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<th>21-IEPR-06</th>
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<tr>
<td><strong>Project Title:</strong></td>
<td>Building Decarbonization and Energy Efficiency</td>
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<tr>
<td><strong>Document Title:</strong></td>
<td>Presentation - Industrial Decarbonization - Opportunities and Challenges</td>
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<tr>
<td><strong>Description:</strong></td>
<td>S1.2A Bob Gemmer, U.S. Department of Energy</td>
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<td><strong>Filer:</strong></td>
<td>Raquel Kravitz</td>
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Industrial Decarbonization: Opportunities and Challenges

CEC Workshop to Accelerate Industrial Decarbonization
August 3, 2021
Key Recommendations from Industrial Decarbonization Roadmap

The industrial decarbonization roadmap addressed the need to accelerate RDD&D of emerging & transformative technologies to achieve net-zero GHG emissions in the industrial sector by 2050.

- **Pursue multiple decarbonization pillars in parallel, including energy efficiency, industrial electrification, low-carbon fuels and CCUS.**
- **Invest early in low-carbon process technologies to ensure future market viability.**
- **Drive low capital investment approaches, with multiple benefits that spur early action, including energy and materials efficiency.**
- **Align with expansion of renewable energy and other low-carbon assets.**
- **Portfolio should include new technologies, integration into process systems and supply chains.**
- **Develop workforce across industries with a spectrum of skill sets and diversity and inclusion.**
Multiple Pillars of Decarbonization Must be Pursued in Parallel

Technical opportunities across a range of Technology Readiness Levels (TRLs)

- **Higher TRLs:** Prompt investments are essential to lower adoption hurdles and rapidly scale later-stage technologies.

- **Lower TRLs:** Investments in early-stage low carbon technologies will be needed soon to ensure future market viability.

Landscape of major RD&D investment opportunities for industrial decarbonization between now and 2050.
Samples of Current RDD&D Activities

Research, Development & Demonstration

- Demonstration of Combined Heat and Power in a Biomass Powered District Energy System
- Energy-Water Nexus – NAWI Hub

Technology Deployment

- Better Plants
- Increased Energy Productivity
- Water Savings
- Waste Reduction
- CHP Technical Assistance Partnerships (TAPs)
Want More Information?

Check our website at
https://www.energy.gov/eere/amo/advanced-manufacturing-office