enVerid's HVAC Load Reduction (HLR) compliance with ASHRAE 62.1-2013

enVerid's HLR scrubbing system adheres to ASHRAE 62.1 Indoor Air Quality Procedure (ASHRAE Standard 62.1-2013, Sections 6.3.2-6.3.4 page 17-18). Air cleaning is allowed by the IAQP to decrease indoor pollutant concentrations as an alternative or complementary to other methods (i.e., source control and dilution of indoor contaminants).

On January 25, 2015, ASHRAE Standard 62.1 committee issued an official document that interprets the language in the standard to clearly state and affirm that the use of air cleaning as a method to remove contaminants of concern is an acceptable method to decrease outside airflow. The higher the efficiency of the filter, the lower the ventilation rate needed to dilute indoor generated pollutants. Mr. Dennis Stanke, a former chair of ASHRAE 62.1, presented his interpretation about air cleaning to the ASHRAE committee and asked the committee to officially respond and approve his interpretation. The purpose of this interpretation is to make it clear to the public that air cleaning is approved by ASHRAE as a method to decrease outside airflow. An excerpt of the text of the interpretation is shown below.

> ***Interpretation by Mr. Dennis Stanke:*** *Using the required mass balance analysis to determine zone outdoor airflow rate, the phrase "other relevant parameters" allows the use of gaseous air cleaners, particle filters or both to remove contaminants and thereby to reduce the outdoor airflow required for a zone, compared to a zone without air cleaning.*
> ***Question:*** *Is this interpretation correct?*
> ***ASHRAE Standard 62.1 Committee Answer:*** *Yes*

The full text of the interpretation is published on the ASHRAE website:
https://www.ashrae.org/standards-research--technology/standards-interpretations/interpretations-for-standard-62-1-2013,
Filename: Interpretation 62.1-2013-4 – January 25, 2015

ASHRAE Standard 62.1 procedures for determining ventilation rates

ASHRAE Standard 62.1 includes two alternatives for determining minimum mechanical ventilation rates, as described below. These procedures are also adopted by the international mechanical code (IMC) as well as most building codes.

- The **ventilation rate procedure (VRP)** is commonly adopted, likely because of its simplicity.
    - Users set minimum ventilation rate for their building type as listed in a table, and indoor air quality is assumed to be acceptable, regardless of building features.

    - The VRP often leads to an over ventilated space since the ventilations rate are designed to be highly conservative.

- The **indoor air quality procedure (IAQP)** is performance-based, flexible, and more energy efficient.
    - Ventilation rates are calculated based on contaminant source emission rates and desired indoor concentrations instead of prescribed by building use.
    - Designers can take credit for source-control and removal measures like gas-phase air cleaning and can smartly titrate ventilation rate as needed.
    - Using gaseous air cleaning such as scrubbers is an acceptable method to decrease outside airflow beyond what is described in the VRP.

Properly installing scrubbers that clean the air continuously and efficiently from contaminants of concern is key to follow and apply the IAQP. With scrubbing the air, IAQP has the advantages of flexibly tailoring ventilation needs of a space based on its specific contaminants. Such user flexibility results in saving energy by adopting healthy but lower ventilation rates than those prescribed in the VRP.

The HLR scrubbing system is formally in compliance with ASHRAE 62.1 Standard requirement and fits within the IAQP. This clearly stated in the official interpretation recently published by ASHRAE.