Onsite Power Production Limitation

Code Change Proposal

Add new text as follows:

406.4.1 On-site power production. The power produced on-site shall be included in the calculation for determining the ERI value in accordance with ANSI ICC/RESNET 301. The contribution to the ERI calculation shall be 5% of the on-site power produced for each ERI point less than 65 as specified in Table R406.4.1.

ADD NEW TABLE R406.4.1

TABLE R406.4.1

Credit for On-site Power Production

ENERGY RATING INDEX	% CREDIT FOR ON-SITE POWER PRODUCTION[1]
65 and above	0
64	5
63	10
62	15
61	20
60	25
59	30
58	35
57	40
56	45
55	50
54	55
53	60
52	65
51	70
50	75
49	80
48	85
47	90
46	95
45 and below	100

[1]Percentage of power produced on-site applied per ERI value.

Revise as follows:

R406.6.2 Compliance report. Compliance software tools shall generate a report that documents that the ERI of the rated design complies with Sections R406.3 and R406.4. The compliance documentation shall include the following information:

1. Address or other identification of the residential building.
2. An inspection checklist documenting the building component characteristics of the rated design. The inspection checklist shall show results for both the ERI reference design and the rated design, and shall document all inputs, including the percentage of power produced on-site credited to the ERI, entered by the user necessary to reproduce the results.
3. Name of individual completing the compliance report.
4. Name and version of the compliance software tool.

Exception: Multiple orientations. Where an otherwise identical building model is offered in multiple orientations, compliance for any orientation shall be permitted by documenting that the building meets the performance requirements in each of the four (north, east, south and west) cardinal orientations.

Reason:

RESNET supports limiting the credit that on-site power production provides when determining an ERI score for demonstrating compliance with the energy code. The limitation ensures that the efficiencies of the building envelope, heating and cooling system, and lighting are not traded away by the use of on-site power production.

Table 406.4.1 only allows a percentage of the total amount of on-site power produced to be considered based on the Target ERI score included in Table R406.4. The look-up table will inform both the builder and the code official on the percentage of onsite power that can be credited when generating the ERI score.

For example, a home proposed to be built in Climate Zone 2 would have a target ERI score from Table R406.4 of 52. Table R406.4.1 shows that 65% of the proposed on-site power produced could be credited toward the building to generate the ERI score. If a 5 kW photovoltaic system is proposed for the house for on-site power production, credit can only be taken for 3.25 kW (0.65 X 5kW).

The code change proposal then requires that the percentage of on-site power assumed for the project is printed on the report that is submitted as part of the energy code documentation.

When on-site power production is utilized in the residential building design, such power may be permitted to reduce the Energy Rating Index (ERI) for the residential building with an ERI of less than 65. The proposed new table starts crediting such power at an ERI of 64 and moves in 5% increments per integer until 100% of on-site power produced may be applied to the ERI. The value of 65 was selected because it is the AVERAGE HERS RATING of over 610,000 new homes built since 2012 as reported by RESNET.

The Table is also designed to account for Target ERI scores that states and local jurisdiction may adopt that are both above and below the ERI values listed on Table R406.4. The table recognizes that not all states and local jurisdictions are adopting the ERI scores as contained in the 2015 IECC, such as Texas that adopted an ERI score of 65. The values in Table R406.4.1 can be applied to these higher ERI scores which would limit on-site power production. The values lower (more stringent) than the Table R406.4 values also “future proof” the table to account for more stringent ERI scores in later versions of the IECC.