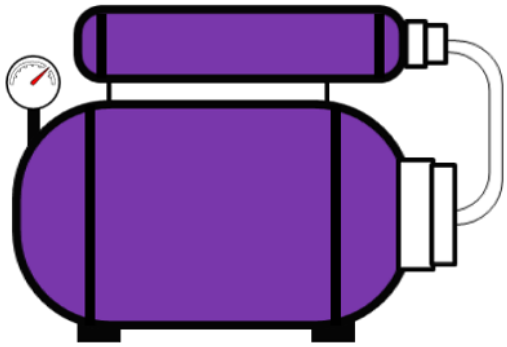


Compressed Air Assessment User Manual

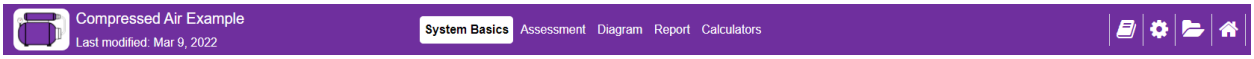
Created By: Oak Ridge National Laboratory

Last Updated: 3/9/2022

Table of Contents

Module Navigation

Use the top banner to navigate around the module. A footer bar with “Next” and “Back” button can also be used to move through the System Setup to the Report.



Main Tabs

System Basics – Establish your baseline by entering the existing data for your compressed air system.

Assessment – Modify system scenarios to find potential savings opportunities.

Diagram – Graphical visualization of a compressed air system.

Report – Full printable breakdown of the system and potential saving scenarios.

Calculators – Stand alone calculators for compressed air properties.

*Some of the tabs will be disabled until the System Setup is completed.

Additional Buttons

Book – The book will open a new window with the Compressed Air User Manual you are reading.

Gear – The gear wheel will navigate you to MEASUR’s global settings page.

Folder – The folder will navigate you to the assessment dashboard folder this assessment is in.

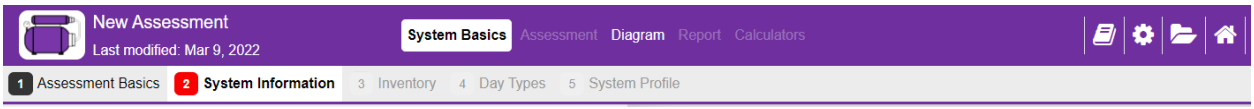
Home – The house will bring you to MEASUR’s home page.

System Setup

The system setup is where you enter the baseline data for your compressed air system. The system setup is broken up into five tabs, each with a related set of input fields to be filled out. Field by field help text is provided for each input field, it will appear in the help panel when an input field is clicked on.

Navigation

Use the second bar to navigate to different sections of the Setup. The tabs will be color coded to indicate the state of the corresponding tab data. Tabs will be disabled in the previous steps have errors in their data.



Assessment Basics – Select the units for the assessment.

System Information – Data entry relating to cost and operation.

Inventory – Add and manage individual compressors in your system.

Day Types – Identify day types matching your systems operation.

System Profile – Data entry relating to loading of the compressors for each day type.

Tab colors:

Green - Valid data entered for tab.

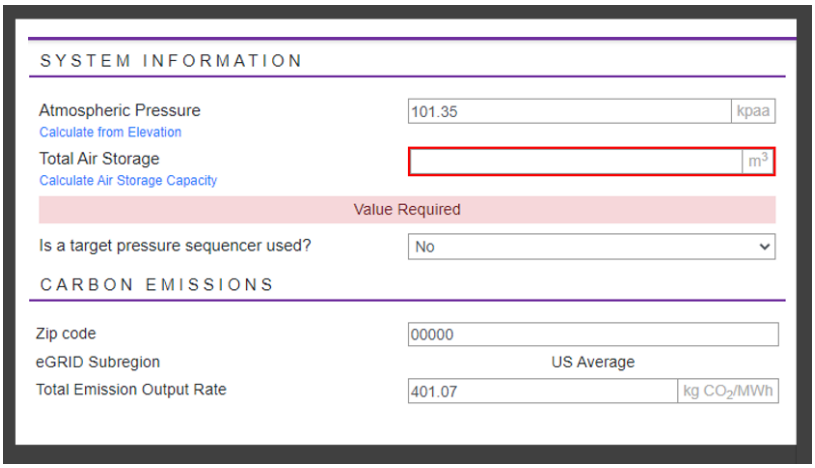
Red – Invalid or missing data entered for tab.

Yellow – Data entered outside of expected range.

Gray – Disabled tab, previous tabs are incomplete.

Data Entry

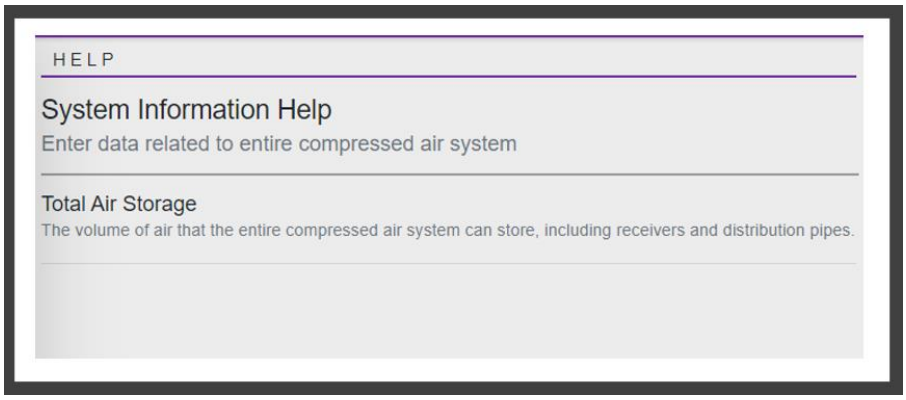
The screenshots below show how to enter data for the System Basics. Input fields will highlight red and an error message will appear if the data that is entered is invalid.



Use the left panels in the System Basics to enter the data for your existing compressed air system.

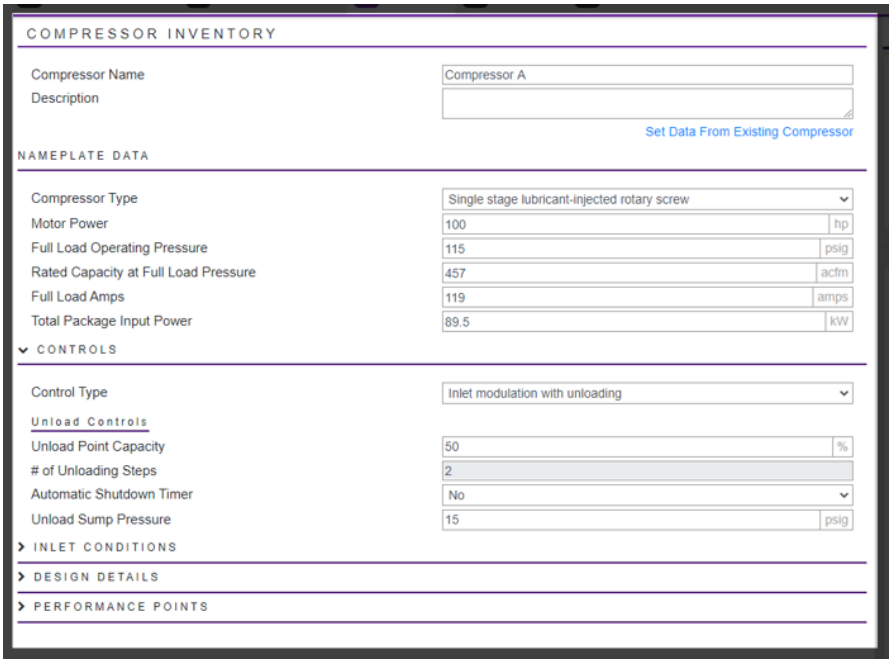
Links underneath input labels can be used to calculate the values of corresponding inputs.

The right side panel contains help text. The panel will show help relating to the field you are currently focused on.



Inventory

In the “Inventory”, you enter details about each compressor in your system. A database of existing compressors can be used to populate the data fields.



Use the left side panel to fill out the details of the selected compressor.

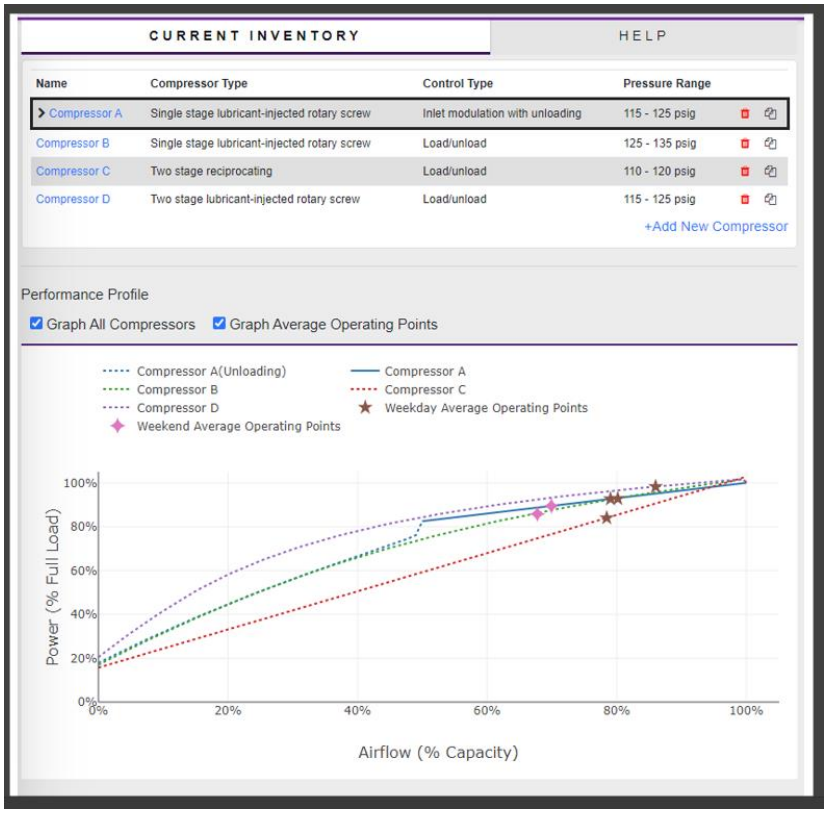
Click “Set Data From Existing Compressors” to view a list of the compressors to choose from.

The input fields shown will change depending on the Compressor and Control type selected.

The right hand panel will provide a table of the compressors in your system as well as a graphical preformance profile.

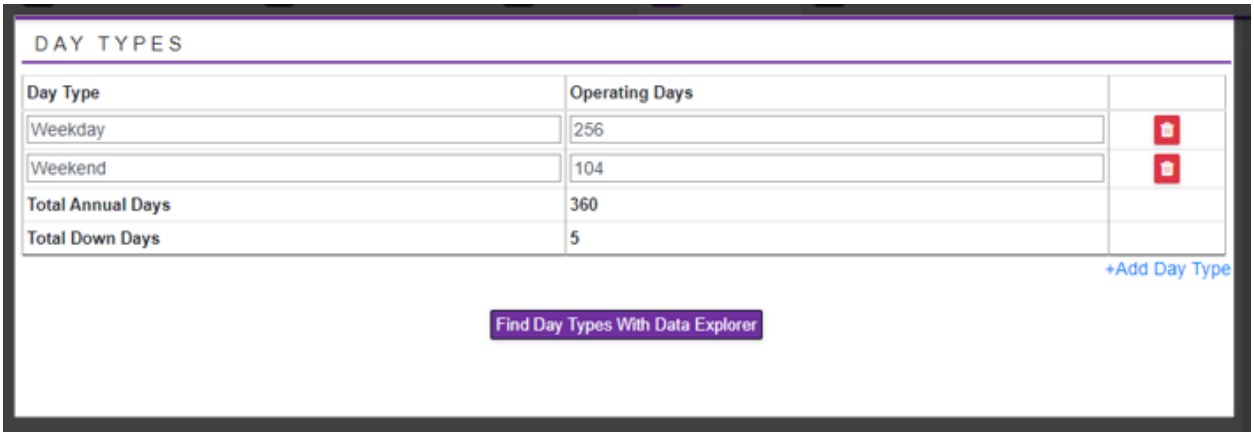
Clicking on the name of a compressor will select it for editing in the left panel.

Under the “Help” tab there will be field by field help text that will update as fields in the left hand panel are selected.



Day Types

Use day types as a way to generalize your daily operations into sets of similar periods. Clicking the “Find Day Types With Data Explorer” button will take you to the Data Explorer module. Once there you can load compressor data and conduct an analysis to create day types that can then be applied to this assessment. That data can then be used to fill out the performance profile data in the next section.

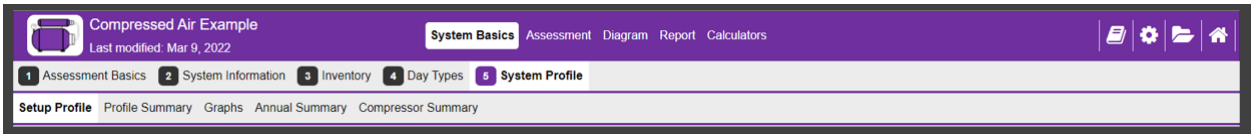


System Profile

The “System Profile” is where you enter operations data for each day type. You’ll need to complete “Setup Profile” before analysing your system.

Navigation

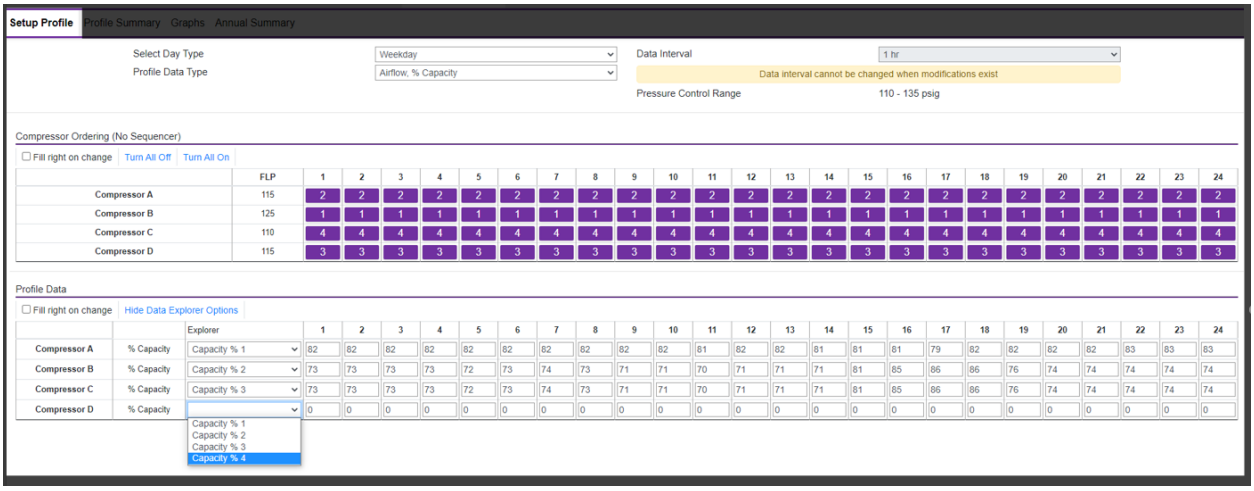
The system profile has multiple tabs providing different information corresponding to the profile.



- Setup Profile: Data entry relating to compressor state at a selected time interval for each day type
- Profile Summary: A table of calculated compressor details at each hour interval for each day type.
- Graphs: Graphical representation of the compressors by hour interval for each day type.
- Annual Summary: An annual summary of each day type and system totals. Can be filtered by compressor.
- Compressor Summary: A power summary of each compressor in the system.

Setup Profile

The “Setup Profile” section provides a variety of options for adding performance profile data for your compressor system. Each day type will need to be filled out for analysis.



The “Compressor Ordering” table will set the order in which the compressors are turned on as needed. Click the purple buttons to toggle the compressors on/off at a given time interval. If the system has a sequencer then dropdowns will show and update accordingly.

The “Profile Data” section is where you enter the measured compressor data at the given time intervals for the selected day type from the dropdown at the top. Use the “Profile Data Type” dropdown to select the type of data you have measured.

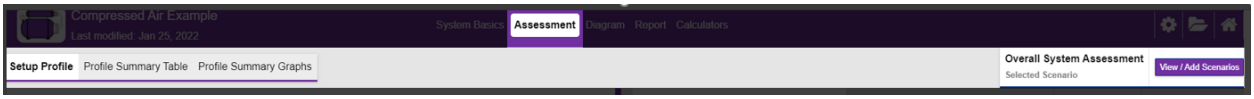
If the Data Explorer was used to determine the day types, then you can use the data from the explorer to fill out the profile with the dropdown by selecting the data that corresponds to the compressor.

Assessment

The assessment section of the module allows you to explore how modification scenarios for your system may provide cost, energy and emissions savings. Your baseline must be setup completely prior to making modifications.

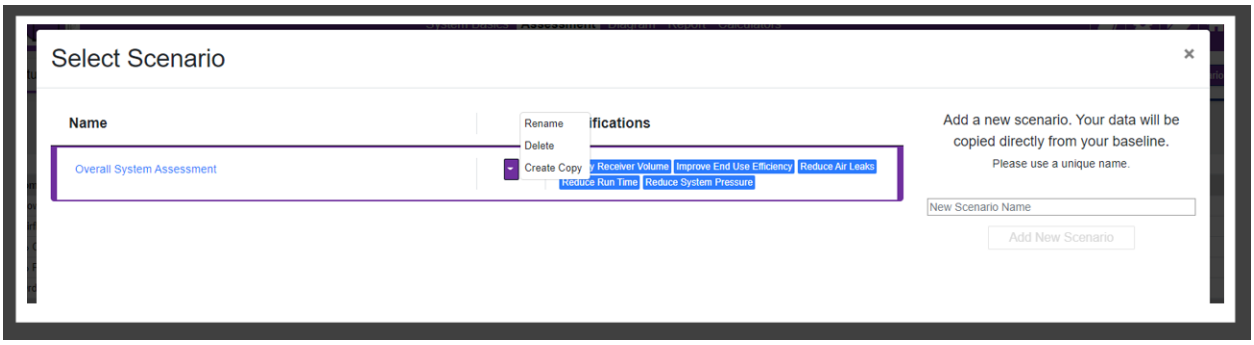
Navigation

As with the System Setup, there is a secondary set of tabs.



- Setup Profile: Is where you apply modifications to the system.
- Profile Summary Table: A table of calculated compressor details **with the modifications applied** at each hour interval for each day type.
- Profile Summary Graphs: Side by side graphical representations of the profile summary for the baseline setup and the applied modifications.

Multiple scenarios can be created, the current “Selected Scenario” will be displayed on the right hand side of this bar. The “View / Add Scenarios” button opens up a modal used to manage your scenarios:

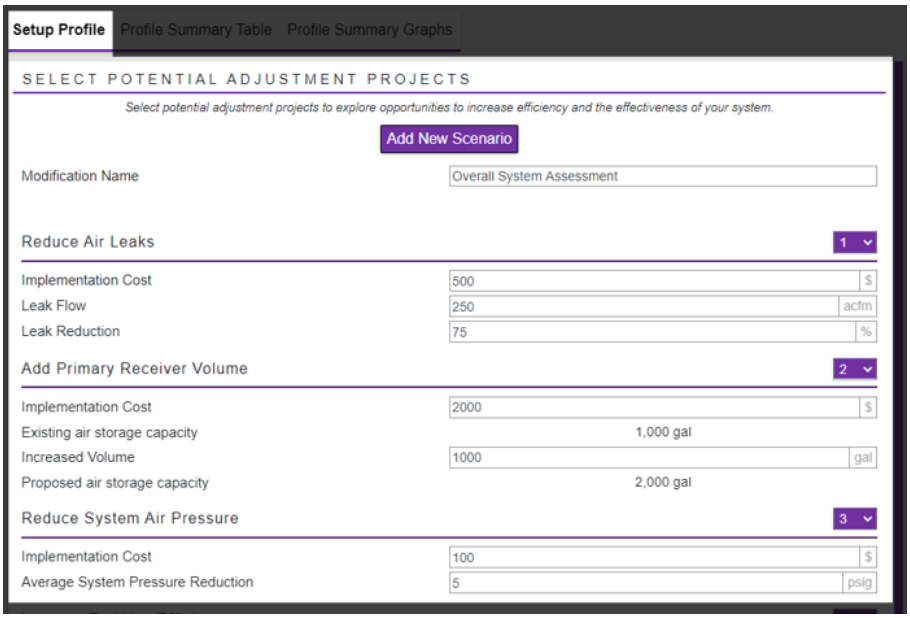


The modal can be used to:

- Create new scenarios
- Create copies of existing scenarios
- Delete or rename scenarios
- Selecting scenarios for viewing and modifying

Setup Profile

Use the “Setup Profile” to apply different modifications to your system for potential savings.



A list of potential savings projects is provided.

Use the dropdown on the right hand of the list to set the order in which the projects will be implemented.

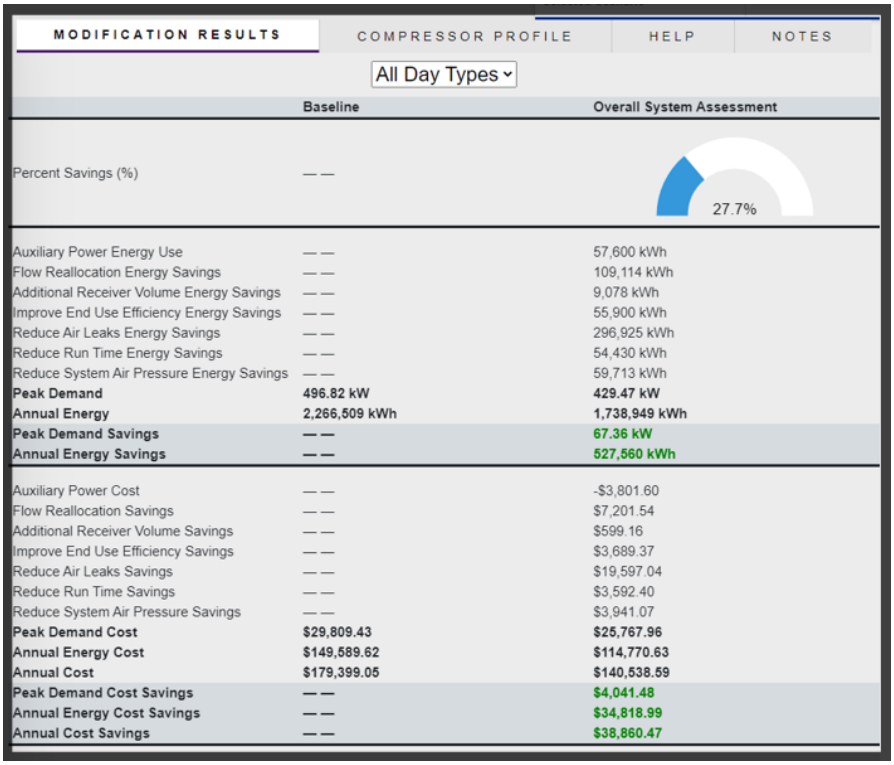
Each list item will provide input fields to modify the scenario.

The “Results” tab will show the calculated results and savings of the modified scenario.

The “Compressor Profile” tab will provide an updated compressor profile as well as the baseline.

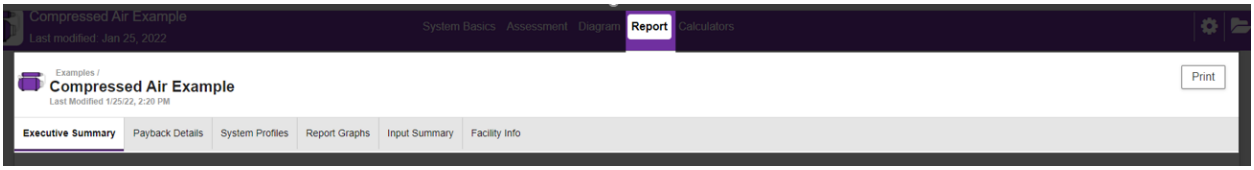
Field by field help text will display in the “Help” panel as input fields are clicked on.

Use the “Notes” tab to add notes for this modification that will be added to the report.



Report

The report is a printable summary of the baseline and scenarios you have created in the assessment. Tables and graphs are provided to analyze the impacts the changes have on each scenario comparitively. There is a secondary set of tabs to navigate to different pieces of the report. The “Print” button in the top right hand corner will generate a PDF report.



- Executive Summary: Results summary with baseline usage and savings for each modification scenario.
- Payback Details: Calculated table of payback period based on cost savings and implementation costs.
- Performance Profiles: Performance profile graphs and compressor summary.
- System Profiles: Profile tables and graphs based on day type interval data for the baseline and modifications.
- Report Graphs: Stacked bar chart and scenario savings for each modification project.
- Input Summary: A table of the input data for the baseline and each scenario.
- Facility Info: The facility information provided for the folder that this assessment was created in.