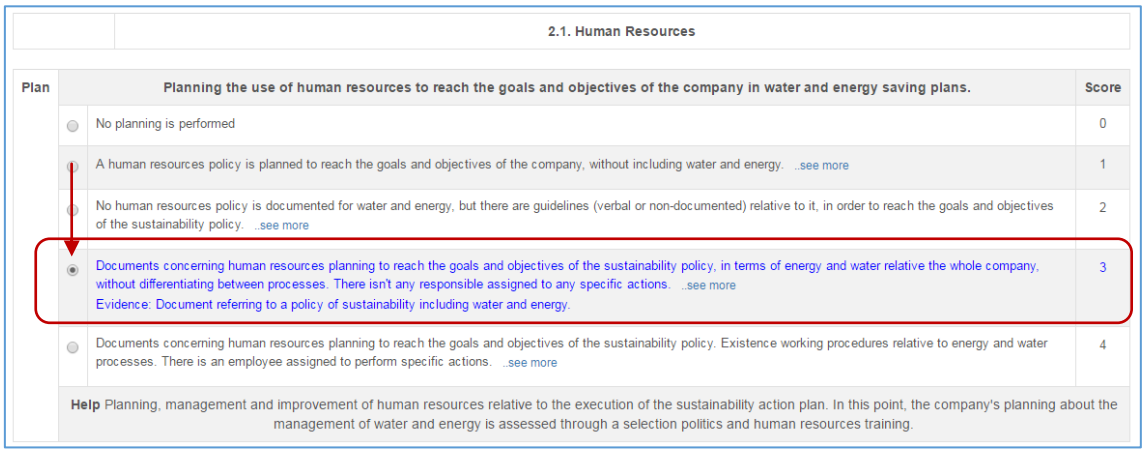


	Criterion	Sub-Criterion	Score
Enablers	1. Leadership, Strategy and Planning	1.1. Sustainability policy (objectives and goals)	0
		1.2. Sustainability management	0
	2.People, Partnerships and Resources	2.1. Human Resources	0
		2.2. Knowledge management	0
		2.3. Finance management	0
		2.4. Water and Energy	0
	3. Processes	3.1. Processes management and design	0

The management section score will be calculated by accumulating the evidences' score on each part of a specific sub-criterion (P, D, C, A). Evidences' score is assigned with a numerical value for each part of the PDCA cycle. The principal evidences that an Energy Angel will be looking for, are also presented in the table below.

The User should select the score which better represent the management situation of the company regarding that specific criterion.

For instance, if we introduce information on the "Plan" part of the PDCA in one Sub-Criterion, the user needs to select the closest option to reality, and the EMSA will automatically provide the score of each part of the cycle.

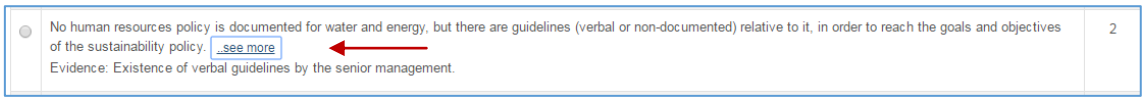


2.1. Human Resources

Plan	Planning the use of human resources to reach the goals and objectives of the company in water and energy saving plans.	Score
	No planning is performed	0
	A human resources policy is planned to reach the goals and objectives of the company, without including water and energy. ..see more	1
	No human resources policy is documented for water and energy, but there are guidelines (verbal or non-documented) relative to it, in order to reach the goals and objectives of the sustainability policy. ..see more	2
	Documents concerning human resources planning to reach the goals and objectives of the sustainability policy, in terms of energy and water relative the whole company, without differentiating between processes. There isn't any responsible assigned to any specific actions. ..see more Evidence: Document referring to a policy of sustainability including water and energy.	3
	Documents concerning human resources planning to reach the goals and objectives of the sustainability policy. Existence working procedures relative to energy and water processes. There is an employee assigned to perform specific actions. ..see more	4

Help Planning, management and improvement of human resources relative to the execution of the sustainability action plan. In this point, the company's planning about the management of water and energy is assessed through a selection politics and human resources training.

If we click in the “see more” option, the tool will display a list of examples and evidences that could match with the criterion requirements.



When all of the information has been implemented, press the “Submit” button.

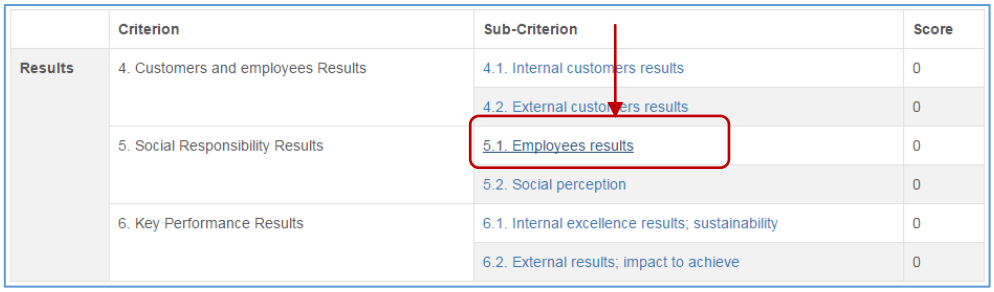
It is highly recommended that the assigned Energy Angel or Company’s Energy Angel, as an objective observer of the company’s status, would be the person to fill in all of the different sub-criterion.

7.5.2 Results Criteria

The results criteria are the following:

1. Customers and employees Results
2. Social Responsibility Results
3. Key Performance Results

They are also divided in different Sub-Criteria, which can be easy scored by click in each or their titles.

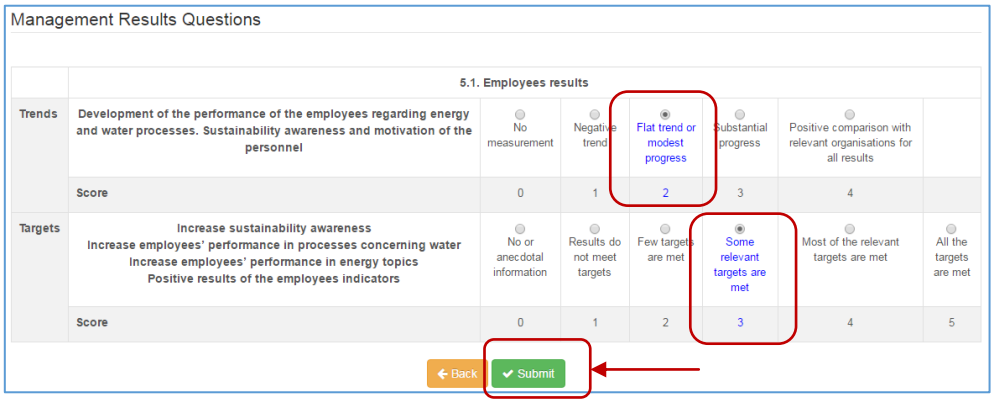


	Criterion	Sub-Criterion	Score
Results	4. Customers and employees Results	4.1. Internal customers results	0
		4.2. External customers results	0
	5. Social Responsibility Results	5.1. Employees results	0
		5.2. Social perception	0
	6. Key Performance Results	6.1. Internal excellence results; sustainability	0
		6.2. External results; impact to achieve	0

Each sub-criterion will be scored based in two different points:

- Firstly about the **trend** followed by the results of the process assessed. The score that a sub-criterion will finally achieve will depend on the trend; if it is negative, neutral or positive.
- Secondly, it will also be assessed the degree of **fulfilment of the targets** proposed in the initial strategy planning of the company. Finally, both scores will be added in order to obtain the final score of a sub-criterion.
- EMSA will automatically provide the score of each of the two different points

For instance, below it is presented an example on how to score a sub-criterion.

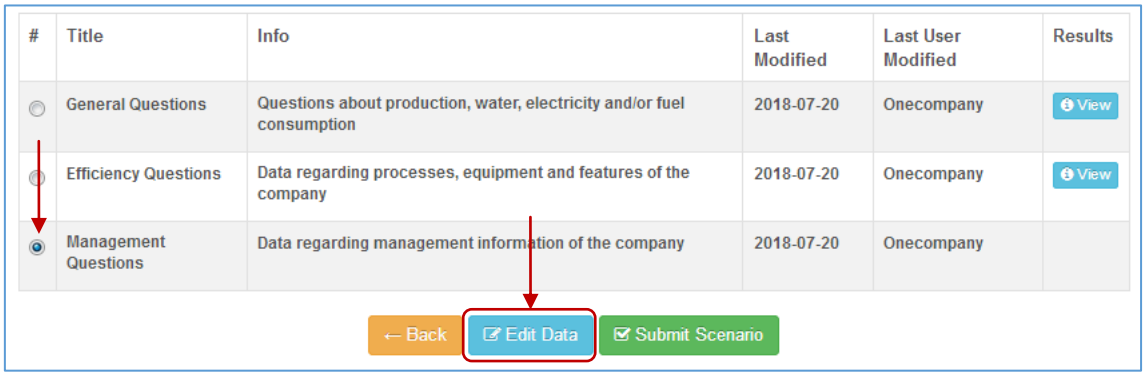


When all of the information has been implemented, press the "Submit" button.

It is highly recommended that the assigned Energy Angel or Company's Energy Angel, as an objective observer of the company's status, would be the person to fill in all of the different sub-criterion.

7.5.3 Management Score

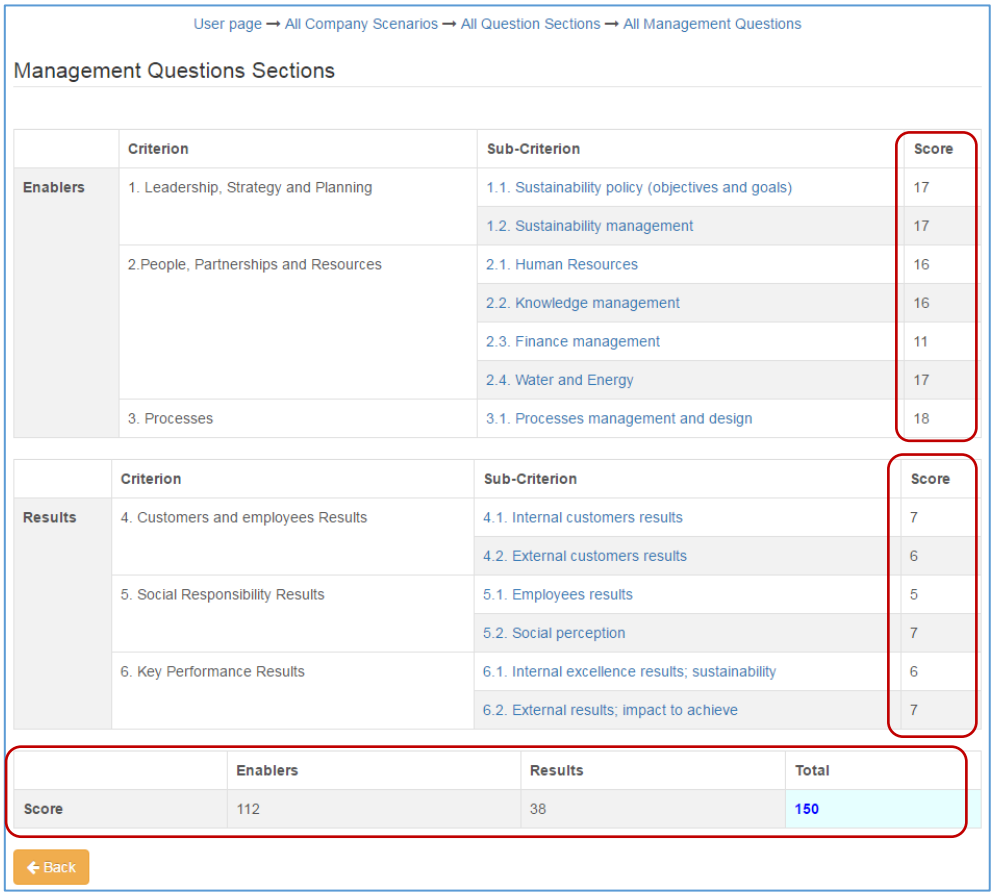
The results of the score obtained by the user are available in the summary page after submitting the results in the main section of the management score.



#	Title	Info	Last Modified	Last User Modified	Results
○	General Questions	Questions about production, water, electricity and/or fuel consumption	2018-07-20	Onecompany	View
○	Efficiency Questions	Data regarding processes, equipment and features of the company	2018-07-20	Onecompany	View
◉	Management Questions	Data regarding management information of the company	2018-07-20	Onecompany	

← Back | Edit Data | Submit Scenario

Once inside the management section, an overview of the results can be seen in the right part of the section, where if a certain criterion or sub criterion has been assessed will display all the result obtained.



User page → All Company Scenarios → All Question Sections → All Management Questions

Management Questions Sections

	Criterion	Sub-Criterion	Score
Enablers	1. Leadership, Strategy and Planning	1.1. Sustainability policy (objectives and goals)	17
		1.2. Sustainability management	17
	2.People, Partnerships and Resources	2.1. Human Resources	16
		2.2. Knowledge management	16
		2.3. Finance management	11
		2.4. Water and Energy	17
	3. Processes	3.1. Processes management and design	18

	Criterion	Sub-Criterion	Score
Results	4. Customers and employees Results	4.1. Internal customers results	7
		4.2. External customers results	6
	5. Social Responsibility Results	5.1. Employees results	5
		5.2. Social perception	7
	6. Key Performance Results	6.1. Internal excellence results; sustainability	6
		6.2. External results; impact to achieve	7

	Enablers	Results	Total
Score	112	38	150

← Back

At the bottom of the page it appears a summary of the enablers and results score as well as the total score.

7.5.4 Reminder

It is highly recommended that the assigned Energy Angel or Company's Energy Angel, as an objective observer of the company's status, would be the person to fill in all of the different sub-criteria.

7.6 Submit Scenario

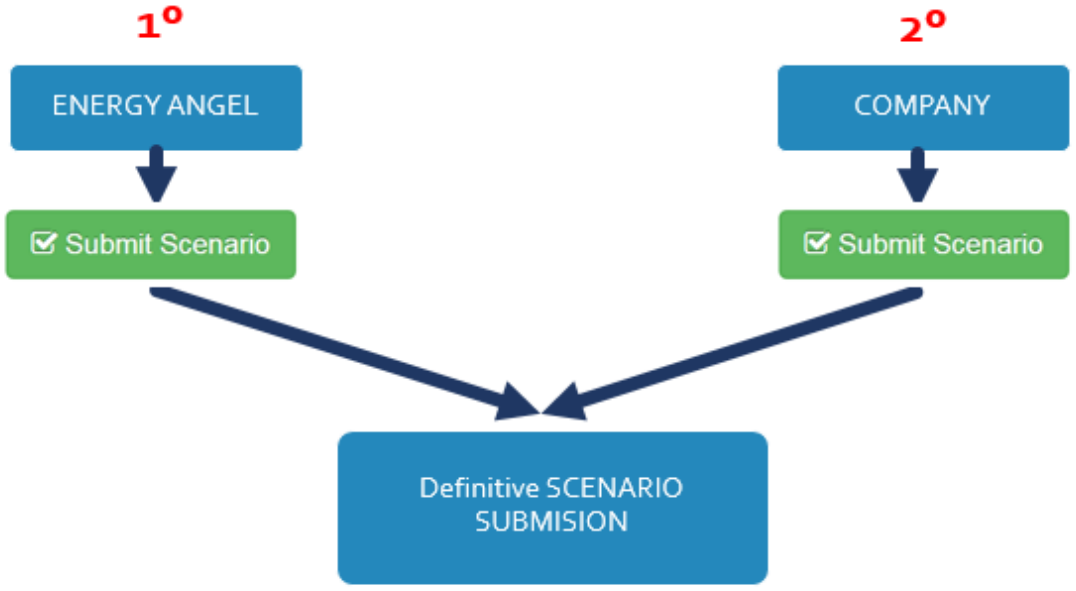
When the Company and the Energy Angel considers that the process of introducing information is completed, they can submit the whole scenario to generate the results that the EMSA is able to provide.

Finishing data input stage means that:

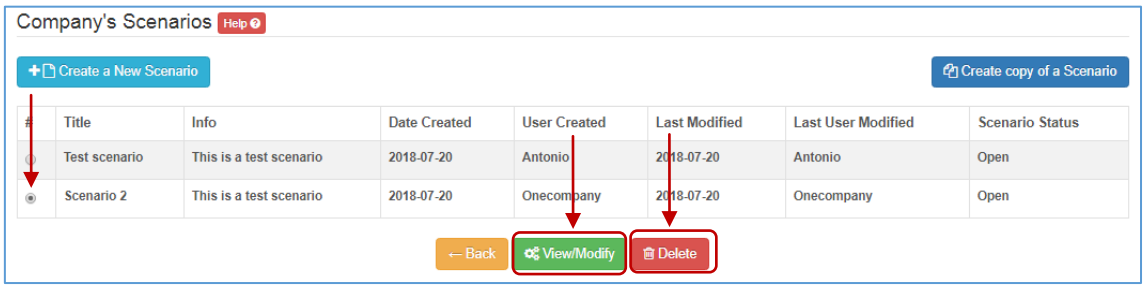
- Company has entered as much information as possible in the tool
- That information has been validated by the Energy Angel
- They both consider that the Scenario is completed

To submit a Scenario, both Company and Energy Angel should agree on the issue that the data introduction phase has been finished and data are correct.

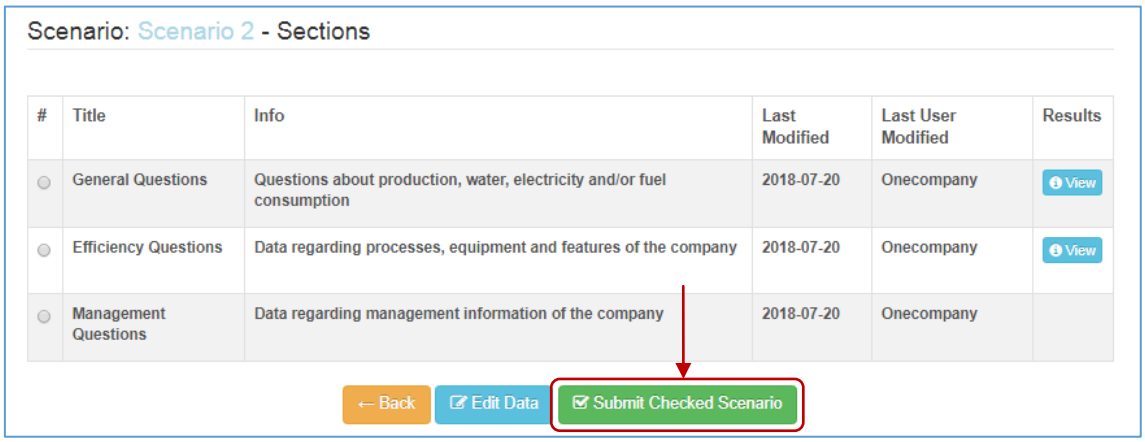
It is because a double-check conformation is implemented to assure that both agree in this part before generating final results



Then, **firstly** the Energy Angel should go to the Scenario main page and select a scenario:

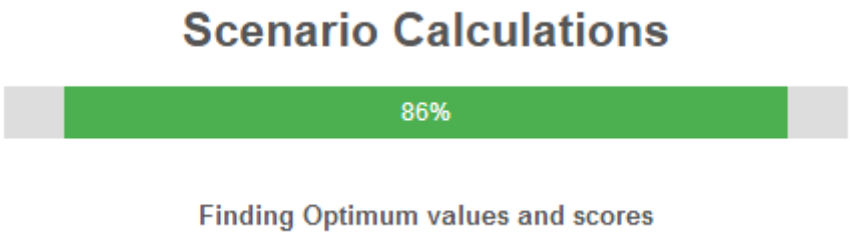


Then, click in the "Submit Scenario" button, inside the Scenario page.



As an double-check conformation, **secondly,** the Company will follow the same procedure

Once submitted the scenario, all the results will be calculated.

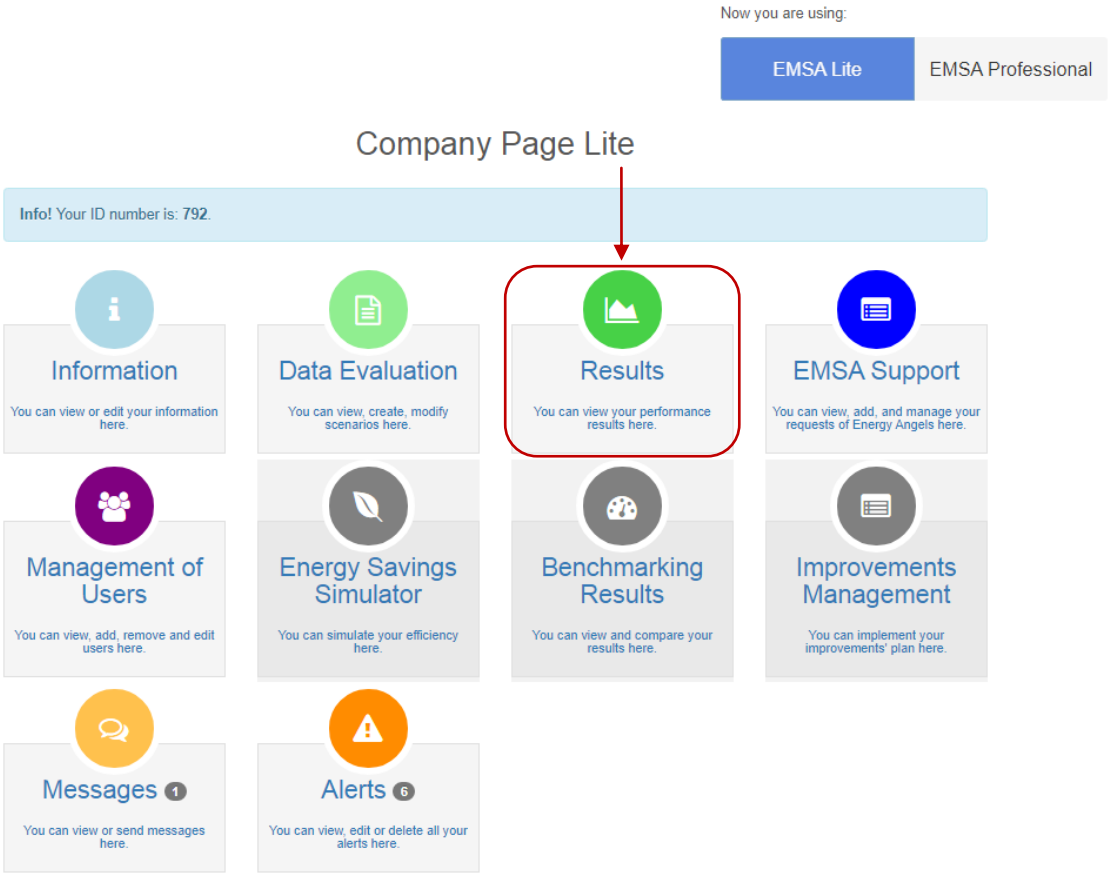


By Submitting a Scenario, it means that:

- The Scenario is completed and it will not be modified again (the EMSA will lock it and it would not be possible to modify it again)
- The Scenario is going to be assessed and the tool will calculate the different Results: (Efficiency, Improvements, Simulation, Benchmarking)

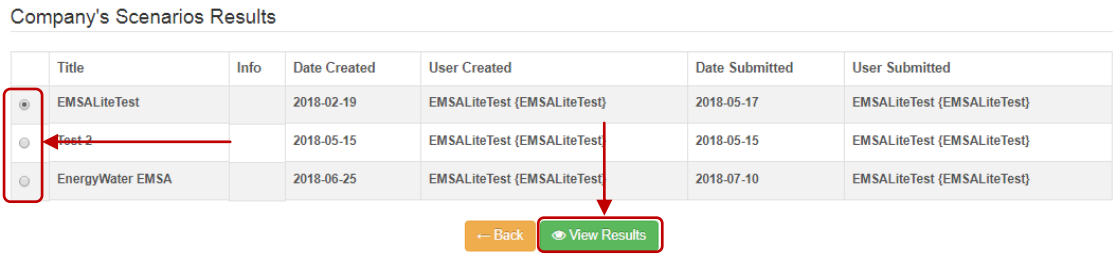
8 RESULTS. EMSA Lite

To see the results of the EMSA Lite assessment, enter in the "*Results*" tab. The company's account has a permanent access to this tab. Depending on the permissions granted by the company, Energy Angels and the rest of the users of the company can also have access to it.



The company has to select which scenario's results they want to display. Once a scenario has been selected, press the "*View Results*" button.

Only the submitted scenarios will be able to be selected.

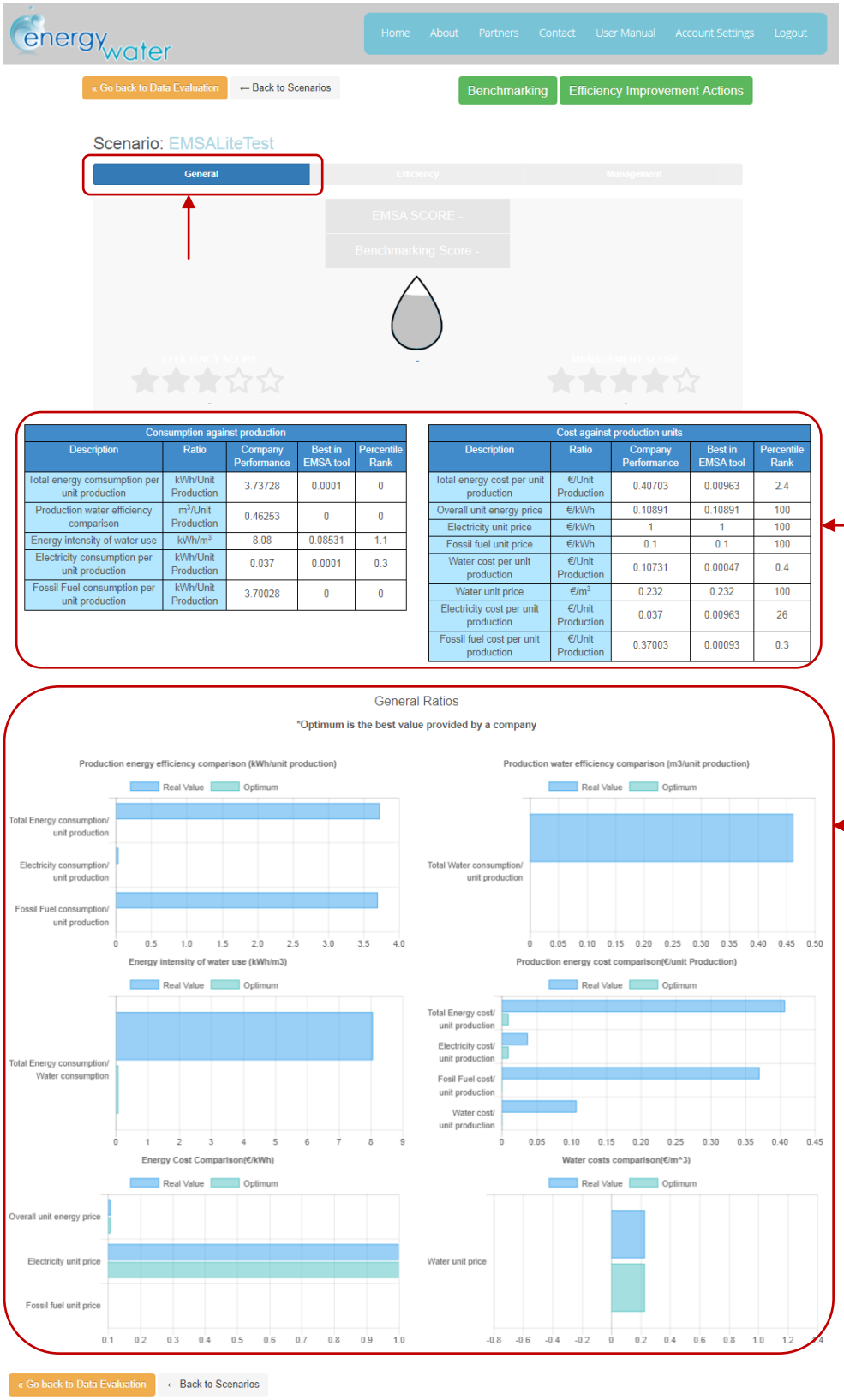


The results page is dived in three different sections:

- General Results
- Benchmarking Results
- Efficiency Improvement Actions Results

8.1 General Results

The first page that appears is the “General Results”.



Consumption against production

Description	Ratio	Company Performance	Best in EMSA tool	Percentile Rank
Total energy comsumption per unit production	kWh/Unit Production	3.73728	0.0001	0
Production water efficiency comparison	m^3/Unit Production	0.46253	0	0
Energy intensity of water use	kWh/m^3	8.08	0.08531	1.1
Electricity consumption per unit production	kWh/Unit Production	0.037	0.0001	0.3
Fossil Fuel consumption per unit production	kWh/Unit Production	3.70028	0	0

Cost against production units

Description	Ratio	Company Performance	Best in EMSA tool	Percentile Rank
Total energy cost per unit production	€/Unit Production	0.40703	0.00963	2.4
Overall unit energy price	€/kWh	0.10891	0.10891	100
Electricity unit price	€/kWh	1	1	100
Fossil fuel unit price	€/kWh	0.1	0.1	100
Water cost per unit production	€/Unit Production	0.10731	0.00047	0.4
Water unit price	€/m^3	0.232	0.232	100
Electricity cost per unit production	€/Unit Production	0.037	0.00963	26
Fossil fuel cost per unit production	€/Unit Production	0.37003	0.00093	0.3

1. General Ratios Tables

In these tables it is shown a summary of the "Efficiency Ratios", for both general information of consumption and cost.

Consumption against production				
Description	Ratio	Company Performance	Best in EMSA tool	Percentile Rank
Total energy comsumption per unit production	kWh/Unit Production	3.73728	0.0001	0
Production water efficiency comparison	m^3/Unit Production	0.46253	0	0
Energy intensity of water use	kWh/m^3	8.08	0.08531	1.1
Electricity consumption per unit production	kWh/Unit Production	0.037	0.0001	0.3
Fossil Fuel consumption per unit production	kWh/Unit Production	3.70028	0	0

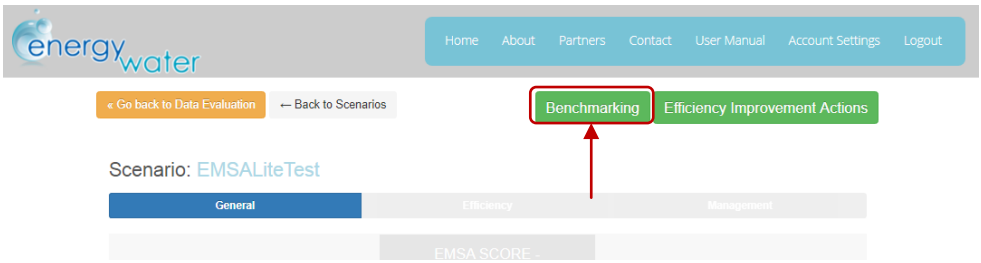
Cost against production units				
Description	Ratio	Company Performance	Best in EMSA tool	Percentile Rank
Total energy cost per unit production	€/Unit Production	0.40703	0.00963	2.4
Overall unit energy price	€/kWh	0.10891	0.10891	100
Electricity unit price	€/kWh	1	1	100
Fossil fuel unit price	€/kWh	0.1	0.1	100
Water cost per unit production	€/Unit Production	0.10731	0.00047	0.4
Water unit price	€/m^3	0.232	0.232	100
Electricity cost per unit production	€/Unit Production	0.037	0.00963	26
Fossil fuel cost per unit production	€/Unit Production	0.37003	0.00093	0.3

2. General Ratios charts

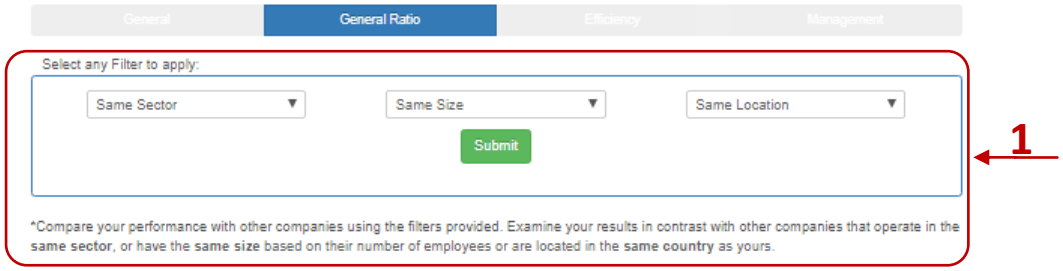
Finally, there are shown several charts with the company's information and the optimum values, which are the best values provided by a company.

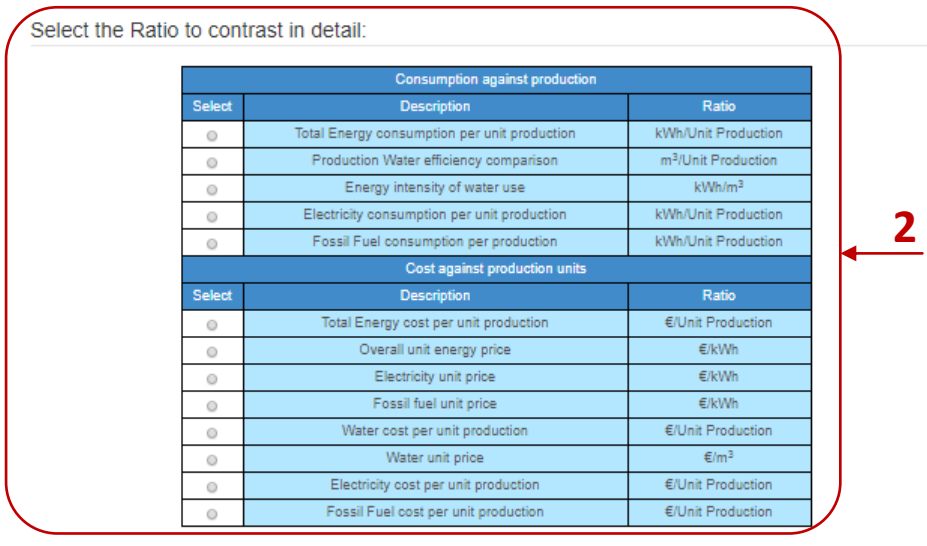
8.2 Benchmarking Results

To enter in the "Benchmarking Results" tab, the user should click the "Benchmarking" button.



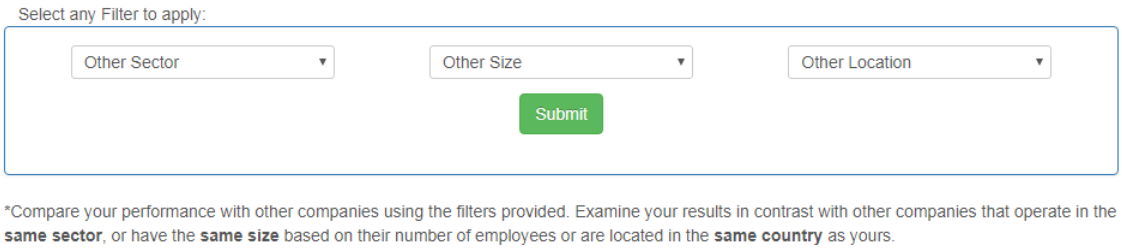
Then, the user will see the next page:



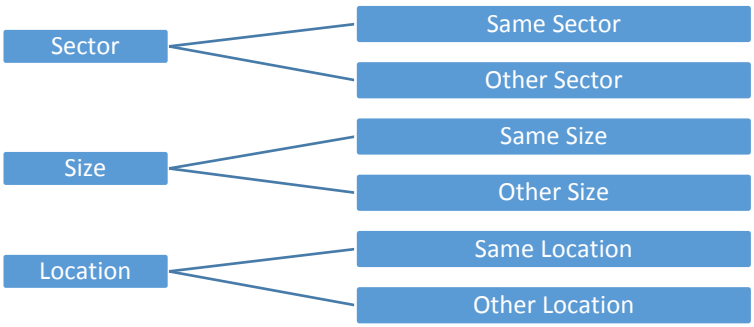


1. Filter to apply.

The user can filter with which companies it will be compared.



The available filters are the following:



2. Ratio to compare

The user can select the ratio to contrast in detail.

Select the Ratio to contrast in detail:

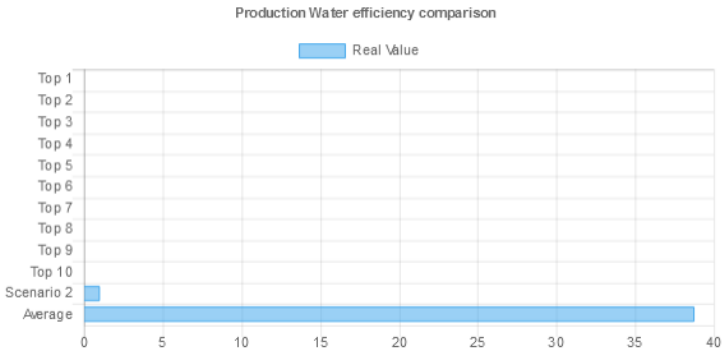
Consumption against production		
Select	Description	Ratio
○	Total Energy consumption per unit production	kWh/Unit Production
◉	Production Water efficiency comparison	m^3/Unit Production
○	Energy intensity of water use	kWh/m^3
○	Electricity consumption per unit production	kWh/Unit Production
○	Fossil Fuel consumption per production	kWh/Unit Production
Cost against production units		
Select	Description	Ratio
○	Total Energy cost per unit production	€/Unit Production
○	Overall unit energy price	€/kWh
○	Electricity unit price	€/kWh
○	Fossil fuel unit price	€/kWh
○	Water cost per unit production	€/Unit Production
○	Water unit price	€/m^3
○	Electricity cost per unit production	€/Unit Production
○	Fossil Fuel cost per unit production	€/Unit Production

3. Results

The user can see the results of the ratio selected against other companies.

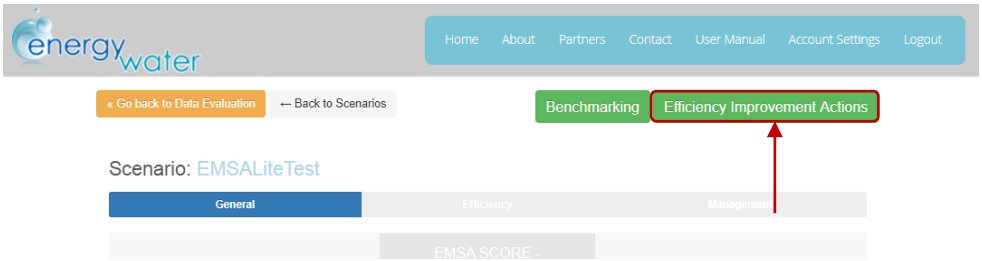
Results

Production Water efficiency comparison	Value
Scenario 2	1
Best Company	0.00033
Average Company	38.80172

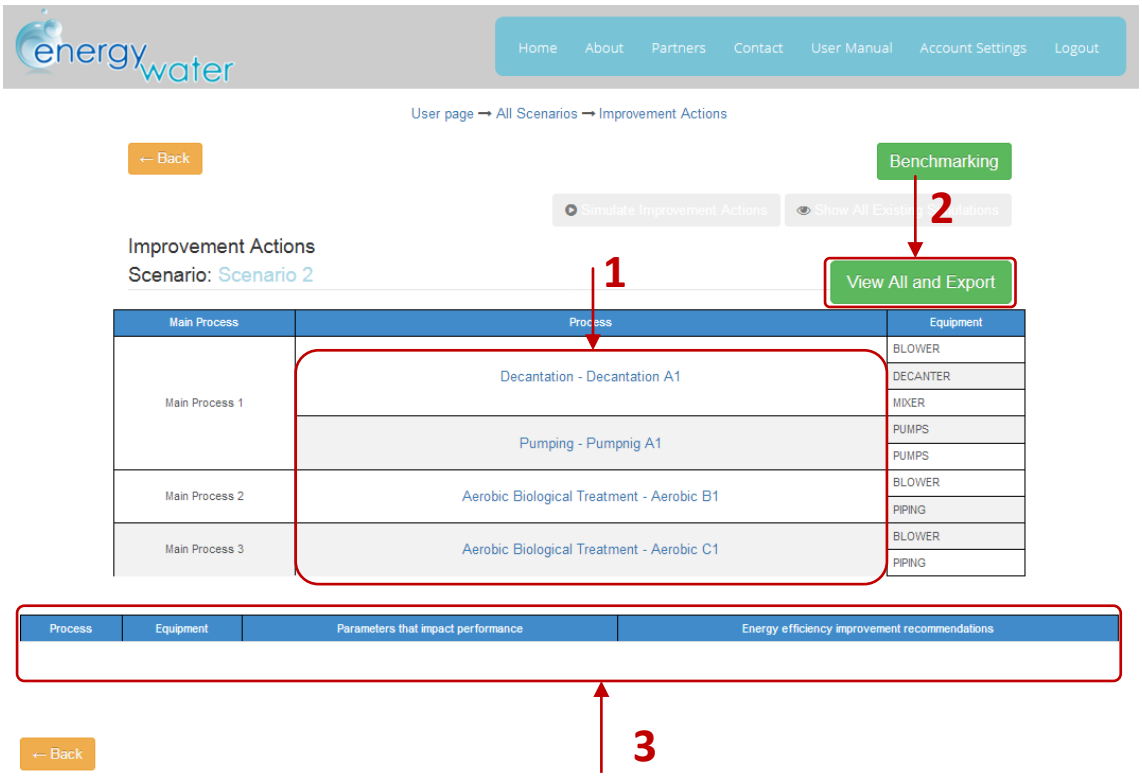


8.3 Efficiency Improvements Actions Results

To enter in the “Improvement Actions” tab, the user should click the “Efficiency Improvement Actions” button.



Then, the user will see the next page:



The user can see the improvements actions recommended by the EMSA Web-Tool.

1. Select the process.

The user can select one of the processes described in the “Data Evaluation” tab.

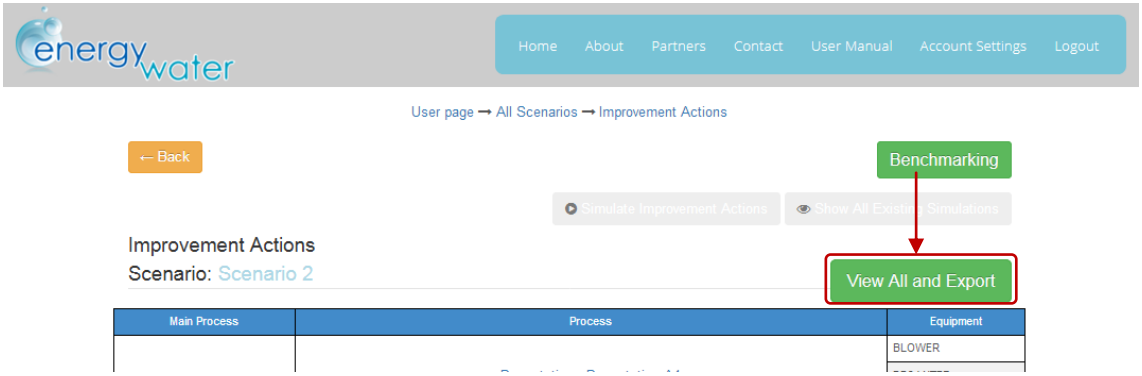
2. Improvements actions

Once the user has clicked one of the processes, the improvements actions and the parameters that impact performance will appear in the table below.

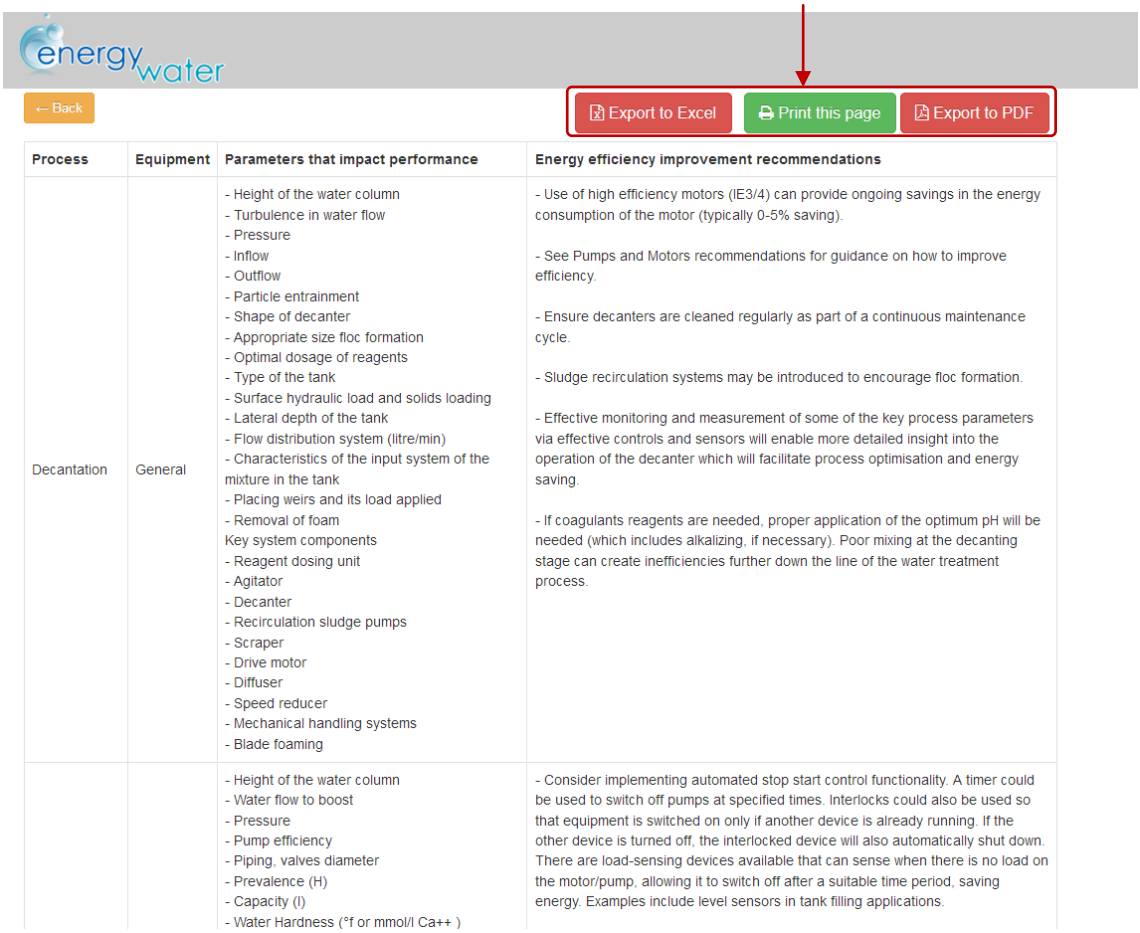
Process	Equipment	Parameters that impact performance	Energy efficiency improvement recommendations
Decantation	General	- Height of the water column - Turbulence in water flow - Pressure - Inflow - Outflow - Particle entrainment - Shape of decanter - Appropriate size floc formation - Optimal dosage of reagents - Type of the tank - Surface hydraulic load and solids loading - Lateral depth of the tank - Flow distribution system (litre/min) - Characteristics of the input system of the mixture in the tank - Placing weirs and its load applied - Removal of foam Key system components - Reagent dosing unit - Agitator - Decanter - Recirculation sludge pumps - Scraper - Drive motor - Diffuser - Speed reducer - Mechanical handling systems - Blade foaming	- Use of high efficiency motors (IE3/4) can provide ongoing savings in the energy consumption of the motor (typically 0-5% saving). - See Pumps and Motors recommendations for guidance on how to improve efficiency. - Ensure decanters are cleaned regularly as part of a continuous maintenance cycle. - Sludge recirculation systems may be introduced to encourage floc formation. - Effective monitoring and measurement of some of the key process parameters via effective controls and sensors will enable more detailed insight into the operation of the decanter which will facilitate process optimisation and energy saving. - If coagulants reagents are needed, proper application of the optimum pH will be needed (which includes alkalizing, if necessary). Poor mixing at the decanting stage can create inefficiencies further down the line of the water treatment process.
Decantation	Pumps	- Height of the water column - Water flow to boost - Pressure - Pump efficiency - Piping, valves diameter - Prevalence (H) - Capacity (l) - Water Hardness (°f or mmol/l Ca++) - pH - Medium being pumped (e.g. raw water, dosing chemical, polyelectrolyte or sludge) - System flowrate (m3/h) - Operating temperature of the fluid - Nozzle diameter - Total static head (m) • Static suction head • Static discharge head • Total system head - Nature and size of any solids present - Single or multiple duty point(s) Operational hours for different duty cycles	- Consider implementing automated stop start control functionality. A timer could be used to switch off pumps at specified times. Interlocks could also be used so that equipment is switched on only if another device is already running. If the other device is turned off, the interlocked device will also automatically shut down. There are load-sensing devices available that can sense when there is no load on the motor/pump, allowing it to switch off after a suitable time period, saving energy. Examples include level sensors in tank filling applications. - A motor will draw a high current from the supply during starting. To reduce this starting current, it is possible to fit a soft starter device that limits the current to the motor during start-up, and achieves a smoother acceleration profile, extending the life of the pump. - Understanding pump performance characteristics is critical. The starting point is to know the current operating point of the analysed pump and hydraulic system, and the method currently used to regulate the flow. By using a manometer / barometer located before and after the pump, and a flowmeter, the performance curve of the pump can be established, which will facilitate the identification of the best efficiency point (BEP) of the pump. - Use of high efficiency motors (IE3/4) can provide ongoing savings in the energy consumption of the pump (typically 0-5% saving). - Install a variable speed drive (VSD) to match pump flow to real process demand. It is possible to manually change the frequency to adjust the desired operating point, or by implementing sensors with closed loop feedback the pump can change speed depending on system requirements and set points. Manual setting is effective in installations with a fixed flow; automated controls would be preferable for systems with variable flow. Typical energy savings are shown to vary between 30% and 80% when implementing variable speed drives (VSDs). - Ensure your Pumps system has the correct Net Positive Suction Head. The correct NPSH is required to ensure the pump

3. View All and Export

To see all the improvements Actions in the scenario, the user should click the “View All and Export” button.



Then, the user will see the next page:



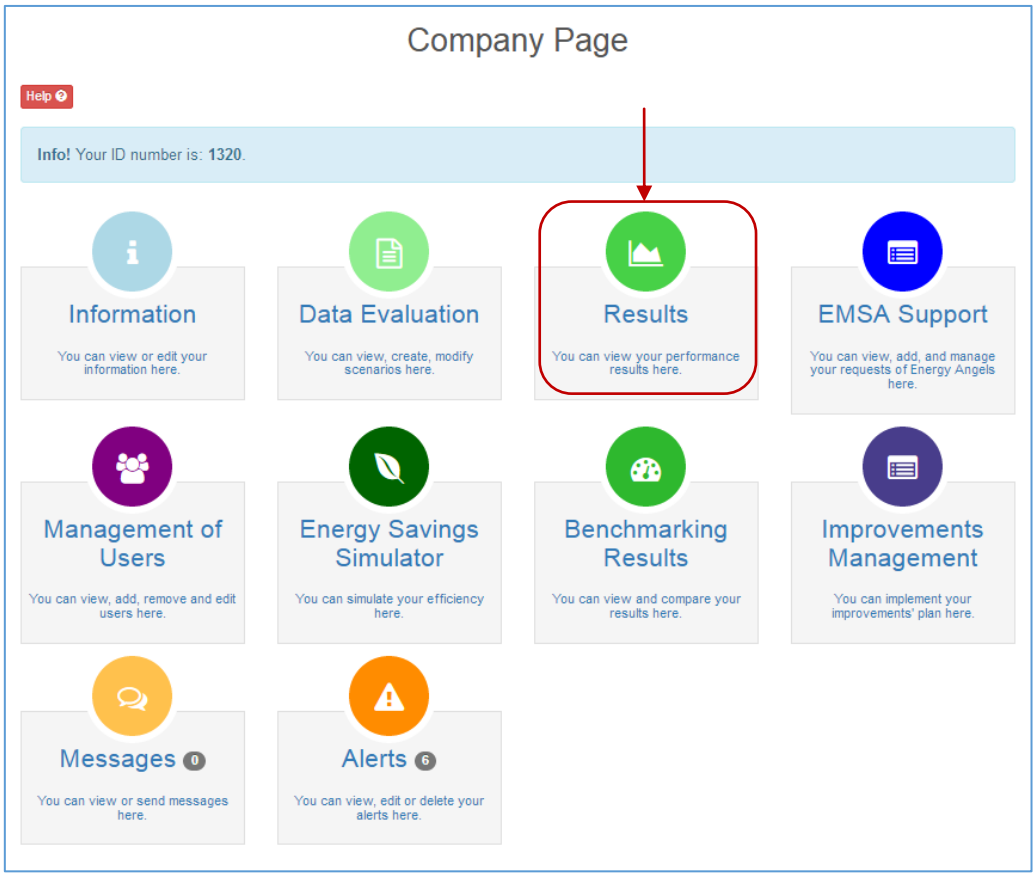
Process	Equipment	Parameters that impact performance	Energy efficiency improvement recommendations
Decantation	General	- Height of the water column - Turbulence in water flow - Pressure - Inflow - Outflow - Particle entrainment - Shape of decanter - Appropriate size floc formation - Optimal dosage of reagents - Type of the tank - Surface hydraulic load and solids loading - Lateral depth of the tank - Flow distribution system (litre/min) - Characteristics of the input system of the mixture in the tank - Placing weirs and its load applied - Removal of foam Key system components - Reagent dosing unit - Agitator - Decanter - Recirculation sludge pumps - Scraper - Drive motor - Diffuser - Speed reducer - Mechanical handling systems - Blade foaming	- Use of high efficiency motors (IE3/4) can provide ongoing savings in the energy consumption of the motor (typically 0-5% saving). - See Pumps and Motors recommendations for guidance on how to improve efficiency. - Ensure decanters are cleaned regularly as part of a continuous maintenance cycle. - Sludge recirculation systems may be introduced to encourage floc formation. - Effective monitoring and measurement of some of the key process parameters via effective controls and sensors will enable more detailed insight into the operation of the decanter which will facilitate process optimisation and energy saving. - If coagulants reagents are needed, proper application of the optimum pH will be needed (which includes alkalizing, if necessary). Poor mixing at the decanting stage can create inefficiencies further down the line of the water treatment process.
		- Height of the water column - Water flow to boost - Pressure - Pump efficiency - Piping, valves diameter - Prevalence (H) - Capacity (l) - Water Hardness (°f or mmol/l Ca++)	- Consider implementing automated stop start control functionality. A timer could be used to switch off pumps at specified times. Interlocks could also be used so that equipment is switched on only if another device is already running. If the other device is turned off, the interlocked device will also automatically shut down. There are load-sensing devices available that can sense when there is no load on the motor/pump, allowing it to switch off after a suitable time period, saving energy. Examples include level sensors in tank filling applications.

All the improvements can be exported to an Excel or PDF file, or printed.

9 RESULTS. EMSA Professional

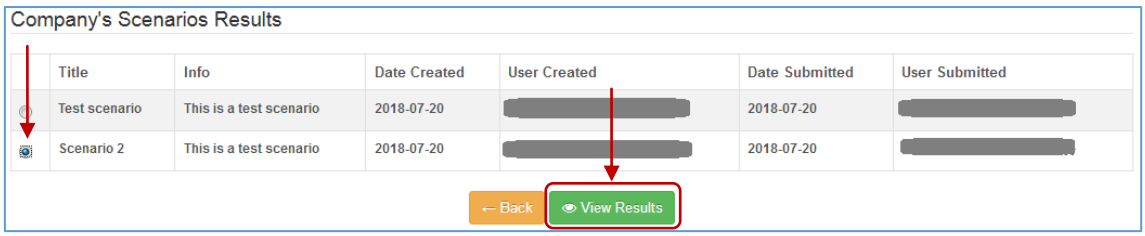
To see the results of the EMSA assessment, enter in the "*Results*" tab. The company's account has a permanent access to this tab.

Depending on the permissions granted by the company, Energy Angels and the rest of the users of the company can also have access to it.



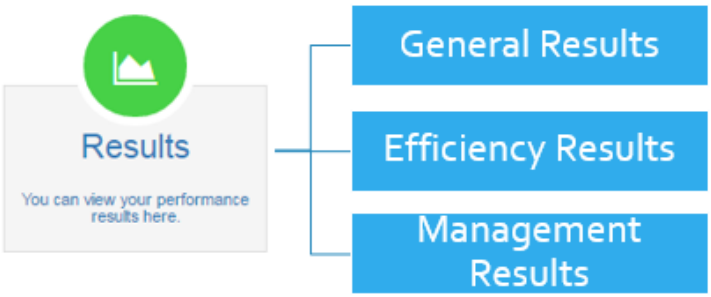
The company has to select which scenario's results they want to display. Once a scenario has been selected, press the "*View Results*" button.

Only the submitted scenarios will be able to be selected.



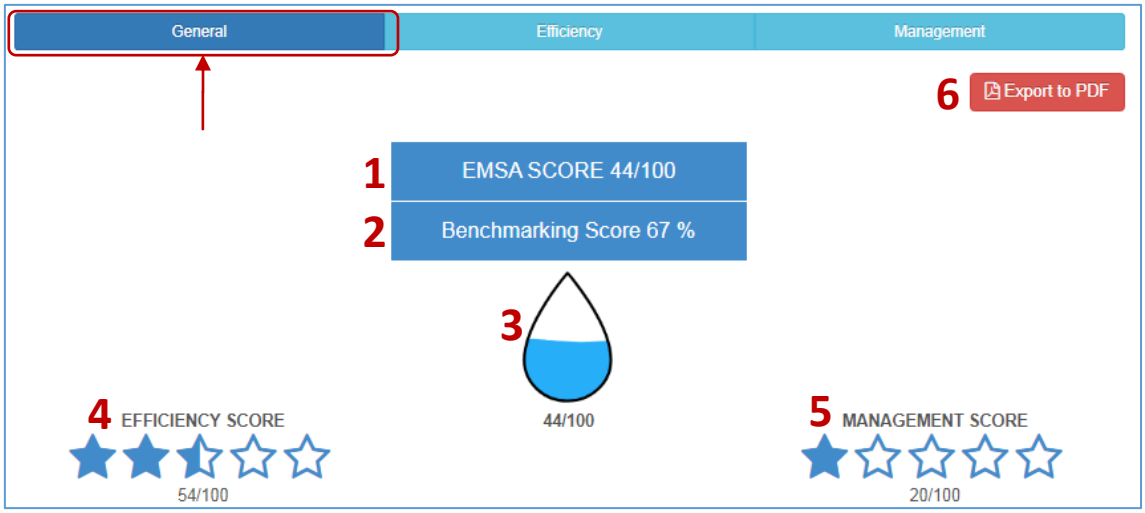
The results page is dived in three different sections:

- General Results
- Efficiency Results
- Management Results



9.1 General Results

The first page that appears is the "General Results".



In this page it firstly appears:

1. **The EMSA score of the company**

This is the Final Score of the company, contains both the efficiency and the management score.

2. **The benchmarking score. This part will later be displayed in the "*Benchmarking Results*" tab**

Companies will have the possibility to compare themselves in general aspects with other companies of their same sector and in a more specific way by choosing the equipment they have installed. The data will be anonymous and the different companies will only know that they are comparing themselves with a company from the same industrial sector, or with a company that has similar processes as they do.

If a company has a 100% score in the benchmarking, it means that from the Benchmarking database, that company has the best results in both the efficiency and management assessment. However, there may be more efficient companies that have not introduced their data in the tool.

3. **A water drop that displays in a more visual way the EMSA score**

This is a visual help to display the EMSA Score

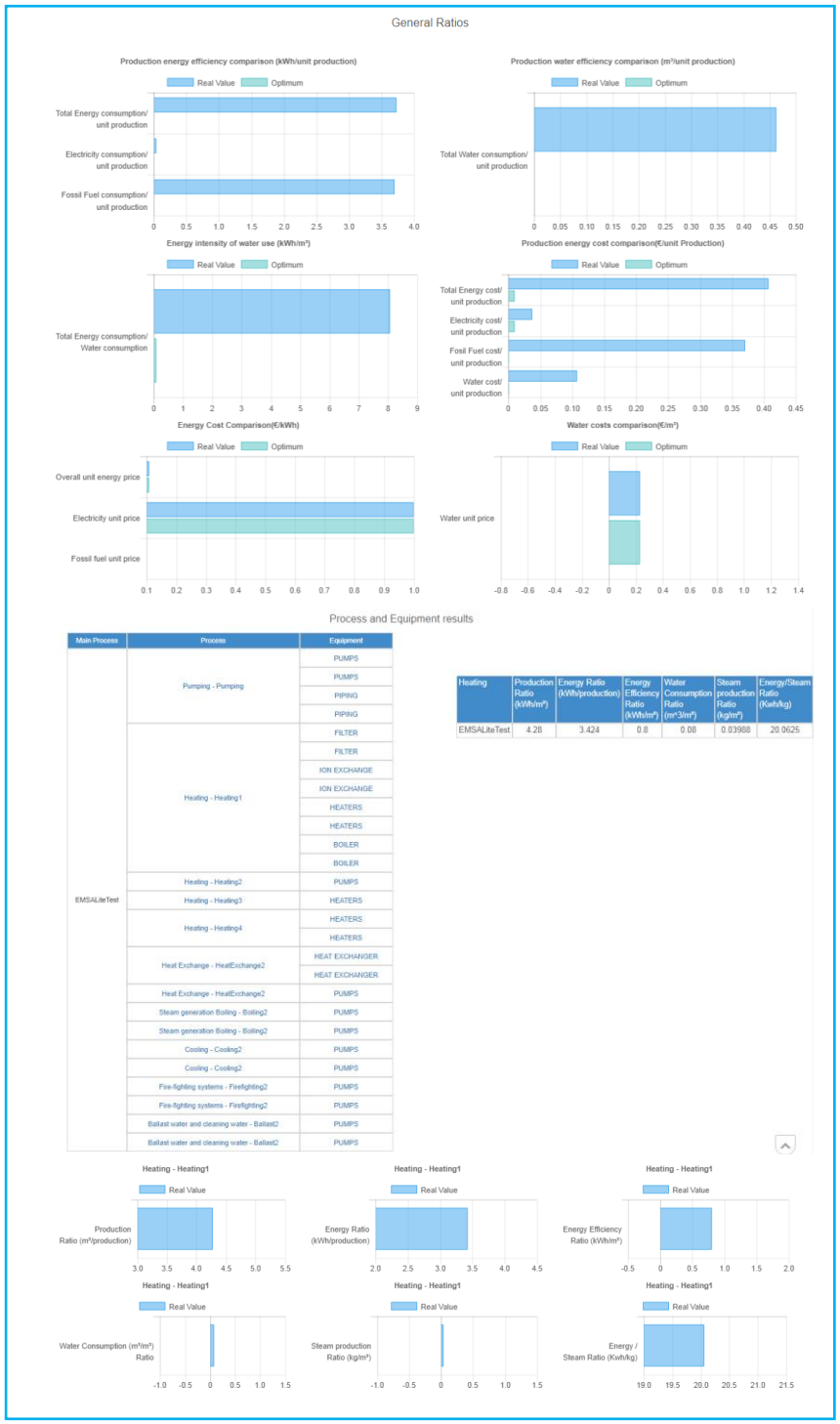
4. **The efficiency score in a numerical and a graphic way**

Although the efficiency part is presented in depth subsequently, here it is presented a summary. In this part is displayed visually and numerically the score obtained in the efficiency part, that contains the global, process and equipment questions.

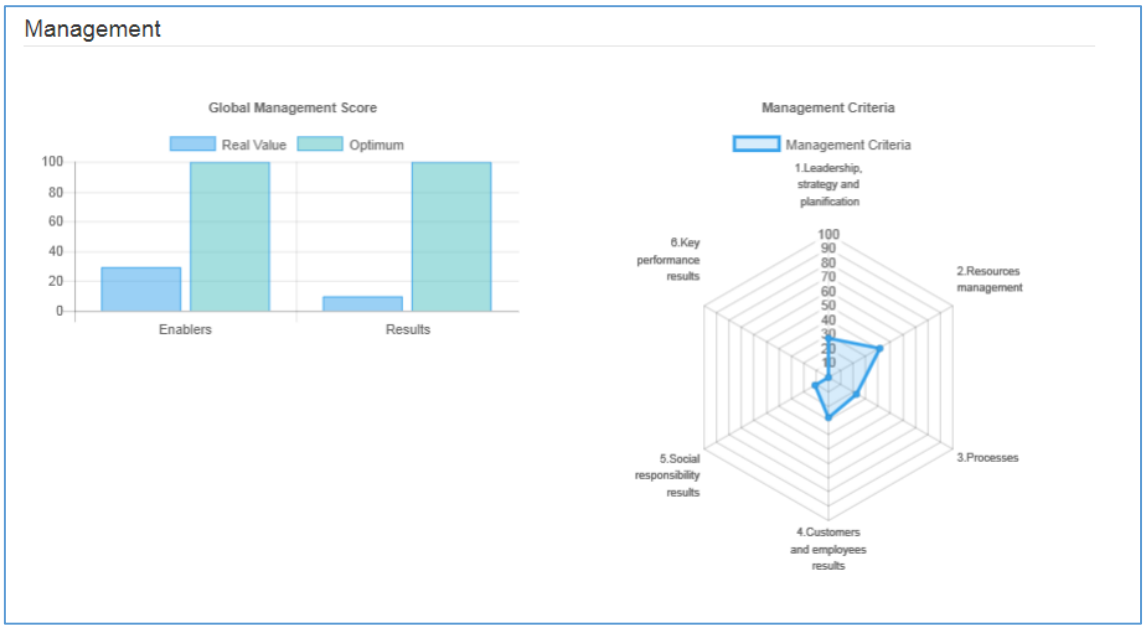
5. The management score in a numerical and a graphic way

This part is also explained in detail in a posterior tab, but there it is presented a summary of the score obtained in the management part. It is represented in both numerical and graphical way.

If the user descends in the EMSA tool, it is shown a more complete summary of the “Efficiency Ratios”, for both the general information and the process and equipment ones.

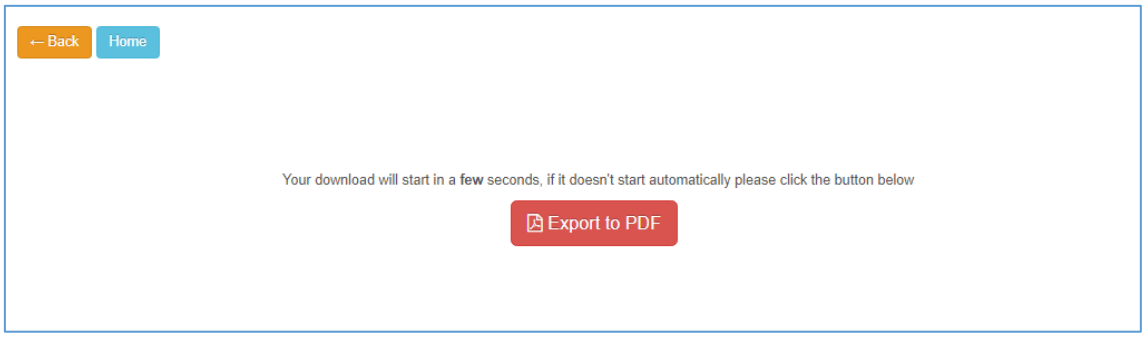


Finally, if the user keeps on descending in the tool, it is shown a summary of the "Management" part giving an overview of the results obtained.



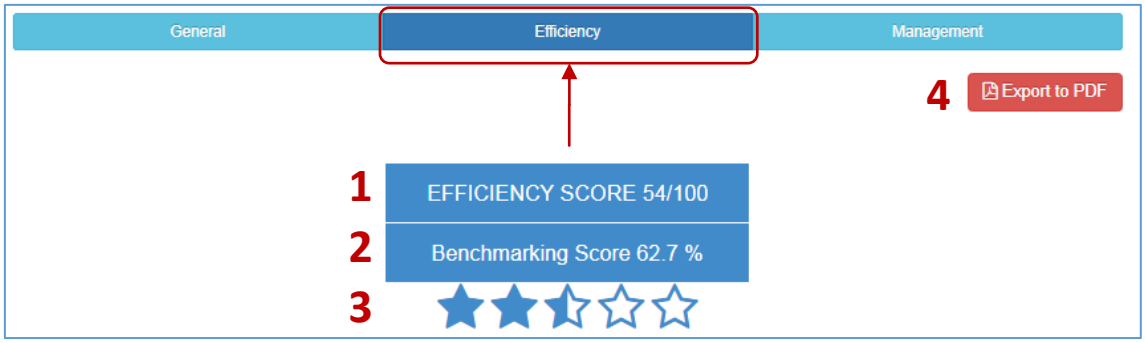
6. Export to PDF file

The user can export the results to a PDF file and download it.



9.2 Efficiency Results

The next tab appearing is the “Efficiency Results” section.



In this page it firstly appears

1. **Efficiency score of the company**

This score involves both the global questions (that are relative to the whole company), as well as the process and equipment selected by the company. All of the information is assessed depending on the information introduced in the tool and the degree of accuracy.

2. **Benchmarking score of the efficiency part. This part will later be displayed in the “*Benchmarking*” tab**

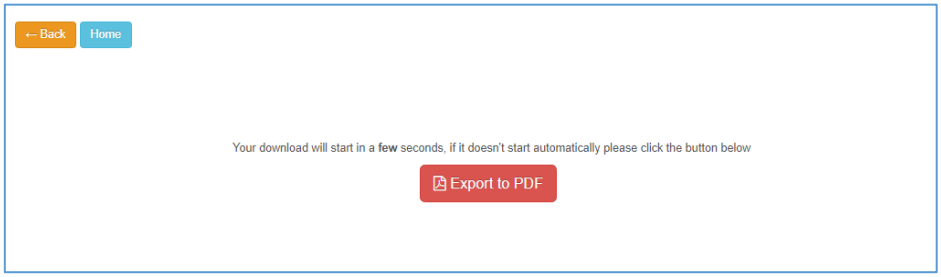
Companies will have the possibility to compare themselves with other companies of their same sector in the operation of their processes and in a more specific way by choosing the equipment they have installed. The data will be anonymous and the different companies will only know that they are comparing themselves with a company from the same industrial sector, or with a company that has similar processes as they do.

3. **A list of that display in a more visual way the efficiency score by being more or less filled depending on the score obtained.**

This is a visual help to see in an instant the score of the efficiency part and the maximum score obtainable by the user.

4. Export to PDF file

The user can export the results to a PDF file and download it.



9.2.1 Global Ratios

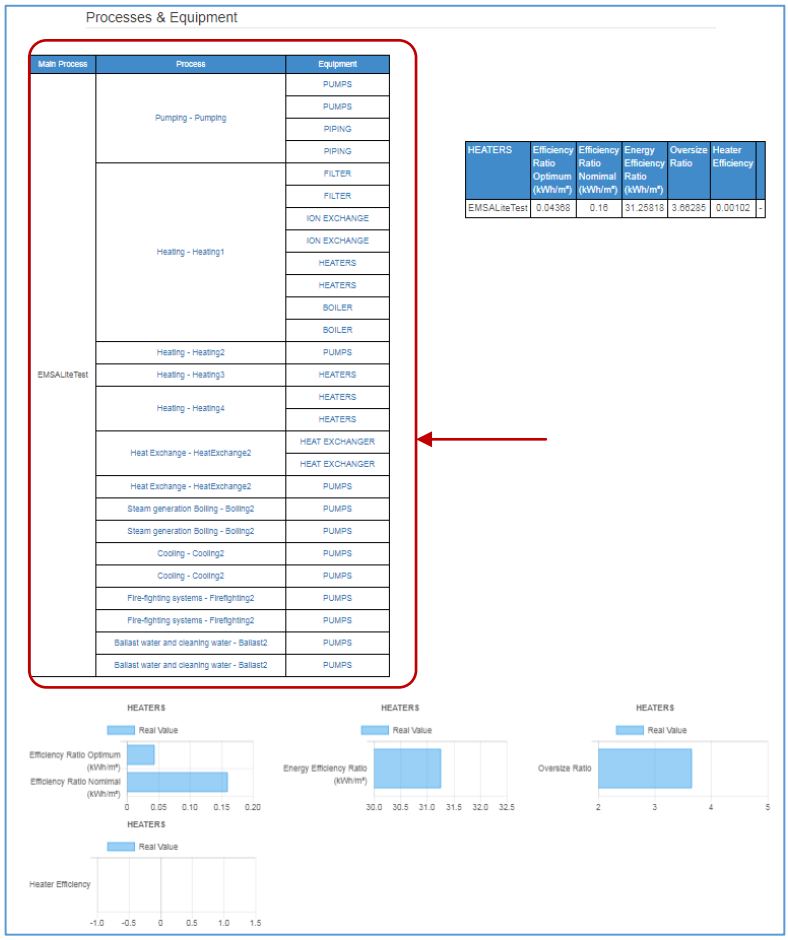
Descending in the tool, it is shown a summary of the global ratios calculated previously in the scenarios questions. This data concerns the whole company, and it comes from the "General Questions" that have been implemented with data concerning all the different processes and equipment of the company.

Depending on the data introduced in the "General Questions" there will be calculated different ratios for the company, depending on the sector, the production and the water consumption amongst others. In this first part, there will be shown the consumption of the processes assessed against the production of the company.

Then, there is also presented the cost against the production units. In this case, there are presented the ratios referring to the cost of the energy required in a global scale. It is also displayed the real value of the company, the optimum ratio of similar companies and the percentile rank depending on other companies from the same sector.

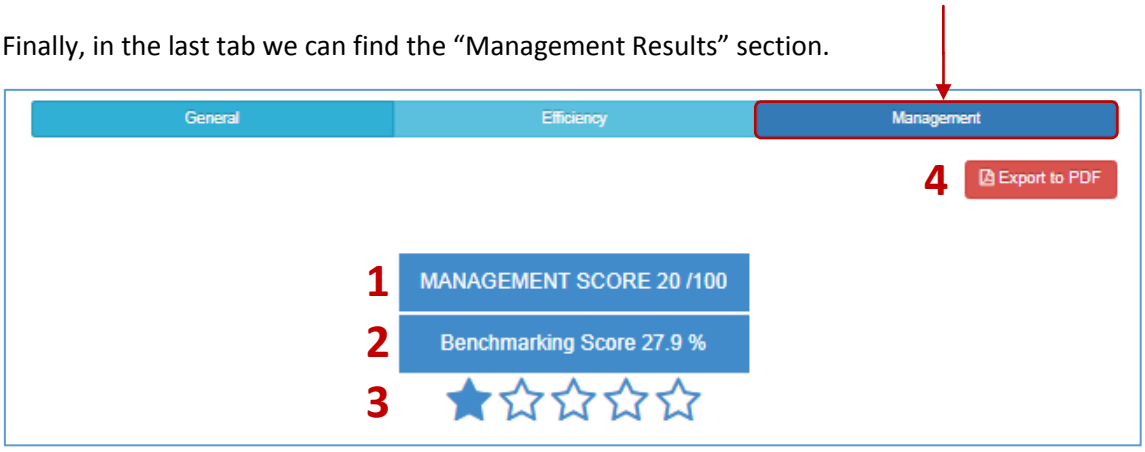
9.2.2 Processes & Equipment

Descending in the tool, it is shown a summary of the process ratios calculated previously in the scenarios questions, showing their main energy efficiency indicators, and comparing them with the optimum value according to the benchmarking and benchlearning database. The user should click in the process or equipment whose results he wants to see.



9.3 Management Results

Finally, in the last tab we can find the "Management Results" section.



In this page it firstly appears

1. **Management score of the company**

This score involves all the questions that have been asked in the management part. This score takes into account both the enablers and results criteria that have been answered previously.

2. **Benchmarking score of the management part. This part will later be displayed in the "*Benchmarking*" tab**

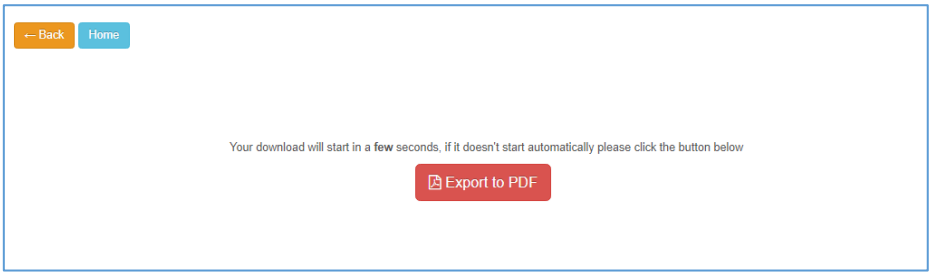
Companies will have the possibility to compare themselves with other companies in their management level. In all of the cases, the data will be anonymous and the different companies will only know that they are comparing themselves with a company from the same industrial sector, or with a company that has similar processes as they do.

3. **A list of that display in a more visual way the Management score by being more or less filled depending on the score obtained.**

This is a visual help to see in an instant the score of the management part and the maximum score obtainable by the user.

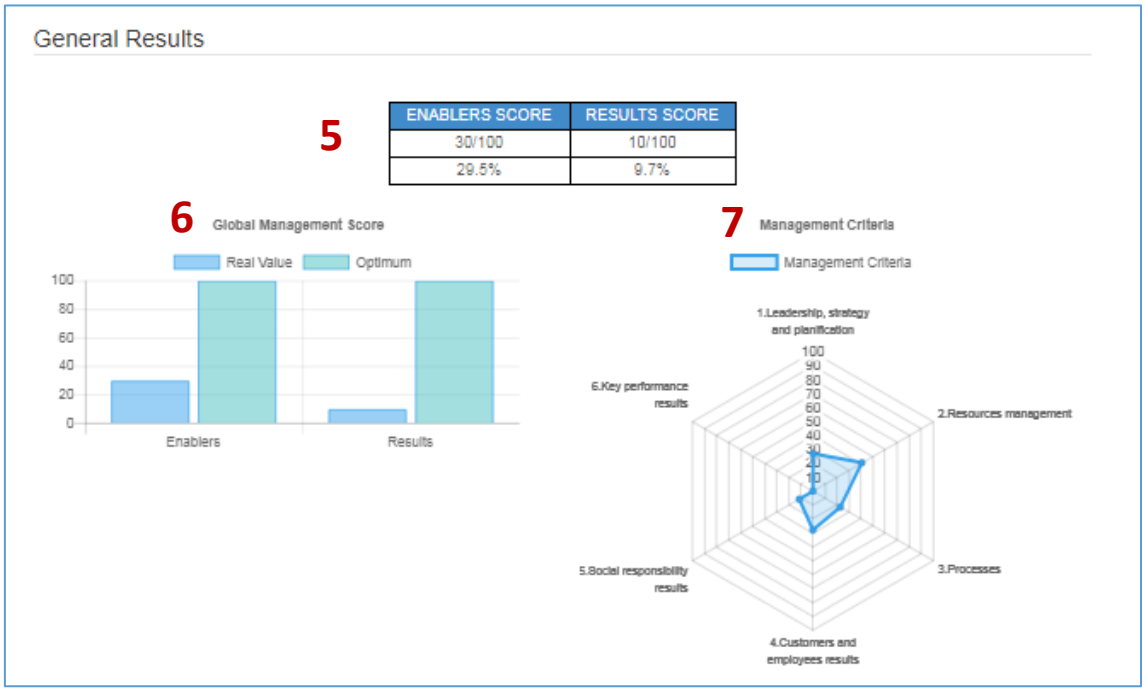
4. **Export to PDF file**

The user can export the results to a PDF file and download it.



9.3.1 General Results

Descending in the tool, it is shown a summary of the management part giving an overview of the results obtained.

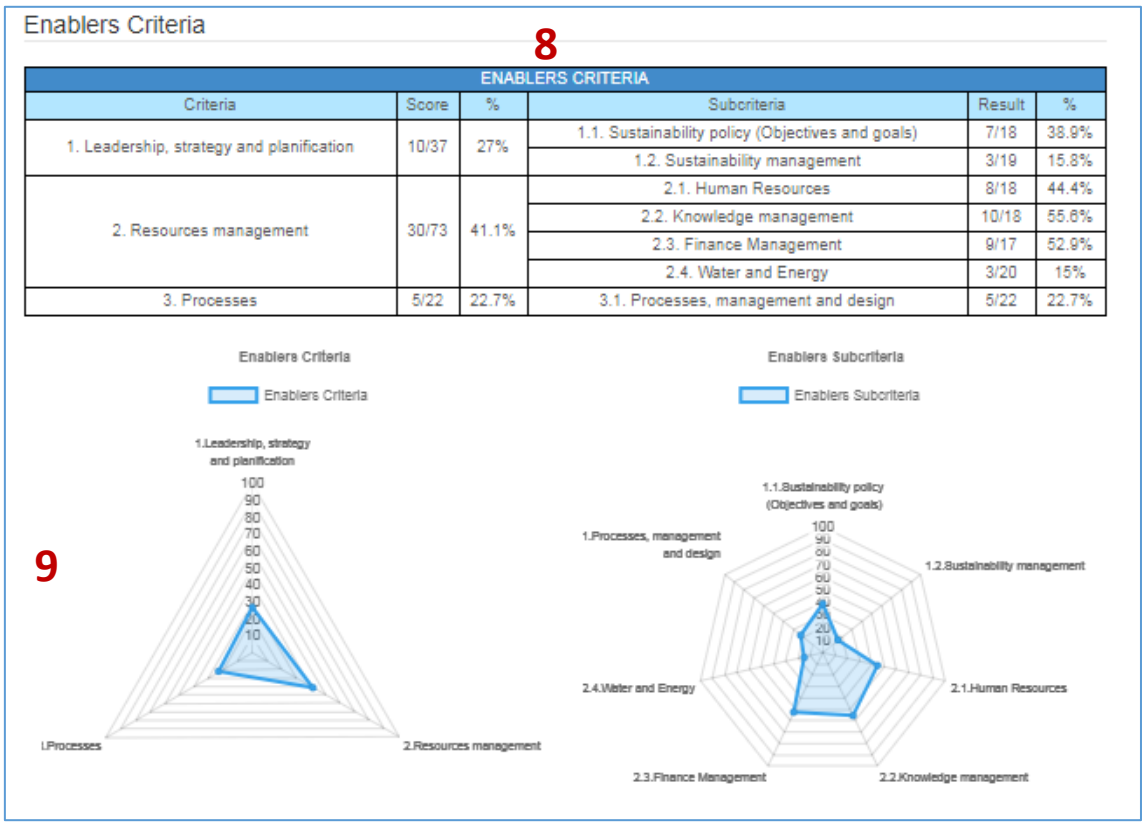


The data displayed by the tool is the following:

5. Global results of the "Enablers" and the "Results" Score. This table displays the score obtained against the maximum score achievable. It also shows the score in a percentage form.
6. Global results of the Enablers and the Results Score in a graphic way comparing them with the maximum score achievable.
7. A spider web diagram that displays the score obtained in all of the criteria assessed. It shows the score of all the criteria at the same time, to help companies to identify their strengthens and weaknesses and identify those strategies or procedures performed in the company that need to be improved

9.3.2 Enablers Criteria

Descending in the tool, it is shown in more detail the scores obtained in the **enablers criteria.**



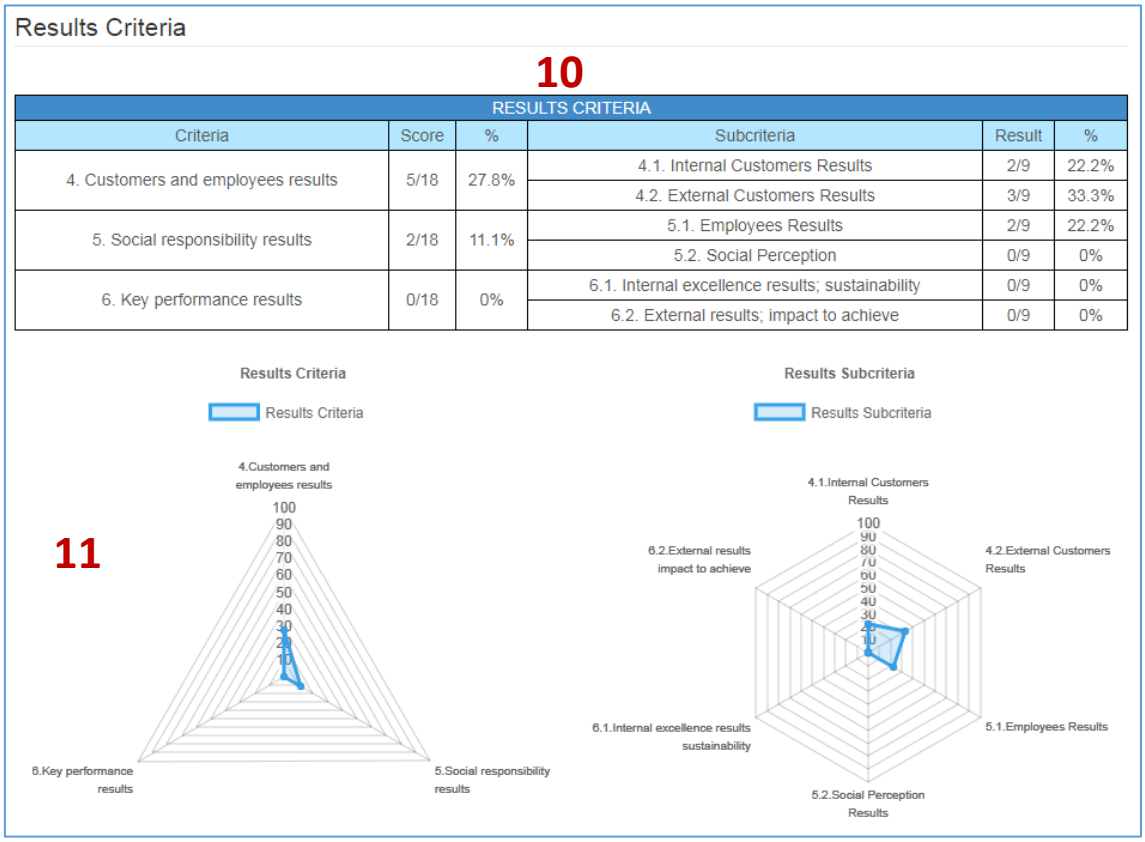
The data displayed by the tool is the following one:

8. Global results of the Enablers Criteria. This table displays the score obtained against the maximum score achievable. It also shows the score in a percentage form. Additionally, there are presented the same results for all the related sub-criteria.

9. A spider web diagram that displays the score obtained in all of the enablers sub-criteria assessed. It shows the score of all the sub-criteria at the same time, to help companies to identify their strengthens and weaknesses and identify those strategies or procedures performed in the company that need to be improved

9.3.3 Results Criteria

Finally, descending more in the tool, it is shown in more detail the scores obtained in the **results criteria.**



The data displayed by the tool is the following one:

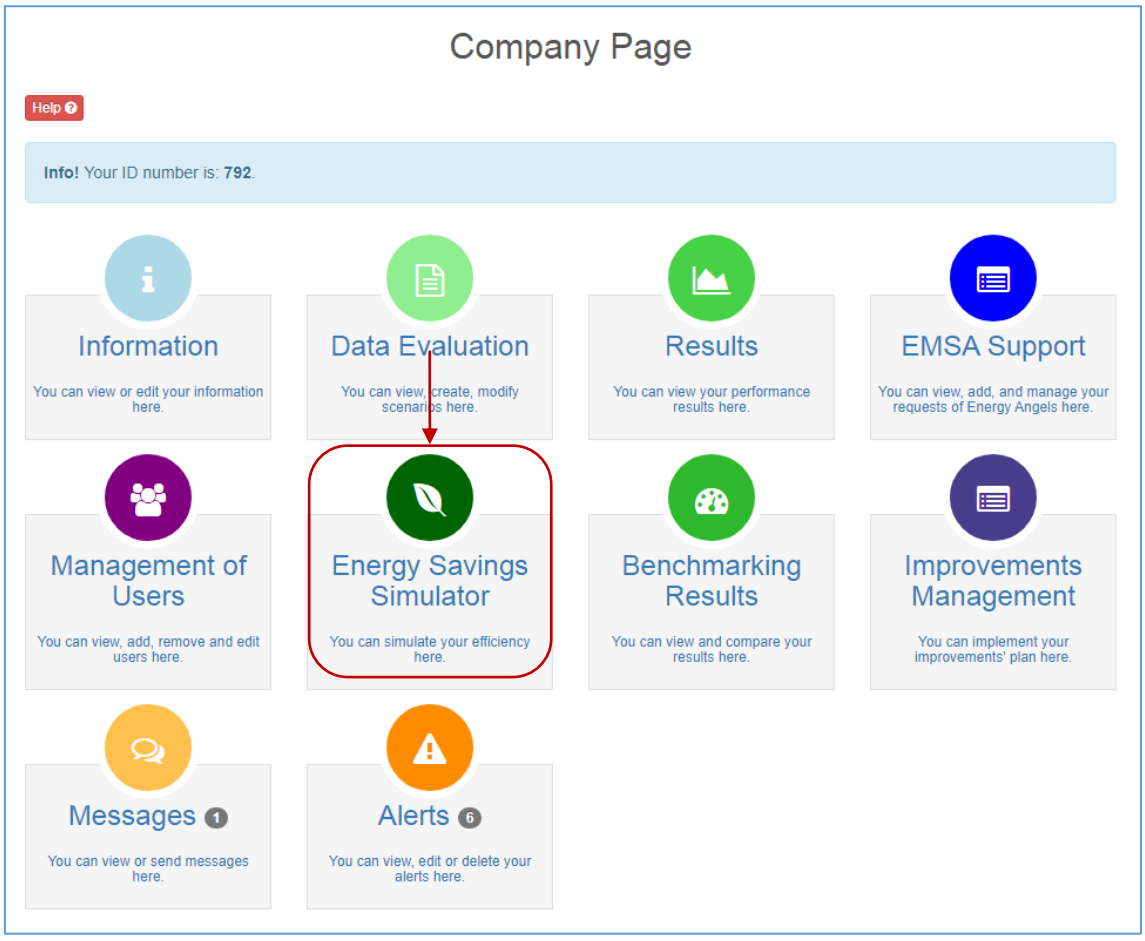
10. Global results of the Results Criteria. This table displays the score obtained against the maximum score achievable. It also shows the score in a percentage form. Additionally, there are presented the same results for all the related sub-criteria.
11. A spider web diagram that displays the score obtained in all of the results sub-criteria assessed. It shows the score of all the sub-criteria at the same time, to help companies to identify their strengthens and weaknesses and identify those strategies or procedures performed in the company that need to be improved

10 ENERGY SAVINGS SIMULATOR

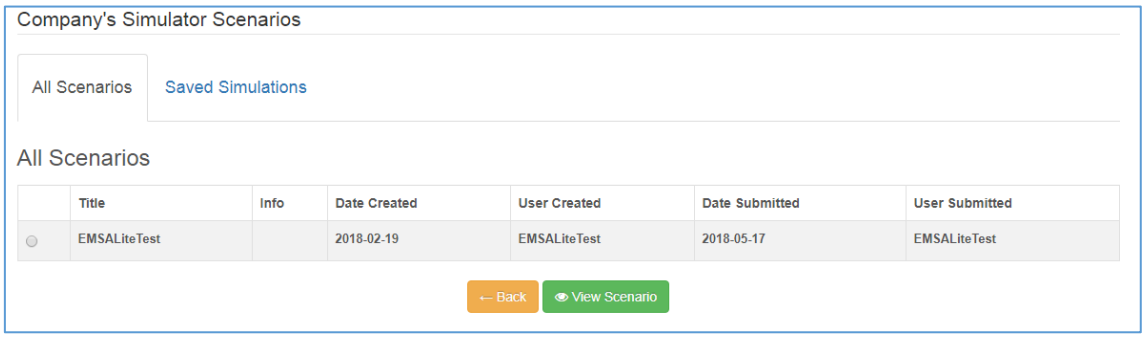
The main goal of the "Energy Saving Simulator" module is to calculate the impact in the company's consumption if they decide to implement a certain selection of improvement actions.

To access to the "Energy Savings Simulator" module, the User should enter in the "Energy *Savings Simulator*" tab. The company's account has a permanent access to this tab.

Depending on the permissions granted by the company, Energy Angels and the rest of the users of the company can also have access to it.



When the user clicks on it, a new screen appears where the user can select on which scenario they want to see the related improvement actions. **In the list there will be only the submitted scenarios**

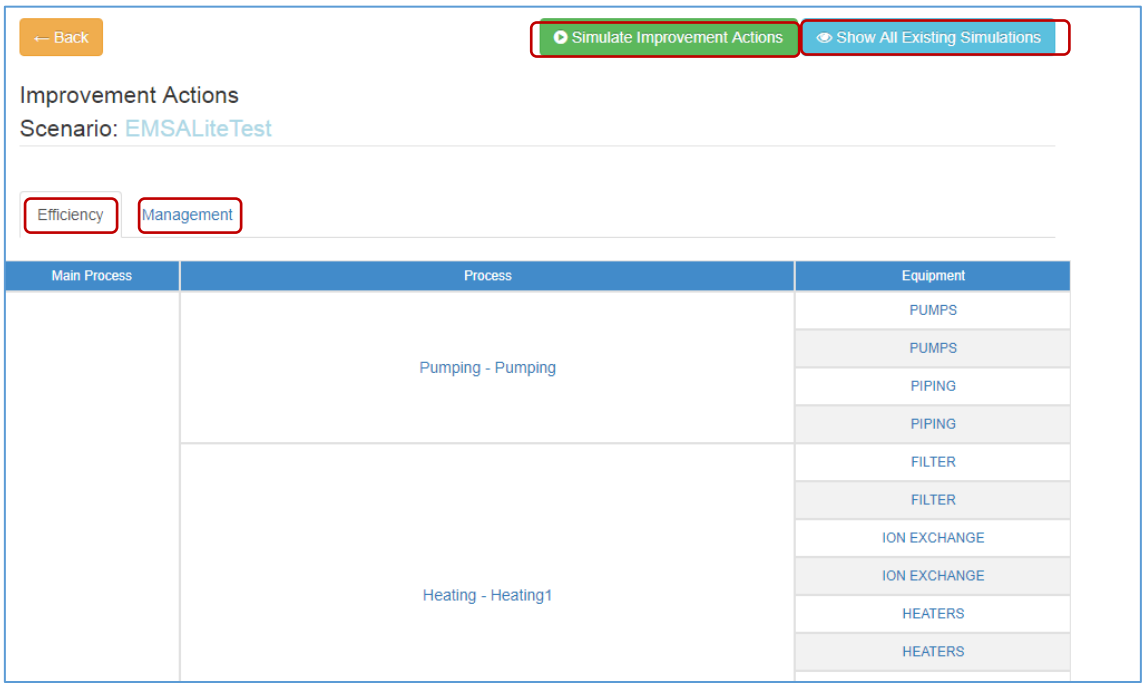


Then, once the scenario has been selected, the tool provides a direct access to their improvement actions related.

10.1Improvement actions

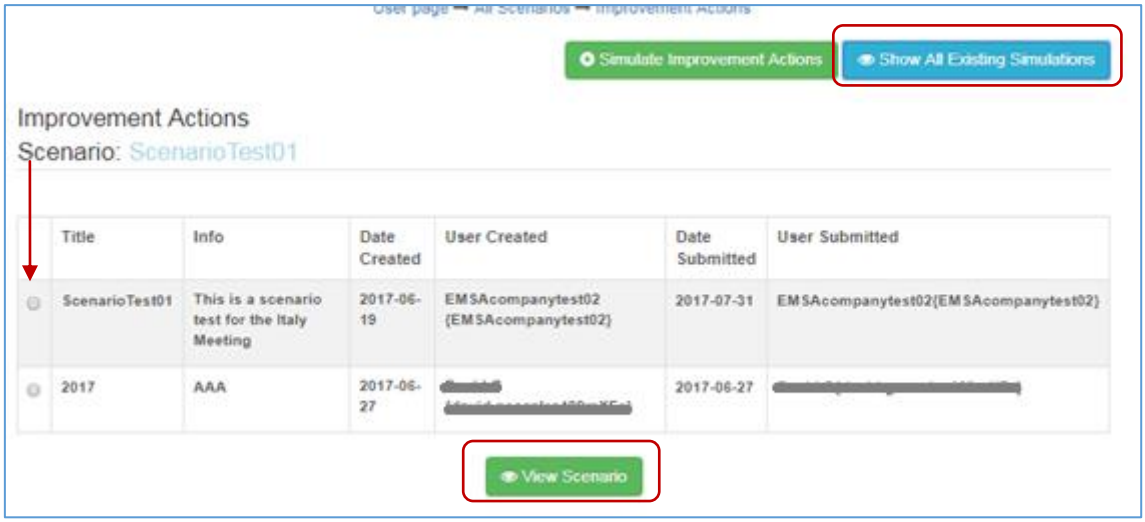
The first thing that the EMSA displays is a table with the processes and equipment included in the scenario. The user should click in the process or equipment whose results he wants to see. Then, if the user descends in the EMSA tool, it is shown a list of available improvement actions that the assessment methodology has identified for a certain submitted scenario. In this module there are three main parts:

- Existing simulations
- Simulate Improvement Actions
- Improvement actions
    - Efficiency improvements
    - Management improvements



10.1.1 Existing simulations

In the top of the screen, before calculating any simulation, there is the option to load a previous simulation through the button “Show All Existing Simulations”. This table could be folded/unfolded to hide/show its content.



If we want to load a simulation, click on the existing simulation and the “View” button.

The objective is to show the list of the saving simulations that the user wants to save, to do this, later in the “Simulation” screen we will see a “Save” button to do so.

On each simulation, we will be able to View/modify or Delete it.

If we click in the “View” button, in the following tables we will load the selection of improvements that the user did for that simulation. If not, we will have to make a selection of improvement whose impact we want to simulate.

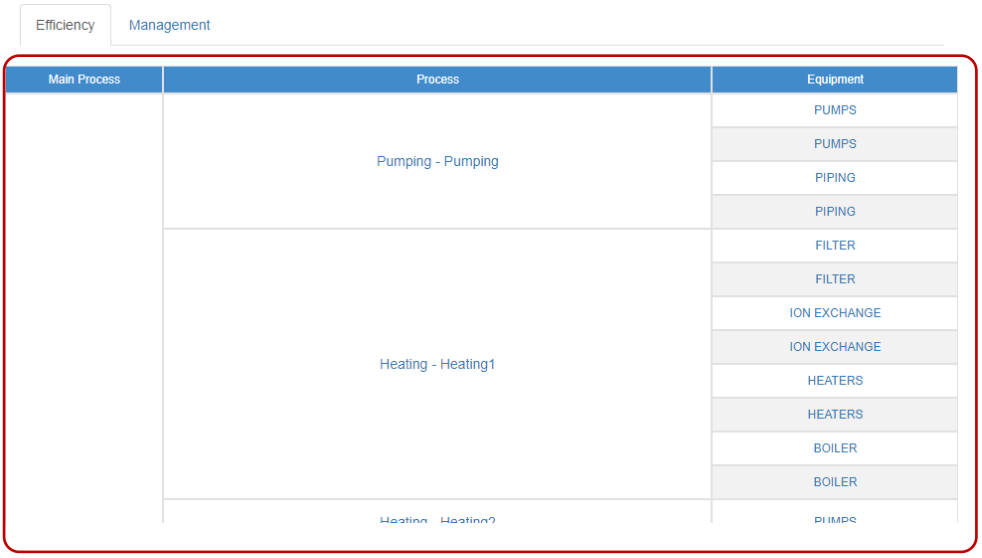
10.1.2 Improvement actions

In the "improvement actions" table there are two tabs: efficiency and management. In this tabs there will be shown all the improvements/recommendations that the EMSA has identified during the assessment process, for each process and equipment, identifying what actions belongs to each process/equipment.

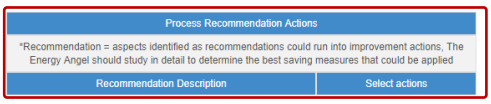
1. **1st tab →Efficiency improvements**

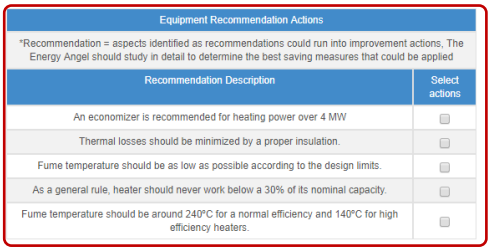
In this tab, there will be the following tables

- Table with all processes and equipment
- Process Improvements Actions
- Process Recommendation Actions
- Equipment Improvement Actions
- Equipment Recommendation Actions



The user should select the process or equipment, and all the improvements and recommendation available will appear in the four tables below.





2. 2nd tab →Management improvements

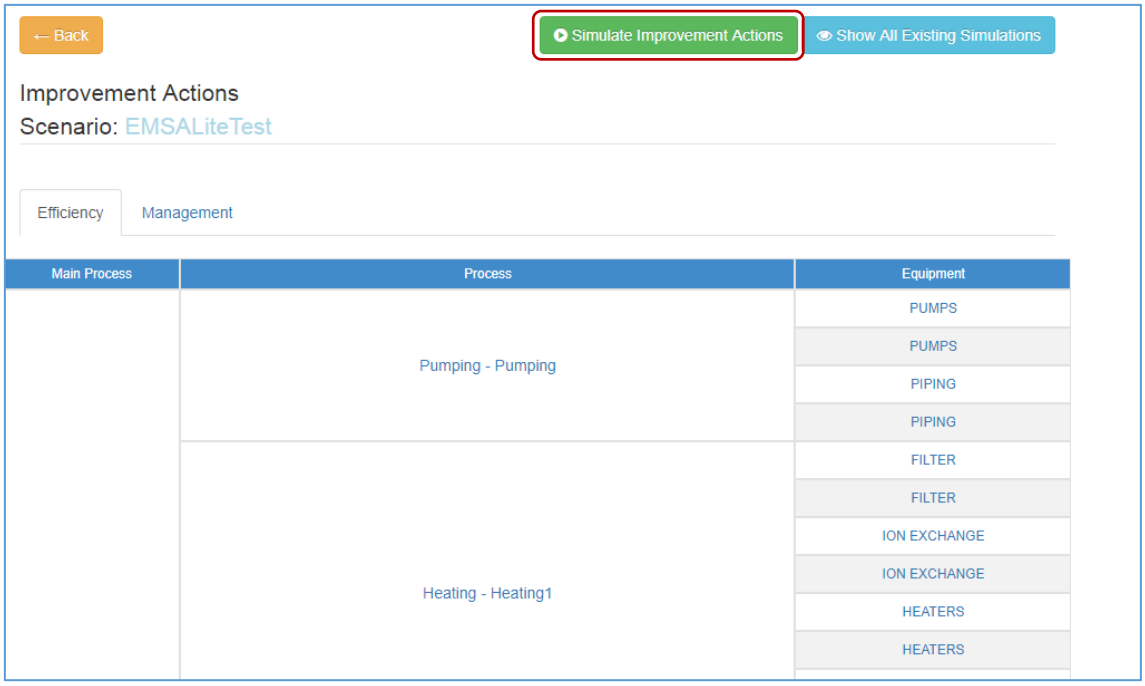
In this tab, there will be presented the improvement actions related to the management areas of the company, regarding the 6 management criteria.

Improvements

Category	Criterion	Sub-Criterion	Label	Improvement Description	Select actions
Enablers	1. Leadership, Strategy and Planning	1.1. Sustainability policy (objectives and goals)	General	Develop basic documented procedures for planning, developing and assessing the goals and objectives of the sustainability policy.Define global sustainability indicators and the way to implement the necessary corrective actions.	☐
			Plan		
			Do		
			Check	Examine and monitor the information relative to the goals and objectives of the company, regardless if they involve water and energy topics.	☐
			Act		
		1.2. Sustainability management	General	Contemplate guidelines for planning, developing and assessing sustainability management. Define a global sustainability indicator and the way to implement the necessary corrective actions.	☐
			Plan		
			Do		
			Check		
			Act		
	2.People, Partnerships and Resources	2.1. Human Resources	General	Develop basic documented procedures for planning, developing some basic training in water and energy topics for the human resources of the company. Define a global human resources indicator and implement the necessary corrective actions.	☐
			Plan		
			Do		
			Check	Examine and monitor the activities performed by the employees, regardless if the training involves water and energy topics.	☐
			Act	Review and analyse the key performance results and propose corrective actions to them, regardless if the actions are being documented.	☐
		2.2. Knowledge management	General	Develop basic documented procedures for planning and developing the knowledge management in water and energy topics for the company. Define a global indicator and implement the necessary corrective actions.	☐
			Plan		
			Do		
			Check		
			Act		
		2.3. Finance management	General	Perform and document financial investments in water and energy topics for the company. Preform a documented budgetary control. Create at least a global financial indicator and review short and long term saving plans.	☐
			Plan		
			Do		
			Check	Calculation of financial indicators that can affect directly or indirectly to the financial management.	☐
			Act		
		2.4. Water and Energy	General	Contemplate guidelines for planning, developing and assessing the water and energy management. Define a global indicator and propose the necessary corrective actions.	☐
			Plan		
			Do		
			Check	Verify the correct functioning of resources management, regardless if it involves water and energy topics.	☐
			Act		
	3. Processes	3.1. Processes management and design	General	Develop at least some basic diagrams for the processes of the company. Perform basic verifications and maintenance on the processes concerning water and energy.	☐
			Plan		
			Do		
			Check		
			Act		

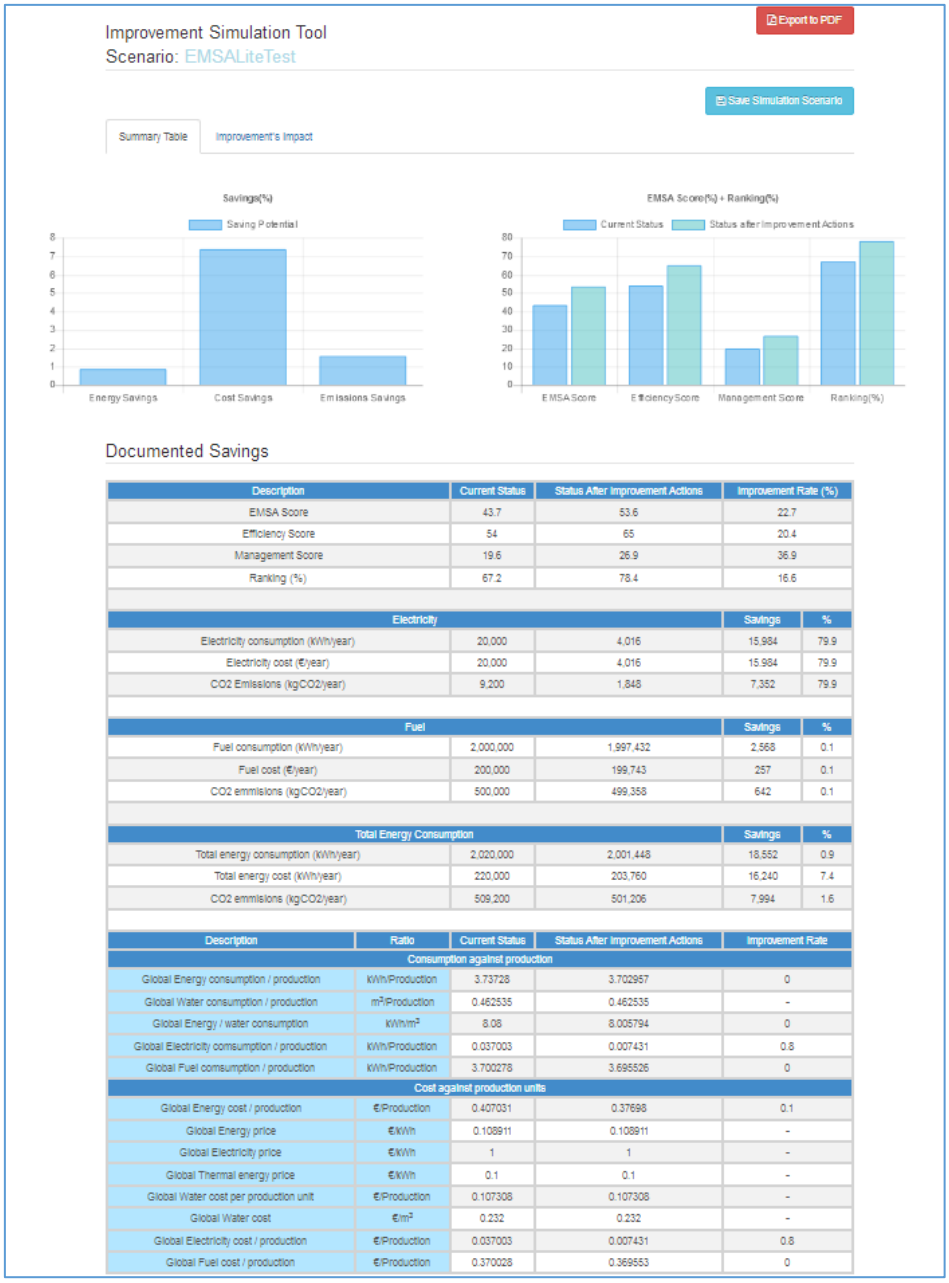
Category	Criterion	Sub-Criterion	Label	Improvement Description	Select actions
Results	4. Customers and employees Results	4.1. Internal customers results	Trends	Perform immediate corrective actions about internal customers vision of the company. Send satisfaction surveys, analyse their results and act according to the results obtained. Perform immediate corrective actions about internal customers vision of the company. Send satisfaction surveys, analyse their results and act according to the results obtained.	☐
			Targets	Create working procedures, constant communication with the internal customers, perform periodic revisions of indicators related with water and energy. Examine closely their own targets. Send satisfaction surveys and analyse them.	☐
		4.2. External customers results	Trends	Perform basic corrective actions about external customers vision of the company. Send satisfaction surveys, analyse their results and act according to the results obtained.	☐
			Targets	Create working procedures, constant communication with the external customers, perform periodic revisions of indicators related with water and energy. Examine closely their own targets. Send satisfaction surveys and analyse them.	☐
	5. Social Responsibility Results	5.1. Employees results	Trends		
			Targets	Measure the employees targets by creating a communication plan or by sending surveys about the image of the company or their perception.	☐
		5.2. Social perception	Trends		
			Targets		
	6. Key Performance Results	6.1. Internal excellence results; sustainability	Trends		
			Targets		
		6.2. External results; impact to achieve	Trends		
			Targets		

Users should select on which improvement they are interested and, with this selection, they could simulate the savings impact. To do this, the user should click the "**Simulate improvement actions**" button.



10.2By clicking on “Simulate improvement actions”

When we click on “Simulate improvement actions”, the nest page will appear:



Documented Savings

Description	Current Status	Status After Improvement Actions	Improvement Rate (%)
EMSA Score	43.7	53.6	22.7
Efficiency Score	54	65	20.4
Management Score	19.6	26.9	36.9
Ranking (%)	67.2	78.4	16.6

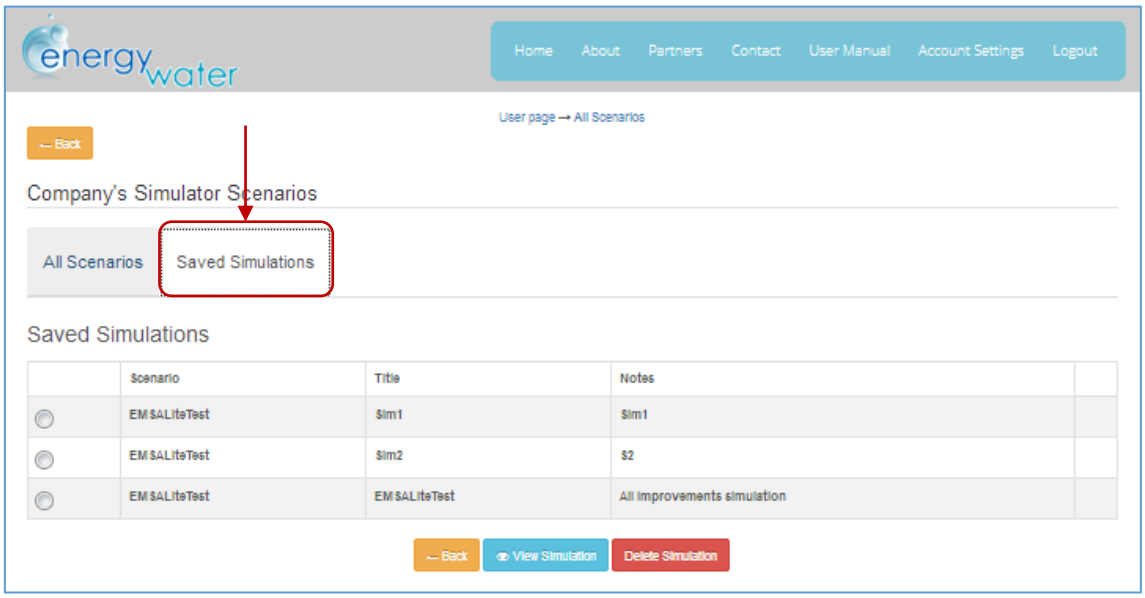
Electricity			Savings	%
Electricity consumption (kWh/year)	20,000	4,016	15,984	79.9
Electricity cost (€/year)	20,000	4,016	15,984	79.9
CO2 Emissions (kgCO2/year)	9,200	1,848	7,352	79.9

Fuel			Savings	%
Fuel consumption (kWh/year)	2,000,000	1,997,432	2,568	0.1
Fuel cost (€/year)	200,000	199,743	257	0.1
CO2 emmisions (kgCO2/year)	500,000	499,358	642	0.1

Total Energy Consumption			Savings	%
Total energy consumption (kWh/year)	2,020,000	2,001,448	18,552	0.9
Total energy cost (kWh/year)	220,000	203,760	16,240	7.4
CO2 emmisions (kgCO2/year)	509,200	501,206	7,994	1.6

Description	Ratio	Current Status	Status After Improvement Actions	Improvement Rate
Consumption against production				
Global Energy consumption / production	kWh/Production	3.73728	3.702957	0
Global Water consumption / production	m³/Production	0.462535	0.462535	-
Global Energy / water consumption	kWh/m³	8.08	8.005794	0
Global Electricity comsumption / production	kWh/Production	0.037003	0.007431	0.8
Global Fuel comsumption / production	kWh/Production	3.700278	3.695526	0
Cost against production units				
Global Energy cost / production	€/Production	0.407031	0.37698	0.1
Global Energy price	€/kWh	0.108911	0.108911	-
Global Electricity price	€/kWh	1	1	-
Global Thermal energy price	€/kWh	0.1	0.1	-
Global Water cost per production unit	€/Production	0.107308	0.107308	-
Global Water cost	€/m³	0.232	0.232	-
Global Electricity cost / production	€/Production	0.037003	0.007431	0.8
Global Fuel cost / production	€/Production	0.370028	0.369553	0

The user can save the new simulation in order to access to them in the future by the welcome screen of this module (Energy Savings Simulators). We must identify each simulation with an ID and also ask for a descriptive name given by the user before going to that page.



For each simulation, the EMSA creates a virtual scenario. On it, instead of the real values of the scenario, the tool is going to substitute them with the recommended value, but only in the selected improvement actions.

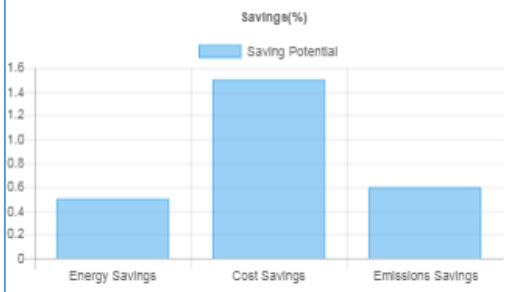
Then, two tabs appear:

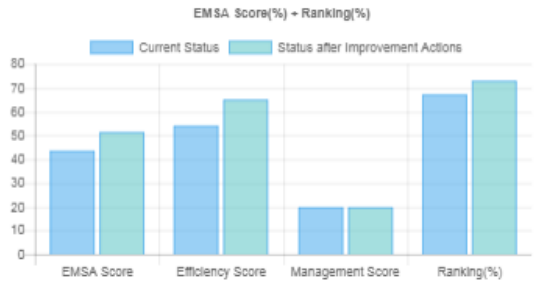
- Summary table
- Improvements' impact.

10.2.1 Summary table

Here, the tool presents the summary table of the **selected** improvement actions' impact if all of them were implemented. To do this, there is a summary table comparing before/after scenarios and the improvement rate.

Summary Table | Improvement's impact





Documented Savings

Description	Current Status	Status After Improvement Actions	Improvement Rate (%)
EMSA Score	43.7	51.4	17.6
Efficiency Score	54	65	20.4
Management Score	19.6	19.6	0
Ranking (%)	67.2	72.9	8.5

Electricity			Savings	%
Electricity consumption (kWh/year)	20,000	17,382	2,618	13.1
Electricity cost (€/year)	20,000	17,382	2,618	13.1
CO2 Emissions (kgCO2/year)	9,200	7,996	1,204	13.1

Fuel			Savings	%
Fuel consumption (kWh/year)	2,000,000	1,992,675	7,325	0.4
Fuel cost (€/year)	200,000	199,267	733	0.4
CO2 emmisions (kgCO2/year)	500,000	498,169	1,831	0.4

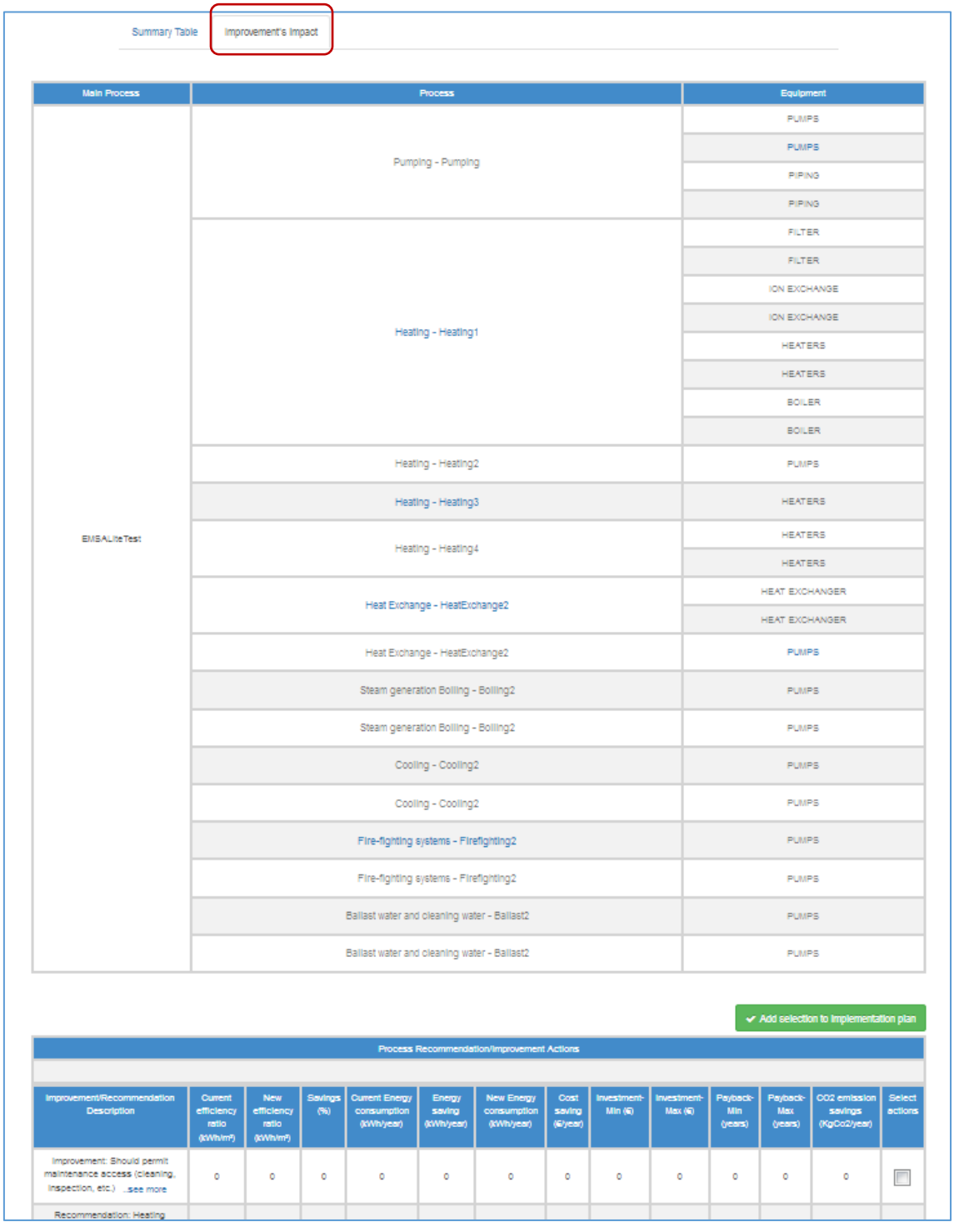
Total Energy Consumption			Savings	%
Total energy consumption (kWh/year)	2,020,000	2,010,057	9,943	0.5
Total energy cost (kWh/year)	220,000	216,650	3,350	1.5
CO2 emmisions (kgCO2/year)	509,200	506,165	3,035	0.6

Description	Ratio	Current Status	Status After Improvement Actions	Improvement Rate
Consumption against production				
Global Energy consumption / production	kWh/Production	3.73728	3.718885	0
Global Water consumption / production	m^3/Production	0.462535	0.462535	-
Global Energy / water consumption	kWh/m^3	8.08	8.040228	0
Global Electricity comsumption / production	kWh/Production	0.037003	0.03216	0.1
Global Fuel comsumption / production	kWh/Production	3.700278	3.686725	0
Cost against production units				
Global Energy cost / production	€/Production	0.407031	0.40083	0
Global Energy price	€/kWh	0.108911	0.108911	-
Global Electricity price	€/kWh	1	1	-
Global Thermal energy price	€/kWh	0.1	0.1	-
Global Water cost per production unit	€/Production	0.107308	0.107308	-
Global Water cost	€/m^3	0.232	0.232	-
Global Electricity cost / production	€/Production	0.037003	0.03216	0.1
Global Fuel cost / production	€/Production	0.370028	0.368672	0

10.2.2 Improvements' impact

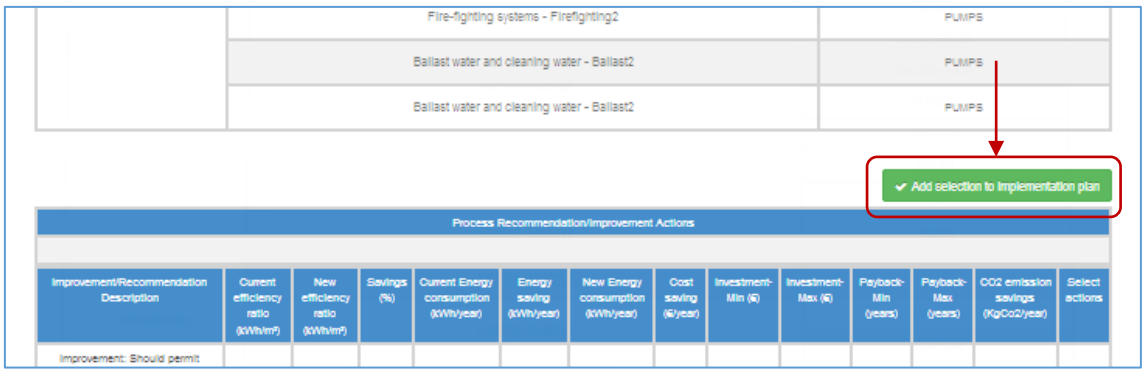
In this tab, the tool will show the impact of the selected improvement actions through different data such as total consumption, savings (energy, cost, CO2 emissions) and general KPIs

The user should select those improvements that they are willing to implement, and, that selection will be used to make the requests of the EA´s network services. This will be done by the "**Improvements Management**" module.



If the user has a special interest on implementing some high-impact actions and keep track of it, he should select the improvements he wants, and click in the "Add selection to implementation plan" button.

Later, those improvement will appear in the "Improvement Management" module.

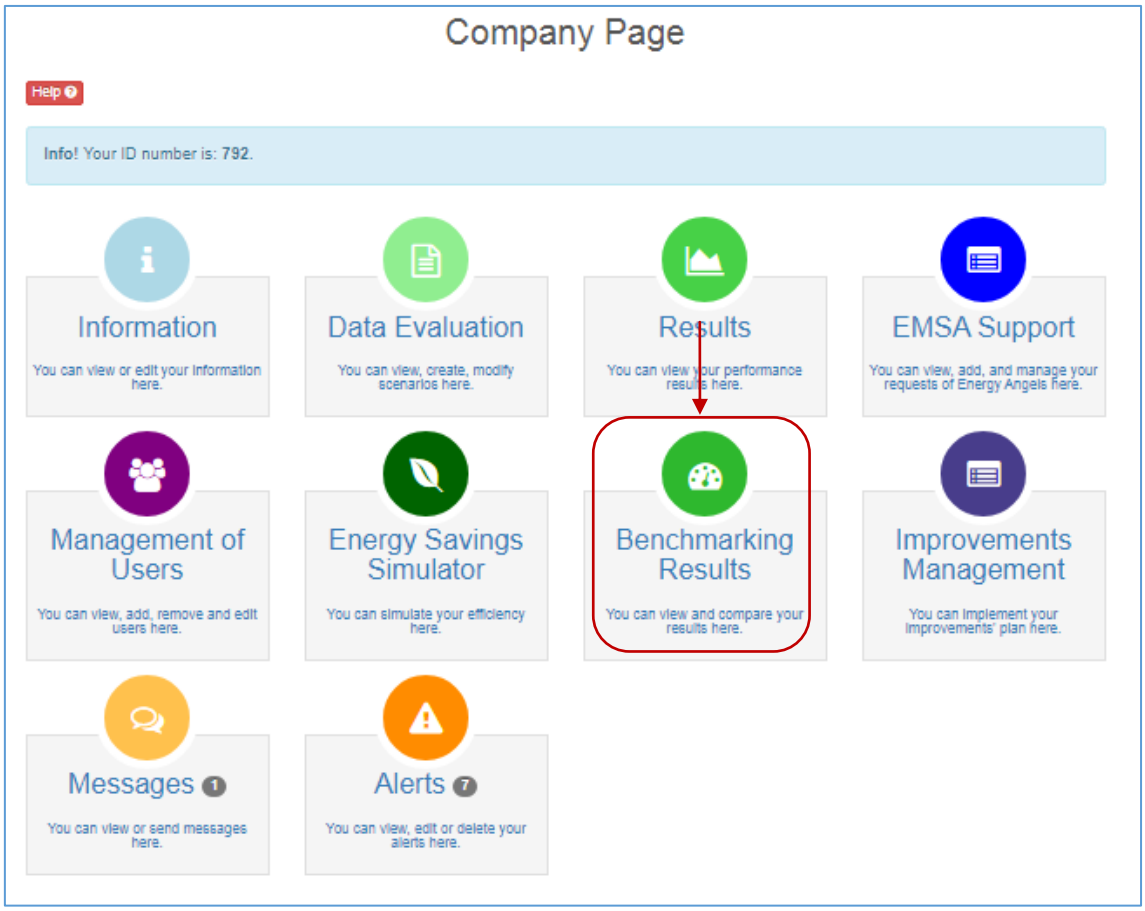


When the user clicks on it, he will be redirected to the "Improvements Management" module. The Energy Angel assigned to the improvements added to the implementation plan will be the same as the one assigned to the company.

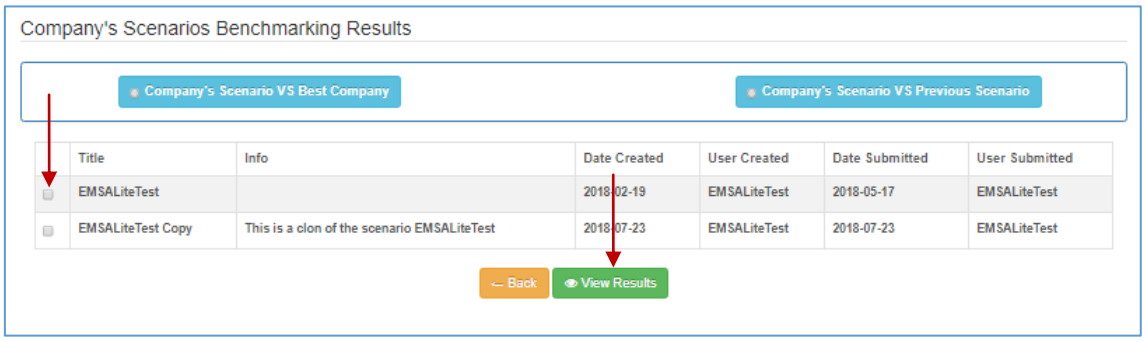
11 BENCHMARKING

To access to the Benchmarking module, the User should enter in the "*Benchmarking*" tab. The company's account has a permanent access to this tab.

Depending on the permissions granted by the company, Energy Angels and the rest of the users of the company can also have access to it.



Then, the tool proposes two ways of making the benchmarking comparison:

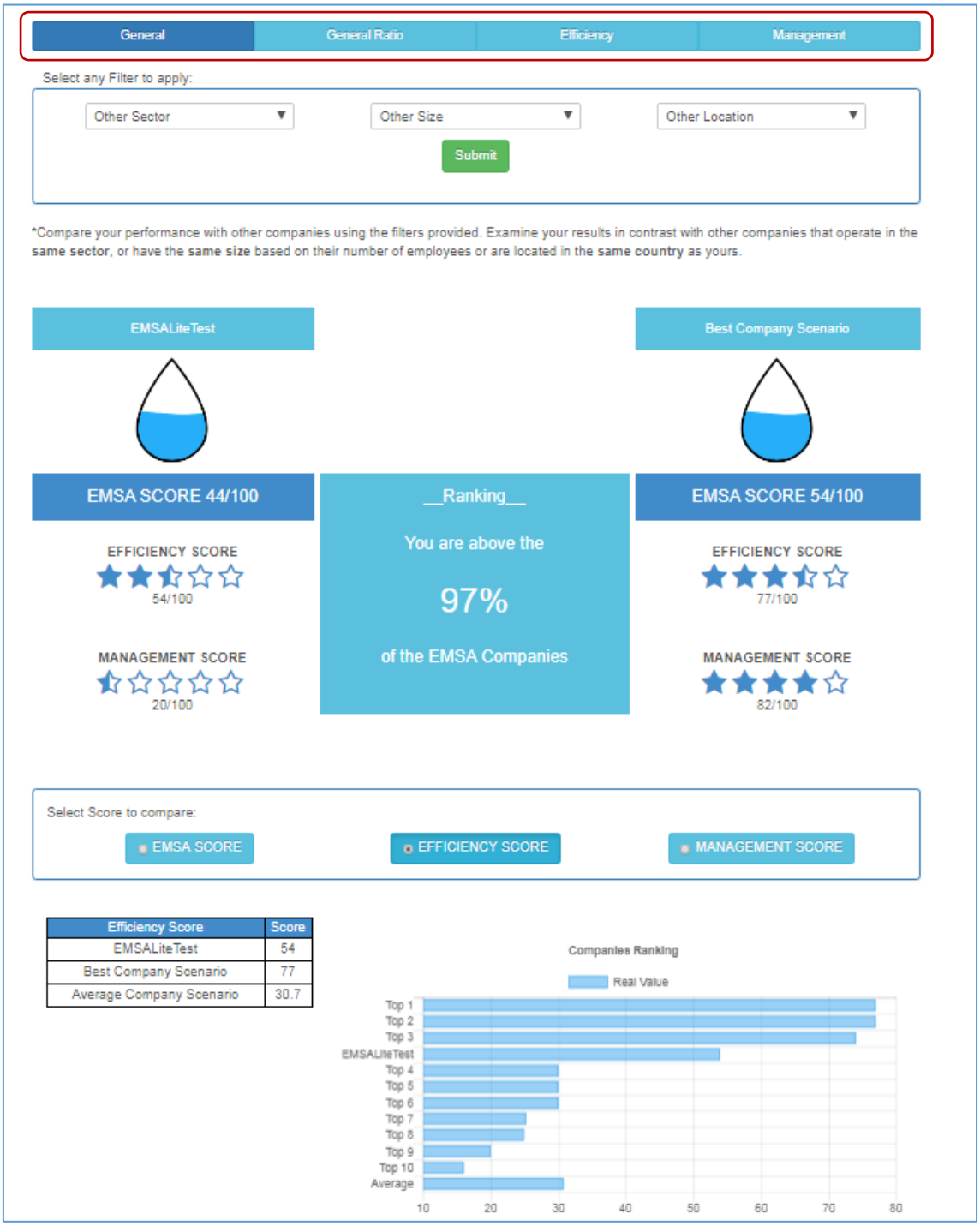


In the first option, people should select ONE scenario to compare with the best companies across Europe, in the second option, people should select TWO scenario to compare one against the other.

The company has to select which scenario's results they want to display. Once a scenario has been selected, press the "*View Results*" button.

Only the submitted scenarios will be able to be selected.

After that, a screen with the Benchmarking result appears:



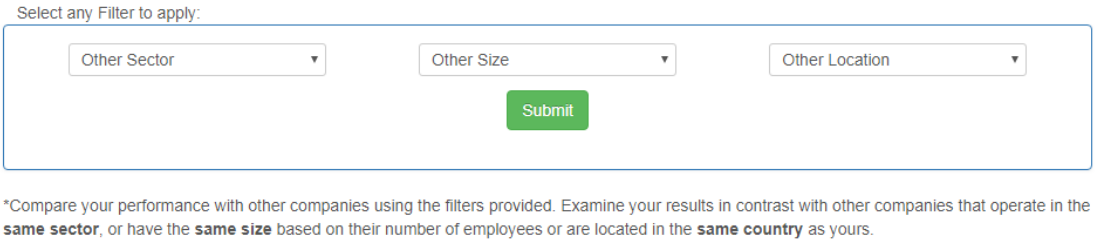
In the first half of the screen we can see four different tabs, one for every type of benchmarking results that EMSA displays:

- General Results
- General Ratio Results
- Efficiency Results
- Management results

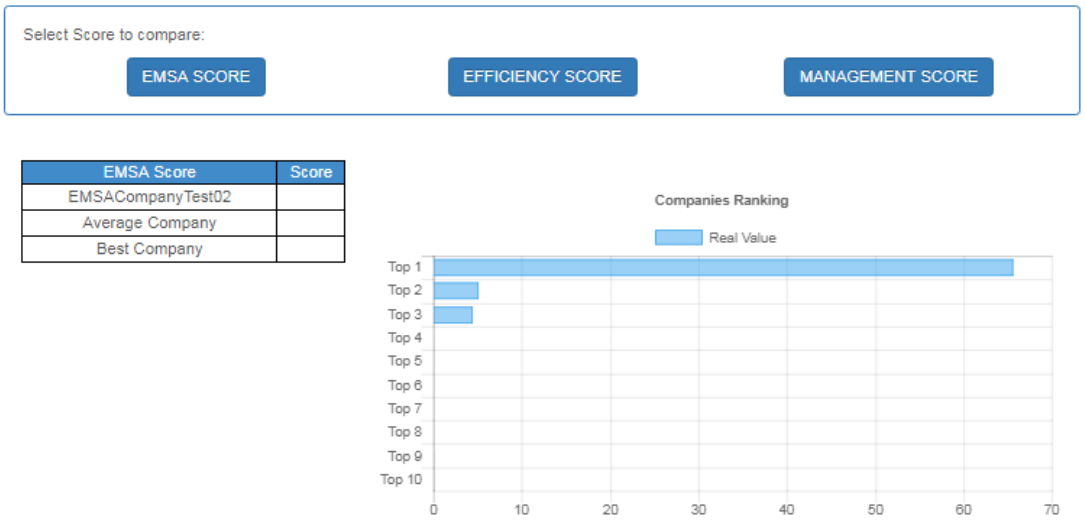
On every tab, the first thing to do is select the type of filter that the User wants to apply to make the benchmarking comparison. To do this, the following filters are available:

- **Sector**: All sectors/Same sector
- **Company size**: All sizes/Same size/SME's/Large companies
- **Location**: All EU countries/Same country

In case the User changes the values of the filters, click on the "Submit" button to apply the selected filters and refresh data.



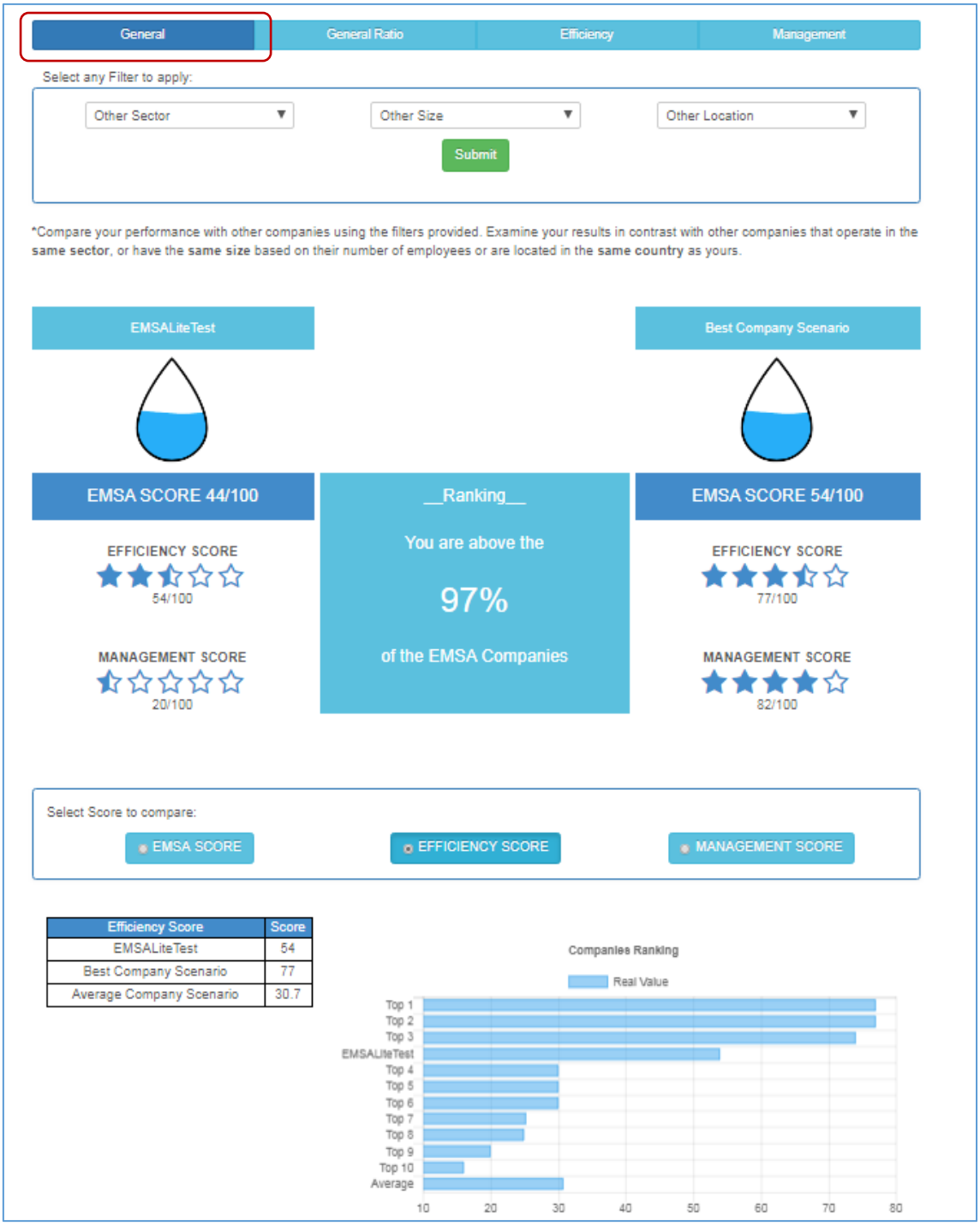
Another function similar to every tab is the ranking diagram. On it, the Company can select a specific indicator to be compared (select only one value at the same time), and a graph will display a summary table with the main reference indicators and their ranking position according to the benchmarking database.



In the following points there will be explained the different benchmarking tabs and their related functionalities.

11.1General Benchmarking

In the general benchmarking the following aspects will appear:



Here, we can see two type of companies to be compared:

- On the left side, there are the Company's data related to the submitted scenario that the User wants to compare
- On the right side, we can see the reference data that the EMSA use to compare the submitted scenario. That reference data can have two origins:
    - "Best Company", the best company appears when we select the **Company's scenario vs. Best Companies** method of comparison, and that best company are the company with the highest EMSA score inside the Benchmarking database.
    - "Previous scenario" the previous scenario appears when we select the **Company's scenario vs. previous scenario** method of comparison, and that previous scenario is a company's scenario that the User needs to select at after selecting the way of comparison.

In that screen, the indicators compared have been explained in the previous points and belong to the Results section of the tool such as:

- EMSA Score
- Efficiency Score
- Management Score

In that part, the most important indicator is the "**Benchmarking Score**" that is presented in the middle of the two compared items.

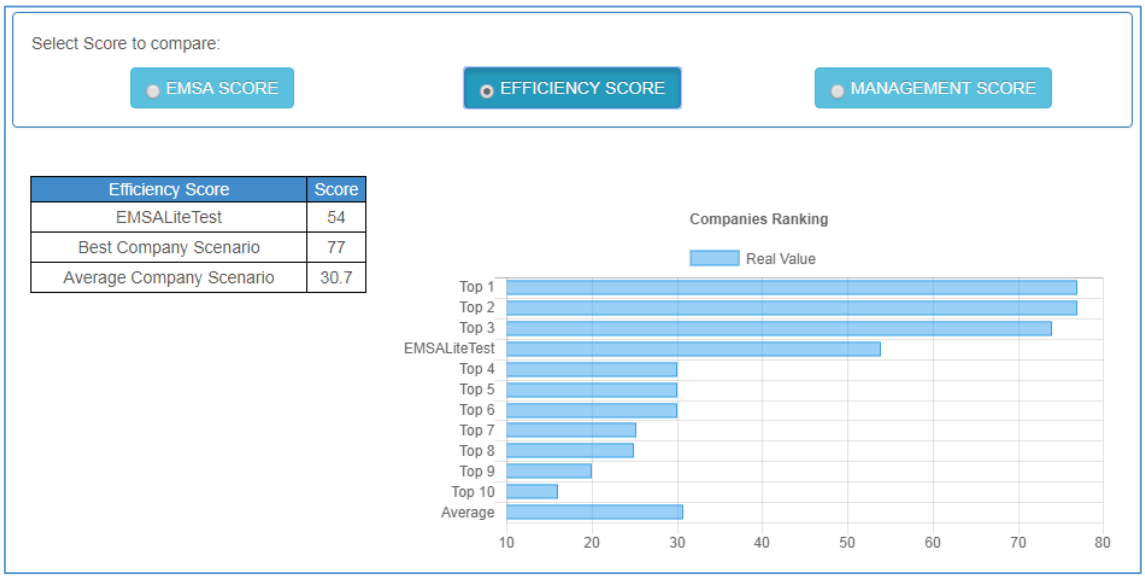
The benchmarking score shows the global position of a company compared to industrial companies across Europe inside the benchmarking database. It shows how close a company is from the top position (100%), regarding EMSA Score, that joins efficiency and management criteria in a single score number.

If a company has a 100% score in the benchmarking, it means that from the Benchmarking database, that company has the best results in both the efficiency and management assessment. However, there may be more efficient companies that have not introduced their data in the tool.

For instance, if a company has a benchmarking score of 75%, it means that, for that specific criterion, that company is above the 75% of the companies inside the benchmarking database.

In the second part of this tab, we can find the ranking diagram, on it, we can compare the main general results of a company's scenario, which are the following:

- **EMSA Score**
- **Efficiency Score**
- **Management Score**



Efficiency Score	Score
EMSALiteTest	54
Best Company Scenario	77
Average Company Scenario	30.7

By selecting one by one those indicators, we can see a summary table where the EMSA displays the company's value, the average value and the best value, and that information are also presented in the raking diagram, where we could see the ranking of the following items:

- Top 10 best companies
- Position of the actual company
- Position of the average company

The actual company will be positioned inside the graph depending on their ranking value (over/below the average, on the top10, etc.)

If we are doing a comparison with the previous scenario, only the actual scenario data and the previous scenario data will be shown.

11.2General Ratio Benchmarking

In the general ratio benchmarking the following aspects will appear:

Here, the User can see the results of the main energy efficiency ratios indicators according to the “General questions” and the “Efficiency questions” about process and equipment data.

The user can select an indicator (one by one) in the summary table.

Select the Ratio to contrast in detail:

Consumption against production		
Select	Description	Ratio
○	Total Energy consumption per unit production	kWh/Unit Production
○	Production Water efficiency comparison	m^3/Unit Production
○	Energy intensity of water use	kWh/m^3
○	Electricity consumption per unit production	kWh/Unit Production
○	Fossil Fuel consumption per production	kWh/Unit Production
Cost against production units		
Select	Description	Ratio
○	Total Energy cost per unit production	€/Production
○	Overall unit energy price	€/kWh
○	Electricity unit price	€/kWh
○	Fossil fuel unit price	€/kWh
◉	Water cost per unit production	€/Production
○	Water unit price	€/m^3
○	Electricity cost per unit production	€/Unit Production
○	Fossil Fuel cost per unit production	€/Unit Production

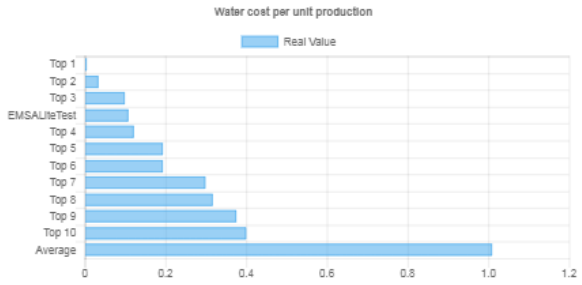
By selecting one by one those indicators, we can see a summary table where the EMSA displays the company’s value, the average value and the best value, and that information are also presented in the raking diagram, where we could see the ranking of the following items:

- Top 10 best companies
- Position of the actual company
- Position of the average company

The actual company will be positioned inside the graph depending on their ranking value (over/below the average, on the top10, etc.)

Results

Water cost per unit production	Value
EMSALiteTest	0.10731
Best Company	0.00428
Average Company	1.00845



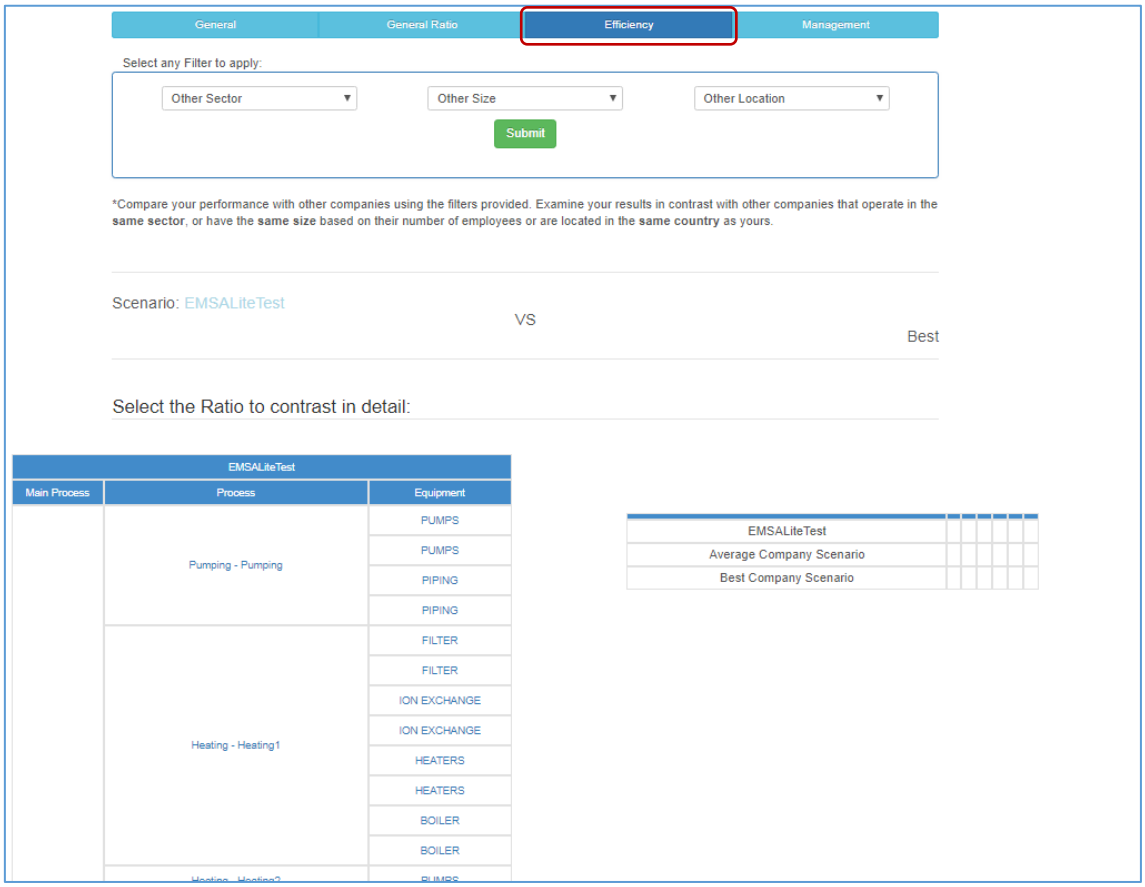
If we are doing a comparison with the previous scenario, only the actual scenario data and the previous scenario data will be shown.

11.3Efficiency Benchmarking

The “Efficiency Benchmarking“tab is different if the comparison is with the best company or with the previous scenario.

11.3.1 Best Company

In the case of best company comparison the following aspects will appear:



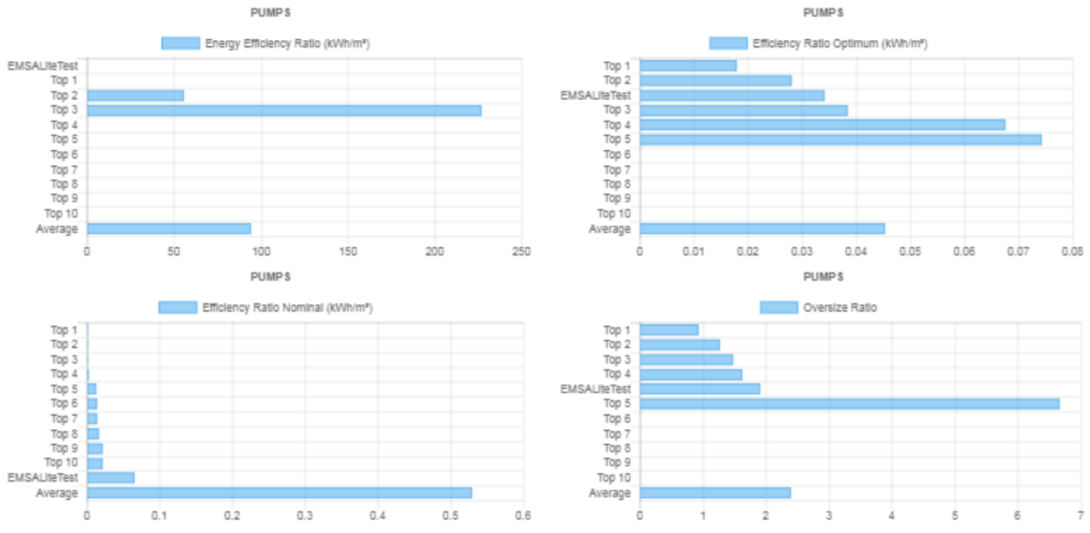
By selecting one by one the processes and equipments, we can see a summary table where the EMSA displays the company’s value, the average value and the best value of the main energy efficiency indicator calculated on EMSA evaluation, and that information are also presented in the rakings diagrams, where we could see the ranking of the different relevant parameters in the process or equipment selected.

Select the Ratio to contrast in detail:

EMSALiteTest		
Main Process	Process	Equipment
	Pumping - Pumping	PUMPS
		PUMPS
		PIPING
		PIPING
	Heating - Heating1	FILTER
		FILTER
		ION EXCHANGE
		ION EXCHANGE
		HEATERS

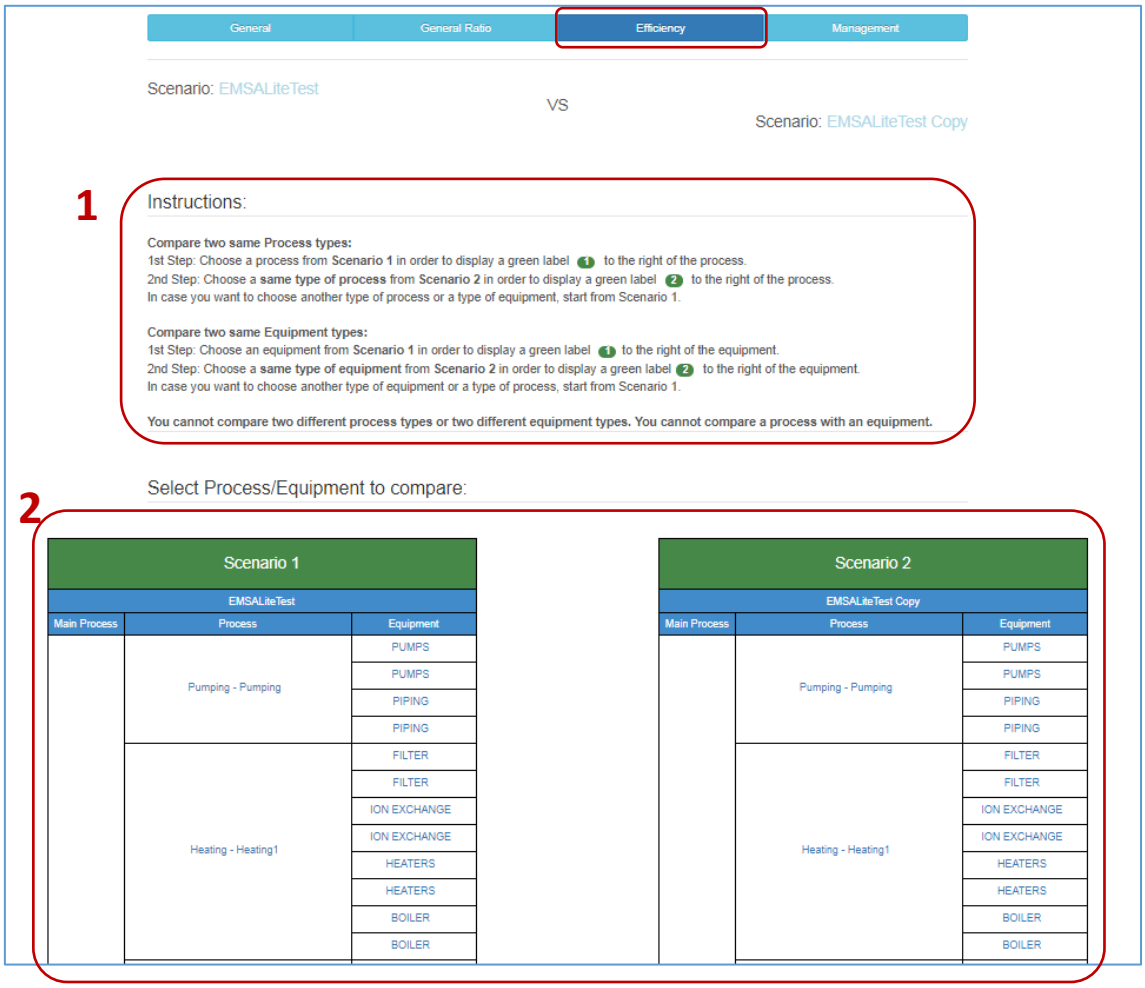
PUMPS	Energy Efficiency Ratio (kWh/m³)	Efficiency Ratio Optimum (kWh/m³)	Efficiency Ratio Nominal (kWh/m³)	Oversize Ratio		
EMSALiteTest	0.00066	0.03406	0.065	1.90826	-	-
Average Company Scenario	94.23495	0.0452	0.52971	2.38965	-	-
Best Company Scenario	0.03567	0.0179	0.00041	0.92389	-	-

Results:



11.3.2 Previous Scenario

In the case of previous scenario comparison the following aspects will appear:



1. Instructions

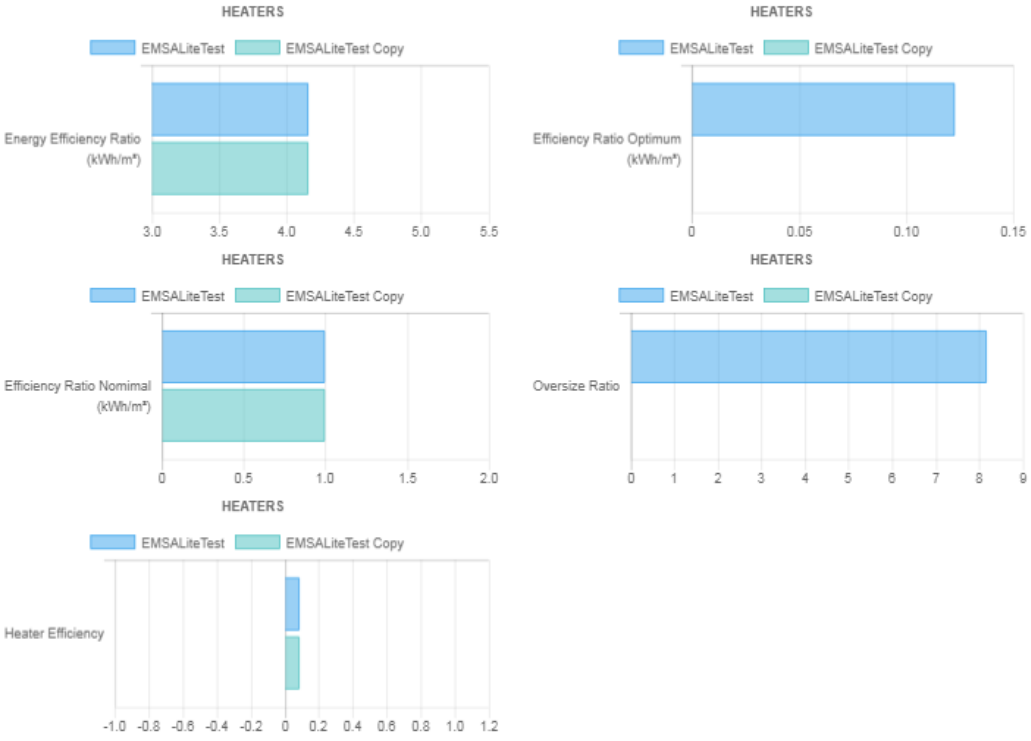
On the top of the screen will appear the instructions for selecting the processes and equipments to compare.

2. In the tables will appear a summary table of the equipments and processes of the scenarios. The company's scenario will be located at left and the previous scenario at right.

By selecting one by one the processes and equipments, we can see a summary table where the EMSA displays the company's value, and the previous scenario value. We could see the comparison of the different relevant parameters in the process or equipment selected.

Results

	Process / Equipment	Energy Efficiency Ratio (kWh/m³)	Efficiency Ratio Optimum (kWh/m³)	Efficiency Ratio Nomimal (kWh/m³)	Oversize Ratio
EMSALiteTest	ION EXCHANGE	4.15929	0.12241	1	8.16925
EMSALiteTest Copy	HEATERS	4.15929	0	1	0

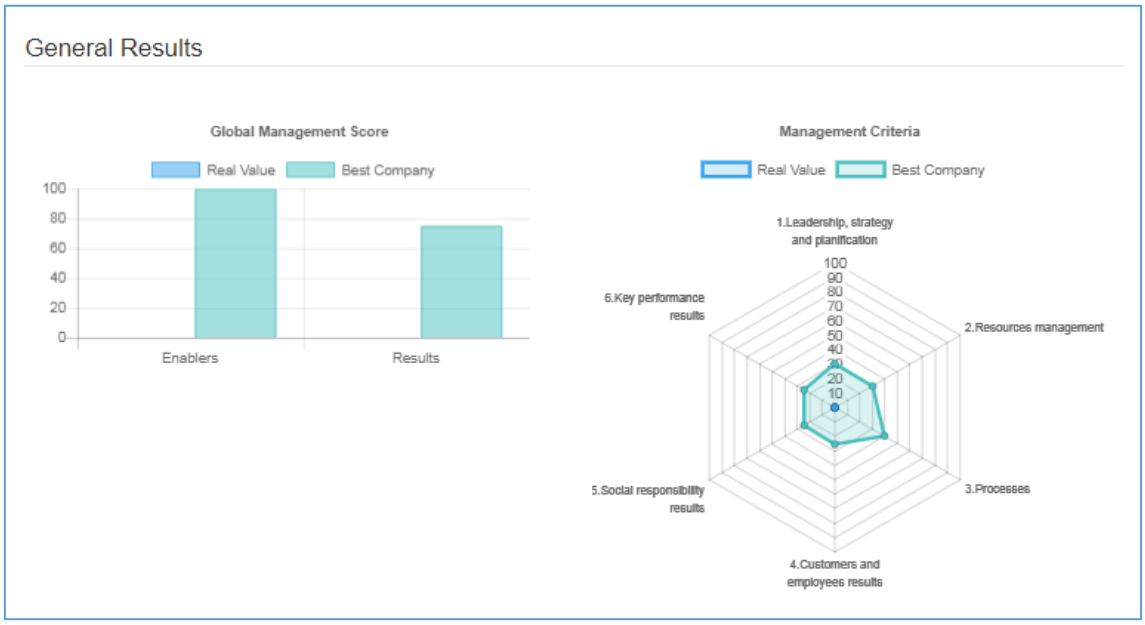


11.4Management Benchmarking

The “Management Benchmarking“tab is different if the comparison is with the best company or with the previous scenario.

11.4.1 Best Company

In the case of best company comparison the following aspects will appear:



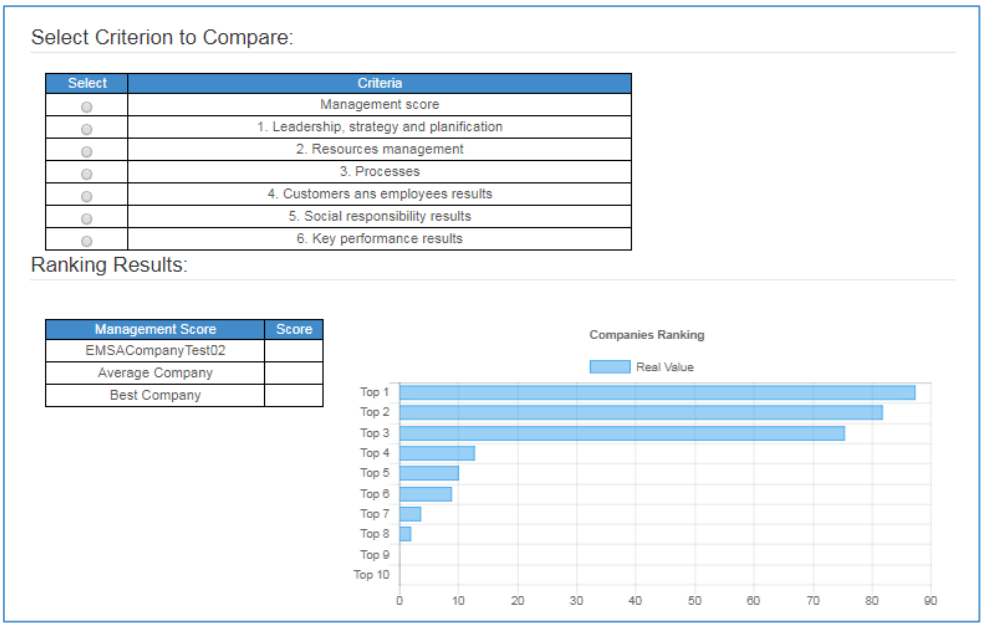
Here, the User can see the results of the enablers and results criteria according to the “Management questions”.

There, the graphs displays both the real value of the Scenario selected and the reference value according to the comparison method selected.

On the top of the screen, different graphs will display the energy indicators, divided by categories such as:

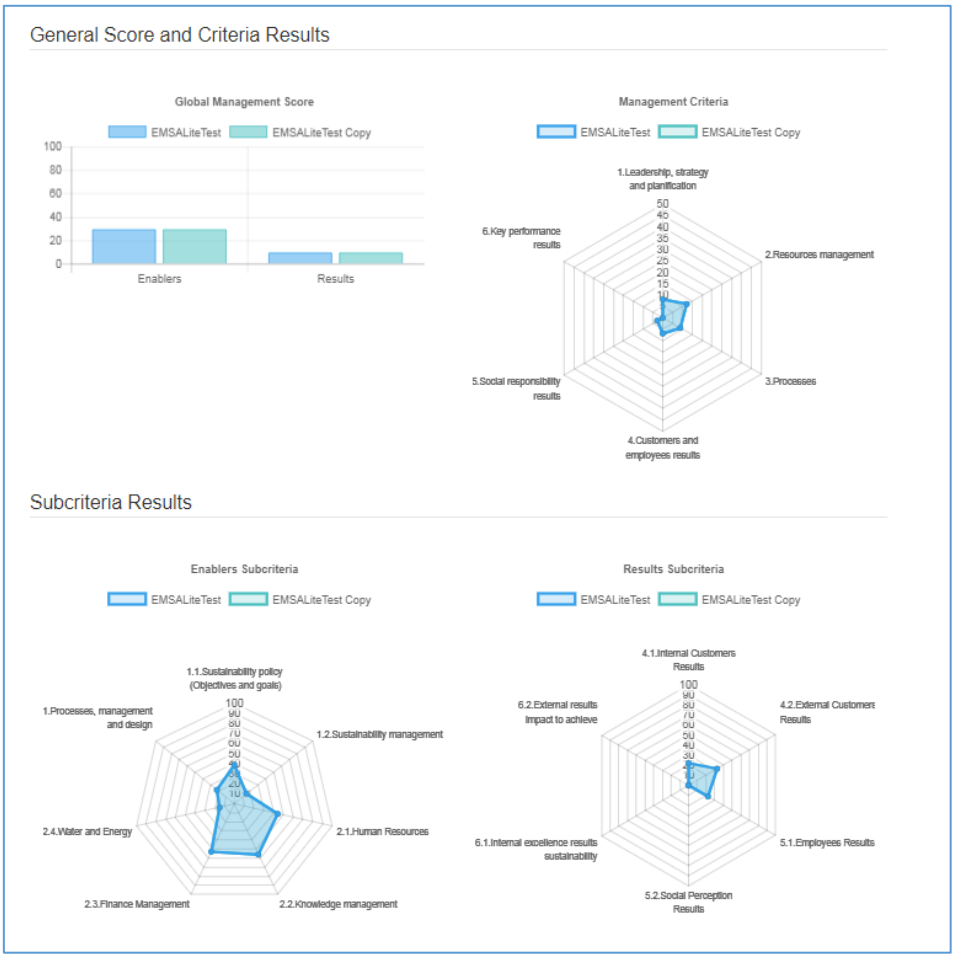
- Global management Score
  - Enablers
  - Results
- Management Criteria
  - Criterion 1
  - Criterion 2
  - Criterion 3
  - Criterion 4
  - Criterion 5
  - Criterion 6

Then, the same scores are in a summary table, where we can select them (one by one) and compare them in the same way as it has been explained in the previous points.



11.4.2 Previous Scenario

In the case of previous scenario comparison the following aspects will appear:



Here, the User can see the results of the general scores and both the subcriteria and criteria results according to the “Management questions”.

There, the graphs displays both the real value of the Scenario selected and the previous scenario value according to the comparison method selected.

11.5Explaining the “Benchmarking database”

The “Benchmarking Database” is the basis of the comparison methodology that the EMSA uses to provide the Benchmarking Score. To do this, it has the following features:

Categories/filters

Through different categories and filters, companies are able to see their status inside the global industrial sector and in detail by size, sector or country. The filters used are the following:

1. Sector
    - Same sector
    - All industrial sectors
2. Size
    - Large companies
    - SME’s
    - All sizes
    - Same size
3. Location
    - Same country
    - All Europe

Type of information to compare

In the Benchmarking database appear all information displayed in the Results Section of the EMSA, recording the best company for every indicator. The main indicators are:

- General results
    - EMSA Score
    - Efficiency Score
    - Management Score
- General questions
    - Indicators
- Efficiency questions
    - Process
    - Equipment
    - Efficiency Score
- Management questions
    - Global management score
    - Criteria
    - Sub-criteria

Components

To build the **Benchmarking database** the EMSA carries out the following automatic tasks:

- Create an anonymous identity for every company registered in the EMSA
- Assign to that anonymous profiles their Scenario results of the most recent submitted scenario (all results)
- Identify their ranking position on every type of information that we are able to compare and every category.
- Identify the "average" company→ a virtual company that has the average value of the results of all the companies in the database
- Update database: control what values are updated is a key aspect for the quality if the benchmarking process. In general, the rule is update the corresponding value anytime that a new company gets a better score/ratio. There will be created a log where all the updates are recorded so that the Network Administration were able to supervise them and validate that the process is being done properly.

General rules for benchmarking:

- It will be possible to compare those fields where ratios/indicators are available, in the rest, the EMSA will provide a "Information not available "·message
- If there is enough information to generate results, but not enough to make benchmarking, the tool will provide a generic benchmarking database average values in order to encourage companies to see the capacities of the benchmarking module, but clearly indicating that those values doesn't belong to the company (The EMSA is just giving them generic data to test the benchmarking options and engage them to introduce more information).
- The reference data in the benchmarking database must have the MEASURED label whenever possible, but the data we are going to compare can be measured/estimated/calculated, so we should always indicate the origin of the data.
- The more data are in the EMSA, the more powerful will be the benchmarking module, so this module will be easy to modify and to add new categories/filters and make different groups as if grows during the EnergyWater project life.

12 IMPROVEMENTS MANAGEMENT

We should distinguish the "Improvements Management" functionality from the "Energy Angels: EMSA support" service.

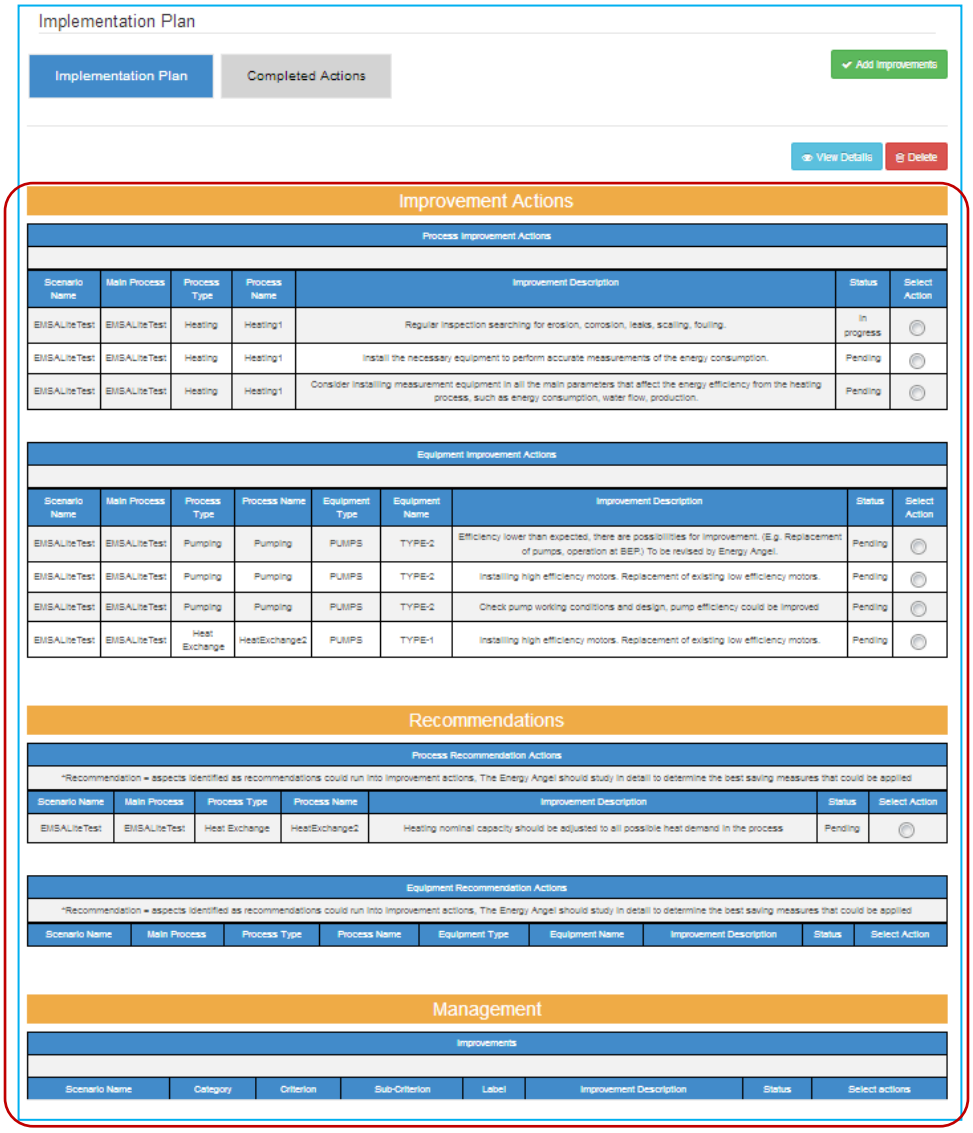
This new functionality aims to manage the proposed improvement actions identified during the assessment, which the Company wants to implement, with the Energy Angels that provide the different services where Companies need support to implement it.

To do this, the main functionalities are:

- Provide a complete list of available "improvement actions" identified in the different submitted scenarios
    - In the list there should appear all the available improvements in the company, regardless the scenario that they belong.
    - Each improvement/recommendation identified should have a unique ID to identify its origins (main process → process → equipment…), as we cannot make two simultaneously requests for the same improvement action in the same equipment.
- The user will select some "improvement actions" that the company wants to implement and transfer them into an "implementation plan"
- For every "improvement action" inside the "implementation plan" there is a technical sheet where the User can keep track of its development in terms of status, Energy Angel associated, etc. To do this, select what services do the company wants, and the tool will provide a list of Energy Angels that are validated in those services.
    - The company must select the services to provide to that improvement action
    - The EMSA shows those EA that are validated in that services selection
    - The company select one or more EA
    - The EMSA sends a request to the EA with some information
    - If the EA accepts the work, both the EA and the company are able to see the contact details of each other and they can get in contact to ask for a budget and continue the implementation process.

12.1Improvements Management→ Welcome screen

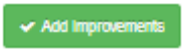
When we click on the "Improvements Management" module, a welcome screen appears with the **implementation plan**.



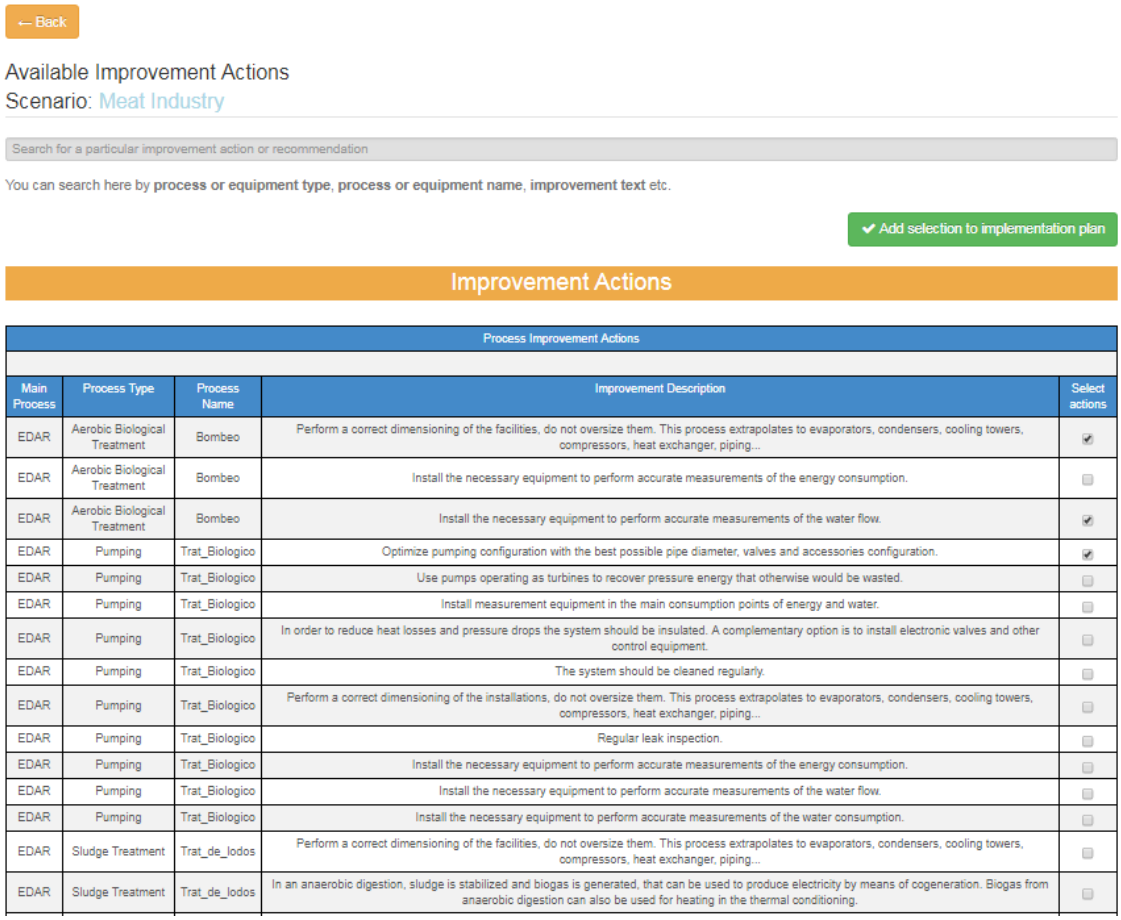
In this screen are shown the list of all the improvements actions identified in the company, regardless the scenario that they belong, without redundancy. There are three different types of improvements:

- Improvement Actions
- Improvement recommendations
- Management improvements

The user can add more improvements by clicking in the "Add Improvements" button.



Once the user has clicked this button, he will be redirected to an “Available Improvement Actions” screen where all improvements are displayed.



← Back

Available Improvement Actions
Scenario: Meat Industry

Search for a particular improvement action or recommendation

You can search here by **process or equipment type**, **process or equipment name**, **improvement text** etc.

✔ Add selection to implementation plan

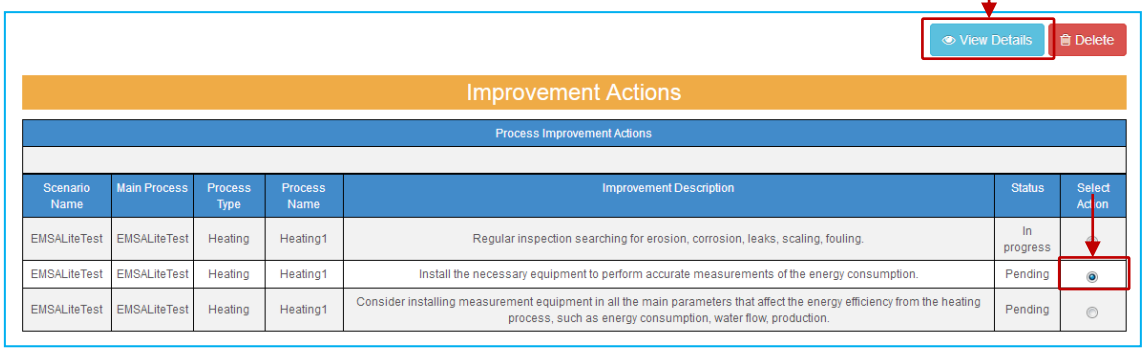
Improvement Actions

Process Improvement Actions

Main Process	Process Type	Process Name	Improvement Description	Select actions
EDAR	Aerobic Biological Treatment	Bombeo	Perform a correct dimensioning of the facilities, do not oversize them. This process extrapolates to evaporators, condensers, cooling towers, compressors, heat exchanger, piping...	☑
EDAR	Aerobic Biological Treatment	Bombeo	Install the necessary equipment to perform accurate measurements of the energy consumption.	☐
EDAR	Aerobic Biological Treatment	Bombeo	Install the necessary equipment to perform accurate measurements of the water flow.	☑
EDAR	Pumping	Trat_Biologico	Optimize pumping configuration with the best possible pipe diameter, valves and accessories configuration.	☑
EDAR	Pumping	Trat_Biologico	Use pumps operating as turbines to recover pressure energy that otherwise would be wasted.	☐
EDAR	Pumping	Trat_Biologico	Install measurement equipment in the main consumption points of energy and water.	☐
EDAR	Pumping	Trat_Biologico	In order to reduce heat losses and pressure drops the system should be insulated. A complementary option is to install electronic valves and other control equipment.	☐
EDAR	Pumping	Trat_Biologico	The system should be cleaned regularly.	☐
EDAR	Pumping	Trat_Biologico	Perform a correct dimensioning of the installations, do not oversize them. This process extrapolates to evaporators, condensers, cooling towers, compressors, heat exchanger, piping...	☐
EDAR	Pumping	Trat_Biologico	Regular leak inspection.	☐
EDAR	Pumping	Trat_Biologico	Install the necessary equipment to perform accurate measurements of the energy consumption.	☐
EDAR	Pumping	Trat_Biologico	Install the necessary equipment to perform accurate measurements of the water flow.	☐
EDAR	Pumping	Trat_Biologico	Install the necessary equipment to perform accurate measurements of the water consumption.	☐
EDAR	Sludge Treatment	Trat_de_lodos	Perform a correct dimensioning of the facilities, do not oversize them. This process extrapolates to evaporators, condensers, cooling towers, compressors, heat exchanger, piping...	☐
EDAR	Sludge Treatment	Trat_de_lodos	In an anaerobic digestion, sludge is stabilized and biogas is generated, that can be used to produce electricity by means of cogeneration. Biogas from anaerobic digestion can also be used for heating in the thermal conditioning.	☐

The companies will select the ones that they are interested in, and those selected improvement actions will be moved to the “Implementation plan” tab.

To avoid mistakes when they want to edit this selection, in this preliminary list there is a column indicating if this improvement action is already in the “improvement plan” or not.



View Details | Delete

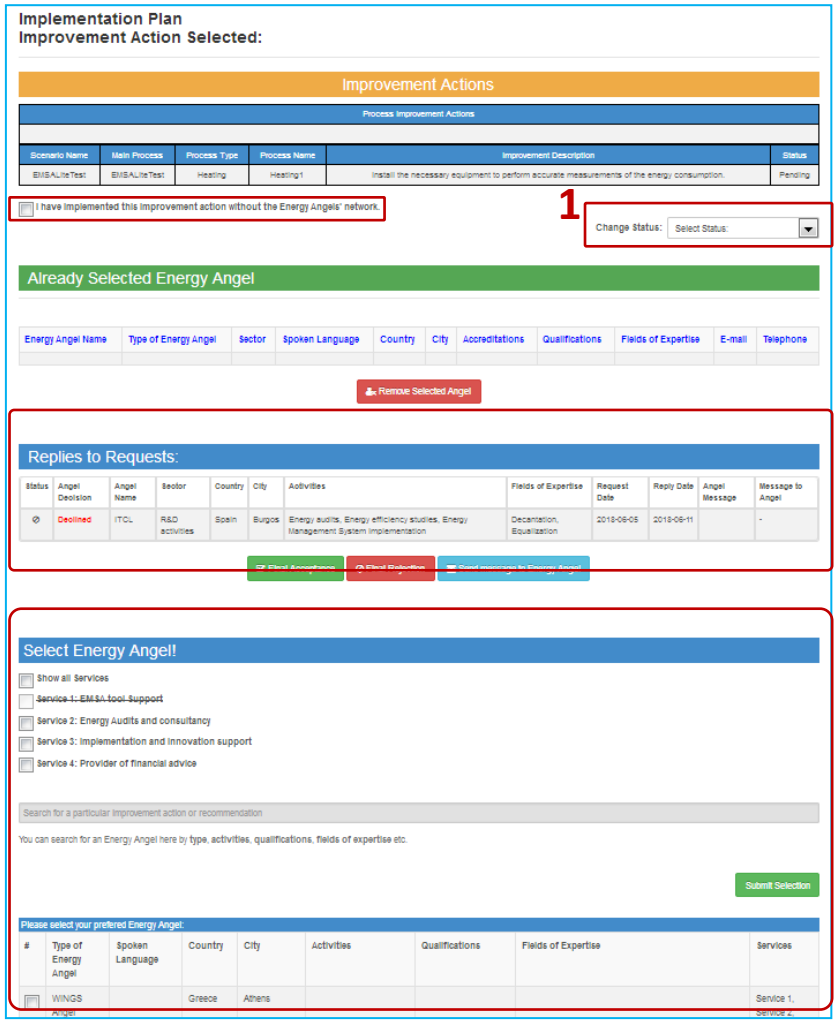
Improvement Actions

Process Improvement Actions

Scenario Name	Main Process	Process Type	Process Name	Improvement Description	Status	Select Action
EMSALiteTest	EMSALiteTest	Heating	Heating1	Regular inspection searching for erosion, corrosion, leaks, scaling, fouling.	In progress	
EMSALiteTest	EMSALiteTest	Heating	Heating1	Install the necessary equipment to perform accurate measurements of the energy consumption.	Pending	◉
EMSALiteTest	EMSALiteTest	Heating	Heating1	Consider installing measurement equipment in all the main parameters that affect the energy efficiency from the heating process, such as energy consumption, water flow, production.	Pending	○

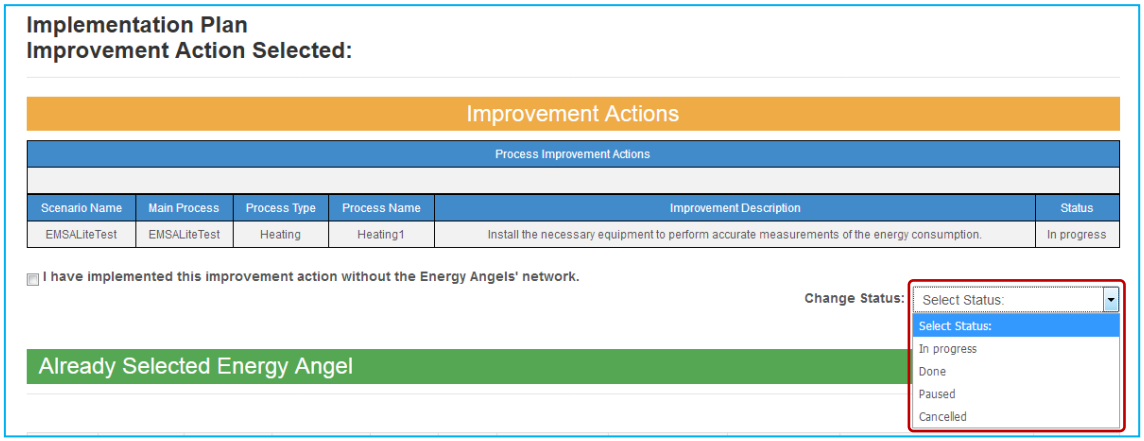
Then, when a company selects an improvement action and click on “View Details”, a new screen for that improvement’s details appear. On that new screen, the Company could do the following things:

1. Change the status (manually)
2. Select EA services for that improvement according to the services selected
3. Send request to the Energy Angels
4. There is an option if the company implements an improvement action without the Energy Angels’ Network.



12.2Change the status

In order to facilitate the improvements management, the company can change the status of each improvement implementation manually, on the drop-down menu shown in the next picture:

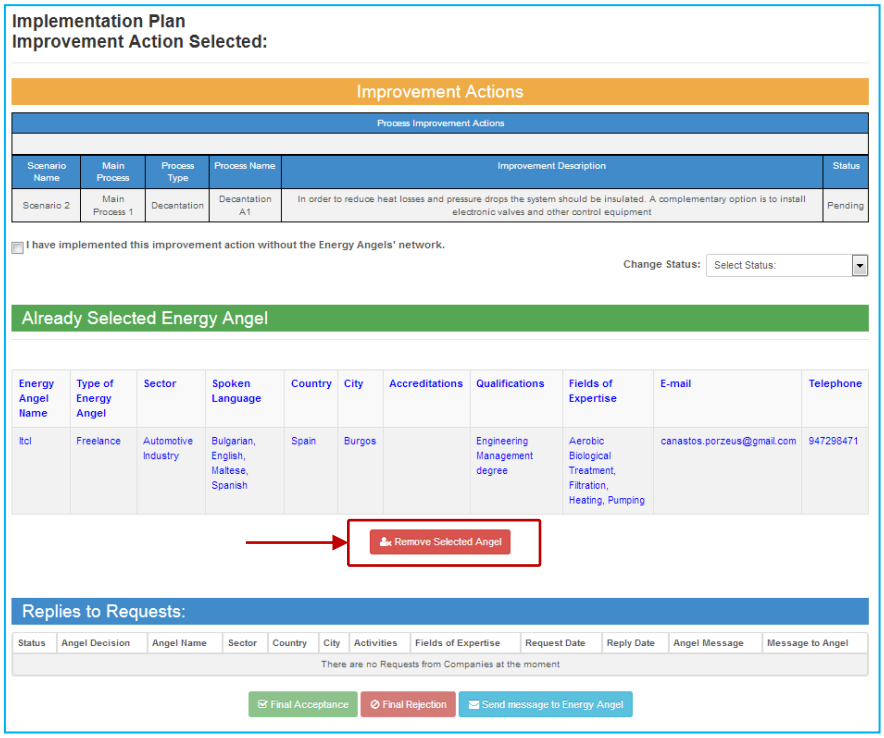


Improvement action status

- **Pending:** the “pending” status is automatically given when a new improvement action arrives to the implementation plan
- **In progress:** an improvement action is automatically “in progress” when the company sends the first request for a service to an Energy Angel.
- **Done:** the “done” status should be manually set by the company when they consider that the implementation is completed
- **Paused:** the “paused” status should be manually set by the company when they consider that they have a huge delay or an interruption.
- **Cancelled:** the “cancelled” status should be manually set by the company when they consider that the improvement should be cancelled, but this doesn’t mean that the improvement should be deleted from the table.

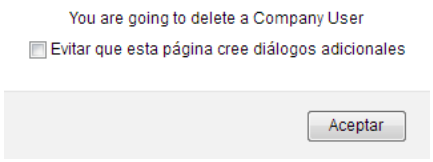
12.3Select an Energy Angel

By default the Energy Angel assigning to the improvement will be the same as the one assigned to the company for "EMSA Support", if the company wants to change to another Energy Angel with other skills more suitable to the improvement to be implemented, the user of the company should remove the current Energy Angel and select a more suitable one. Even if the Energy Angel is removed, he will still have all the permissions he had, but he will not be in charge of implementing the improvement.

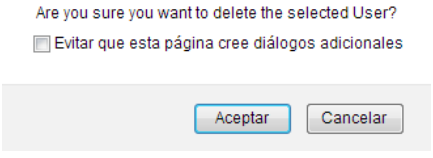


The company can search for an Energy Angel for each improvement even if the improvements already have one already assigned, then the company should remove the actual Energy Angel and replace it with the new one. To remove an already selected Energy Angel, the company user should click in the "Remove Selected Angel" button.

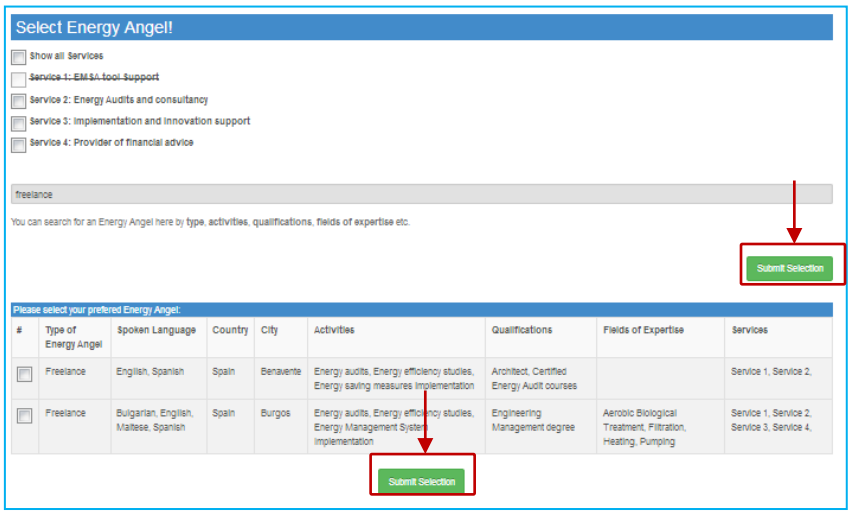
If the company removes an Energy Angel, the next warning message will appear:



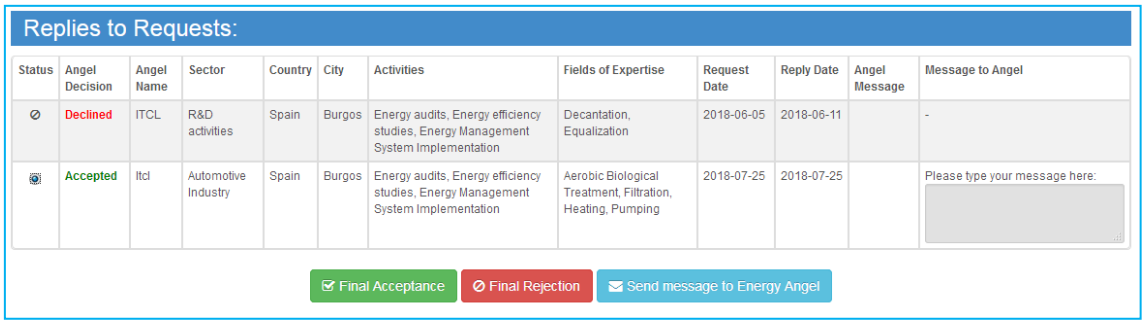
In order to confirm the decision, a last confirmation message will appear:



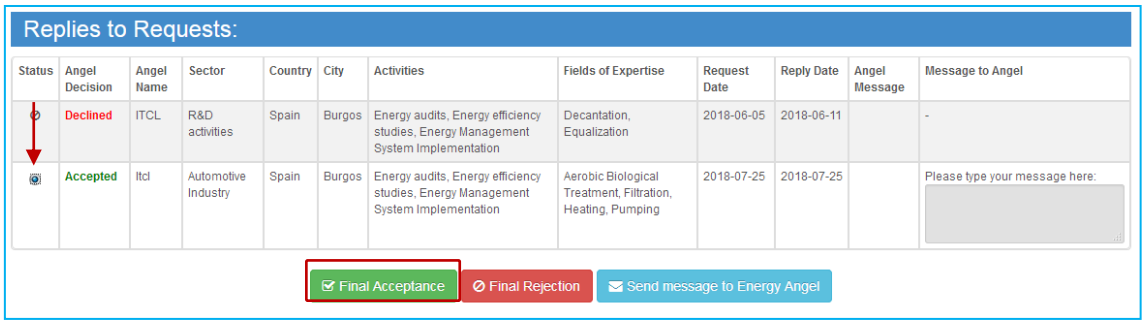
Finally, the Energy Angel will be removed from that specific improvement.



Once the company has chosen the Energy Angel he wants, the user should click in the "Submit Selection" button to send a request to a new one. Then, the company has to wait the Energy Angel's answer. Once he Energy Angel has analyzed the request, he will decide whether to accept it or not.



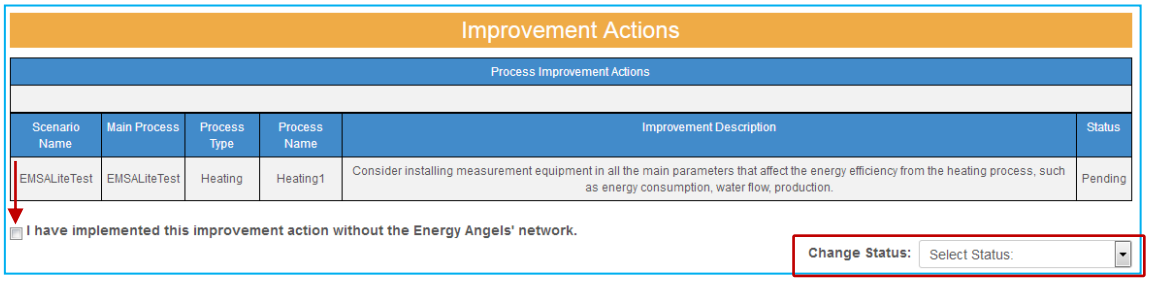
In this image is shown how is seen the two options, a declined requests and an accepted one.



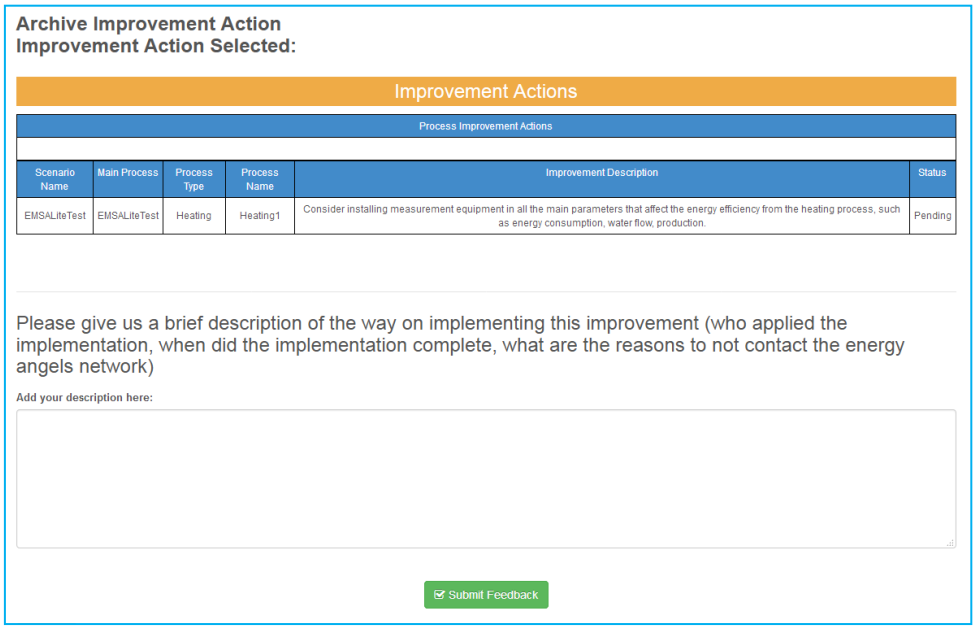
In general, companies can accept or decline the Energy Angel acceptance, as they have the last word in term of selecting an Energy Angels to do the implementation. If a company accepts or denies an Energy Angel, the state of the request will appear in the "request" tab as Declined.

12.4Improvements without the EA Network

In the case that the company has implemented the improvement action without the Energy Angels' Network, the company user should mark the tick and change the status to "Done".



Then, the next page will be shown:



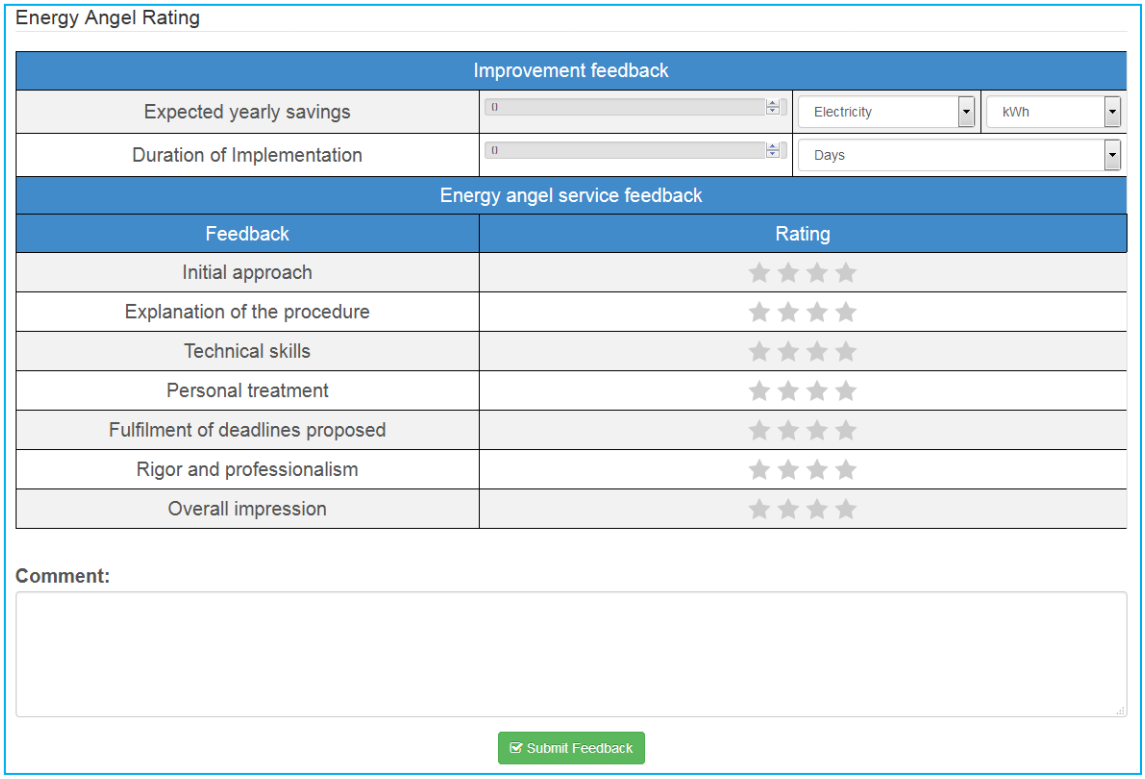
All the information that the company can provide here will be very useful to improve the Energy Angels' network and the EMSA Web-Tool.

12.5Completed Improvements

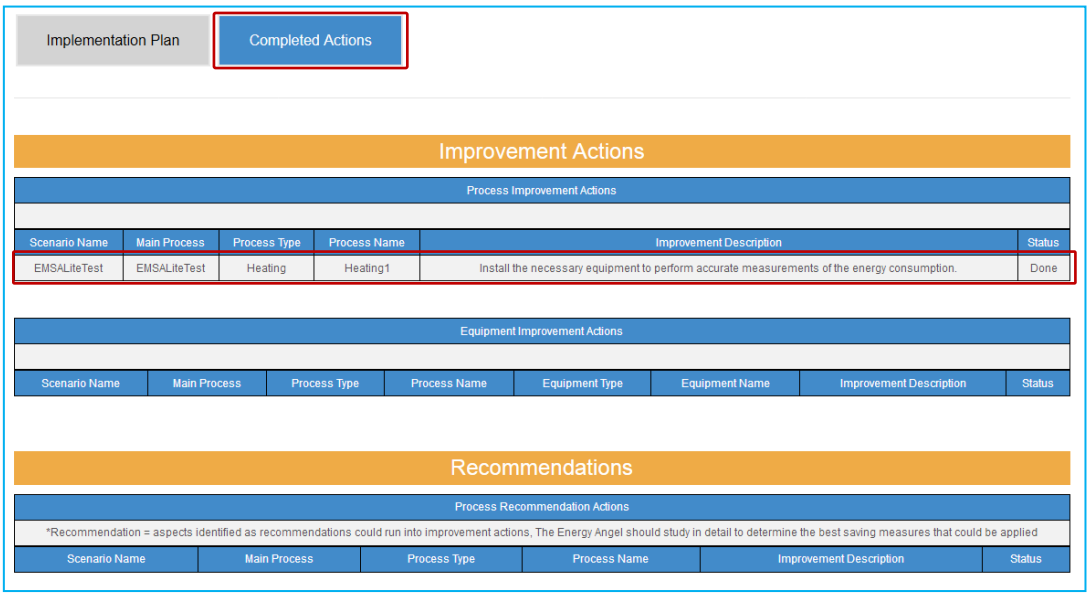
The “completed improvements” tab is reserved for those improvement actions that are completed, that is to say, those improvement actions that have the “Done” Status.

The objective is to have a different view of the completed actions and their impact and not to overload the “Implementation plan” tab with actions that don’t need to be managed.

To do that, when a company sets the “done” status of an improvement action, it shown the next page:



The company should answer some question about the implementation process and, if the questions are answered, the “improvement action” can be stored as completed in this tab and the benchmarking and benchlearning databases are updated with this new information.



In order to see all the completed actions, the company user should click on the “Completed Actions” button in the “Improvement Management” tab.