

From: [Richard Fennelly](#)
To: [comments, EMP](#)
Subject: [EXTERNAL] 2019 Draft Energy Master Plan
Date: Monday, August 26, 2019 11:24:08 AM
Attachments: [Kigali Knowledge Brief.pdf](#)
[US Cities Emissions Chart.docx](#)

I'm attaching a Kigali Cooling knowledge brief on the significant energy savings/emissions reduction in keeping HVACR cooling equipment in good shape and would welcome the chance to talk to you about the area soon. This area, we think, is being totally ignored. Do you know of anyone/anywhere implementing coil cleaning programs, for example.

Our main takeaways from this document:

1. It characterizes the optimization, monitoring and maintenance of HVACR cooling equipment as a " ... major opportunity for energy and emissions savings" (p. 3, last paragraph on the left side) after noting that few such programs exist anywhere in the world. The term "huge" is also used in regard to the opportunity;
2. Reference 7 on page 4 states that multiple studies show energy savings of from 15% to 25%, although the range of results is much wider (3% to 60%);
3. Figure 1 on page 2 states a global (indirect) emissions reduction potential of 500,000,000 metric tons/year from better cleaning and servicing of such HVACR cooling items. (This amount of emissions is from inefficient units running, which are in need of better cleaning and servicing and is a direct measure of the general level of electric waste in the world's electric grids); and
4. On page 2, upper left corner, Dietier Coulomb, Director General of the International Refrigeration institute, characterizes this activity as capable of giving a 38% additional benefit over the replacement of high global warming refrigerants, which various stakeholders have embraced as a major strategy in regard to the HVACR cooling sector. Replacement of HFC refrigerants is an "inside the coil" solution ---- our suggestion is an "outside the coil" solution. Both are needed since HVACR cooling units are flawed in their design for reasons we'd be happy to explain.

Employing NJ GDP as a calculation proxy for the global emissions reduction potential of 0.5 GT/year in Figure 1 of the Kigali document, here's our estimate for NJ of the state's emissions reduction potential if AC and refrigeration units were to be kept running with clean coils, filters, etc. ----> **~4.054 million metric tons CO2eq/year in reduced power plant emissions.**

I'm ready to brief your team on very short notice.

Regards
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