



Deliverable Report

Project Title:

Solar-Biomass Reversible energy system for covering a large share of energy needs in buildings

Project Acronym:

SolBio-Rev

Work Package 9

Deliverable 9.2

“Project Website and Logo”

Responsible for Deliverable:

National Technical University of Athens (NTUA)

June 2019



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Contents

Contents	2
1 Publishable executive summary.....	3
2 The logo design.....	4
3 Technical details	4
3.1 Font.....	4
3.2 Colors.....	4
3.3 Grayscale version.....	4
3.4 Scale and aspect ratio.....	5
4 Website structure and development	6
5 Website content	7
5.1 Front page	7
5.2 Work Packages	9
5.3 Participants.....	10
5.4 Photo gallery page.....	11
5.5 Contact page.....	12
5.6 Publications	12

1 Publishable executive summary

The SolBio-Rev project is a H2020 funded project that aims at developing a flexible energy system suitable for building integration based on renewables for covering a large share of energy demand (heating/cooling/electricity) in a cost-effective manner. The proposed configuration is based on solar, ambient and bioenergy, while it is suitable to be installed in various building types and sizes without any geographical restriction. The design of the project logo and the development of the website are part of the 9th Work Package (WP9) and specifically under Task 9.2.

The domain name **solbiorev** is registered under the top-level domain **.eu**. The registration period is 48 months. However, it can be extended as much as we wish if it is decided.

2 The logo design

The logo for the project has been designed from scratch in both color and grayscale versions as shown in Figure 1. The overall design is supposed not only to communicate the values of the project but also the main innovative features of the system. Thus, the selected elements such as fonts, colors, aspect ratio etc. which are presented in detail below, represent an ecological, pleasant but also robust approach while the visual linkage between the words **Sol** and **Bio** represent the innovative functional relation between the heat pump and the organic Rankine cycle.



Figure 1: Project logo in color and grayscale format

3 Technical details

3.1 Font

The font family used is Comfortaa, a rounded geometric sans-serif type design. It is free, both for personal and commercial use and it is provided and supported by Google Fonts. It comes in 5 styles and can be used both in printed material as well as in digital media. It embeds Latin, Cyrillic and Greek characters, as well as all the important special characters. Its glyph denotes a rather open contemporary and friendly look.

3.2 Colors

In order to communicate the main aspects of the system two colors were selected: Orange to be linked with the sun (Sol) and green to be associated with the bioenergy (Bio). For the third word (Rev) a shade of gray was selected so as not to interrupt the dialogue between the two basic words. The colors used for the logo in RGB, CMYK and Hex coding are the following:

- Orange (Sol): R:230 G:155 B:25 / C:8% M:43% Y:100% K:0% / #E69B19
- Green (Bio): R:80 G:125 B:60 / C:72% M:31% Y:98% K:16% / #507D3C
- Gray (Rev): R:109 G:110 B:113 / C:58% M:49% Y:46% K:15% / #6D6E71

3.3 Grayscale version

In order to maintain the visual contrast of the orange and green color in printed applications with no option for colors (Photocopies, FAX etc.) a grayscale version was also designed with the following tones of gray:

- Gray 1 (Sol): R:88 G:89 B:91 / C:64% M:56% Y:53% K:28% / #58595B
- Gray 2 (Bio): R:88 G:89 B:91 / C:64% M:56% Y:53% K:28% / #58595B
- Gray 3 (Rev): R:128 G:130 B:133 / C:52% M:43% Y:41% K:6% / #808285

3.4 Scale and aspect ratio

A landscape orientation with an aspect ratio of 4:3 was selected for the overall shape of the logo, so as to be easily embedded in most applications. This ratio is also considered well balanced and widely used in many digital and printed applications. The overall design is optimized so as to be legible in sizes as low as 60x45px in digital applications and 2.0x1.5cm in printed applications. There is no upper limit concerning its application in both digital and printed form if the vector version is used (eps, pdf).

4 Website structure and development

For the development of the website the open source software Drupal has been used. It is distributed under the terms of the GNU General Public License (GPL). Drupal is a very popular content management system (CMS) for creating websites, integrated digital frameworks and other applications.

The Drupal core 8 is used and it is updated according to new stable releases, currently running on version 8.7.3. Basic hosting system specifications are as follows: Database server MySQL 5.5.3 and Web server with PHP version 7.2.12.

The website functionality has been extended beyond the capabilities of the standard Drupal installation by the addition and customization of contributed modules. Additionally, the rather plain looking of the standard installation has been enhanced by the installation and customization of contributed themes. Both modules and themes receive periodic updates fixing security and/or functionality issues and/or adding new features. A check on a regular basis is performed for new versions of the installed modules and themes and the necessary actions take place. During module and theme installation special attention is given to the full functional compatibility of the website with all modern browsers that support CSS and JavaScript such as Internet Explorer 11, Microsoft Edge, Firefox 5.x and later, Opera 12 and later, Safari 5.x and later and Google Chrome.

Website content is classified, connected and interrelated to each other through taxonomy terms that are gathered within vocabularies. For example, the short names of the participants are listed in a vocabulary, something which allows gathering and displaying information related to each participant, such as general info and work packages in which the participant is defined as lead beneficiary. Taxonomy is built according to project requirements, content interrelationships and aims at serving possible future functional expansion. More information about the taxonomy is given below.

Furthermore, for the different type of published material, such as informational page, Participant info, Photo gallery etc. appropriate *content types* with customized fields have been specifically designed. This approach helps organizing the content more efficiently and provides extensive functionality to the website.

The first fully operational version of the website is available online since the 14th of June 2018. However, the website is under constant updating of its content and structure development to meet the project needs, i.e. announcements, events etc.

5 Website content

5.1 Frontpage

The front page of the website displays aggregated information about the main aspects of the project as can be seen in Figure 2. The front page can display various customizable block regions such as header, image slideshow, three-column banner, left and right sidebar, three columns footer etc. These block regions are selectively displayed on the individual pages of the website.



SoBio Rev Solar-Biomass Reversible energy system for covering a large share of energy needs in buildings
Renewable energy system integrated at the building scale

Winter mode

The diagram illustrates the energy system in winter mode. It shows a storage tank for short-term heat storage (<65°C) and a reversible HP/ORC unit. Solar thermal collectors with TEGs provide solar heat to storage (<65°C) and solar thermal energy. The storage tank provides heat to the HP (<30°C). The HP/ORC unit provides space heating and rejected heat to a biomass boiler. The biomass boiler provides heat to the HP/ORC unit. The HP/ORC unit also provides electricity to the building. The building is shown with a DWG (District Warming Grid) connection. The system is designed for use either as a heat pump for heating or as a biomass boiler for DHP.

Project Concept

The SoBio-Rev project concept is to develop a configuration based on renewables that allows covering all heating and cooling demand and a variable electricity demand (from zero up to even 100%) in a cost-effective manner. This configuration is based on solar, ambient and bioenergy, while it is suitable to be installed in various buildings types and sizes without any geographical restriction. [Read more](#).

Objectives

The core objective of the SoBio-Rev project is to combine promising renewable energy technologies based on solar, ambient and bioenergy, having at the core an innovative heat pump-based configuration and to allow the efficient application of this solution, without any geographical restriction at least in the EU. [Read more](#).

Impact

The very high energy share of the SoBio-Rev solution results to a reduction of the dependence on fossil fuels by up to 70%, thus aiding on EU energy security of supply, for: (1) heating with gas commonly used in EU, with boiler efficiency of 90%, (2) cooling with standard electrical chillers or air-conditioners with an average COP of 2.5, and (3) electricity needs from gas-fired power plants, with a typical thermal efficiency of 40%, including transmission and conversion losses. [Read more](#).

Abstract

The SoBio-Rev project will develop a flexible energy system suitable for building integration based on renewables for covering a large share of energy demand (heating/cooling/electricity). Its flexibility is derived from the long-term collaboration of key industrial partners with research organisations, having in mind the large variety of EU buildings, especially non-residential (types, uses and sizes). [Read more](#)

SoBio-Rev ambitions at various levels

Overall

- Reach compact solutions that can be integrated in new or existing buildings of different types.
- Potential to reach similar system cost compared to other renewable energy systems in buildings, but with higher energy savings and a shorter PBP.
- Optimised system design and sizing for achieving a very high energy share up to 85% all over Europe.
- Validation

[Read more](#)

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GALLERY

[Kick Off Meeting](#)

Search

[Home](#) [Work Packages](#) [Publications](#) [Participants](#) [Gallery](#) [Contact](#)

[Project concept](#) [Objectives](#) [Impact](#) [Ambitions](#) [Summer mode](#) [Winter mode](#) [Intermediate seasons](#)

[Abbreviations](#) [Terminology](#)

Figure 2: Website front page

Main navigation menu is in the header block at the top of the screen. It is available in every individual page and includes links to the following pages: Home (or front page), Work Packages, Publication, Participants, Gallery and Contact.

Under main navigation menu the project logo and the title are visible in every individual page. A slide show of five images with a short description is visible in the front page and each image links to the related content. For the time being, the images include two group-photos from the kick off meeting in Athens, summer mode and winter mode schematics and a graphical representation of the project path from the idea to the commercialization. These images can be changed with the progress of the project.

Project Concept, Objectives and Impact are available in the frontpage banner with a *Read more* link to the full-page content for each one.

In the main content area of the first page a short summary of the project Abstract and the project Ambitions at various levels are promoted with a Read more link to the full content page. Content promoted to front page can be changed, increased or decreased according to the needs of the project.

Right sidebar contains two blocks named Funded by and Gallery. The first one displays information about the funding the project has received from the European Union under the Horizon 2020 research and innovation programme. The second one includes links to the project photo galleries. Both blocks are always visible on every individual page.

A search box is placed at the top footer block, for easy and quick search in the website's content.

The footer block displays three columns containing useful links for easy and direct access to the website content.

At the bottom of the footer a small icon for the popular news and social networking site named Twitter is placed linking to the project account. All tweets related to @solbiorev will appear on the left side of homepage.

5.2 Work Packages

Work Package (WP) page displays a three columns table listing WP number and title and the short name of the lead beneficiary participant, as shown in Figure 3.

Each WP title links to a webpage displaying the main scope and the objectives of the Work Package. The short name of the Lead beneficiary participant is a taxonomy term and links to a web page that summarizes all the activities in which the specific participant is involved.

Work packages

[HOME](#)
[WORK PACKAGES](#)
[PUBLICATIONS](#)
[PARTICIPANTS](#)
[GALLERY](#)
[CONTACT](#)



Solar-Biomass Reversible energy system for covering a large share of energy needs in buildings

Renewable energy system integrated at the building scale

Work Package Title	Lead beneficiary
WP1 Project coordination and management	NTUA
WP2 Innovative SolBio-Rev components and configuration	ITAE
WP3 Simulation and smart control	NTUA
WP4 Prototypes design, production and commissioning	Daikin
WP5 System testing and technology validation	FAU
WP6 Social acceptance, potential for uptake and engagement	UOS
WP7 LCA, economic analysis and building integration	UDL
WP8 Dissemination and exploitation of results	DBC
WP9 Communication activities	DBC

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GALLERY

[Kick Off Meeting](#)

Search

[Home](#)
[Work Packages](#)
[Publications](#)
[Participants](#)
[Gallery](#)

[Project concept](#)
[Objectives](#)
[Impact](#)
[Ambitions](#)

[Abbreviations](#)
[Terminology](#)

Figure 3: Work Packages summary page

5.3 Participants

Participants' web page summarizes in a grid type view listing the full name, logo and country of origin of the participants, as shown in Figure 4. By clicking on the full name or the logo of a participant the individual page of the participant is displayed providing a short description of the organization and the official website for further information. Additionally, dedicated and highly recognized skills/experience of the participant is highlighted.



Figure 4: Participants summary page

The country of origin is a taxonomy term that links to a webpage that summarizes all the participants from the same country. In case of Greece the summarized page is depicted in Figure 5.

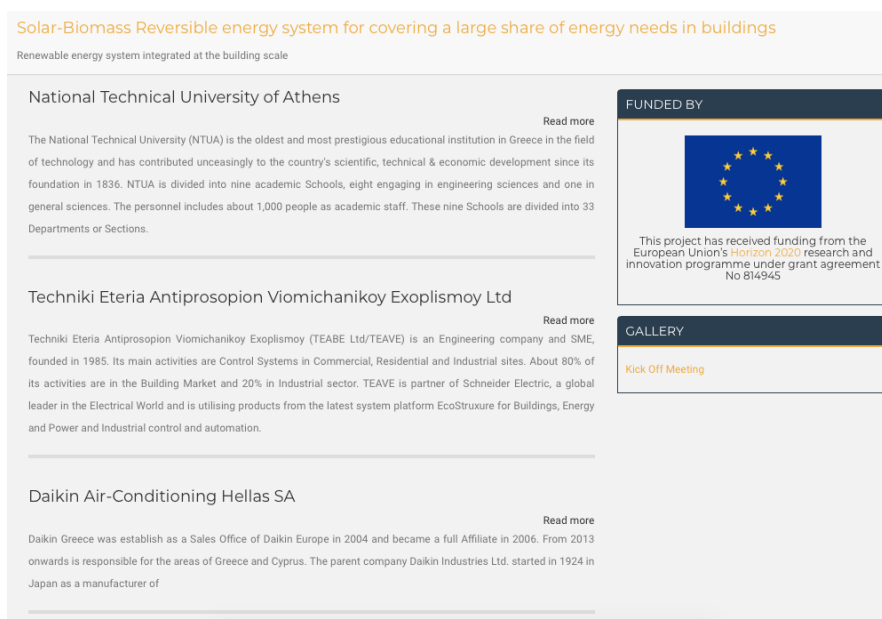


Figure 5: Participants from Greece, summarized using taxonomy terms

5.4 Photo gallery page

The photographic material of the project is organized into albums according to the relevant theme, i.e. an event or an experimental facility etc. All the available albums are presented in a three-column table listing the title of the album, four images as sample preview and the total number of the uploaded images, as shown in Figure 6.

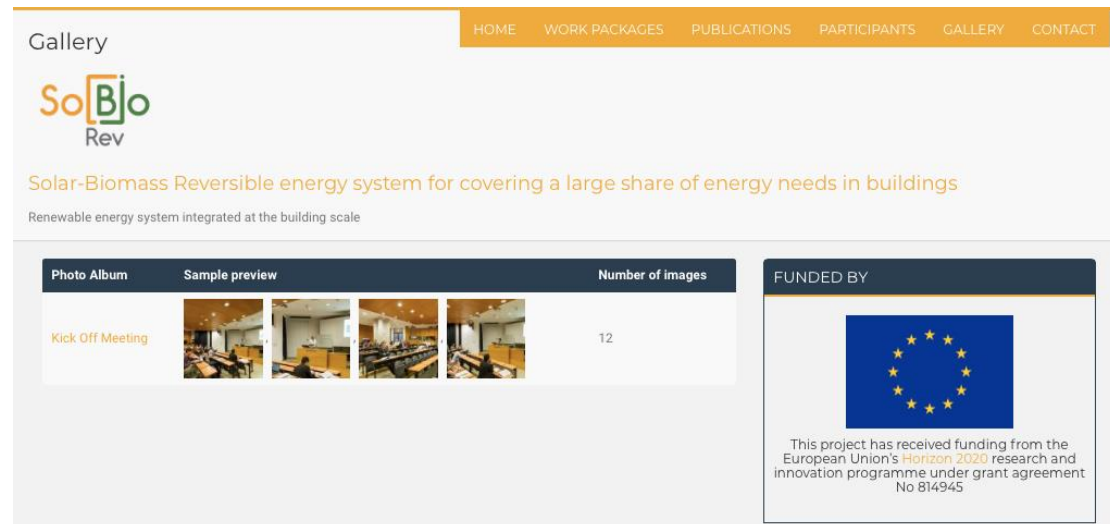


Figure 6: Website photo gallery

Photo album individual webpage displays pictures in 640x480 format, where larger images are resized (see Figure 7). Visitors can select to show or hide a filmstrip with all the pictures in thumbnail size. Furthermore, by selecting the expand button users can view the images at high resolution in full browser window or choose to view an image in a new browser window.

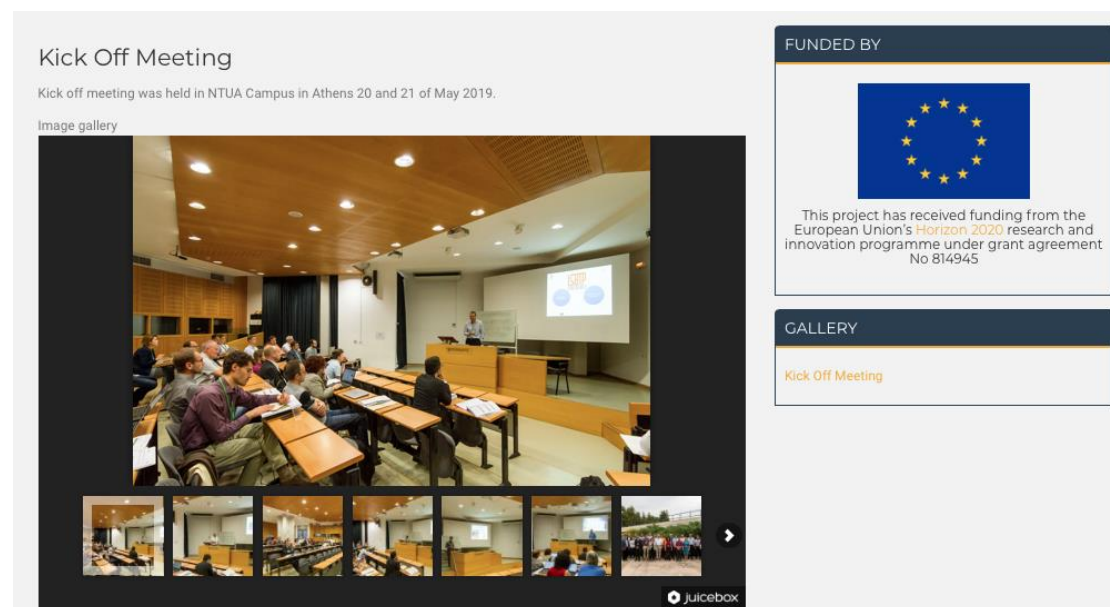
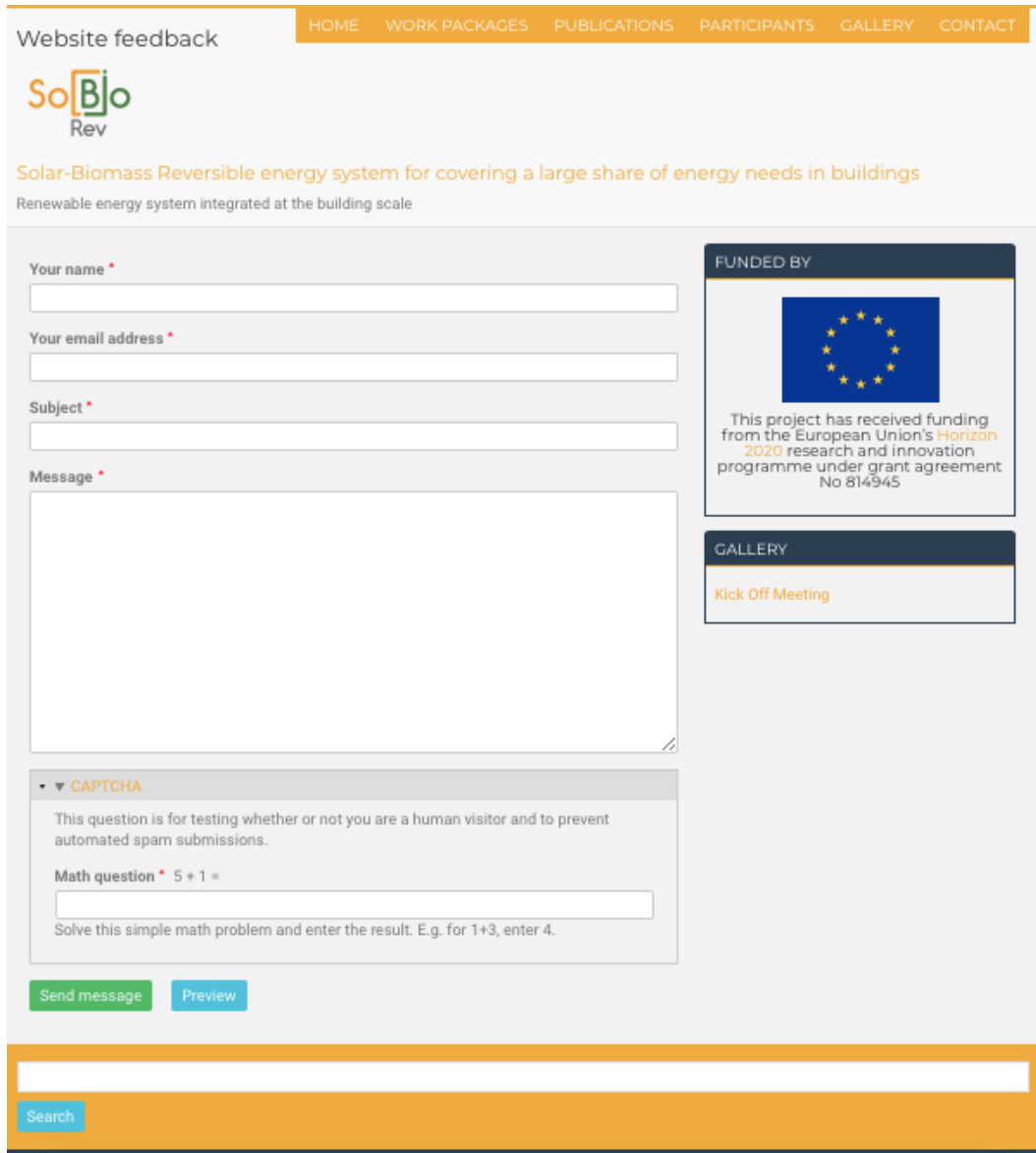


Figure 7: Kick of meeting photo album

5.5 Contact page

For communication purposes, a contact form has been created where visitors must fill in their name and an email address, the subject and the message they want to send. In order to prevent automated spam submissions a captcha tool has been added, prompting the visitor to answer a simple mathematical question. Incoming messages are managed by the NTUA team. The contact form is shown in Figure 8.



The screenshot shows a web page titled "Website feedback" with a navigation bar containing links: HOME, WORK PACKAGES, PUBLICATIONS, PARTICIPANTS, GALLERY, and CONTACT. The SoBjo Rev logo is displayed, followed by the project description: "Solar-Biomass Reversible energy system for covering a large share of energy needs in buildings" and "Renewable energy system integrated at the building scale".

The contact form includes the following fields:

- Your name *
- Your email address *
- Subject *
- Message *

Below the message field is a CAPTCHA section with the text: "This question is for testing whether or not you are a human visitor and to prevent automated spam submissions." and a math question: "Math question * $5 + 1 =$ ". Below the question is a text input field and the instruction: "Solve this simple math problem and enter the result. E.g. for 1+3, enter 4." At the bottom of the form are two buttons: "Send message" (green) and "Preview" (blue).

On the right side of the form, there is a "FUNDED BY" section featuring the European Union flag and the text: "This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 814945". Below this is a "GALLERY" section with a link: "Kick Off Meeting".

At the bottom of the page, there is a search bar with a "Search" button.

Figure 8: Website contact form

5.6 Publications

Publication page will summarize all the project-related publications on a public dissemination level. In more detail Press releases, Workshop proceedings and presentations, Conference and/or Journal publications as well as the Deliverable reports will be available there.