

Energy Industry Overview Map - AI Data Centers: Advanced Cooling

written by Lauri Moon | August 7, 2025



This webinar will focus on the advanced cooling and thermal management needs for AI Data Centers. Data centers require advanced cooling solutions—such as direct-to-chip liquid cooling, microchannel cold plates, and pumped two-phase systems—to efficiently manage heat from high-power CPUs and GPUs.

Rack-level cooling technologies, including forced convection, heat pipes, and thermosyphons, are critical for supporting high-density server racks and ensuring reliable thermal performance. Facility-level systems like CRAHs, CRACs, dry coolers, and cooling towers handle large-scale heat loads while maximizing energy efficiency and maintaining precise temperature control. Integration of smart controls and monitoring enables scalable operations, improved energy management, and supports evolving data center infrastructure needs.

The Energy & Manufacturing in Appalachia (EMA) project helps manufacturers understand and navigate opportunities in the vast energy supply chains. The EMA team, along with outside experts, have developed supply chain maps for each energy segment or sub-segment to help manufacturers navigate these industry sectors.

The supply chain maps provide introductory overview of the market size, key drivers, supply chain needs, and components for each of the specific segments.

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The AI Data Centers: Advanced Cooling was drafted by Dr. Deborah Stine. Deb is the Founder of the Science & Technology Policy Academy which provides independent consulting, policy analysis, program evaluation, freelance writing, teaching, and coaching services. Previously, she served in the Obama White House as Executive Director of the President's Council of Advisors on Science and Technology (PCAST) that led to the establishment of the Advanced Manufacturing Partnership and the creation of the Manufacturing USA Institutes.