



Qualification of innovative floating substructures for 10MW wind turbines and water depths greater than 50m

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Definitions & Abbreviations	
AST	Administrative Support Team
DC	Dissemination Committee
PC	Project Coordinator
PM	Project Manager
WPL	Work Package Leader





## Executive Summary

This document describes the external web-representation of the LIFES50+ project. The external parts denote those parts that are accessible without any login. It takes part in the dissemination of the project results. The pages inform visitors about the progress in the project and gives access to public reports. Moreover, it provides contact details of the project coordinator, manager and media contact. Since the web-site reports on the progress of the project, it will periodically be updated.

This document describes the installation process.

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## 1 Introduction

The deliverable 8.4 External website is a software installation on a web-server. This document serves as an accompanying documentation of the installation process, the decisions made and of its existence. Since the website will be updated periodically, this document describes the version as on the day of delivery. Future updates of the web-site will not cause revisions of this document, since this is not a living document.

LIFES50+ is an EU-project and as such it is committed to disseminate results and to be available on the internet. The website takes part in the dissemination effort.

## 2 Requirements

The external web-presence is required from project month 6 until 2 years after the project is finished.

### 2.1 Functional requirements

In order to function as a public access portal to the public deliverables of the project and to news related to the project, an external website is required. It must be possible to

- Upload deliverables in report format and make them public accessible.
- Publish posts related to project events using an online editor.
- Restrict upload and editing capabilities to a selected group of persons.

### 2.2 Technical requirements

The web presence requires the display of several more or less static pages together with some material like images and PDF-files. With “less static” we mean a functionality which enables less savvy personal to create new posts or pages. Moreover, it would be an added bonus if the same domain could be used for project internal web-space too. One of the most frequent combinations of functionality and data storage is the combination of PHP and MySQL. Hence the requirements were:

- The web hosting platform allows the usage of PHP and provides a MySQL database
- The hoster resides in the European Union or European Economic Area
- The hoster provides convenient access
- The hoster provides enough storage for our purposes
- Hosting is cheap enough

The requirements are not such demanding that a dedicated server machine seemed to be reasonable. Hence, those requirements can be fulfilled by most web space providers.

## 3 Selection of Web space provider

The selection of a web space provider was simple. The hoster [www.one.com](http://www.one.com) resides in Denmark and follows Danish laws with respect to privacy. The costs per year are so low that an additional search would cost more than the operation over the proposed time horizon. Moreover, a member of the AST had previous experience with [www.one.com](http://www.one.com).

## 4 Software and theme

The provider offers a 1-click installation of WordPress<sup>1</sup>. WordPress is a software package based on PHP<sup>2</sup>. It offers the on-the-fly creation of web-pages based on templates, general code and database content. The general code includes online editors for content and user management.

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<sup>1</sup> <https://wordpress.com/>



#### 4.1 Access to online editing capabilities

Uploading and editing capability is available to a restricted group comprising the Administration Support Team (AST) and members of the Dissemination Committee (DC) with media competence. During installation, access to the platform is given to relevant developers.

Access is granted by a usual login process. Users have to be registered by the administrator, who is a member of the Administrative Support Team. A lost password functionality based on the provided email is available.

On the personal profile page are options available to change the displayed name and to generate a new password among others.

#### 4.2 Uploading media content and editing posts

The used package called WordPress comprises a set of functionality for blogging. A larger dashboard allows an expert user to customize the web-site, install themes and add widgets and menus to the pages. This functionality has been used to create <http://lifes50plus.eu>.

After a successful login, a separate bar above the site allows the user to add posts, pages, media and users<sup>3</sup>. After selecting the media entry, the user can drop media onto an area and are then asked to fill in additional information. This provides search terms and a permalink for later use.

Posts are the main thing on a blog. Therefore, WordPress provides an extensive interface for those. The user can enter a text title, a formatted section, which can contain media, an excerpt that can be used in an abbreviated display of the post, categories and tags for sorting into different sections of the archive. Since WordPress aims at the average blogger, the editor is tailor-made for them.

New posts for the website are created by the Administrative Support Team and then published. In case of larger posts requiring media competence, relevant members of the Dissemination Committee will be involved.

#### 4.3 Layout and structure

Web pages usually follow a certain layout structure. There is a header area identifying the web-site, followed by a navigation area. The main content occupies the centre of the screen while the left and right margins contain auxiliary widgets or entries. A footer area is found at the bottom, containing common references and some operational widgets.

Widgets are items having a certain function, like presenting a list over recent posts, the archive or a calendar.

The layout and colour schemes are determined by a theme, which is discussed later on.

#### 4.4 Blog posts and pages

WordPress has the capability to display both pages and blog posts. Pages occupy the main content area. Only one page is displayed at a time. Pages are devoted to fixed topics like “Contact” or “Results”. Those pages are created once and edited infrequently. Blog posts on the other hand are like news. They do not belong to fixed topics. Moreover, once created they are unlikely to be edited at later times.

The number of posts displayed in the News page are limited. When new posts are published, some older posts might no longer be visible on that page. However, unless deleted all posts are accessible through the archive.

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<sup>2</sup> PHP: Hypertext Preprocessor, <http://www.php.net>

<sup>3</sup> Depending on the user role



## 4.5 Theme

A WordPress theme is a set of files following a certain naming convention. Those files are php-scripts which combine HTML and PHP-code. The HTML code describes the structure of the page, while php-scripts fill the places with the desired content. A style file is responsible for visual impressions like colours and font sizes.

There are literally thousands of different themes offered by WordPress, but there are no good search facilities enabling one to search for a theme that fulfils certain requirements. Moreover, the first optical impression does not expose the underlying flexibility. Hence, testing templates is by itself time consuming. However, the requirements for the LIFES50+ presence were rather simple.

The LIFES50+ project has a name, a logo, and a longer subtitle. In addition to this the support by the European Commission has to be stated along with the official EU logo. We have identified several themes, each providing certain functionality. Based on those themes, we created a temporary theme by copy / paste of relevant passages and editing of remaining parts. See Figure 1 LIFES50+ presence as of August 12th 2015 shows the home pages as of August 12<sup>th</sup> 2015. The black ribbon at the top is only visible for users who have logged into the WordPress software and is invisible to others. Then the grey bottom line includes a greyed “login” item below the European flag.

The main aim of this theme was to look simple and to not draw attention away from the content. The first temporary theme was used to encourage a discussion about intended audience and purpose. During the discussion a consensus emerged that the simple classic look does not appeal. Moreover, a design was requested that also works on mobile devices. This additional requirement is also known as a responsive theme requirement. The decision was made to outsource such a design and its implementation. MARINTEK got proposals from two companies and decided to assign the contract to *JJ Design AS*. They will implement the design as a WordPress theme, such that the existing platform will be used and MARINTEK will administer and maintain the website.

The theme will be available as a desktop and as a mobile version. The top area is filled with the logo, several menu items in a larger font. At the top edge of the screen one can find a link to the internal pages in a slightly smaller font signalling lesser importance to visitors.

Underneath is a banner area, displaying an image with a slogan or the page title. Below this main visual element at tab area for tabs showing “Challenge”, “Goals”, “Approach” and “Concepts” and their related content using a Tab-metaphor. On mobile devices, this area is displayed as an accordion widget. A fly-in widget with major contact information is placed on the right edge. This widget will be visible when the mouse clicks the contact icon. The latest news and a reference to the news archive are displayed below the tab area. At the very bottom, the footer contains the EU-flag and the mandatory funding reference text.

## 4.6 Comments

WordPress includes functionality for handling comments. The AST added this functionality to the first version of the website. However, during the first day, much spam was found as submitted comments. Keeping the comment functionality would either require constant moderation of incoming comments or an advanced anti-spam measure. Since the benefit of having comment-functionality is rather marginal, the AST opted for a comment-free template.





Figure 1 LIFES50+ presence as of August 12th 2015

## 5 Content

The LIFES50+ web-presence is a living website and will be updated throughout the project.

The website has been launched on June 24<sup>th</sup> 2015. As of November 12<sup>th</sup> 2015 this site has been visited 3.500 times. The final theme was implemented by JJ-Design AS and is a WordPress theme. Planned for implementation is a share-on-social-networks functionality.

### 5.1 The front page

The front page is the page displayed when the user only uses the domain name [lifes50plus.eu](http://lifes50plus.eu) to connect to the website. The front page is a static page with a bit more functionality than the other pages. Figure 2 Front page show the version as of November 25<sup>th</sup> 2015.



[INTERNAL](#)

[HOME](#) | [NEWS](#) | [RESULTS](#) | [CONTACT](#)

## INNOVATIVE FLOATING OFFSHORE WIND ENERGY

Proving cost effective technology for floating substructures for 10MW wind turbines at water depths greater than 50 m

CHALLENGE
GOALS
APPROACH
CONCEPTS

### Challenge

There is a need for new innovative substructure concepts, including floating platforms, to reduce production, installation and O&M costs for water depths of more than 50m.

**OBJECTIVES:**

- Optimize and qualify to a Technology Readiness Level – TRL of 5, two innovative substructure designs for 10MW turbines
- Develop a streamlined and KPI (key performance indicator) based methodology for the evaluation and qualification process of floating substructures

**FOCUS:**

- Floating wind turbines installed in water depths from 50m to 200m.
- Offshore wind farms of large wind turbines (10MW) – identified to be the most effective way of reducing cost of energy in short term

LATEST NEWS

**First simulation of deep-water wave-energy accumulator in the North Sea**

Sub-headline to the article with more details about first simulation of deep-water-wave-energy accumulator in the North Sea

**Major international collaboration launched to develop next generation floating wind technologies**

A major international collaborative project involving 12 partners from eight countries and worth €7.3 billion is set to drive forward development of the next generation of floating wind substructures.

[NEWS ARCHIVE](#)

PARTNERS

The research leading to these results has received funding from the European Union Horizon 2020 programme under the agreement H0202-LCE-2014-1-640741.

**INNOVATIVE FLOATING  
OFFSHORE WIND ENERGY**

DESIGN | DESIGN | CODE | KONSULENTEN

Figure 2 Front page

LIFESSO+ Deliverable, project 640741

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The top line shows the logo with a few menu entries, while the entry to the internal pages is lifted to the upper edge. The picture banner is similar to the front page of the project flyer. The banner also displays the slogan of the project.

Below this banner we can find a tabbed area, which is displayed as an accordion in the mobile version. To the right is a fly-out widget, which provides contact details.

A short news section shows the excerpts of two of the latest news which a link to the new archive. All project partners are displayed with the clickable logos underneath the news section.

The bottom area is reserved for the required reference to the EU funding and project logo.

## 5.2 News page

The news page shows the same top row and bottom area as the front page. The picture banner is smaller and displays the page name.

The excerpts of news are displayed in a 2 column layout for at most 10 posts.

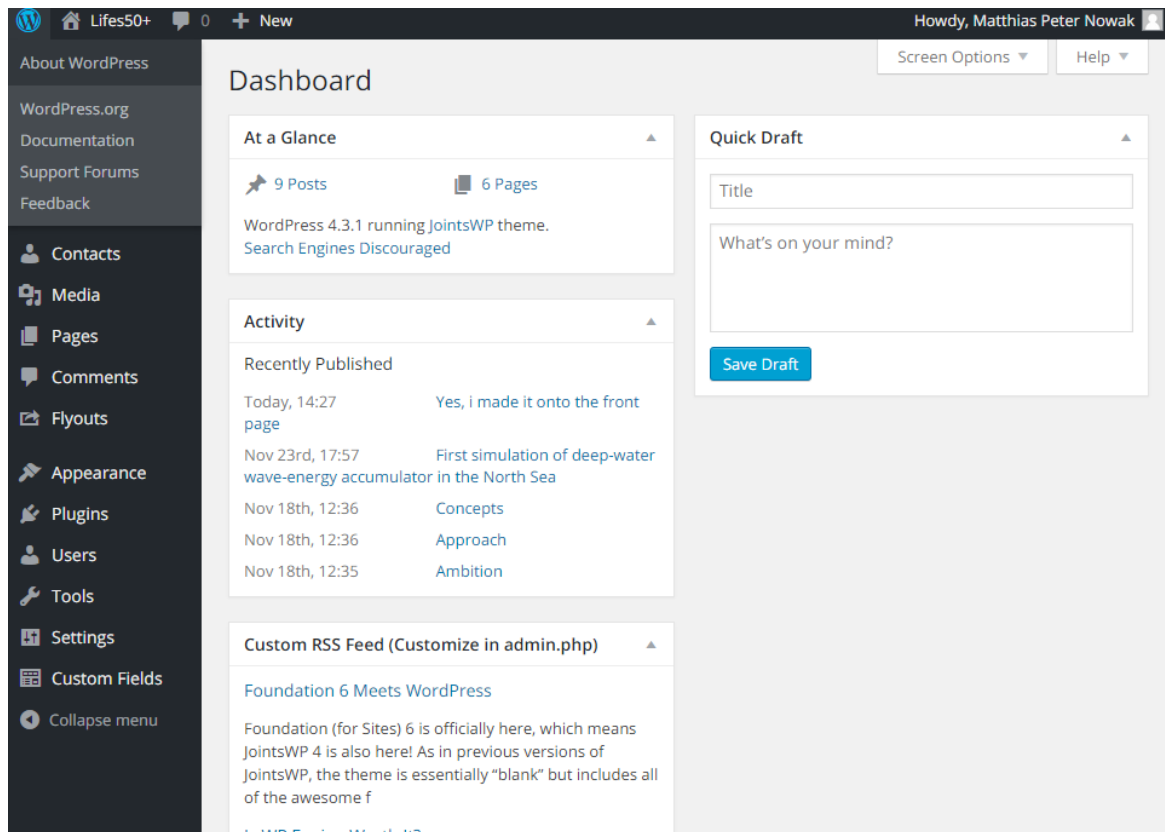
## 5.3 Results and Contact

Similar to the News page, the result and the contact page contain the top bar including the picture banner and the bottom bar. Both pages display static content. The pages contain a "Facts" box for easy references of the project.



## 6 Work flow

The external website is based on the WordPress package. This package contains a user administration, editing facilities, and login procedures. The package provides a dashboard that allows a registered user to change settings, edit pages or adding posts. Moreover the site can be customized. Figure 3 WordPress dashboard shows the available options.



**Figure 3 WordPress dashboard**

Using this dashboard, users can be administered and given different roles. Currently Administrator, Editor, Author, Contributor and Subscriber are available, each with its own set of permissions.

Since the publishing of news, results and other relevant items is in the hand of the Administrative Support Team and the Dissemination Committee, the responsibility of updating the external website is delegated to them. Hence, project participants will send in their contributions to the Administrative Support Team, which will take it from there.