



Thermal Energy Storage Systems for Peak Shifting of HVAC Energy

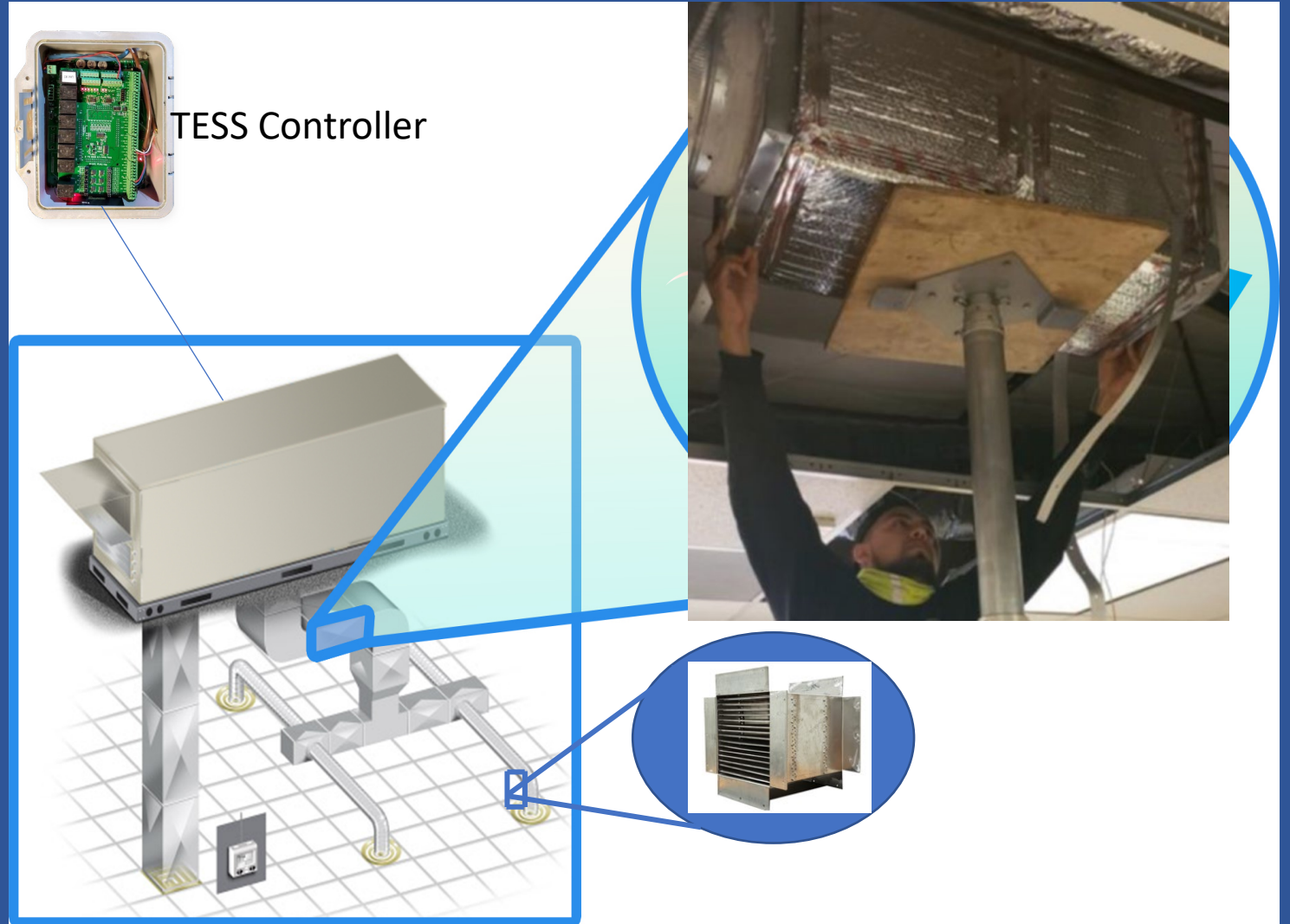
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CalSEED CalTestBed BRIDGE

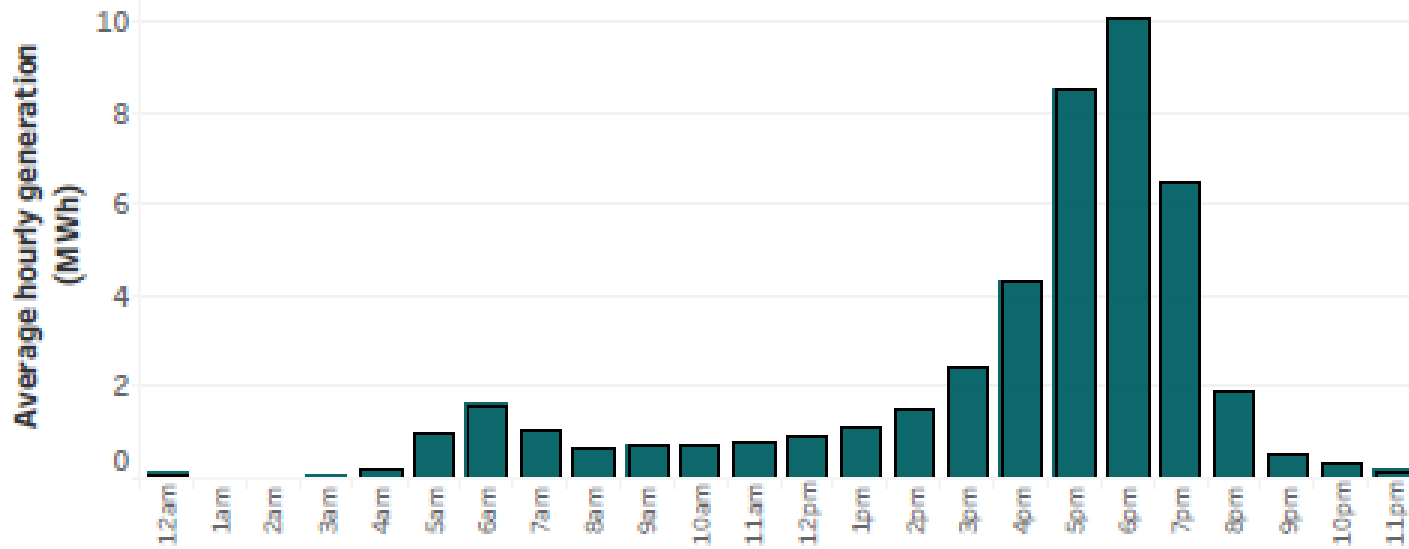
# TESS Technology and Product

## Thermal Energy Storage System

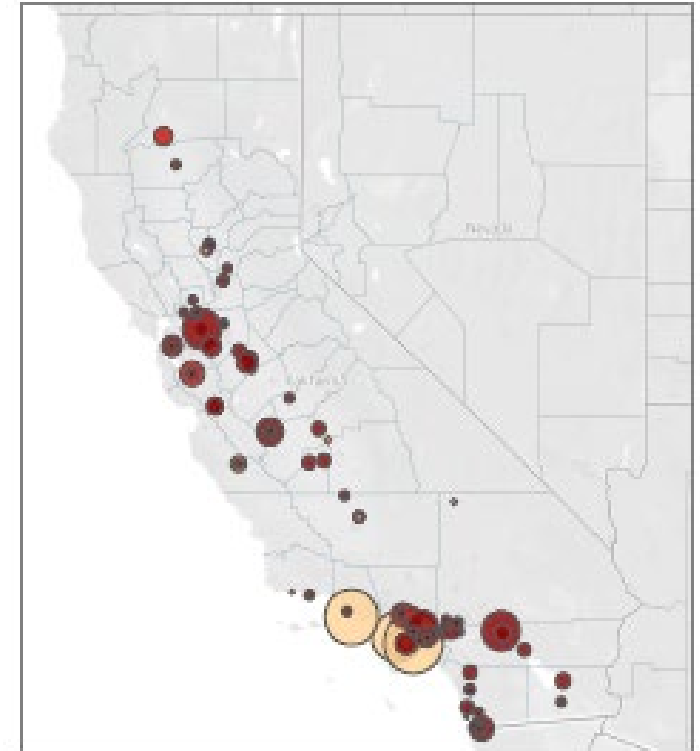
- Commercial Rooftop Packaged (RTU) units for small & medium businesses
- TESS installed in supply duct
- Normal HVAC operations until start of peak demand
- Proprietary TESS controller manages late-day stored thermal energy deployment and cooling
- Cooling is provided by TESS and HVAC fan and Compressor runtime limited to maintain comfort



# Focusing on CA Peaker Plants: 60% Peak Cooling Reduction



**Figure 2: Average hourly generation from the CalPeak Power Vaca Dixon plant.** The plant occasionally meets some morning loads and reduces output during peak solar hours, but it is most frequently used to meet peak evening demand. It runs an average of 2.8 hours every time it starts up and has a capacity factor of 2.6 percent. Batteries can serve a similar grid role.



**Figure 1: Peaker plants across California**

Source: PSE Healthy Energy: California Peaker Power Plants May 2020  
Energy Storage Replacement Opportunities