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enterprise Portfolio View

Guide Document

by Cachelan

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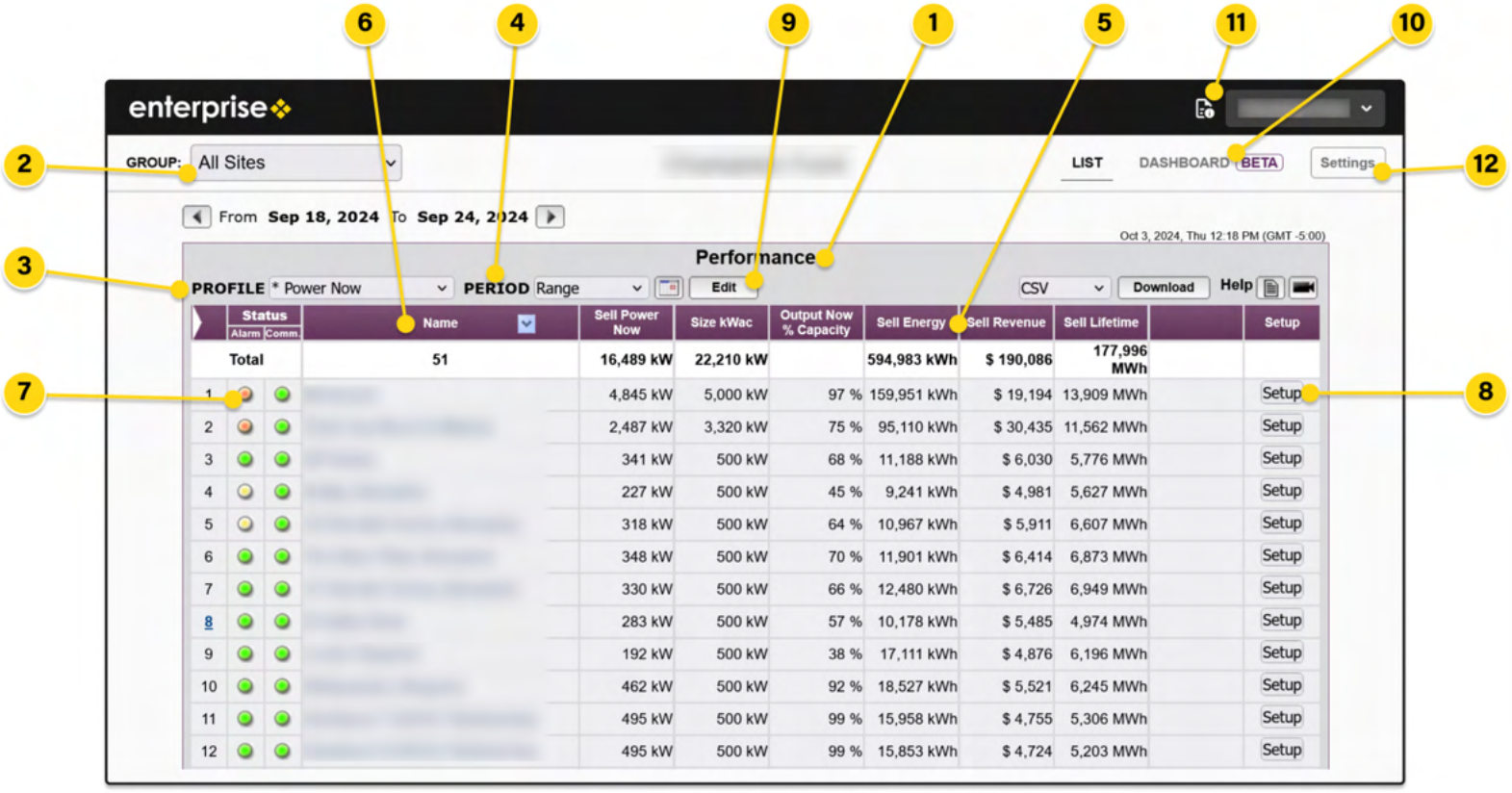
LIST VIEW PAGE



1. PERFORMANCE: Monitor the online status of all sites, including fault alarms and communication health, in real-time. Choose from various parameters organized into profiles for any time period, such as current power output, energy production, and revenue. Generate reports based on these profiles to track key metrics and make informed decisions.

2. GROUP: View all sites on a single screen or organize a large portfolio into smaller, related groups for separate display. Only the sites in the selected group will be visible, with their totals shown for display and reporting.

3. PROFILE: Select parameters for display and reporting. You can create new profiles and name them to suit your personal preferences, allowing for a tailored view of the most relevant data.

4. PERIOD: Choose a time period of interest. Data is stored for the system's lifetime, and the values for the selected interval will be displayed, with totals conveniently shown in the first row.

5. PARAMETER: Customize profiles with over 25 available parameters. Sort sites in ascending or descending order by any parameter, or search for sites alphabetically by name.

6. NAME: Each site is identified by its default SolarVu® Portal web address, alias, and site name. You can sort sites by your preferred identification method. Clicking on the site name takes you directly to the site's energy portal for more detailed information.

7. COMMUNICATION & ALARM STATUS

- **Comm Light**:
    - Green: Internet connection is OK.
    - Red: No internet connection for the last 2 hours.
    - Yellow: Partial internet connection (check for weak cellular signals or intermittent ISP connections).
- **Alarm Light**:
    - Green: All devices are reporting OK.
    - Red: Issues such as inverter faults, low power alarms, combiner alarms, or no serial data (inverter off or connection problem).

Click on the status headings (Alarm or Comm) to sort sites by issues. If available, **maintenance notes can be accessed by clicking the site number**, providing a helpful history for O&M staff.

8. SETUP: To modify site settings, use the **Setup** button (administrator login required). Visitor login allows viewing but does not permit changes.

9. EDIT/CREATE PROFILE: Create or edit a profile by clicking the **Edit** button. This feature is available only to administrator accounts.

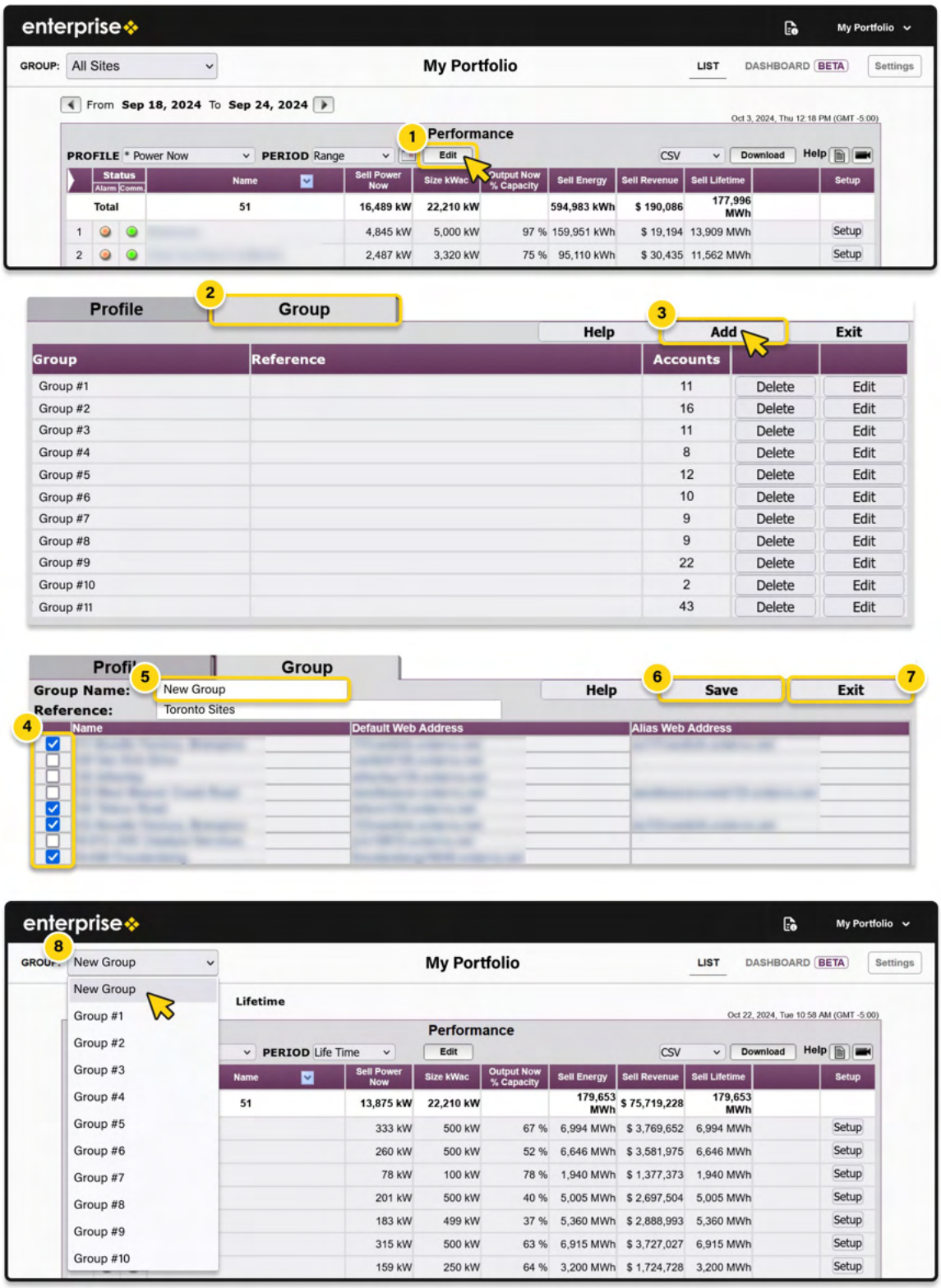
10. DASHBOARD: Access a summary of your portfolio's energy data on a single screen for quick and easy monitoring.

11. THE LEARNING CENTER: The Learning Center provides the latest updates, tutorials, and guide information from Cachelan, conveniently stored in one place for easy reference.

12. SETTINGS: Use the Enterprise Portfolio View settings button to update your password, assign a visitor passphrase, enable two-factor authentication, or modify the banner name, timezone, or background color.

GROUPS - CONFIGURATION

Customize your account by creating groups of sites for easier management. This is available through an administrator login.



1. **Create/Edit Groups**: Click the **Edit** button to modify groups.

2. Group Tab: Access this tab to make changes to groups.

3. Add Button: Add, edit, or delete groups.

4. Select Sites: Choose sites to include in the group.

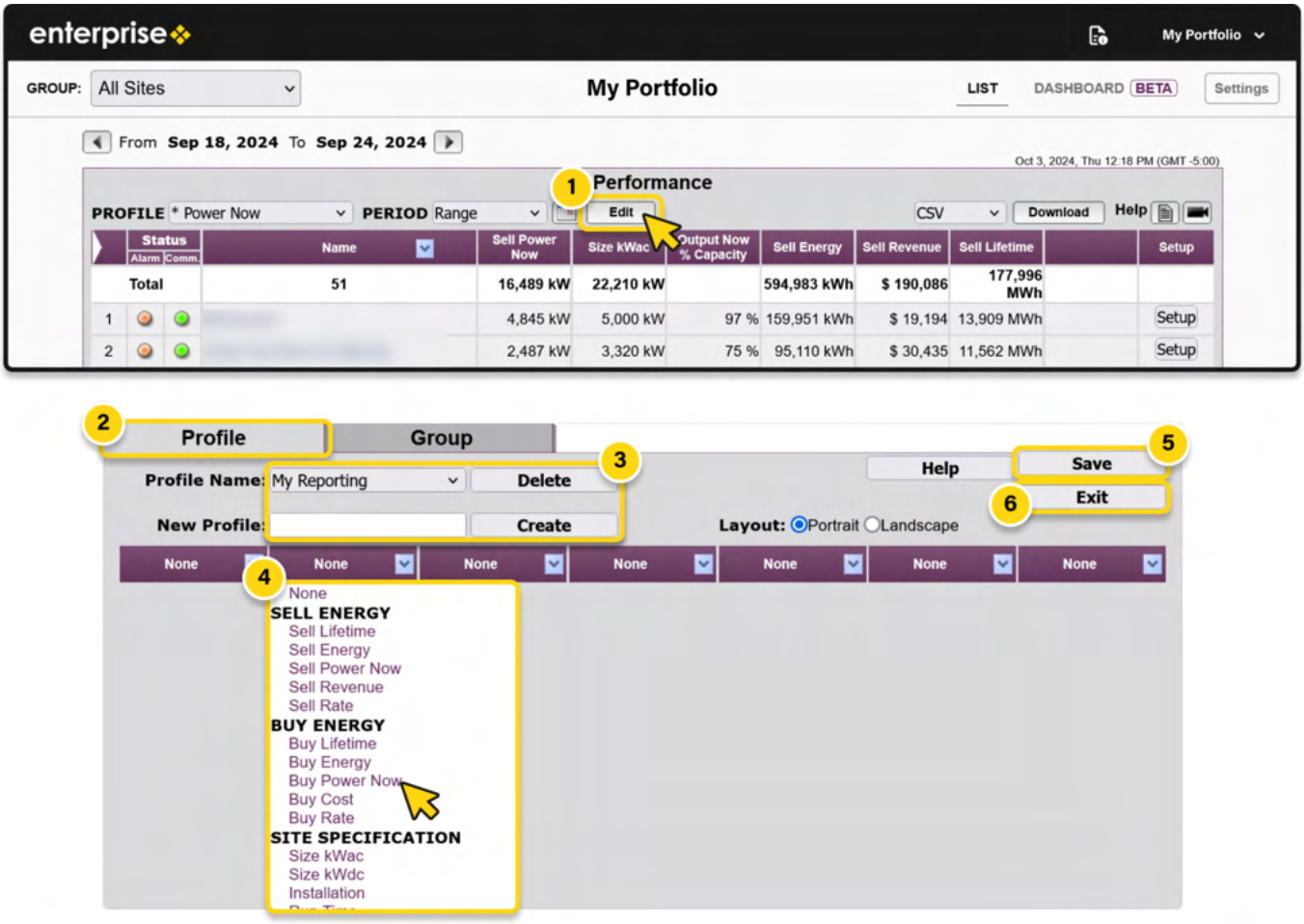
5. Group Name & Reference: Assign a meaningful name to appear in the dropdown menu and write a short reference (optional) for additional context.

6. Save: Save the group or exit without saving.

7. Exit: Return to the main screen after saving.

8. Group Selector: Select a group that you want to be displayed on the main screen of the Enterprise Portfolio View.

PROFILES - CONFIGURATION



Customize profiles by selecting relevant parameters from 40 available options. An administrator login is required to create or edit profiles.

1. Create/Edit Profiles: Click the **Edit** button to make changes.

2. Profile Tab: Access this tab to edit profiles.

3. Create & Delete Buttons: Create or delete profiles as needed and assign meaningful names like Revenue, Savings, or Output for easy identification.

4. Assign Parameters: Select parameters for every column to include in the profile.

5. Save: Save the profile or exit without saving.

6. Exit: Return to the Performance screen.

PARAMETER DEFINITIONS

Over 50 different parameters can be selected and arranged into various profiles for customized views and reports. Definitions are listed in the order of the selection pulldown menu in the Profile Setup.

Parameters	Units	Definition
SELL ENERGY		
Sell Lifetime	**$**	Total revenue generated for the lifetime period.
Sell Energy	**kWh**	Total energy generated kWh for the selected period.
Sell Power	**kW**	Now Actual system power being generated now kW.
Sell Revenue	**$**	Revenue = FIT rate x energy kWh for the selected period.
Sell Rate	**$/kWh**	FIT sell rate entered in 'Setup'->'Sell Rate' used for revenue calculations.
BUY ENERGY		
Buy Lifetime	**kWh**	Grid energy used since startup. Only available if a grid meter is installed.
Buy Energy	**kWh**	Grid energy used for the selected period. Only available if a grid meter is installed.
Buy Power Now	**kW**	Grid power now. Only available if a grid meter is installed.
Buy Cost	**$**	Grid energy * Buy power cost/kWh entered in 'Setup'->'Buy Rate'. Grid meter must be installed.
Buy Rate	**$**	Grid energy * Average cost of power entered in 'Setup'->'Buy Rate'. Grid meter must be installed.
SITE SPECIFICATION		
Size kWac	**kWac**	Rated total AC output of system kW for 100% capacity.
Size kWdc	**kWdc**	Rated total DC solar panel kW. Usually greater than AC rating.
Installation	**Date**	Installation Date of startup used to calculate runtime.

Run Time	**days**	Runtime in days or years from initial startup date entered in 'Setup'->SolarVu® Installation Date'.
PERFORMANCE		
Performance Ratio AC	**%**	Actual energy / (AC capacity * insolation) for the selected period.
Performance Ratio DC	**%**	Actual energy / (DC capacity * insolation) for the selected period.
Output Now % Capacity	**%**	Actual kWac output now / Rated kWac capacity of the system. Total inverter rated output in kWac is entered in 'Setup'->'Equipment'->'Inverter'.
Expected Energy	**kWh**	Requires Site Insolation. An approximation of energy expected for the selected time period factoring in the site size (Site size in kWpac * Insolation). Assumes insolation is PoA (Plane of Array) measurement (most WeatherTrak IMT's are). Contact Cachelan Tech Support to discuss more precise models.
Expected Revenue	**$**	Revenue expected = Expected energy x Sell rate for the selected time period. Values for sell rate are in each portal's 'Setup', and can be modified there.
Output kWh/kWac/yr	**kWh**	Annual energy per kW of installed rated inverter output capacity. Normalized for comparing relative performance.
Output kWh/kWdc/yr	**kWh**	Annual energy per kW of installed total DC panel capacity. Normalized for comparing systems with different DC panel ratings.
Output FSH/day	**kWh**	Daily energy/AC capacity expressed in FSH (Full Sun Hours). Energy from one FSH is the energy the system would produce for 1 hour of irradiance at 1000W/m² (STD).
Solar Map kWh/kWac/yr	**kWh**	Expected annual energy per kW of installed AC capacity based on historical records of horizontal insolation.
Solar Map FSH/Day	**FSH**	Expected daily energy expressed in FSH per kW of installed AC capacity based on the solar map value entered in 'Setup'->'Account'->'Insolation' for this location.
Output % Solar Map	**%**	Actual energy / expected energy annual from a solar map for this location (entered in 'Setup'->'Account'->'Insolation') for the selected period.
Output $/kWac/yr	**$**	Annual revenue / kWac rated system capacity. Normalized to allow comparing systems of different sizes to see which produces more revenue.

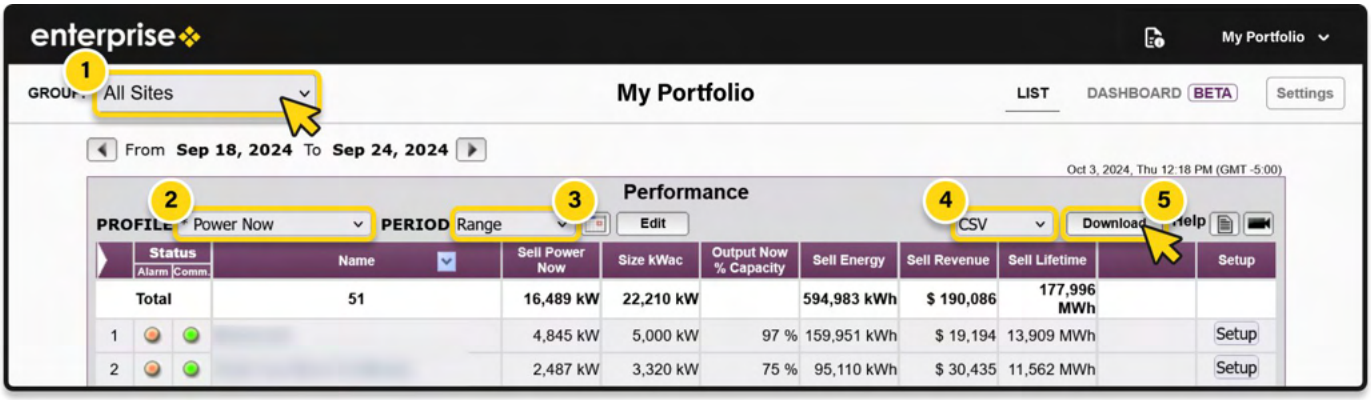
Output $/kWdc/yr	**$**	Annual revenue / kWdc rated installed DC panel capacity. Normalized to compare systems with different size DC panel ratings.
% Green Power	**%**	(S-G)/S * 100 where S= Solar Power kW now, G=grid power kW now. Only available on systems that measure both solar and grid generation. 100% means all power used is coming from solar generation.
% Green Energy	**%**	(S-G)/S * 100 where S= Solar Energy kWh, G=grid energy kWh over the selected time period. Only available on systems that measure both solar and grid generation. 100% means all energy used during the time period came from solar generation.
Forecast Energy	**kWh**	Values from entered in 'Setup->'Performance'->'PVSyst' from the PVsyst report for expected energy for the selected period. Contact Cachelan for assistance or if you have questions.
Forecast Insolation	**kWh/m²**	Value entered in 'Setup->'Performance'->'PVSyst' from the PVsys report for the expected insolation based on solar map values for the selected period. Used for comparing measured irradiance to assumed irradiance from the PVsyst model.
Forecast Revenue	**$**	Expected revenue = FIT rate * PVsyst forecast energy for the selected period. Used for calculating performance by comparing actual to expected.
Energy kWh Variance *(previously Energy kWh Variance)*	**kWh**	Actual energy - PVsyst forecast energy. PVsyst values must be entered in 'Setup->'Performance'->'PVSyst'. Positive values indicate better than expected performance.
Energy Forecast % Variance *(previously Energy % Variance)*	**%**	Actual energy / PVsyst forecast energy. PVsyst values must be entered in 'Setup->'Performance'->'PVSyst'. Positive values indicate better than expected performance.
Expected Energy kWh Variance	**kWh**	Actual Energy-Expected Energy. Expected Energy requires insolation site data, and this represents the difference between actual generation and generation based on a simple weather adjusted model. Contact Cachelan support for enhanced models.
Expected Energy % Variance	**%**	Actual Energy / Expected Energy. Expected Energy requires insolation site data. Contact Cachelan support for enhanced models.
Insolation Variance	**kWh/m²**	Measured insolation - PVsyst Expected insolation. PVsyst insolation values from a solar map must be entered in 'Setup->'Performance'->'PVSyst'.
Insolation % Variance	**%**	Actual insolation / PVsyst forecast insolation. PVsyst values must be entered in 'Setup->'Performance'->'PVSyst'. Positive values indicate more insolation (sunlight energy) received than expected for the selected period.
Revenue $ Variance	**$**	Actual revenue / (PVsyst expected energy * FIT rate). Positive values indicate higher than expected revenues for the selected period.
Revenue % Variance	**%**	Revenue / Expected revenue as calculated by the PVsyst model. Positive values indicate better than expected performance for the selected period.
PowerWatch™		
Power Ratio Yesterday		Lowest inverter power / highest inverter power at 12PM yesterday.

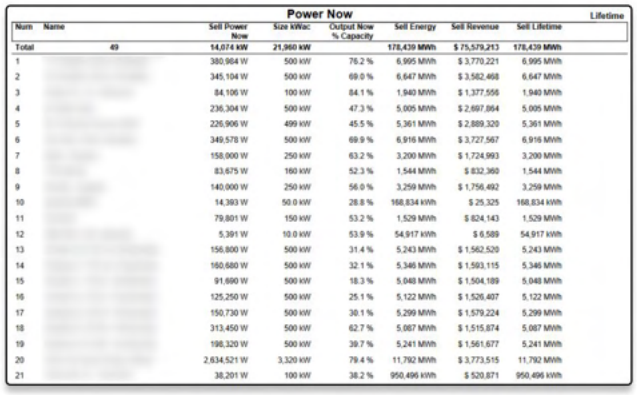
Energy Ratio Yesterday		Lowest inverter energy yesterday / highest inverter energy yesterday.
Energy Ratio Today		Lowest inverter power / highest inverter power today. NA displayed if not available.
kWh/kWac Yesterday		Total energy / rated AC capacity yesterday. Used to compare relative output of different size systems.
Actual FSH Yesterday		Amount of insolation received yesterday in FSH (full sun hours). 1 FSH = 1000 w/m².
Performance Ratio AC Yesterday		Actual energy / (AC capacity * insolation) for yesterday. Shows actual to expected output.
Performance Ratio DC Yesterday		Actual energy / (DC capacity * insolation) for yesterday. Shows actual to expected output.
WeatherTrak™		
Irradiance Now	**W/m²**	Measured irradiance at the site now from the WeatherTrak™ sensor.
Insolation	**kWh/m²**	Measured insolation for the selected period from the WeatherTrak™ sensor.
Lifetime Insolation	**kWh/m²**	Insolation (sunlight energy) measured by the WeatherTrak™ sensor since system startup.
Sun % Now	**%**	Takes measured Irradiance and divides by 1000 W/m², to generate a % of 'Sunniness' as last measured. Like 'Power Now', this value is not affected by time range selectors and represents the current / most recent value.
Power vs Sun Now Δ	**%**	Takes a sites 'Power Now' (generation) % of Capacity, subtracting Sun % Now. A 50% power rating of capacity, measured at 500 W/m², (50% Sun Now) will show as 0%.
SAVINGS		
Savings GHG lb	**lb**	Energy generated for the selected period is converted to the amount of GHG (greenhouse gas) that would be produced burning fossil fuels to generate the same energy. The conversion rate varies by location and can be changed in 'Setup->'Account'->'System Parameters".
Savings EV km	**km**	Energy generated for the selected period is converted to the distance a typical EV could drive assuming 5km/kWh conversion rate.
Savings Gasoline litre	**litres**	Energy generated for the selected period is converted to the amount of gasoline that would be required to produce the same energy.
Savings Notebook hr	**hours**	Number of hours a typical notebook computer that uses 25W could run from the energy generated over the selected period.
Revenue % Variance	**%**	Revenue / Expected revenue as calculated by the PVsyst model. Positive values indicate better than expected performance for the selected period.
HISTORY		
Views		A measure of how much use the SolarVu® Portal is getting. Each time a new visitor accesses the portal the view counter is incremented by 1.
Last Visit		Date the SolarVu® Portal was accessed on. Use this to determine if the site is still being actively used.

REPORTS & DOWNLOADS

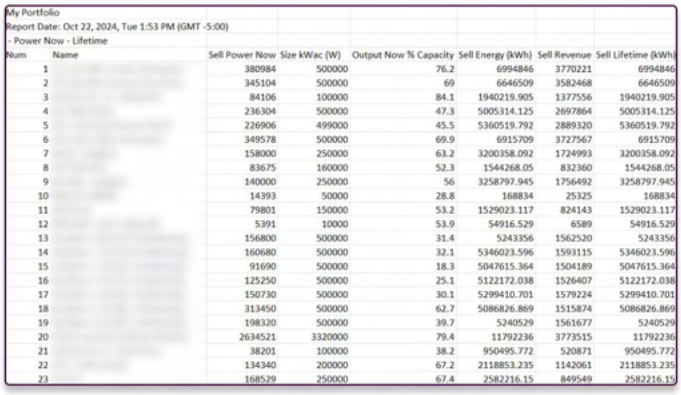
CREATE REPORTS & DOWNLOAD DATA

Create PDF reports for groups of sites, sorted with different parameters including totals, for any selected time period. Use this to compare sites to each other, check utility payments and do accounting audits. For performance analysis, site data can be exported as a CSV file for further custom analysis in a spreadsheet or imported into a database.





PDF Format



CSV Format

1. GROUP SELECTOR: Choose the group for which you want to generate the report.

2. PROFILE: Select the profile that will be used for the report.

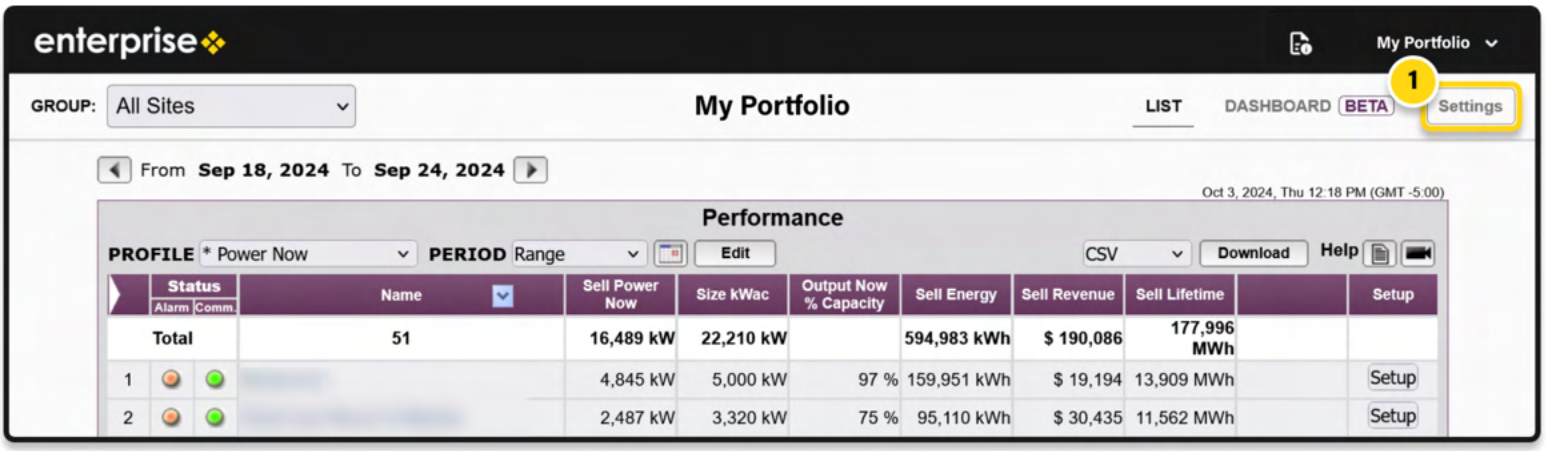
3. PERIOD: Choose the time period for the report.

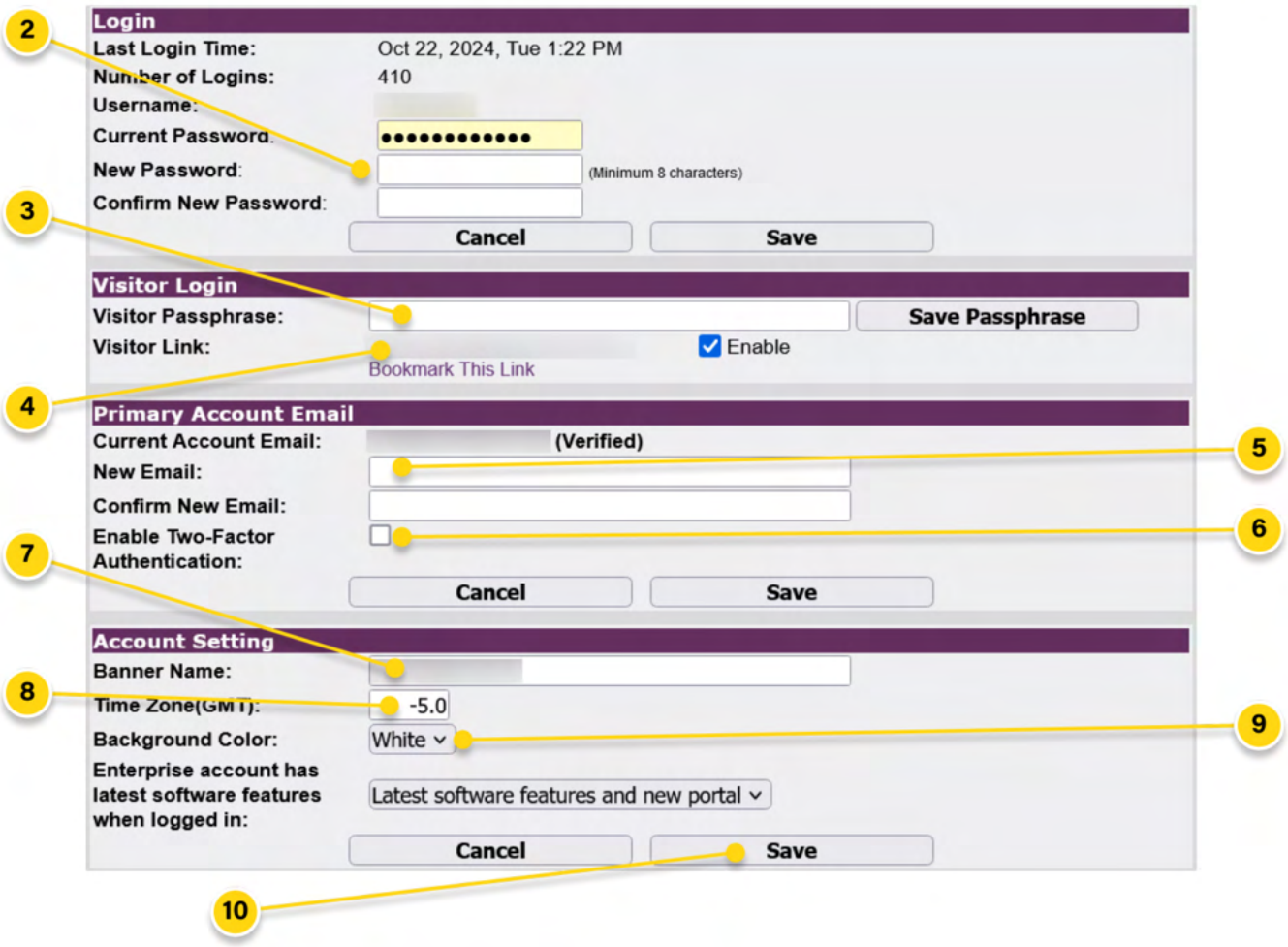
4. FORMAT: Select **PDF** for a formatted report or **CSV** for a file that can be imported into a spreadsheet for further analysis.

5. DOWNLOAD: Click the **Download** button and choose the destination folder for saving the report.

ENTERPRISE PORTFOLIO VIEW - SETTINGS

Make adjustments to your Enterprise Portfolio account by clicking the **SETTINGS** button. While the username is fixed, the administrator password can be changed, a separate visitor login can be enabled for read-only access without allowing any changes to site settings.





1. SETTINGS: Click the **SETTINGS** button to access and modify the Enterprise account. Administrator privileges and the administrator password are required for access.

2. ADMINISTRATOR PASSWORD: Change the default administrator password by entering a new one and clicking **Save** in the login panel. The administrator password should only be shared with staff authorized to make changes to all sites. Note that each site also has its own unique **SETUP** login password, which differs from the Enterprise password.

3. VISITOR ACCESS: Enable a visitor password for read-only access to the Enterprise account, which hides the **Setup** button for each site to prevent unauthorized changes. This is ideal for providing access to O&M staff. Ensure the visitor password is different from the administrator password.

4. DIRECT VISITOR LINK: Check the **Enable** box to create a direct link to the Enterprise account that doesn't require a password for viewing access. This allows faster access with viewing-only capabilities and no ability to make changes. You can distribute this visitor link, which can be bookmarked in a browser for easy, single-click access to the account.

5. PRIMARY ACCOUNT PASSWORD: If you forget your password, click the **Forgot Your Password?** link on the login screen. The new password will be sent to the **Primary Email** you provide in the settings.

6. TWO-FACTOR AUTHENTICATION: Enable two-factor authentication to add an additional layer of security to your Enterprise account.

7. BANNER NAME: Enter the desired account name to display in the banner by typing it into the **Banner Name** box.

8.TIME ZONE: Set the correct time zone for your region by entering the appropriate GMT offset. For example, GMT -5 for Eastern Standard Time (EST) in North America.

9. BACKGROUND COLORS: Choose between black or white background styles for your Enterprise Portfolio View page based on your preference.

10. SAVE: After making all desired changes, click the **Save** button to apply them immediately.