EPIC TRIENNIAL INVESTMENT PLAN 2015-17
Proposed Energy Research Initiative Questionnaire

Title of Proposed Initiative (Short and concise): Real-Time Residential Ventilation Controller

Investment Areas (Check one or more) – *For definitions, see First Triennial Investment Plan, page 12*:

☒ Applied Research and Development
☒ Technology Demonstration and Deployment
☐ Market Facilitation

Electricity System Value Chain (**Check only one**): *See CPUC Decision 12-05-037, Ordering Paragraph 12.a. http://docs.cpuc.ca.gov/PublishedDocs/WORD_PDF/FINAL_DECISION/167664.PDF.*

☐ Grid operations/market design
☐ Generation
☐ Transmission
☐ Distribution
☒ Demand-side management

Issues and Barriers:

Currently Title 24 does know how to account for real-time control of residential ventilation either in terms of its environmental (IAQ) benefits, its energy savings benefits, or its grid benefits. No commercial controllers exist to supply these benefits.

Initiative Description and Purpose:

Several solutions from low-cost to high-value need to be investigated and then criteria need to be developed that would allow inclusion of this technology in State codes and programs. Preliminary technology, evaluation and incorporation efforts can be started for $500K.

Stakeholders:

This would support T24. California IOUs have demonstrated interest in the concept. HVI and fan manufacturers support it.

Background and the State-of-the-Art:

CEC has funded one small-business grant to develop one such potential technology, and funded follow-up work to evaluate it, which identified steps forward. DOE has some related work.

Justification:

Ventilation and infiltration consume about 1/3 of the space conditioning load in California homes. Smart (i.e. real-time control) technologies are currently not allowed in State programs or by code and so technologies are not available.

Ratepayer Benefits (Check one or more)**:**

☐ Promote greater reliability

☒ Potential energy and cost savings

☒ Increased safety

☒ Societal benefits

☒ Environmental benefits – Indoor Air Quality

☐ GHG emissions mitigation/adaptation in the electricity sector at the lowest possible cost

☐ Low emission vehicles/transportation

☐ Waste reduction

☐ Economic development

This technology can reduce the ventilation load by 20%. It can reduce ventilation-related peak power by 50-100%. It can improve IAQ without imposing additional cost or energy consumption.

Public Utilities Code Sections 740.1 and 8360:

Please describe how this technology or strategy addresses the principles articulated in California Public Utilities Code Sections 740.1 and 8360. The California Public Utilities Code is available online at www.leginfo.ca.gov/cgi-bin/calawquery?codesection=puc.

This project offers a reasonable probability of providing benefits to rate payers because preliminary methods have been lab demonstrated. It will extend previous work to provide energy, demand and IAQ benefits to CA ratepayers. It will also facilitate grid integration benefits in the residential sector.