

Decarbonizing Boulder Valley School District

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Purpose

Boulder Valley School District [BVSD] is a public school district based in Colorado's front range that serves 11 communities across Boulder, Broomfield and Gilpin counties. In 2009, when sustainability action was still new to corporate organizations, let alone public school districts, BVSD set the ambitious goal to reach carbon neutrality or reduce emissions by 80% by 2050. Since then, technological advances, increased public awareness, and readily available funding have made this once-distant objective achievable. The purpose of the project was to create a decarbonization plan for BVSD to achieve carbon neutrality by 2050.



Capstone team attending an audit.

A major impetus for this plan's development is the urgency to leverage available funding. In 2022, the federal government passed the Inflation Reduction Act, which BVSD anticipates to be a critical source of funding for their schools. Additionally, the Bipartisan Infrastructure Deal of 2021 may be tapped for resilience project funding. In order to access grant money, the district needs to have an established plan. BVSD is also subject to external emissions requirements set by the CO Energy Performance for Buildings Act (HB 21-1286) beginning in 2025 and extending through 2050.

Process & Methods

| Building a Foundation | Candidate School Deep Dives | Challenges and Solutions |
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| We began the project by completing a literature review of goals, timelines, and methods used by districts and municipalities in the Front Range and nationally. | In order to better understand BVSDs conditions and needs, We completed ASHRAE Level 2 audits at candidate schools and collected data on the district as a whole. | Upon completion of our data collection, we developed a draft decarbonization plan and presented our findings and recommendations to district administration. |

- Boulder Valley School District 2050 Decarbonization Plan for Buildings:** A draft plan to achieve decarbonization by 2050, including a proposed trajectory and recommendations regarding renewable sourcing, electrification, efficiency, and funding.
- BVSD 2050 Timeline Planner:** a master tool to be used to manage progress towards decarbonization.
- Site Decarbonization Roadmapping Planner:** a site-specific version that can be used for granular decision-making. This version has been filled out for Louisville Middle.
- Literature Review of Public School Decarbonization Planning, Standards, and Tools in the U.S.:** a broad review of decarbonization plans for school districts, municipalities, and relevant players.
- Literature Review Appendix:** Table of municipal goals as of the writing of this document.

Key Takeaways

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| Funding mechanisms are available. | BVSD may leverage a variety of funding options, such as CCEF loans, IRA funding, TELPs, ESAs, or PPAs. Municipal bonds might be worded to directly influence decarbonization. |
| Electrification technology is not widely adopted, yet. | Decarbonization is new amongst public school districts and facilities staff need to be supported with a foundation of learning. Districts in the Denver metro area and around the US are beginning to report out on hurdles and successes, and there is an opportunity for shared learning. |
| It is unclear what technologies to prioritize. | In the short term, district-owned solar will have the greatest impact on decarbonization because the grid is as carbon intense as it will ever be. In the long term, equipment should be replaced at its end of life with electric options. Throughout the timeline, efficiency can support electrification by lessening loads and reducing cost. |



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