



Introduction to CLEWs

Hands-on lecture 1: Setting up the infrastructure

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Activity 1 – Install the interface

N.B. In order to carry out this activity and all the ones that follow in the course, you need a computer that has Windows 10 Operating System.

Through this activity, you will install the user interface (UI) you will be using for creating models throughout the course.

Together with the interface, a template model will be installed, which you will use in the next hands-on sessions and slowly develop to create a CLEWs model.

To install the UI and the template model file:

1. Download the .exe installation file (named osemosys.4.3.0) from [here](#). You will now need to follow the survey before you can get access to the user interface (the correct link will appear at the end of the survey).
2. Move the .exe file from your download folder to a folder where you have administrator privileges. This may be for instance inside the folder: **users  name_of_the_user** or any other folder you prefer.
3. Right-click on osemosys.4.3.0.exe and click '**Run as administrator**'. This will start the installation of the UI. The installation may take several minutes. Once it is complete, the installation window will simply disappear.
4. Once the installation has been completed, open the installation folder (i.e., C:\Users\your_user_name\AppData\Local\osemosys) and find the file 'osemosys.exe'. Right-click on it and 'Run as administrator'.
5. You will see the UI in a new window.

You will have to configure a new model and add some inputs. Once the UI is opened,

6. Go to the left panel and click on 'Configure model'. Click on '+Configure new model'
7. Enter a 'Model name', select a date, and write a short description of your model in 'Model description'



General model data

Model name	Select a date	Model description
<input type="text" value="Example"/>	<input type="text" value="12/06/2021"/>	<input type="text" value="This is an exercise for the course"/> <small>Note: description is not required field.</small>
<small>![@#\$%^&*() are not allowed in model name!</small>		

8. Set the modelling period from 2019 to 2022

Define model years

Check all Uncheck all X2 X5

2 000 Year; 2 019 Year; — 2 022 Year; 2 070 Year;

2019 2020 2021 2022

9. Fill in the number of seasons as 2 and the number of day types as 2. This will make so that 4 time steps are created in each year of the model. We will come back to this in future hands-ons.

General model data

Model name	Select a date	Model description	Currency	Number of seasons	Day types	Modes of operation
<input type="text" value="CLEWs intro model"/>	<input type="text" value="03/21/2022"/>	<input type="text" value="CLEWs exercise model"/> <small>Note: description is not required field.</small>	<input type="text" value="USD"/>	<input type="text" value="2"/>	<input type="text" value="2"/>	<input type="text" value="1"/>

Define model years

Check all Uncheck all X2 X5

2 020 Year; — 2 035 Year; 2 070 Year;

Define model configuration

Commodities 22 Emissions 1 Technologies 27 Constraints 0
 Scenarios 2

Define commodities

10. At the top, click on **'Save new model data'**. Now, the initial 'shell' of your model is ready to be filled in with data, in the next exercises.



The sets EMISSIONS, COMMODITY and TECHNOLOGY contain no inputs for now and you will enter more inputs in the following activities. All the other SETs contain no inputs and will not be used in this course.

Activity 2 – Set up the cloud account to run the models

Now you have installed the graphical interface that will help you build your model and input numerical values. However, once your model is ready, you need to run the optimisation, where your inputs and the equations of OSeMOSYS are used to calculate the least-cost configuration of the system. After that, you also need to visualize the results of the optimization. Although OSeMOSYS UI could do both, in principle, we offer here a service that will allow you to run optimisations and visualize results more easily. The service is on a cloud, and we will now guide you to creating an account to access the cloud.

1. Go to: <https://www.osemosys-cloud.com>



2. In the page that appears, click **Register**.
3. Enter all information that you are asked (shown in the figure below) and then click **Sign up**



Sign up

Full name *

Country *

Email *

Password *

8 characters minimum

Password confirmation *

Language *

 English ✓

[Sign up](#)

[Log in](#)

4. Once you have an account, log in using the email and password you provided in the registration.

Osemosys Cloud (alpha) [My models](#)

Log in

Email

Password

Remember me

[Log in](#)

[Sign up](#)

[Forgot your password?](#)

5. Once logged in, click on **New model** to start a new project.

Osemosys Cloud (alpha) [My models](#)

Welcome! You have signed up successfully. X

My models

Id	Name
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[New model](#)

6. Name your project, for instance **Workshop_Model** (do not include spaces in the name!) and click **Create model**



New model

Name *

Create model

7. Now you need to create a version of the model you just added. Click on 'New version' in the top-right corner, as in the figure. Name your version again 'Workshop_model' and click 'Create version'.

A screenshot of a web application interface. At the top, a blue header bar displays the text 'Model created' on the left and a close button 'X' on the right. Below the header, the title 'Workshop_model' is centered. Underneath the title, the word 'Versions' is displayed. A table below the title lists two columns: 'Id' and 'Name'. In the top-right corner of the table header, there is a blue button with the text 'New version' in white. This button is highlighted with a red rectangular box. The table is currently empty, showing only the column headers.

8. Now you are all set for starting modelling. You will pick up your model again in the Hands-on exercise after lecture 3.