

## REALIZE Mechanical Manufacturers Webinar – Q&A Summary

### **Q: Is REALIZE promoting the use of CO<sub>2</sub> as a refrigerant for the proposed systems?**

A: Yes, REALIZE aims to promote the use of low global warming potential refrigerants and would prefer to utilize a natural refrigerant such as CO<sub>2</sub> in its mechanical system solution.

### **Q: Will a recording be sent out?**

A: Yes, the webinar recording can be viewed [here](#) and additional information can be found at [www.rmi.org/REALIZE](http://www.rmi.org/REALIZE).

### **Q: Is REALIZE seeking proposals from smaller start-ups as well as larger companies?**

A: Yes, REALIZE is open to partnering with any manufacturer that can provide the system functionalities outlined in the RFP.

### **Q: What are the heating and cooling load targets?**

The heating and cooling load ranges are outlined in the [RFP](#) and are as follows:

- Peak Heating Load: 1,100-6,300 Btu/h
- Peak Cooling Load:
  - Sensible 4,300-9,000 Btu/h
  - Coincident Latent 350-400 Btu/h
  - Air Volume Flow 210-430 cfm @ 55.4 F –
- Peak Dehumidification Load ~1,300 Btu/h with energy recovery ventilator (ERV), ~1,800 Btu/h without ERV.

Please refer to the RFP for further details on load assumptions.

### **Q: Reliability has been a significant issue with combined systems. How are you addressing this?**

Reliability will be monitored by the internal controls panel that should be installed in the system. This is how Factory Zero has addressed reliability and we welcome manufacturers discuss how they plan to address reliability in their systems when they respond to the RFP.

### **Q: Do you envision trading thermal energy between units? For example, west facing units may want to give excess afternoon heat to east facing units, etc.**

REALIZE is open to considering a central system option that could incorporate this type of thermal energy transfer. We encourage manufacturers to think about how a central system could be packaged and scaled easily if an in-unit option is not considered and describe the additional benefits that would come with a central system design.

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**Q: Do the cost numbers include the cost of potential electric panel upgrades? Does the package have a load management control strategy, so no electric panel upgrade is needed?**

The cost numbers do not include an electric panel upgrade and REALIZE hopes to reduce loads such that a panel upgrade is not needed. A load management strategy is encouraged as part of the controls package for the proposed mechanical system and should be outlined in responses to the RFP.

**Q: Will the proposed integrated mechanical systems be integrated into the facade of a midrise building for apartment so that each tenant can have their own equipment?**

Yes, REALIZE is open to such a configuration and hopes that the mechanical manufacturer will collaborate with our design and engineering team throughout the design phase.

**Q: What is the purpose of integrating an inverter into the packaged unit?**

The purpose of including a smart inverter in the packaged unit is to enable self-consumption of renewable energy generated on-site. It is expected that the retrofit will include rooftop PV.

**Q: Is the innovation around fitting all the components into one box and having one entity monitoring them through the central control?**

This is part of the innovation and REALIZE believes that having one point of control for the systems will help components work in unison, but the other part of the innovation is creating a system that is easy to install and can be scaled across the residential and multifamily markets in the United States to transform building energy use.

**Q: Is REALIZE working to figure out how to lower manufacturer risk so that R&D progresses quickly, and products can go to market as fast as possible?**

REALIZE recommends highlighting to manufacturer company senior management that the building mechanical system market is ripe for disruption given the low rates of innovation and transformation that have taken place to date in this sector relative to other sectors. REALIZE is an opportunity for manufacturers to get ahead of the curve on market transformation. RMI is concurrently seeking resources to help support R&D and the US Department of Energy and California Energy Commission are also in the process of trying to understand how they can best support this industry transition.

**Q: Should solar thermal be included in this system package?**

REALIZE has not ruled this technology out but manufacturers should consider how integrating solar thermal systems could be standardized, packaged, and scaled across many building typologies and regions as part of a proposal that includes solar thermal.