

EnergyGauge USA 5.0.03

Release Notes

The latest release of EnergyGauge USA, Version 5.0.03, provides new features and bug fixes. This version includes new IECC code features and new features for HERS raters.

Key features added

*Note not all features are available in all versions of EnergyGauge USA.

To all users: **EnergyGauge USA can now be run without admin privileges.**

IMPORTANT NOTE TO ALL** The bldgs folder which contains the Backup and Examples folder has been moved into Documents folder. For instance, if your username is **jsmith** and the EnergyGauge USA version is 5.0.02 the file location will be: c:\users**jsmith**\Documents\EnergyGauge5.0.02. This is also the default folder location for the “**Load *.enb**” and “**Save *.enb**” options.

IMPORTANT NOTE TO RATERS** Please log into your rater webpage and ensure your company name is set under your preferences. This company name will be inserted on the ENERGY STAR Certificate.

New IECC calculations

In addition to the performance (R405) calculation, there are new IECC calculations as sub-menu items under the respective IECC calculation as indicated below. The reports below include an IECC mandatory requirements page.

- IECC 2009
 - R-Value Prescriptive Method (R402)
 - UA Prescriptive Method (R402)
- IECC 2012
 - R-Value Prescriptive Method (R402)
 - UA Prescriptive Method (R402)
- IECC 2015
 - R-Value Prescriptive Method (R402)
 - UA Prescriptive Method (R402)
 - ERI Alternative Method (R406) available to energy raters

New details on Input Summary Report

- Floors – Total exposed area
- Ceiling – Total exposed area
- Doors – Total exposed area
- Windows – Total exposed area

FL Code 2014 calculations in version 5.0.03 – This section was also included in the previous release notes

- Florida Code 2014
 - Performance Method
 - Prescriptive Method – R-Value
 - Prescriptive Method – Total UA
 - R-Value (Blank Form R402)
 - E-ratio Test – This feature is only used for the purpose of qualifying software for Florida Building Code Compliance and is not for the purpose of complying a house for code.

GENERAL BUG FIXES AND FEATURES

- Time to load and save projects has been significantly reduced
- Added Total Floor Area to the input summary
- Added Total Ceiling Area to the input summary
- Added Total Window Area to the and input summary
- Added Total Door Area to the input summary
- Garage Under Unconditioned Space area error has been corrected
- Temperature data missing from ENB files no longer causes a crash
- The new PV modules database is now sorted alphabetically so the new modules are no longer at the end of the list
- Added ceiling insulation type and batt, blown, double batt to Input Summary and similar reports
- Ceiling error no longer displays 12 times during worst case calculation
- Run date is now populated on Monthly Energy report
- Run date is now populated on Monthly Utility report
- Monthly energy and utility reports are now available and display data after running IECC
- Scroll bar is no longer partially cut off on the project search page
- IECC 2012 report has been modified
- Removed heat pump water heater from water heater conservation option (still available as a water heater type)
- Infiltration by spaces no longer hangs when configuring the second space
- Energy use of heat pump water heaters located exterior to the house use has been corrected
- Range Check error no longer displays when viewing reports after calculating
- User should not be prompted to update TMY3 when running Florida projects. TMY3 files are now included in new install.
- Ft. Lauderdale climate data is incorrect and no longer available for selection. The closest city climate should be selected.
- Cooling and heating energy use is now consistent after running Annual Simulation a second time
- Duct error message displays when two ducts are assigned to same HVAC system
- Garage ceiling on input summary displays the correct area and no longer displays 384

- The bathroom input on the Project page is no longer required by any program and has been removed
- Calculating from the Infiltration page when viewing rated or proposed homes with 2 spaces no longer locks the software
- An intermittent data corruption error has been fixed
- USA no longer freezes after making changes then saving or running calculations
- Direct date entry now available as well as the calendar selectable date entry feature
- Mechanical Ventilation - Fan energy should only display on reports when Fans/ERV or Run Time Vent with Minimum are selected
- Hourly reports for the hourly mechanical vent report now display correct data for start date other than January 1
- Input summary now displays garage exposed wall insulation value
- Auto-update now checks for an available update on opening of EGUSA
- Floor over other space no longer causes an access violation or list index out of bounds in some cases
- Moved Bldgs\Backup folder to C:\Users\[USERNAME]\Documents folder
- Worst case radio button selection is now saved when project is saved
- [US1] Input changes are now saved after performing a Save As
- Neighbor ceiling now calculates with a ceiling with metal studs selected
- Space name now longer disappears from overview
- Error checking has been added to ensure a TMY Site field entry if opening enb files generated by Wrightsoft or Elite that have that field blank
- Added manufacturer and model to Hot Water page
- Ceiling R-Value input changes now remain after changing page
- Roof screen Attic Ventilation entry (unvented/vented) input change now remains after changing page
- The default Return Leak Fraction on Ducts page has been changed from 0.6 to 0.5
- Air handler leakage fraction minimum is now 0.02
- Framing fraction field of block walls is now disabled after selecting Post button
- Added error requiring an average wall height of 7 feet or higher when leaving the Spaces tab, when opening a project, and running a calculation

FLORIDA CODE BUG FIXES AND OTHER FEATURES

- FL Code 2014 reference now has an air source heat pump with SEER 14 and HSPF of 8.2 if the proposed has a geothermal HP, fixing unusually high e-Ratios for homes with geothermal heat pumps
- FL Code 2014 Standard Reference SEER is now correctly set to 14 when cooling subtype of split is selected
- Added a Print Multiple Reports button for FL Code 2014

- FL Code 2014 Reference cooling and heating efficiency are set to federal minimum for additions when “none” is selected for Florida Addition
- Added house volume to the Envelope Leakage Test Report
- Glass to floor area correctly displays on FL Code Summary after running FL Code 2014 Performance calculation two consecutive times
- Infiltration page is now viewable when viewing the FL Code proposed home
- FL Code 2014 e-Ratio does not change after changing from run time vent with min to run time then back to run time with min
- FL Code Envelope Leakage Test Report for confirmed single point test – no longer indicates "DEFAULT 0.65" for n and "N/A" for R
- FL Code 2014 Standard Reference for an addition without a DHW system now has the correct water heater EF of 0.948
- Access violation no longer displays when running FL Code 2014 Performance while on the Windows page with more than 7 windows
- HVAC system is resized for FL Code 2014 calculation purposes if it too small
- FL Code 2014 Proposed infiltration is now set to ACH50 5
- HVAC sizing for FL Code 2014 Standard Reference now accounts for duct leakage
- AHU is now set to the user entered location in the FL Code 2014 Proposed home in all cases
- Factory sealed AHU checkbox is now required for FL Code 2014 performance and prescriptive calculations as per FL Code 2014 requirements
- Added FL Climate Zone to the input summary and FL Code 2014 reports
- FL Code 2014 Proposed home duct leakage now has the correct DSE of 0.88 when ducts are in a sealed attic with default leakage in the user entered building
- FL Code 2014 Proposed home duct leakage is now 0.88 and ducts and AHU is in user entered location when default leakage is selected
- Renamed header of Form R405 Duct Leakage Test Report Performance Method from R405-2014 to Form R405-2014 Duct Leakage Test Report Performance Method
- Renamed header of Form R402-2014 Duct Leakage Test Report Prescriptive Method from R402-2014 to Form R402-2014 Duct Leakage Test Report Prescriptive Method
- The word software now displays in the footer of FL Code 2014 reports. It was being truncated on some computers based on display resolution.
- Florida Code Proposed Design uses a Return Leak Fraction of 0.5, regardless of user entry
- FL Code 2014 addition no longer has an issue with HVAC set to none; assumes baseline systems when running proposed design
- Heating efficiency and capacity is now set with existing/confirmed efficiency for additions
- Modified text above signature on Form R405-2014 Duct Leakage Test Report

New Energy Rating Index calculation (rating versions)

This ERI calculation is under the main calculation menu on rater versions of the software and is called **Energy Rating Index**. This is different than the IECC 2015 ERI in that the Summary and report display the HERS Index but not the IECC 2015 Target or indicate a PASS/FAIL status. This

calculation allows users in states/jurisdictions which have implemented a modified code ERI Target to qualify with this modified ERI form and requires the code official verify the HERS Index qualifies. The mandatory requirements page is included.

Note that the ERI calculation uses the HERS 2014 calculation consistent with the R406 referenced standard. The regular HERS rating is still based on the HERS 2013 calculation for this release as per RESNET delay of the HERS 2014 methodology. Current plans are for the 2014 HERS methodology to go in effect July 1. After that time, the ERI and the HERS index will match.

New input options for HERS Raters

- Verifiers Tab – This is a new input page and is selectable under the main Site tab. This is an input for Raters and the entry of verifiers is required by RESNET during the rating process. A full description is available in the Help Pages.
 - The verifiers input provides the rater with a new Verifiers tab in preferences for entry of all verifiers. This list will be maintained in your database.
 - Each project now also displays a new Verifiers tab where the rater can create an entry for each task performed by a RESNET Rater or RESNET Field Inspector during the rating. The tasks entered are required by RESNET and automatically submitted to the RESNET Registry during the HERS Rating registration. The tasks for selection include:
 - Blower Door Test
 - Duct Test
 - Envelope Verification
 - Exhaust Test
 - Insulation Inspection
 - Pressure Mapping
 - Static Pressure
 - Ventilation Test
 - Other
- QA Automation is now required for all HERS Providers. The manual HERS Registration option is no longer supported. QA Automation provides enhanced efficiency to both the Rater and Provider and improved security of rating system data and operations.
- Check RESNET Warning Flags – Available under the Registration menu item to verify the project meets the criteria set under RESNET Publication 002-13. This calculation can be run after entering a project and at a minimum should be run prior to creating and RGU file for registration.
- A label has been added next to Total Qualifying Fixtures to indicate the RESNET requirement for qualifying fixtures including LED; 50 lumens per watt or greater
- New water heater inputs have been added to the Hot Water page to support BSRRESNET 301-2014 Addendum A-201x FD-01. These inputs are now required with each rating and impact the HERS Index. A full description is available in the Help Pages. *(These entries will only affect HERS Ratings and will not affect Florida Energy Code or IECC calculations)*. These inputs include:
 - Simple GDP – This displays the gallons of hot water per day used in the FL Code and IECC calculations.

- HERS GDP – This displays the gallons of hot water per day used to be used in the HERS calculation.
- Piping Length (Feet) – Enter the length of the hot water system's piping (in feet). This length is calculated from plans and is equal to the longitudinal distance from the hot water heater to the farthest fixture from the hot water heater, assuming the hot water piping does not run diagonally, plus 10 feet of piping for each floor level, plus 5 feet of piping for unconditioned basements (if any). Note this entry is not shown if the Recirculation system box is checked.
- Piping Insulation – Use the pull-down menu options to enter the R-value of the hot water system's piping insulation; select =>R-3 if the insulation R-value is 3 or greater, or select a blank row to enter a custom R-value, or select *None* if no piping insulation.
- Fixture Flow – Selections (Standard or Low)
- Tank Wrap Insulation – Unchanged from previous releases
- Solar System – Unchanged from previous releases
- Florida Solar EF – Unchanged from previous releases
- Heat Recovery Unit – Unchanged from previous releases
- Heat Trap/Insulation – Unchanged from previous releases
- Recirculation System – Selecting checkbox displays details button
 - Control Type – Selections (None, Temperature Control, Demand Control (presence sensor), Demand Control (manual))
 - Recirculation Piping Length (ft) – Hot water recirculation loop piping length includes both supply and return sides of the loop, measured longitudinally from plans, assuming the hot water piping does not run diagonally, plus 20 feet of piping for each floor level greater than one plus 10 feet of piping for unconditioned basements.
 - Branch Piping Length (ft) – Branch length is the measured length of the branch hot water piping from the recirculation loop to the farthest hot water fixture from the recirculation loop, measured longitudinally from plans, assuming the branch hot water piping does not run diagonally.
 - Pump Power (Watts) – Enter the wattage of the recirculation system's pump.
- Drain Water Heat Recovery – Selecting checkbox displays details button
 - Facilities Connected – Selections (One or All)
 - Equal Flow – Selections (Yes or No)
 - DWHR Efficiency - Enter an efficiency between 0 and 1.0
- GPD Method – Use the pull-down menu options to select whether annual simulations will use either the *Simple* or *HERS2014* hot water gallons per day entry (this entry will not affect Florida Code, IECC or HERS calculations which instead use values based on their rule sets). If you want *EnergyGauge* use a user-entered gallons per day value for annual simulations, select *Simple* and enter the gallons of hot water gallons per day in the Simple entry field. Otherwise select *HERS2014* and *EnergyGauge* will use the RESNET rule set calculated gallons per day (shown on the screen next to the HERS label) for Annual Simulation Calculations.

- Infiltration – In order to perform the HERS calculation a proposed or tested input is required. An error will display if default infiltration is input.
- Duct leakage – In order to perform the HERS calculation a proposed or tested input is required. An error will display if default is input.
- Create RGU
 - New **IECC ERI Report (2015)** checkbox to request a Confirmed Report after building has been tested.
 - Registration ERI Info page lists the IECC 2015 Mandatory Requirements that must be met in order to qualify following the ERI method. The Rater must select the checkbox indicating the building systems comply.
 - New **Indoor airPLUS** Report to request an Indoor airPLUS Certificate. This requires an Indoor airPLUS Checklist to have been completed and uploaded as a PDF document demonstrating the home qualifies.

RATING BUG FIXES AND OTHER FEATURES

- EnergyGauge USA no longer halts processing of an rgu file if a work log not found error is displayed
- Inserted the process date in the Date field on the HERS Rating Guide
- Added error check during create RGU to not allow leading and trailing spaces in the project title or address
- New RESNET Hot Water Standard - ANSI/RESNET/ICC 301-2014 Addendum A-2016
- Now require Final Inspection Date when creating the RGU file
- Decreased the number of significant digits to 3 on the HERS Summary Report
- Door assigned to the second garage wall no longer causes an index out of bounds on ENERGY STAR calculation
- Final Inspection Date, Tested Date, tested infiltration and tested ducts are now required for HERS, ENERGY STAR, DOE ZERH during RGU file creation, per new RESNET standard
- Changed hot water GPD labels to a selectable Simple GPD and HERS GPD following the RESNET Hot Water requirement changes
- RESNET Disclosure generated during registration has been updated to include RESNET changes
- Annual emissions on HERS Rating Guide only displays positive numbers
- Blue background is displayed when the AEP Texas ENERGY STAR Program calculation is executing
- Added ignorable warning popups for all RESNET warnings
- Sealed attic with roof deck insulation and knee wall insulation no longer results in audit with cause
- Input Summary Report now displays the new appliance schedule
- ENERGY STAR FL 3.1 reference home now generates with a door associated with garage wall

- Company name from rater online setting is inserted into ENERGY STAR Certificate
- Added hot water energy savings to the hot water page when compared to RESNET hot water inputs
- HERS now calculates when project includes a conditioned and unconditioned basement
- HERS Ratings now use a Return Leak Fraction of 0.5 for Rated Home, regardless of user entry – this may alter HERS index
- Remove Registration > HERS Provider Registration option.
- HERS will now run with more than one heating system without cooling system
- Added a ventilation line item under energy use and building loads on the HERS Summary Report and thus pulling it out of the cooling and heating normalized load multiplier method. In some homes this may improve HERS indexes from previous software versions.
- Modified text below rater signature line regarding disclosure
- Added DOE ZERH November 2015 Updates