EnergyGauge USA Version 7.0.00 RELEASE NOTES

GENERAL NEW FEATURES:

Version 7 is a major release and contains major new calculations for Florida code, HERS and Tax Credit. Version 7 will not overwrite Version 6. Look for the EGUSA7 icon to run Version 7.

- Favorite calculation buttons have been added on the right to all building input pages
    - Select which favorites to show from preferences
- New Preference Feature - Backup file location can be specified in Preferences
- New Preference Feature – HVAC Grading default for new projects and loading old projects
- Common area input available for condo/apt dwellings adjacent to common laundry areas. Check appropriate box on the *Garage* tab.
- Copy and paste is now available from Excel into multi-point blower door inputs
- Occupancy input on project page is now **Unit Type** and choices are **Detached** and **Attached**

GENERAL BUG FIXES:

- Access violation error fixed when selecting Save Current Project on the *Lighting* tab
- Fixed situation where moving a space on the *Block* tab would cause program to stop
- Below grade ICF walls now able to run
- Geothermal pump info is no longer hidden from view
- An error now displays during calculation if CFM25out is greater than CFM25total on the *Duct* tab.
- Envelope Leakage Test Report House volume now includes attic volume when hatch is open (was already in calculation but did not show on report)
- The % entry box is now shown when 'Duct Air Leakage' type is chosen on *Duct* tab.
- Leakage test exception type is now required on Infiltration and duct pages
- Space page no longer repeatedly scrolls when saving or calculating from space page
- Inputs on combined HVAC systems entry on *Duct* tab no longer hides some entries
- Return duct R-Value input added to the combined HVAC systems entry on *Duct* tab
- The comment entry on *MVent* tab is now saved in ENB and XML pages
- ERV Sensible Efficiency label is now correctly labeled as ERV Efficiency on *MVent* tab (ERV Efficiency is sensible and latent)

- Display on *Heat* tab corrected to show correct efficiency units when switching heating systems and selecting Size Now button
- Selected Block/Spaces label is now visible on Heating tab
- Water heater can now be assigned to a space named Basement
- Worst case now calculates 4 orientations
- Worst case report shows worst case results

Manual J and S

- Fan Type, Fan Speed Cooling and External Static Pressure (IWC) inputs are now saved in Manual S
- Ducts field now display ductless on Manual S page if systems are ductless

FLORIDA ENERGY CODE

Software will calculate the following methodologies for the 7th Edition (2020) Florida Building Code, Energy Conservation Volume residential code

- ☑ R402 Prescriptive R-Value Method
- ☐ Prescriptive U-Factor Alternative Method
- ☑ Prescriptive Total UA Alternative Method
- ☑ Performance Method – R405
- ☑ ERI Method – R406

A list of changes for the 2020 code relative to 2017 can be found on the FloridaBuilding.org website by clicking on the resource menu item on the left or try this direct link https://www.floridabuilding.org/fbc/Links_to_Code_Resources.html and look for a full list under "Energy" or just the significant changes document "Significant Commercial and Residential Provision Changes Between the 6th Edition (2017) and 7th Edition (2020) Florida Building Code, Energy Conservation Volumes"

For performance based code (R405) one of the differences in the 2020 code from 2017 is a revision to the calculation of hot water load. This tends to slightly reduce the amount of energy use for both the proposed and base homes that are modeled. If you have been complying with e-ratios close to 1.0 and have been using a highly efficient water heater, for example gas tankless or 50-gallon heat pump water heater, you may find your combined heating, cooling and water heating energy slightly above the base home energy use now.

For prescriptive compliance the new Florida code prohibits electric resistance space heating from being the primary heating system used in Climate Zone 2. Homes in Climate Zone 2 using electric resistance heat will have to comply by section R405 or R406.

In the new code, the ERI (R406) calculations now follow the ANSI/RESNET/ICC 301-2019 Standard for the Calculation and Labeling of the Energy Performance of Dwelling and Sleeping Units using an Energy Rating Index (ANSI/RESNET 301-2019); however, ERI compliance is

now not allowed for Florida code hotel/lodging type sleeping rooms without kitchens. The new standard incorporates many changes from the R406 ERI 2017 code.

Florida energy code 2017 calculation remains in the software unchanged for projects permitted before December 31st 2020. After December 31st 2020, permitted buildings need to comply with the 2020 code.

EnergyGauge USA has been using ASHRAE formulas for converting measured ACH50 rates to cfm for the purpose of determining ASHRAE Standard 62-2 recommended ventilation levels (available on the *MVent* tab in the software). Annual simulation and HERS rating calculations were moved to those conversions for air infiltration modeling in the last few years also. With this release, Florida energy code 2020 will use those same equations for infiltration calculations as opposed to an older conversion methodology. This may cause some differences between the 2020 calculation and 2017 calculation.

IECC

- None

TAX CREDIT

DOE approved a new RESNET methodology for tax credit for new energy-efficient homes, RESNET Pub 001-20. The new methodology largely follows the newly passed (ANSI/RESNET 301 -2019) standard but has a number of its own features. The calculation is enabled but users should be cautioned that **the software as of the release date still needs to be approved by DOE** and an update may be necessary. EnergyGauge USA RESNET Pub 001-20 includes HVAC Grading (see HERS RATERS CHANGES).

HERS RATERS CHANGES AND OTHER FEATURES

In Version 7.0 all HERS calculations are conducted with ANSI/RESNET 301-2019 including Addendums A and B. For those wishing to finish projects with ANSI/RESNET 301-2014 with amendments, version 6.1.09 is recommended. EnergyGaugeVersion7.0 is for detached and attached buildings with individual cooling, heating and hot water systems. EnergyGauge USA does not currently handle cooling, heating and hot water systems serving multiple units.

The software includes ANSI/RESNET/ACCA Standard 310 for HVAC Grading. Standard 310 adds in the ability to obtain credit for a verified HVAC system. A new equipment tab, *AHU*, allows software users to enter the central fan design and measured cfms, the measure fan wattage and the measured refrigerant charge. HVAC grading ranges from a default of Grade III to a best of Grade I. Grade I has a range of possible values so a *no fault* scenario will reduce energy use more than our default Grade I. Details about the standard should be obtained from RESNET and your Training Provider.

Standard 310 calls for a default 0.58 watts/cfm for unmeasured fan systems for both the rated and reference home. This is higher than the historical EnergyGauge USA default of 0.375 Watts/cfm for SEER 14 and higher equipment that was compared against the historical EnergyGauge USA default of 0.5 Watts/cfm for the HERS reference home SEER 13 system. As such, using HVAC grading without measurement may result in higher HERS indexes than previously.

EnergyGauge USA currently allows the calculation of HERS Indexes with or without HVAC grading. RESNET will eventually **only allow registration of ratings with HVAC grading**. HERS ratings that incorporate measurements and verifications of quality installations should achieve significant improvement in the HERS index for homes with large annual cooling loads and those homes with high annual heating loads met mainly by a heat pump.

Registration of ratings is disabled awaiting RESNET approval of the product and final programming and testing. Raters will be notified when an update is available.

- ProjWin already exists error no longer displays when running HERS 2019 IAF rating on new project with no climate selected

ENERGY STAR

- Permit number no longer prints permit number twice on ENERGY STAR Certificate
- ENERGY STAR 3.0 reference home duct area is now proportioned when part of ducts are in attic
- ENERGY STAR MFNC calculation is now enabled in HERS Provider version
- View Preliminary Rating Guide button is now available on ENERGY STAR Summary. NOTE: This HERS Index will not include on-site energy production from PV.

ANNUAL SIMULATION:

- Allows annual simulation to be calculated with or without HVAC grading.