

ATLANTIC CANADA ENERGY SYSTEM (ACES) MODEL

INSTALLATION INSTRUCTIONS for MacOS

Overview

Net Zero Atlantic has been working on an open-source energy system model to help Atlantic Canadian users find the least-cost sets of investment decisions that ensure that our emission reduction targets will be met. This package outlines the steps involved in installing the necessary programs and applications that you will need to successfully run the ACES model.

Time to Complete

The full installation of the ACES model will take up to 1 hour.

Overview of What You Will Need

Links and instructions for each step are described in the section below.

1. Anaconda

- Anaconda is a program that distributes Python to simplify packages and overall use.
- ACES uses Python coding; using Anaconda streamlines this process.

2. ACES Model Files

- The ACES folder has all the files needed to run the ACES model.

3. Atom

- Atom is a text and source code editor that will be helpful for editing code in text files.

4. DB Browser for SQLite

- DB Browser is a tool to create, design and edit database files compatible with SQLite.
- SQLite is a relational database management system, where the files to run and edit the model are formatted. You can think of DB Browser as similar to Microsoft Excel.

Steps for ACES Model Installation

1. OBTAINING THE ACES FILES

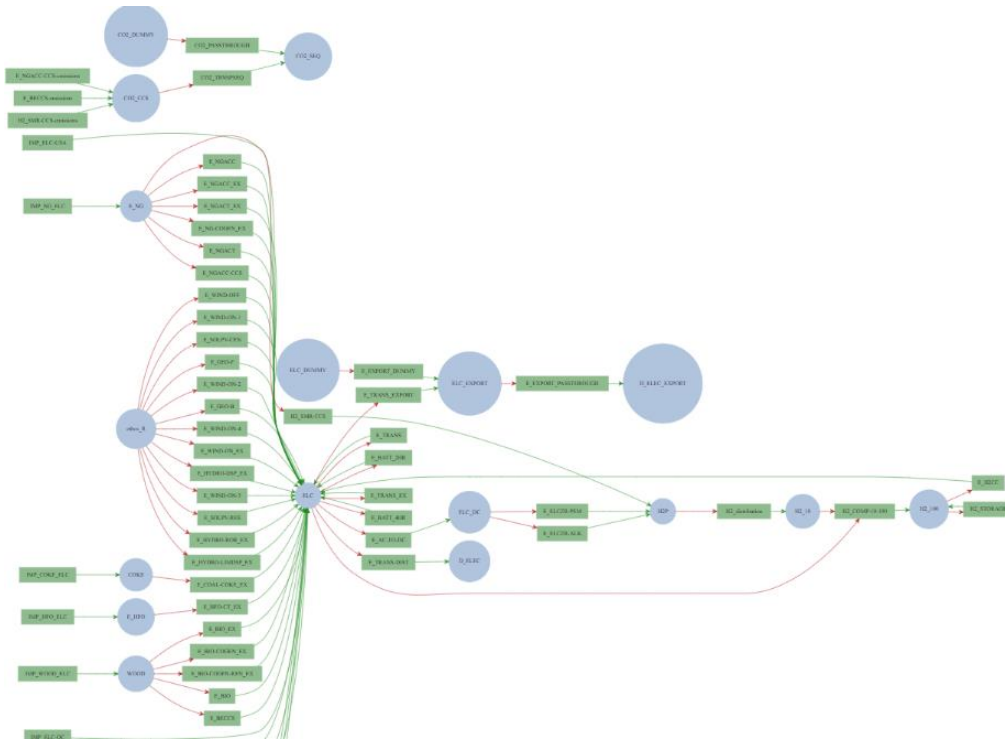
- The ACES Model zip file can be downloaded from the ACES modelling website. Download the folder and copy it to your Documents folder for easy access.
- You will need to extract the ACES folder within the zip. If you double-click the zip file, you should find the ACES folder inside and can move this to your Documents folder. Alternatively, you can right-click the zip file and select **Extract All**. If your device does not automatically have an extracting tool, you can use a free extracting tool from the internet, such as 7-zip. Once the internal file is extracted, you may delete the zip file.

2. DOWNLOADING ANACONDA

- Go to <https://www.anaconda.com/products/individual> to download Anaconda for MacOS. When the file is downloaded, open the .pkg file and begin the install process for Anaconda3, following the steps in the install prompt.

3. CREATING THE PROJECT ENVIRONMENT

- Creating a virtual environment will separate your current project to make it distinct from other Python projects. The **environment.yml** file is in the ACES folder. It is a text file that lists all the required packages and functions, telling your system what it needs to set up the environment.
- When Anaconda installation is complete, open Launchpad on your computer and click the Terminal icon. When Terminal opens, navigate to your Documents by typing: **cd documents** then press **enter**. Now navigate to your ACES folder by typing: **cd ACES** then press **enter**. This tells the terminal to set your current directory (cd) to the ACES folder.
- To create the environment, type: **conda env create**
- Let the environment solve and download packages. This will take some time. Leave it alone while it does this, feel free to work on other things in the meantime.
- When it is finished, a new command line will appear. Activate the modelling framework with: **conda activate ACES**
- You should see a new directory starting with (ACES) which has replaced (base), signifying that the environment has been activated.
- To test that the environment is working, invoke the following command (as one line):
python data_processing/MakeGraphviz.py -i ./data_files/ACES-Testing.sqlite
Note: there is a space before and after the **-i**
- A network diagram of the energy system should appear under the **ACES-Testing_input_graphviz** directory in your ACES folder in your Documents. When you open the file, you should get something like this:



4. DOWNLOADING ATOM

- o Atom will be helpful for editing text files, such as the environment.yml file, for when you want to make changes to any code (as outlined in the User Guide).
- o Download here: <https://atom.io/>
- o Open the downloaded file to install the app. You can close it when it launches.

5. DOWNLOADING DB BROWSER FOR SQLITE

- o DB Browser will be helpful for changing the parameters to run different model scenarios.
- o Download here, selecting the Standard installer for 64-bit Windows: <https://sqlitebrowser.org/dl/>
- o Open the downloaded file, agree to the terms, and continue until it is installed. If you get a pop-up asking if the program can make changes to your computer, select **yes**.

You should now be all set up to run the updated version of ACES. If you have any questions or issues, do not hesitate to contact vwatson@netzeroatlantic.ca. You can also use our online booking system to schedule technical support with us at any time.

Book a technical support meeting: <https://acesmodeltrainingbooking.as.me/technicalsupport>