



LIFE  
WIRE

Water Cycle Efficiency Improvement  
by Boosting Industrial Water Reuse

[www.life-wire.eu](http://www.life-wire.eu)

# D1.7 After-LIFE Communication Plan

A. Buskute  
Cetaqua  
01-06-2017

**Project Title:** LIFE WIRE. Water Cycle Efficiency Improvement by Boosting Industrial Water Reuse

**Partner responsible:** Cetaqua

**Authors:** A Buskute

**Date:** June 207

**Modifications (dates)**

**Validation**

**Project Manager**

**Area Manager**



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## Glossary

AIAS	Asociación de Industrias de Acabados de Superficies
ASERSA	Asociación Española de Reutilización Sostenible de Agua
CNM	Carbon Nanostructured Material
CUADLL	Comunitat d'Usuaris d'Aigües del Delta del Llobregat
EC	European Comission
EU	European Union
FEIQE	Federación Empresarial de la Industria Química Española
Innobaix	Agència d'Innovació Industrial i Coneixement del Baix Llobregat
RO	Reverse Osmosis
UF	Ultrafiltration
WF	Water Footprint
WSC	Water Specific Consumption
WWRP	Wastewater Reclamation Plant

## Executive Summary

The After-LIFE Communication Plan for the LIFE WIRE project aims to ensure continued information and dissemination activities once the project is finished in order to ensure the impact of the project in the future. In concrete, the LIFE WIRE After-LIFE Communication Plan has two main objectives:

- To review all the communication and dissemination activities carried out during the lifetime of the project and to evaluate the impact obtained.
- To develop a strategy for continuous dissemination of the project outputs after the end of the project.

## 1. Context of the LIFE WIRE Project

**Water scarcity** is among the main problems to be faced by society in the 21<sup>st</sup> century. Water use has been growing at more than twice the rate of population increase in the last century. Although there is no global water scarcity as such, an increasing number of regions are chronically short of water.

**Water conservation** is the hydrological answer to scarcity problem and certainly **water reuse** is an important component of water conservation strategies. Several projects have demonstrated the benefits of water reuse and thus, it has been recognised as unique opportunity to be considered as a sustainable practice within a framework of integrated water management. Reuse provides two important benefits: the provision of an **alternative water resource** and the **reduction of environmental impacts** by reducing/eliminating wastewater disposal, which results in the preservation of water quality downstream. Despite the potential of water reclamation and reuse strategies to mitigate water scarcity, there is a lack of reuse experiences, and thus, **its implementation is still limited**. In 2004, it was estimated that only 700 hm<sup>3</sup>/y of wastewater were reused in Europe, accounting for less than a fifth of the estimated water reuse potential.

At European level, several actions have been undertaken to **encourage water consumption sustainability and reuse**. From a legislative point of view, there is not a single piece of legislation regarding wastewater reclamation and reuse at EU level. However, countries with a higher water stress index, such as Spain and Italy, have promulgated their own legislation to pave the way to its implementation. There is thus a need to fix a piece of legislation to set a common framework and thus promoting reuse among Member Countries.

The total **water use for industry** in Europe is 34,194 Hm<sup>3</sup>/year, which amounts for 18% of its consumptive uses. Industrial water use represents 37% of the consumptive uses in Western Europe (Central and Nordic), and just 13% of the consumptive uses in Southern Europe. Industrial use of water accounts for about 32% of total water abstractions in the EU. Excluding cooling water, the main industrial water users are the chemical, the steel & metallurgy as well as the pulp & paper industries.

### 1.1. Initial objectives of the LIFE WIRE Project

Industrial water users' goal is to minimize the amount of water that is uptaken and discharged, either to a receiving stream or publicly-owned treatment works. There are several reasons that may explain this trend: fresh water cost increase, cost of additional treatment to reach discharge limits, water availability, environmental awareness and community relations.

Water reuse can be directly achieved by **internal treatment and reuse of effluents** (recycled back into the same process) or by **using reclaimed water**. Spanish Royal Decree of wastewater reuse (RD1620/2007) establishes the potential water uses and the quality and monitoring programme needed in each case. However, **only certain parameters are defined for industrial**

**reuse** because water quality required depends on the industrial sector considered. Efforts are thus needed to determine which technologies and reuse schemes are necessary to be implemented in each industrial sector.

The overall objective of LIFE WIRE was to **boost industrial water reuse by making available non-conventional water resources through the reuse of urban wastewater in industries**. LIFE WIRE concretely aimed at demonstrating the feasibility of one or more technological configurations based on the combination of leading-edge technologies (ultrafiltration-UF, carbon nanostructured material-CNM filtration and reverse osmosis-RO) to polish and reuse reclaimed municipal wastewater in chemical, liquid waste disposal and electro-coating industries.

The main specific objectives of LIFE WIRE project were:

- To demonstrate which technological configuration/s between UF, CNM and RO are technically and economically viable to polish reclaimed urban wastewater and efficiently reuse it in major industrial sectors.
- To optimise UF, CNM and RO operation within each configuration tested in terms of energy and chemicals' consumption as well as by-products generated.
- To evaluate from a technical and economic point of view the use of conventional water resources against the adoption of reclaimed urban water in industries.
- To identify which management strategies need to be implemented in municipal WWRPs for assuring quality and demand of water supplied to industries.
- To disseminate the project results and transfer the knowledge gained, to identify potential end users and WWRP in other EU areas in which urban water could be reclaimed and reused for industrial purposes.

## 1.2. Final conclusions of the Project

The LIFE WIRE Project was finished in March 2017 and the following 3 key conclusions were identified:

1. The project demonstrated technical feasibility and reliability of the evaluated technologies in order to reach the industrial quality requirements established by the partners. Since salinity removal is required in most applications, it is necessary the use of desalination technologies.
2. The technologies tested in the framework of the project are economically competitive against the use of potable water but not against groundwater due to its minor exploitation cost.
3. The use of reclaimed water in industries represent a water footprint reduction of 97-98% regarding potable water.

## 2. Communication and dissemination of the LIFE WIRE project

### 2.1. Main objectives of communication and dissemination

The LIFE WIRE project aimed to achieve the following communication objectives:

#### General objective

- To make possible the **global understanding of the project** by target groups and its impact in the environment.

#### Specific objectives

- To promote the widest possible application of project methodologies and outcomes beyond the lifetime of the project.
- To raise awareness among industries of the importance and benefits of water reuse. In particular, to demonstrate to stakeholders the stepwise links between the problem of water scarcity, the resulting need of reuse and the solution of employing innovative treatment technologies and schemes.
- To disseminate the progress of the project and the expected transfer results.
- To disseminate the project to public connected with environmentalists and the scientific world.
- To identify potential partners and customers in these fields.

### 1.3 Communication and dissemination strategy

The communication strategy (**iError! No se encuentra el origen de la referencia.**) of the LIFE WIRE project was divided in **three different stages**. First of all, the project developed a **visual identity** and dissemination materials, with the aim of having unity and coherence to offer the basic information of the project and to be used in all the communication actions. Next, the communication of the project concept (context, objectives, etc) and awareness raising-oriented phase was carried out. Finally, when the project presented significant achievements, the main effort was focused on the dissemination of the results.

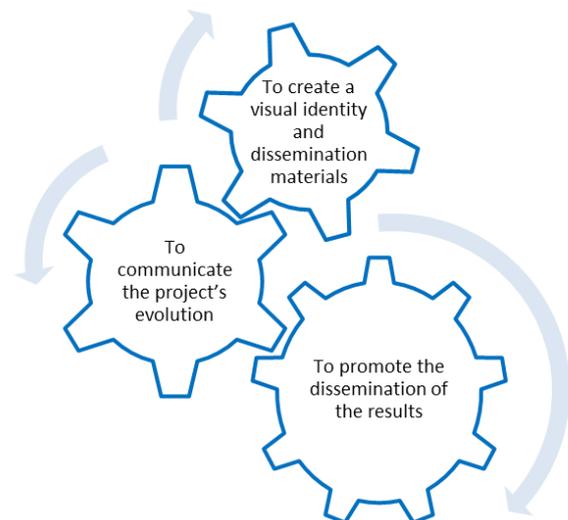


Figure 1 Communication strategy

## 1.4 Target Group

For successful communication and dissemination, it was crucial to identify target audiences at the very beginning of the project. These were the LIFE WIRE target groups:

### 1) Project partners

The LIFE WIRE project consortium is formed by the following participants:



CETAqua Water Technology Center  
(coordinating beneficiary)



Tradebe - Ecoimsa  
(associated beneficiary)



Tacsa  
(associated beneficiary)



Archroma  
(associated beneficiary)



AMB  
(associated beneficiary)



Aigües de Barcelona  
(associated beneficiary)

All project partners were encouraged to promote the project amongst their colleagues and contacts within their respective organizations.

### 2) Stakeholders and collaborators

The stakeholders involved in the project were:

- Administration and public entities

→ **INNOBAIX:** Agència d'Innovació Industrial i Coneixement del Baix Llobregat, driven by the mayors Council of Baix Llobregat, aims at leading the transformation of the region and its model through innovation, knowledge and entrepreneurship.

→ **AENA:** The Aena Group is a group of companies devoted to airport management and the provision of air navigation services.

- **Associations and clusters**

→ **AIAS:** Asociación de Industrias de Acabados de Superficies is an organisation that brings together surface treatments companies from all over Spain and that is interested in the new developments in water reuse.

→ **CUADLL:** Comunitat d'Usuaris d'Aigües del Delta del Llobregat is a community of water users under the Spanish law that encompasses more than 1.000 private users of diverse nature (agricultural, industry and public supply).

→ **ASERSA:** Asociación Española de Reutilización Sostenible del Agua is an association devoted to the promotion of sustainable water resources use through sustainable water reuse.

- **Water treatment and engineering companies**

→ **SUEZ:** Suez Group provides drinking water to 76 million people, offers wastewater treatment services for 44 million people and collects the waste from private individuals, companies, administrations and municipal authorities.

- **Automobile manufacturer companies**

→ **SEAT:** a Spanish automotive company with its head office in Martorell, Catalonia, Spain. Seat is the only major Spanish car manufacturer with the ability and the infrastructure to develop its own cars in-house.

### 3) Scientific community

From the very beginning the LIFE WIRE project worked on identification of synergies with similar research initiatives in order to avoid overlaps. Different networking activities were also carried out during the lifetime of the project.

### 4) General public

Given the fact that policies and practices are more likely to benefit the society when they are supported by knowledge build on research activities, the LIFE WIRE project paid a special attention to non-academic communication focused on general audience.

#### **5) Potential end-users and customers**

Some potential end-users of the LIFE WIRE project were identified:

- Industries from Barcelona Area of representing different fields, such as machinery (Roca), chloro-alkaly and chemistry (Solvay and SEDA), among others.

### 3. Communication and dissemination actions carried out and the impact achieved

The following actions were conducted to communicate and disseminate the LIFE WIRE project.

#### 3.1. Stage 1: Creation of visual identity

Table 1 First stage

Action	Description	Objective
Logotype and applications	The logotype is the image that identifies the project. It always appear with the LIFE logotype. Based on it, templates for documents, reports and presentations were created.	To achieve fast identification of the project through visual identity elements (logo and applications). To give the project its unity, coherence and identity.
Website	It is the public image of the project and the meeting place for the participants.	To provide updated information for the audience.
Leaflet	A printed document that introduces the project and brings the audience closer to the site.	To contribute to the communication and dissemination of the project's objectives and actions.

#### 3.2. Stage 2: To communicate the project's evolution

Table 2 Second stage

Action	Description	Objective
Notice board and stickers	This is an information panel that was displayed in a strategic place, accessible to the public. Stickers were also be placed on the prototypes, equipment and installations.	To give identity to the project at the demonstration sites.
Brochure	A printed document containing a description of the project, its objectives, evolution and results.	To get high visibility and give usability to the information provided.
Visits	Technical and demonstration visits with the aim of showing the implementation of the project.	To promote the networking and the diffusion of the project.
Conferences	Several workshops and conferences were tended during the project.	To disseminate project activities, validate the implemented technologies, gain expertise and contacts for potential collaborations.

### 3.3. Stage 3: To promote the diffusion of the results

Table 3 Third stage

Action	Description	Objective
Video	The video is an audiovisual resource of communication that permits creating messages.	The video was recorder at the very end of the project in order to disseminate the results and generate awareness.
Workshops	Some networking events and the final final workshop were organised during the project.	Diffusion and assessment of the final scope. To encourage discussion and exchange of ideas.
Layman's Report	Provides a general and brief overview of the project and its outcomes, gathering all the information, since the beginning until the end of the project.	It is an effective tool to contribute in the implementation of actions beyond the project and to communicate main outcomes to the wider public.
General media	Various media channels were chosen to communicate the message to a wider audience.	Aimed to increase the awareness of the project thematic and implementation.
Technical media	These technical channels were used to present project results.	Identify similar initiatives in the field and new potential demonstration areas and dissemination purposes.

### 3.4. Other communication tools

Table 4 Other tools

Action	Description	Objective
Communication Database	An Excel created for monitoring both the progress and the impact of the communication activities and materials developed.	To have a track record of all the communication and dissemination activities performed in relation to the project.

### 3.5. Timing

This point shows visually the implementation and duration time of all communication and dissemination actions carried out during the project.

**Table 5 Timing**

Launched  
 Implementation and duration

Action	2013	2014				2015				2016				2017
	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st	2nd	3rd	4th	1st
Logo														
Web														
Leaflet														
Notice Board														
Brochure														
Video														
Final Workshop														
Layman's														
Visits														
Conferences														
Media														
Database														
LIFE+														
After-Life														

## 4. Evaluation

For each communication tasks of the LIFE WIRE project, impact and effectiveness indicators were monitored and analysed.

Some of the monitoring mechanisms included:

- Regular activity review meetings by the LIFE WIRE communications team, plus review and interaction between the partners.
- Feedback and interest from target audiences.
- Web analytics and statistics.
- Media coverage analysis

Table 6 Indicators of evaluation

Action	Indicators set in the Communication Plan	Fanal evaluation
Logotype and applications	Creation of one logotype and one template per type of communication tool (documents, communications, e-mail headers, presentations, posters, etc.).	Brand identity was created on the first month of the project and was a core element during its evolution.
Website	Creation of a webpage. Maintenance for a minimum of up to 5 years after the project's end. A target of 300 visits per month is set.	Website launched on March 2014 and since then received over 8300 visits, which presents an average of 250 visits per month.
Leaflet	Production and distribution of 750 copies.	The leaflet included the information about the prototype units, its functioning, the main objectives of the project and partners involved. Over 900 copies distributed.
Notice board and stickers	Creation of 1 notice board. Stickers' production and sticking to all the equipment funded by LIFE+ in the LIFE WIRE project.	The notice board was installed next to the prototype in late 2015 and was as an informative tool for explaining the essence of the project.
Brochure	Production and distribution of 750 copies.	The technical brochure was presented in September 2016 and contained technical information about the prototype and its different configurations as well as mid-term results. 600 copies were printed and over 350 are already distributed.
Visits	100 visits received.	28 guided visits were organised to the Project prototype (over 170 persons attended).

Conferences	Attendance to events and conferences related to the project. Minimum of 7.	In total, 16 national, European and international conferences were attended.
Video	Production of 1 video.	3 versions of video were produced: in Catalan, Spanish and English.
Workshops	Organization of 1 workshop, with a target of 100 attendees in total.	The final workshop was attended by 60 attendees.
Layman's report	Production of 1 Layman's Report.	300 copies of Layman's report were printed and will be distributed during the next five years.
General media	3 communications to non-technical media.	In total, over 25 articles in general media were published.
Technical media	Submission of 2 papers to scientific journals and 7 presentations/posters to conferences related to the LIFE WIRE project.	In total, 2 technical articles on the LIFE WIRE project were published.
Communication Database	Updated database with all the communication actions done.	Communication database was periodically updated and facilitated the evaluation of the impact.
LIFE+ External Communication Team	Regular communication with this team. Publication of project's information in their material produced.	LIFE communication team was informed about the key actions of the project.

## 5. Potential activities after the lifetime of the project

### Local press releases

Once the project has finished, two local press releases will be made. The main objective will be to explain, more in detail, what were the results and what kind of benefits can it bring to the citizens of Barcelona.

### Participation in scientific conferences and congresses

It is planned to attend to different scientific conferences and congresses, mainly local ones but also European when possible in order to present a poster with the project's outcomes or to make oral presentations on the key outcomes of the LIFE WIRE project.

### Knowledge transfer

Some seminars and courses may be carried out in the years to come. They can be external, to scientific community and/or other groups interested in the project, or internal, to other companies of the SUEZ group to which Cetaqua belong.

### General and technical media (online and offline)

There will be intents to publish different articles related to the project in general and technical media, both online and offline (for example, radio, TV or printed newspapers).

The project consortium is willing to keep disseminating the project outcomes by means of journal papers publication in top scientific and applied journals.

### Social media

The material related to the project (video, pictures, Layman's Report...) will be available in the online consortium communication channels, like Twitter, Youtube and the pictures albums in the website. These tools are intended to inform general public through graphic, visual and easy understanding material.

### Presentations to students

In order to raise the importance of technology and environment and approach it to the general public, some presentations of the LIFE WIRE project may be done in schools and high schools.

At the same time, some presentations may be performed also in universities, focused on technical details to show the students the main outcome of this project and how the project results could be applied.