Introduction to CLEWs

Hands-on lecture 1: Setting up the infrastructure

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Tags: CLEWs; Climate; Land; Energy; Water; Systems Modelling; Integrated; Policy Coherence; Installation; Hands-on; Climate Compatible Growth; Open Source; Teaching Kit;

Useful links:

1) Discussion forum for CLEWs

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.

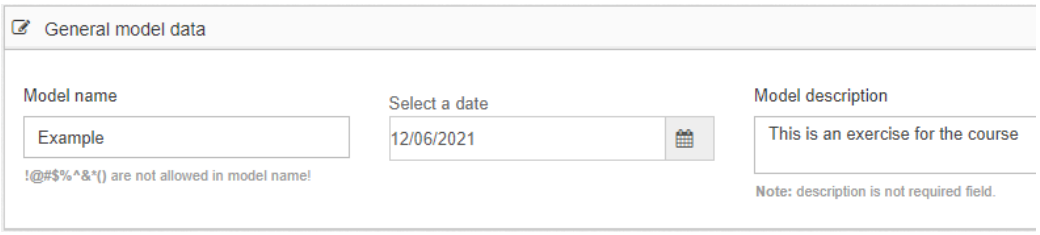
Together with the interface, a template model will be installed, which you will use in the next hands-on sessions and slowly develop to create a CLEWs model.

To install the UI and the template model file:

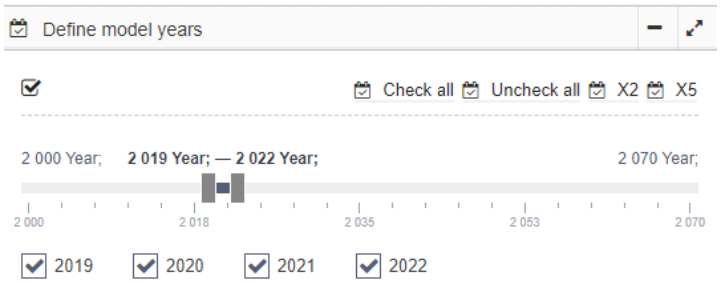
1. Download the .exe installation file (named osemosys.3.3.0) from **here**.
2. Move the .exe file from your download folder to a folder where you have administrator privileges. This may be for instance inside the folder: **users** → ***name_of_the_user*** or any other folder you prefer.
3. Right-click on osemosys.3.3.0.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,

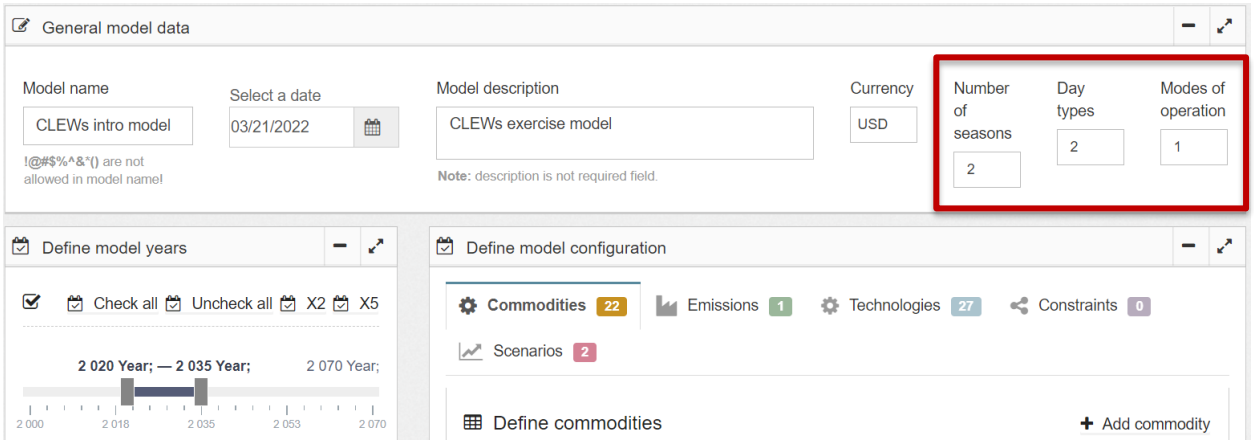
6. Go to the left panel and click on 'Configure model'. Click on '+Configure new model'
7. Enter a 'Model name', select a date, and write a short description of your model in 'Model description'



8. Set the modelling period from 2019 to 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.



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.

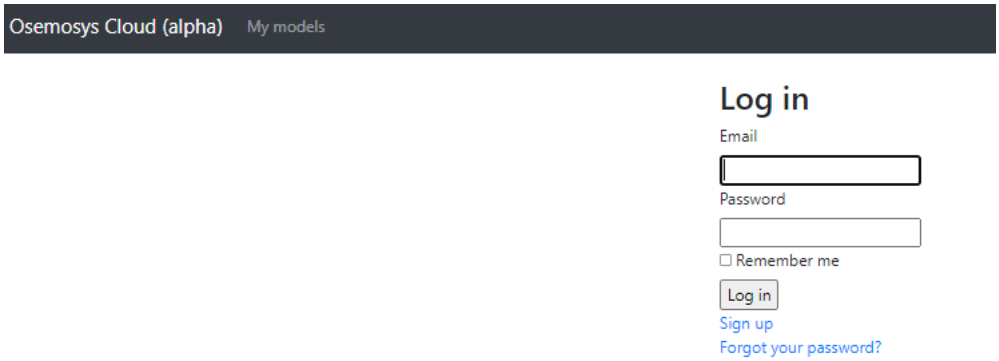
Activity 2 – Set up the cloud account to run the models

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.

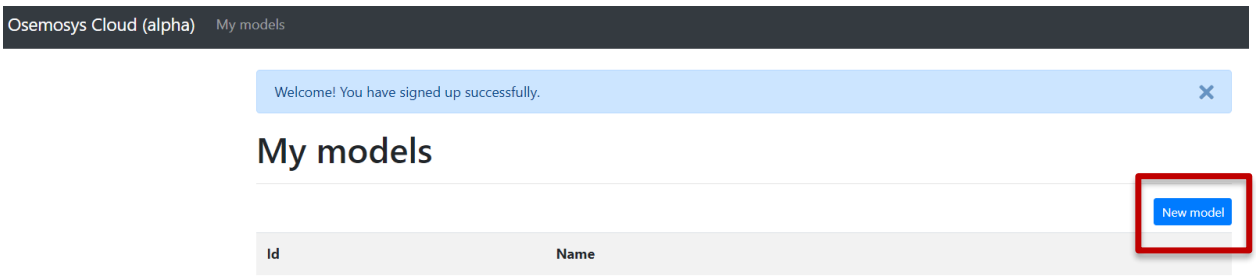
1. Go to: https://www.osemosys-cloud.com

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**

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

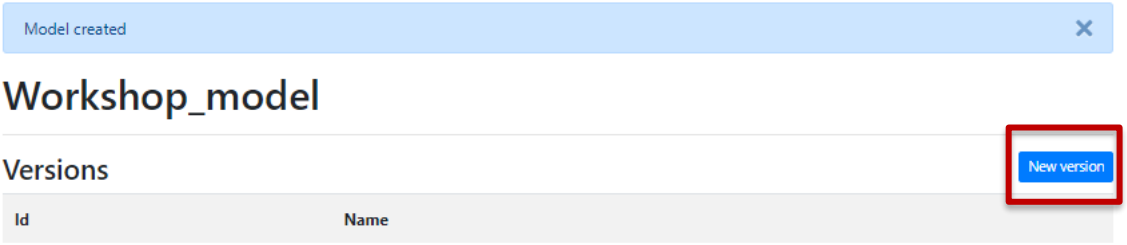


5. Once logged in, click on **New model** to start a new project.



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



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