# STOMP v3 - User Guidelines

This document provides instructions for utilization of STOMP_v3, the pilot application for wind farm maintenance scheduling, developed within the context of the ILIAD Digital Twin of the Ocean project.

Before usage:

- Please tell us which users would like to test the application. Namely by supplying the user name to us. Send information to ricardo.pereira@wavec.org.

- Register and create a user login details; note that the 'phone number' field does not accept the + character.

- We will then provide you with a user account, and assign you a client. You will thus be ready to go.

First usage :

- Access the application here https://stomp.app.wavec.org:81/

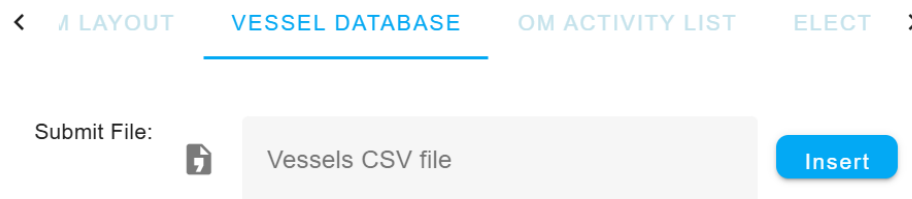- Choose 'Create New Project' in the first menu. So that is the orange box, as shown below.
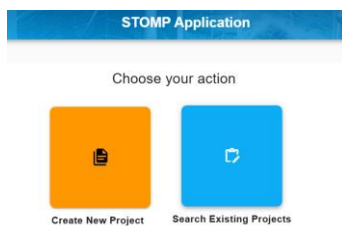
- You need to supply a few files to be able to run the app. For the first run, please use the default files we supplied attached in the email.

- After you save the project, run the model. This will take a few minutes. Afterwards you can visualize the results, namely the operation list and respective calendar.

Input - Files :

To run *STOMP_v3,* some .csv files should be input, namely the *wind farm layout, vessel database* and list of *O&M activities*.
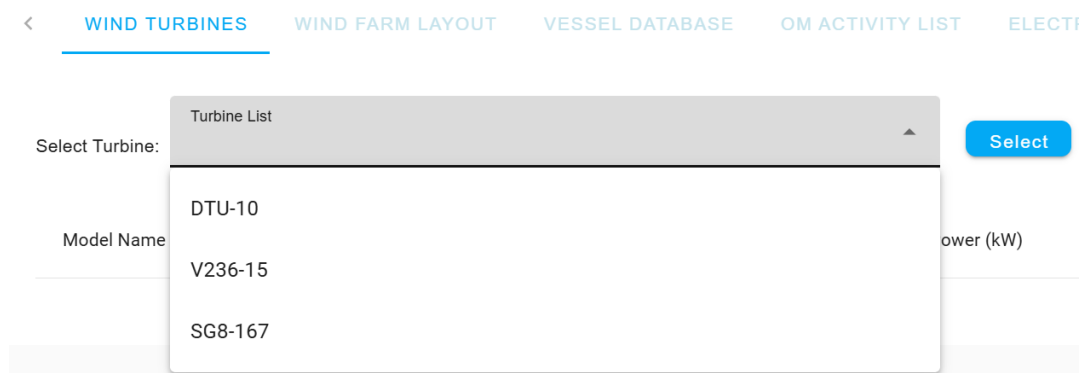
To input the *.csv* files, **press the page icon**, left of the gray box indicated below**. Afterwards click the 'insert'** button, blue, just right of the gray box.

Input – Dropdown Menus :

There are some variables which are inputted via a dropdown menu. Namely the type of turbine and weather forecast source. Three turbine models, with different sizes (8, 10 and 15 *MW*) and manufacturers are available.

As for the weather forecast, two locations are available, namely a location in the Atlantic, in the North of Portugal, and a location in the North Sea, located off the Belgian coast.

-1   ▲   Save

IPMA

North Sea

Results :

The results will be displayed, namely the operation scheduling and the associated economic parameters. The user may toggle the individual cost components and visualise it as a pie-chart, as to aid visual comprehension.

After each run is completed, the user will also receive two excel files with the results in his/her email box.

Recommended Operational Schedule

O&M ID	Vessel Used	T on-site	T finish
1	CTV1	2025-05-16 11:00:00	2025-05-16 15:00:00
2	CTV1	2025-05-17 08:00:00	2025-05-17 12:00:00
3	CSV1	2025-05-16 08:00:00	2025-05-16 12:00:00

Economic Results

Parameter	Value [€]
Operational revenue	637790
Fuel costs	12268
Chartering costs	4985
Downtime losses	4074
Operational profit	620537

■ Fuel costs   ■ Chartering costs   ■ Downtime losses
■ Operational profit
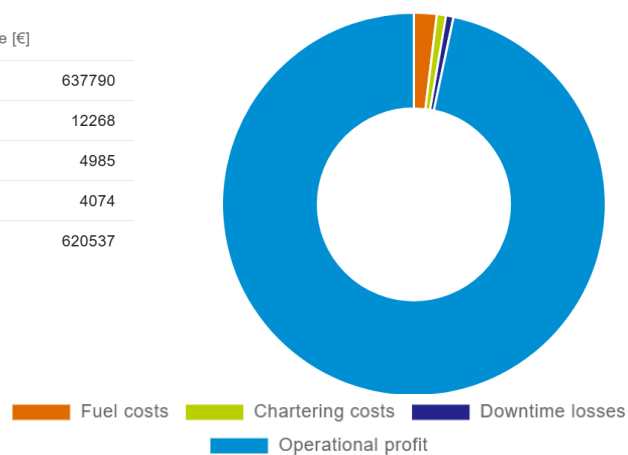
Click on parameter to toggle/untoggle.

Please Note :

- It is advised that you start with the supplied input files and use them in the first run. Increasing the number of maintenance operations in the activity list will increase the run time. You should keep it below 10 operations for reasonably quick results.

- The range of possible values for each parameter, and the value precision where applicable, are indicated at the bottom of this document. You must input sensible values if a sensible output is to be expected.

Additional Usages :

- Please please go ahead and **play** with the file parameters and inputs. This includes:

1 – the **input files**, namely *O&M activity* file (change operation duration, contingency, weather limits, *etc)*, the *wind farm layout* file (change the turbine spacing, relative position and orientation) and the *vessel database* file (add/remove vessel types)

2 – the **dropdown menu selections**, namely the turbine model and the geographic location.

3 – you can also **load** a project, and rerun the model with all input parameters fixed but on a different date. Since the weather does not repeat itself, running the application on different dates will produce different results in terms of economic parameters and operation schedulling.

Feedback:

At this stage, it is of the utmost importance for us to have feedback on the tool. So please let us know of any difficulties/problems/bugs you find.

Ideally, please take a **screenshot**, such we can identify and correct the issues swiftly.

Errors and Troubleshooting:

The following table identifies the most common errors and respective solutions for the STOMP_v3 tool:

Error	Probable Cause	Solution
Can't access the app	No internet connection / STOMP server is down	Check internet connection / contact STOMP support
Maintenance Activities not scheduled	Rough weather incompatible with vessel safety restrictions	Wait for days with fairer weather
Input Data is not loaded	File format is not supported	Input *.csv* files only
Global error object:object	Wrong data input	Make sure you have the correct number of columns and lines on all input files

Variable List and Allowable Range and Precision

WIND FARM ITEM

[Name] - all non-special characters, up to 15 characters

[Latitude,Longitude] – {+-90; +-180}
Precision -   .01 deg

[Orientation] – {0-359}
Precision - 1 deg

[Spacing] – {3-20}
Precision - 0.1 Diameter

[Port Distance] – {0.1-200}
Precision - 0.01 Nautical Mile

OTHER VARIABLES

Electricity Price – {0.01-20}
Precision – 0.01 Eur/kWhr