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Review of 2011 Sales Data Update of the Carrier CO₂NSERVATION Meter Model

TIAX LLC has conducted a thorough review of the current update of the models used to calculate the ongoing reduction of CO₂ equivalent (CO_{2e}) greenhouse gas emissions that can be attributed to the high efficiency refrigeration and space cooling and heating products that Carrier produces and sells globally, as displayed by the CO₂NSERVATION Meter on the Carrier web site home page. Primarily, this update entailed adding the detailed 2011 sales data to the existing models which have been verified previously. The models cover the CO_{2e} emission reductions that are attributable to the high efficiency products that Carrier has sold since 2000 in the major product categories (residential air conditioners, heat pumps and gas furnaces; packaged commercial rooftop air conditioners; HVAC chillers; supermarket refrigeration systems; and transport refrigeration systems) and the CO_{2e} emission reductions that are attributable to the energy service activities of NORESKO, Carrier's energy services company, since 2008.

For the refrigeration and space cooling and heating products, the models calculate the energy saved by high efficiency products versus baseline, minimum efficiency products and appropriate CO_{2e} emission factors are used to determine the CO_{2e} emission reductions attributable to the energy saved. For each of these models, TIAX has reviewed the added sales data for 2011 and the accompanying update of the model to include the impact of the added sales on the CO_{2e} emission reductions. In the model used for NORESKO, CO_{2e} emission reductions for each calendar year are based on the verified energy savings, by energy input (electric energy, steam, or fuel type), of the energy efficiency improvement projects that were active in that calendar year, multiplied by the appropriate CO_{2e} emission factors. The CO_{2e} emission factors used for each energy input category are taken from widely accepted reference sources. These CO_{2e} emission factors include both precombustion emissions (associated with production, processing and transport of fuels) and the emissions from the combustion of fuels, either on-site or off-site to generate energy inputs like electric energy or steam.

Based on our review, we have found that the CO₂NSERVATION Meter provides a good, conservative estimate of the CO_{2e} emission reductions that are attributable to the high efficiency products and energy efficiency services that Carrier has provided since 2000.



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