

# *EE HPC Working Group Liquid Cooling Controls Webinar*

Goals and Motivations

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# Goals

- **Encourage communication between vendors (especially system integrators) and HPC centers**
- **Stress the importance of liquid cooling controls for energy efficiency and cost savings**

# Motivation

- Improve energy efficiency and reduce operational expenditures by optimizing liquid cooling controls. What are the liquid cooling energy costs? How much power is being utilized?
- We want to better understand how the HPC system load dynamics or volatility plays into how to control cooling and therefore impacts efficiency. HPC loads can vary by MWs. What are the sites experiences with this?
- Environmental conditions are also variable which leads to varying temperatures and energy use to cool the water. What are the sites experiences with this?
- What other factors might drive for more dynamic controls – e.g. water conservation?
- Where are liquid cooling controls best implemented – in the HPC system or in the building or both? Interoperability: components and subsystem level(s)
- What other strategies could be implemented such as power managed job scheduling?
- Can we develop recommendations for implementation to reduce control system complexity for sites with multiple HPC systems?