

ET Summit 2024

Presented by



Program Perspectives on Tech Transfer

CalNEXT



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Bringing Emerging Technologies to the Portfolio

Technology Transfer

CalNEXT activities that create impacts in the EE Portfolio

- Deemed, Custom, NMEC program
- Codes and Standards Enhancement
- Market Transformation programs

CalNEXT Approach

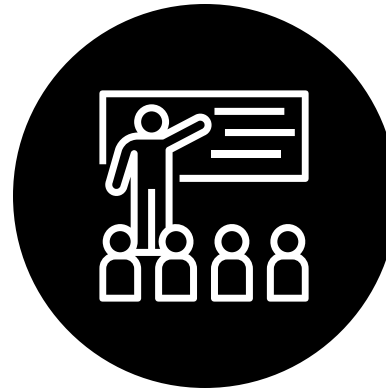
- Communicate Priorities in TPMs
- Engage Program Implementers
- Close coordination with Cal TF staff and IOU Measure Leads

CalNEXT Technology Priority Maps



High-Level Framework

Explains the CalNEXT program priorities with annual updates, sorted into six technology categories



External Communications Tool

Defines what CalNEXT wants to research with actionable guidance for the types of research projects we want to see.



Internal Tool for Screening

15+% of ET project screening is based on alignment with TPMs.



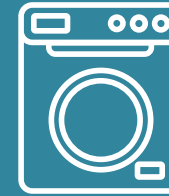
Whole Buildings



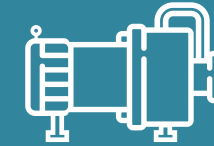
Water Heating



HVAC

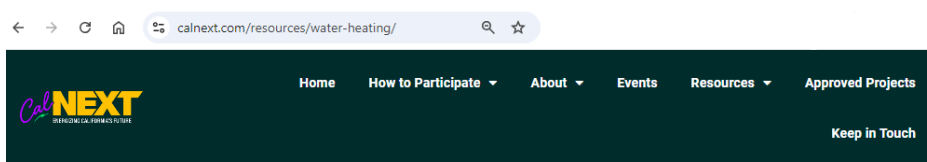


Lighting, Plug Loads, & Appliances



Process Loads

5 End-Use TPMs available at www.CalNEXT.com Webinars and online resources for Project Submitters



Water Heating

PUBLISHED SEPTEMBER 1, 2024

EFFECTIVE SEPTEMBER 1, 2024

[Download the 2024 TPM](#)

The decarbonization of water heating has been identified as an achievable and significant step toward California's overall decarbonization goals. Programs like TECH Clean California and BUILD are working on the market transformation of water heating and water heating manufacturers continue to make key strides in Heat pump products to address electrical infrastructure challenges such



2024 Water Heating TPM

Technology Family	CalNEXT Role	Cal NEXT Priority
Unitary and Single-Family Systems	LEAD	HIGH
Commercial Domestic Hot Water System Design	LEAD	HIGH
Residential Multifunction Heat Pumps *	LEAD	MEDIUM
Commercial Multifunction/Combination AWHPs *	LEAD	MEDIUM
Commercial Hydronic Heat Pumps	LEAD	MEDIUM
Pool Heaters and Residential Pool Pumps	LEAD	LOW

* Technology Family cross-listed in both HVAC and Water Heating TPMs

TPM Research Initiatives Table Example

Research Initiatives	Performance Validation	Market Analysis	Measure Development	Program Development
120V Residential				
120V Commercial				
240V Unitary				
Split Systems and Small Form Factor				
Low-GWP Refrigerant				
Connectivity and Load Shifting				

Key



High Understanding



Research in Progress



Immediate Needs



Future Research Needed

Technology Transfer Challenge

- **Deeper Program Involvement!**
- Hundreds of programs, with differing criteria on measure delivery, customer segment, cost-effectiveness
- Advanced planning isn't synchronized between Program Implementer, Measure Lead Engineer, and CalNEXT
- Program Implementers & Stakeholders highlight key barriers beyond the focus areas of Performance Validation, Market Analysis, and Measure Development

New for 2024: Portfolio Enhancements TPM

- Examine barriers to EE portfolio adoption that cut across technology end-uses
- Highlight opportunities for CalNEXT to fund research that could benefit the California EE portfolio broadly
- To be published end of 2024
- CalNEXT is seeking stakeholder for input this Month!

Portfolio Tech Transfer Barriers

1. Measures need positive values in **both** Total System Benefit (TSB) and Total Resource Cost (TRC) cost-benefit ratio
2. TSB incorporates nuanced time-dependent value of electric savings, but the load shapes to support calculation are lacking
3. Electrification and the resultant electric infrastructure upgrade costs and complexities call for needs assessments across end-uses and policy alignment
4. Refrigeration policies and market practices impact programs
5. Disadvantaged Communities (DAC) lack same access to technologies such a real-time load management

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