User Guide Part 2: The Dashboard Generator

Interacting with the Dashboard

Step 1: Open the dashboard's "Home" page at https://demand-response-impacts.herokuapp.com/home. Note that if a page is not selected, a 404 error is returned (Fig. 1). To select a page, click "Home" or "More Information" in the top left corner of the browser.

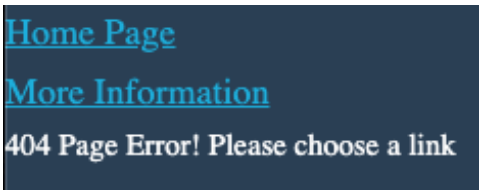

Figure 1: Error returned when no page is selected

Step 2: Read the text on the left side of the page (Fig. 2). This text introduces the dashboard and defines key terms.

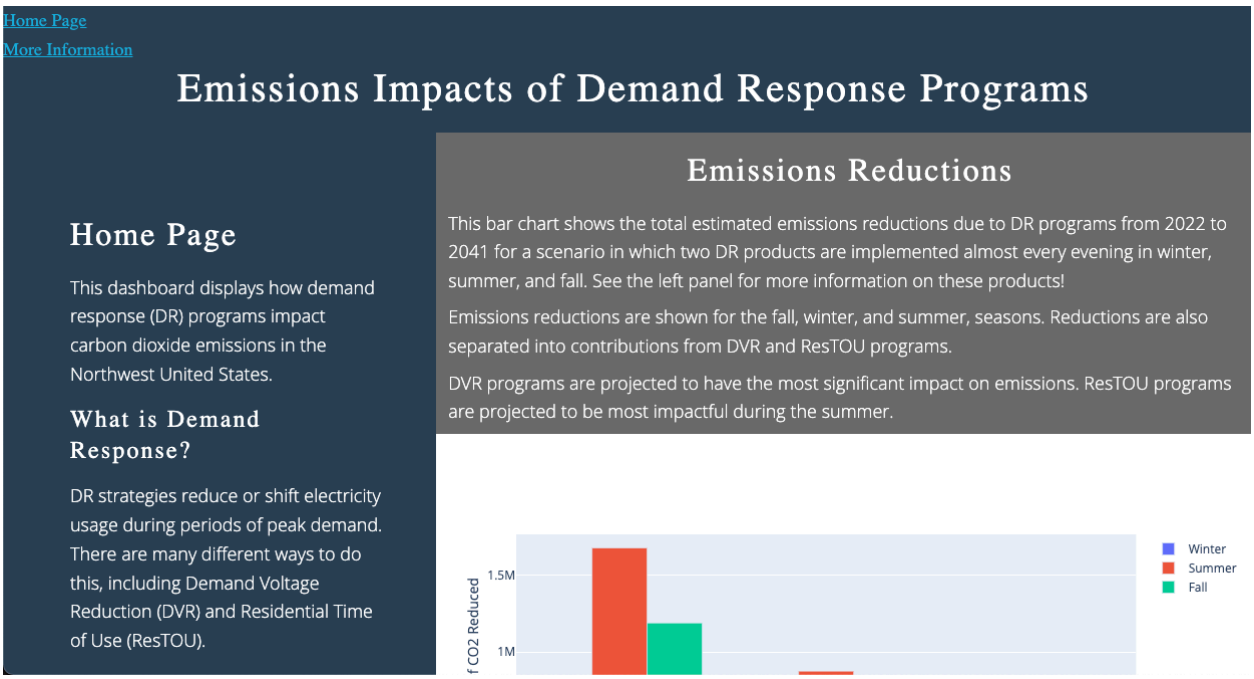

Figure 2: Overview of the dashboard's home page

Step 3: View the plots and read the interpretative text on the "Home" page. The plot of avoided emissions rates includes a dropdown menu in which you can select different seasons. Click on the bar at the top of the plot to choose a season (Fig. 3).

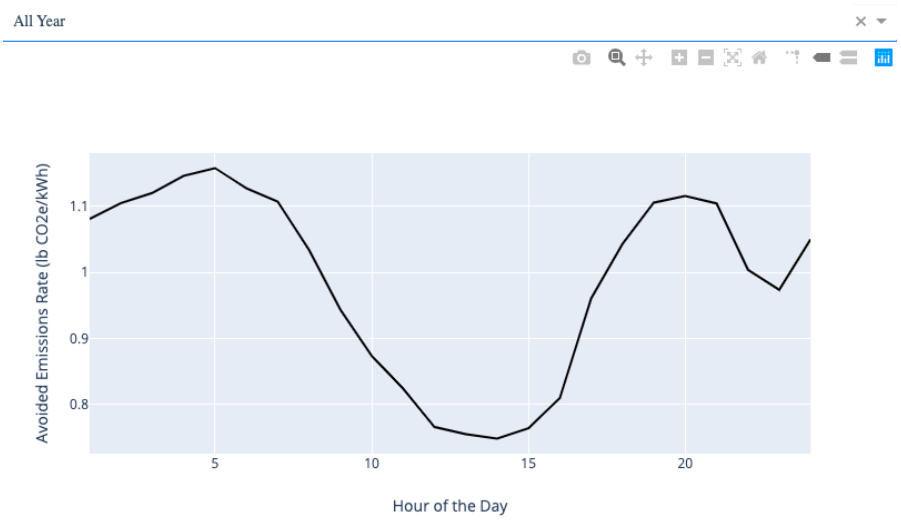

Figure 3: Plot of avoided emissions rates with a dropdown menu.

Step 4: Click the "More Information" link in the top left corner (Fig. 1) to see more information.

Step 5: Read the text and view the plots on the "More Information" page (Fig. 4). The layout is very similar to the "Home" page (Fig. 2). Details and resources are in the left column, and plots and interpretive text are in the right column. Use the dropdown menus to compare different seasons and binning strategies.

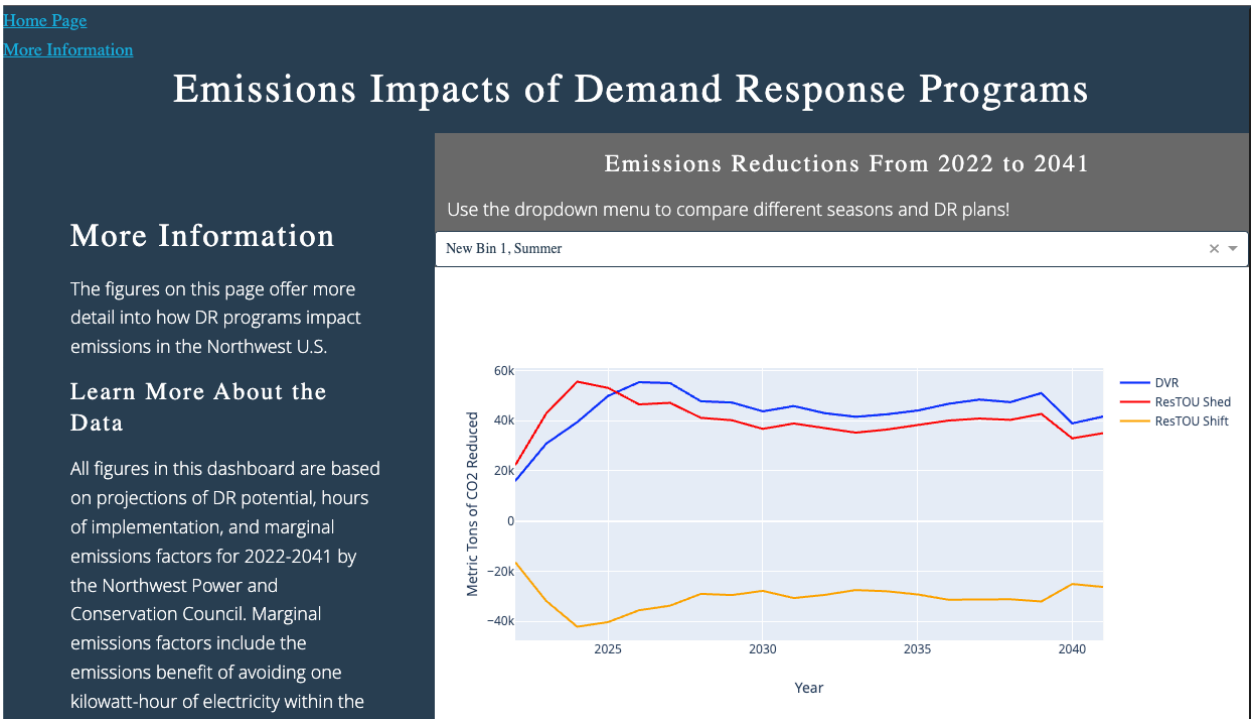

Figure 4: Overview of the dashboard's "More Information" page.

Editing the Dashboard

Step 1: Run the Emissions Calculator with updated input data. See the user guide for the Emissions Calculator for details on how to do this. After completing this step, you should have a cloned version of the project's repository on your local machine.

Step 2: Edit `index.py` in the root directory of the repository to change the main layout of the dashboard (e.g., if you want to add a new webpage to the dashboard or edit the titles of the "Home" and "More Information" pages).

Step 3: Type `cd emissions_calculator/phase2_dashboard_generator` to view the Python package that makes the dashboard pages. The modules `home.py` and `more_info.py` make the layouts for the "Home" and "More Information" pages. The module `read_files.py` reads in the data pre-processed by the Emissions Calculator for plotting. The module `make_plots.py` generates graph objects for plotting on the dashboard.

Step 4: Edit `read_files.py` to change how the processed data is read into pandas dataframes. The default version contains different functions for reading in emissions reductions, emissions rates, and potential.

Step 5: Edit `make_plots.py` to change the generation of the plots. These plotting functions are highly specific to the default dashboard, so this script must be updated extensively to plot newly processed data.

Step 6: Edit `home.py` and `more_info.py` to change the layouts of the "Home" and "More Information" pages. The parameters at the top of the scripts include the URL containing the processed data and lists of seasons, scenarios, bin types, bin numbers, and dropdown options. These parameters must reflect any changes made to the `read_files.py` and `make_plots.py` modules. Edit the HTML portions of the scripts to change the ordering of the plots and the interpretive text.

Step 7: Run `python index.py` on your local machine to make sure the dashboard renders correctly.

Deploying the Dashboard Using Heroku

Step 1: Visit https://www.heroku.com to create an account with Heroku.

Step 2: Create your app. The default version is called "demand-response-impacts", so you must choose a different name to deploy your own dashboard.

Step 3: Connect your app with GitHub. To do this, you must first push your edits to a GitHub repository. Then, visit https://dashboard.heroku.com/apps and click “Deploy”. Choose “GitHub” as your deployment method, enter your GitHub repository, and click “Connect”.

Step 4: Deploy your app. The easiest option is to use the “Manual Deploy” option at the bottom of the page. Choose your branch and then select “Deploy Branch”.

Step 5: Explore your webpage!