

Relevant Criteria Matrix for Final Judging

Qualifying for NESEA's Zero Net Energy Building Award is simple, but certainly not easy. A building needs to have operated for one year using no more energy than the building produced. The judges will select the "best" building of those that qualify. While brute force (larger PV or wind) will satisfy the math, this award is intended to recognize a building so well-designed and energy efficient that a reasonable, roof-sized PV array will suffice. This award should highlight 'best practices' of energy efficiency and delivered services.

To a certain extent, "best practices" are in the eyes of the beholder. Through the matrix below, the Zero Net Energy Building Award advisory committee is attempting to create guidelines to help select the building that will have the most positive impact on society, and to remove some of the inevitable subjectivity from the selection process. In order for the award to have broader impact, the best practices displayed in these buildings need to be adopted by others – so the buildings we recognize should be replicable. The NESEA Zero Net Energy Building Award advisory committee will complete this matrix for each net zero applicant as part of their prequalification process, and will forward it to the judges for their consideration in the final selection process.

Parameter and Why/How it is Important	Method of Rating	Rating/Score for Building
Net Zero Energy balance (import/export) plus details (consumed & produced): Energy balance is the baseline. Details provide evidence of building systems design and performance.	Energy balance (imports/exports) Rating of Production systems (PV in kW, etc.) and yearly output	 kWh(BTUs) balance + or - Production kWh(BTU's) Example for PV- kWh(BTUs)/yr Per sqft(sqM)
Location (climate & site): VT and DE face different challenges in heating, cooling, dehumidification	Energy per degree days (heating and cooling); Advisory Committee may use one of the following websites to calculate: http://www.degreedays.net/ or www.wunderground.com	 Degree Days for site kWh(BTUs) total/DD kWh (BTUs) per sqft(sqM)/DD
Occupancy/intensity of usage: Occupancy affects energy use. Winter/summer vacations affect loads.	Advisory Committee will prequalify that each building is occupied full time (ex., for a home, people living in it 7 days/week; for an office or school, people using it for at least 8 hours/day 5 days/week, etc.) In addition, each applicant will be asked to include in their application an occupancy statement describing how they occupy the building, and including: Days of occupancy: # of days anyone is present in the building for the 12 month period during which net zero data is collected; and Person days of occupancy: one person present for one day gives one person day, two people for two days is four person days, etc.	N/A We won't score each building, but rather will forward the info submitted by the applicant to the judges.
Replicability: As a model for impact, more of the same/similar buildings need to be built.	Each applicant to provide a list of energy related components and technologies used in the building. See detailed list under 'stellar systems,' below. Advisory committee to assess this info, along with extent to which the building is buildable by existing trades.	Advisory Committee to rank the applications with respect to replicability according to the rating method articulated.

Size and cost: Affects marketability, public acceptance of net zero.	Sq ft (sqM) total and dollars/ sq ft (Sq meters) (all cost except for land); Cost = building construction cost exclusive of design fees, site preparation and unconditioned space. Square footage is to be measured from exterior of building.	 Sq. ft. (sqM) Cost Cost/sq. ft.(sqM) If energy system is financed (3rd party, paying back in energy charge)
Stellar systems (envelope, heating, cooling, lighting, domestic hot water if applicable, ventilation, or other major contributors): Highlighting major components of project helps to publish reviews of the most cutting edge systems.	Ask each applicant to specify what they used in terms of major energy-related systems: 1. Building envelope: for each applicable item below, please list insulation material used and thickness/assembly R Value a. Sub Slab b. Slab Edge c. Foundation Wall d. Above Grade Wall e. Flat Attic f. Sloped Ceiling 2. Doors/windows: for windows list Window U Value and SHGC 3. Mechanicals: for each of the sub-systems below, please list component make and model number, and any comments that might be of interest a. Space Heating b. Space Cooling c. Hot Water d. Ventilation 4. Renewable Energy a. Make/Model/Number of major components (e.g. PV panels, inverter, solar hot water panels, tank, other renewable feature, etc) b. What is the peak power of the PV array (KW) or other renewable feature? c. What is the projected annual production of the PV array (kWhr) or other renewable feature? d. What is the actual annual production of the PV array (if known) (kWhr) or other renewable feature?	N/A We won't score each building, but rather will forward the info submitted by the applicant to the judges.
Size of renewable system vs. size of the building: The intent is to ensure that applicants are not trying to 'buy their way to net zero' by using a large solar array or other renewable solution in place of a tight building envelope.	5. Lighting See Renewable Energy information requested under 'stellar systems.'	N/A. We won't score each building, but rather will forward the info submitted by the applicant to the judges.