

RE139-19

IECC: R403.6.1 (IRC N1103.6.1) (New)

Proponent: Mike Moore, Newport Ventures, representing Broan-NuTone (mmoore@newportventures.net)

2018 International Energy Conservation Code

Revise as follows:

R403.6 (IRC N1103.6) Mechanical ventilation (Mandatory). The *building* shall be provided with ventilation that complies with the requirements of the International Residential Code or International Mechanical Code, as applicable, or with other *approved* means of ventilation. Outdoor air intakes and exhausts shall have automatic or gravity dampers that close when the ventilation system is not operating.

Add new text as follows:

R403.6.1 (IRC N1103.6.1) Heat or Energy Recovery Ventilation (Prescriptive). Dwelling units shall be provided with a heat recovery or energy recovery ventilation system in climate zones 7 and 8. The system shall be balanced with a minimum sensible heat recovery efficiency of 65% at 32°F (0°C) at a flow greater than or equal to the design airflow.

Reason: A recent study conducted by Pacific Northwest National Laboratory showed HRVs and ERVs to be cost effective in climate zones 7 and 8, with annual energy savings from \$138 to \$233 on an initial investment of ~\$1500 installed (corresponding to a first cost premium of ~\$840 versus an exhaust only system and one entry-level bath fan; yielding simple paybacks of 4-6 years). This proposal is aligned with recent changes across most of Canada to require heat recovery ventilation for dwelling units. This proposal would require heat or energy recovery ventilators only for those dwelling units following the prescriptive path in the coldest climate zones, which represents a conservative improvement to the code.

Bibliography: Taylor, T. 2018. Residential Heat Recovery Ventilation Technical Brief. Pacific Northwest National Laboratory. PNNL-28354. <https://www.osti.gov/servlets/purl/1488935>.

Cost Impact: The code change proposal will increase the cost of construction

The first cost of construction (including costs for appliance, equipment, and installation) is expected to increase by ~\$830 compared to an exhaust-only system. Based on PNNL's projected energy savings, this will be recovered quickly, within 4-6 years. Assuming the \$830 is financed in a traditional, 30-year mortgage at 4%, the annual energy savings of \$138-\$233 would generate \$90 - \$185 per year in cash flow for the home owner.

Proposal # 5673

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