Emerging Technologies Coordinating Council (ETCC)

Summary

High-Efficiency Hybrid Exhaust Fans Report

The California Energy Commission created the Emerging Technologies Coordinating Council (ETCC) to facilitate collaborations on emerging technologies projects. The ETCC promotes new cost-effective, energy saving products and services. It is funded in part by ratepayer dollars and the *California Statewide Emerging Technologies Program* under the auspices of the California Public Utilities Commission. The municipal portion of this program is funded and administered by Sacramento Municipal Utility District and Los Angeles Department of Water and Power.

ETCC recently posted a test report on their website that compared the energy savings of the *Emerging Technology of HYBRID exhaust fans to Axial fans.* The report states that this ***HYBRID Technology*** **provided**

"Energy Savings of 25% to 75% **depending on the conditions."**

It also indicated that "additional energy savings" were available by

- operating in the Natural or ZNE mode. (no power)
- extraction of energy from the wind.
- variable speed control to enhance the Energy Efficiency.

Conclusions (page 17)

This emerging product greatly outperformed baseline models for low static pressures. However, the emerging product performance relative to the baseline decreased as static pressures increased. The emerging product only worked in applications with a differential static pressure of less than 0.25 in. H2O.

Buildings with large doors, open spaces, short ducting to the exhaust fan, or mechanical pressure relief mechanisms are likely to benefit from this technology. At low static pressures, the emerging technology can attain efficiencies as high as *21 CFM/W*, while the best baseline model attained only *9 CFM/W* under the same conditions.

Based on the laboratory data, hybrid turbine ventilators can reduce exhaust fan power consumption from between *25% to 75%*, *depending on conditions*. Since wind-powered operation was not part of this study, there is potential for more savings. Additionally, since the EC motor used by this emerging product had Modbus capabilities, there is also potential for connectivity with a building management system. A well-managed building could leverage this connectivity to reduce fan speeds on demand, thereby increasing energy savings.

Elevate your designs to the "next level" by using this *Emerging Technology HYBRID SOLUTION*. Call 800-610-9222 for design support or 714-814-5420 for a "demonstration" of this *EMERGING TECHNOLOGY*.