Onsite Energy Technical Assistance Partnerships

U.S. DEPARTMENT OF ENERGY

Midwest

Evaluating Onsite Energy Technology Solutions with the Midwest Onsite Energy TAP

2025 MES Conference

Break Out C3: Industrial Energy Efficiency in Action

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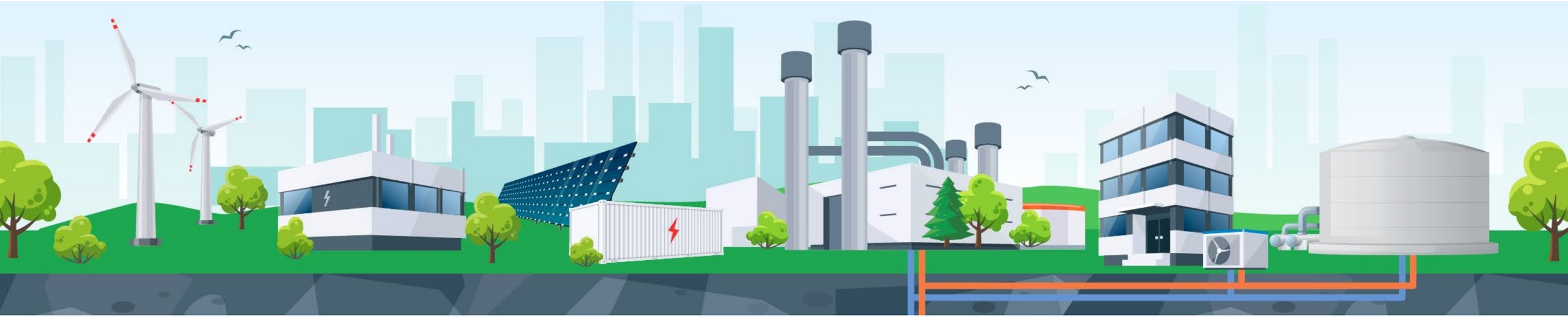
Onsite Energy Program

The U.S. Department of Energy's (DOE) Onsite Energy Program provides technical assistance, market analysis, and best practices to help industrial facilities and other large energy users increase the adoption of onsite clean energy technologies.

battery storage | combined heat and power | district energy | fuel cells | geothermal | industrial heat pumps | renewable fuels | solar PV | solar thermal | thermal storage | waste heat to power| wind



Onsite Energy Technical Assistance Partnerships (TAPs)

DOE's 10 regional Onsite Energy TAPs provide technical assistance to end users and other stakeholders about technology options for achieving clean energy objectives. Key services include:

Technical Assistance: Screen sites for opportunities to implement onsite energy technologies and provide advanced services to maximize economic impact and reduce risk from initial screening to installation to operation and maintenance.

End-User Engagement: Partner with organizations representing industrial and other large energy users to advance onsite energy as a cost-effective way to transition to a clean energy economy.

Stakeholder Engagement: Engage with strategic stakeholders, including utilities and policymakers, to identify and reduce barriers to onsite energy through fact-based, unbiased education.

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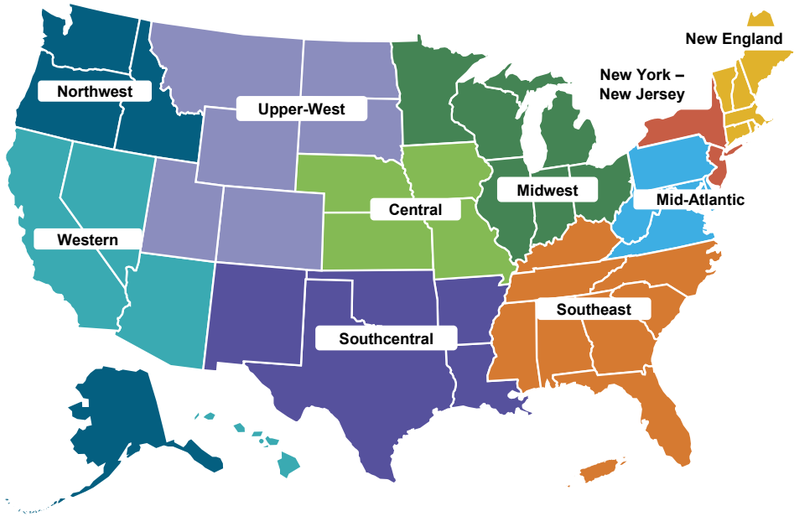


https://betterbuildingssolutioncenter.energy.gov/onsite-energy/taps

Why is Onsite Energy Important?

- **Cost Savings:** Significant cost savings can be achieved through **utility bill reductions** and the **sale of excess electricity production** back to the grid.
- **Resilience:** Organizations can **ensure uninterrupted operations during grid outages or emergencies** with onsite energy solutions, enhancing operational resilience and reducing the risk of financial losses.
- **Sustainability:** Onsite energy deployment contributes to environmental sustainability by **reducing carbon emissions,** demonstrating corporate responsibility, and **aligning with sustainability goals and regulations.**
- **Independence:** By **reducing dependence on external energy sources**, onsite energy systems enhance energy independence and security, **mitigating risks** associated with energy price volatility and supply chain disruptions.
- **Grid Support:** Onsite energy resources can **provide ancillary services to the grid** (e.g., voltage support and frequency regulation) and **peak shaving**, enhancing grid stability and reliability.
- **Community Engagement:** Onsite energy projects can **foster community involvement** through cooperative ownership models, shared savings programs, and educational initiatives, **strengthening social cohesion and resilience**.
- **Innovation:** Investing in onsite energy technologies drives **innovation and technological advancement in renewable energy and energy storage**, positioning organizations at the forefront of the clean energy transition.

Case Study of Onsite Energy TAP Technical Assistance Report

The Midwest Onsite Energy TAP performed an analysis for a client focused on their Corporate Sustainability Goals of Reducing Scope 1 and Scope 2 Emissions. The TAP analyzed three potential onsite energy options for the client: PV, Wind, CHP, and PV + Wind.

Site Description and Parameters:

- **Organization Type:** Industrial Manufacturing Plant
- **Operating Schedule:** 3 shifts, 24 hours/day, 7 days/week
- **Annual Electric Consumption:** 100,000,000 kWh
- **Annual Electric Costs:** $10 million
- **Annual Natural Gas Consumption:** 700,000 MMBtu
- **Annual Natural Gas Costs:** $5 million
- **Thermal Loads:** High Pressure Steam, Chilled Water
- **Site Emissions:** 121,000 tonnes CO_2e^2 per year

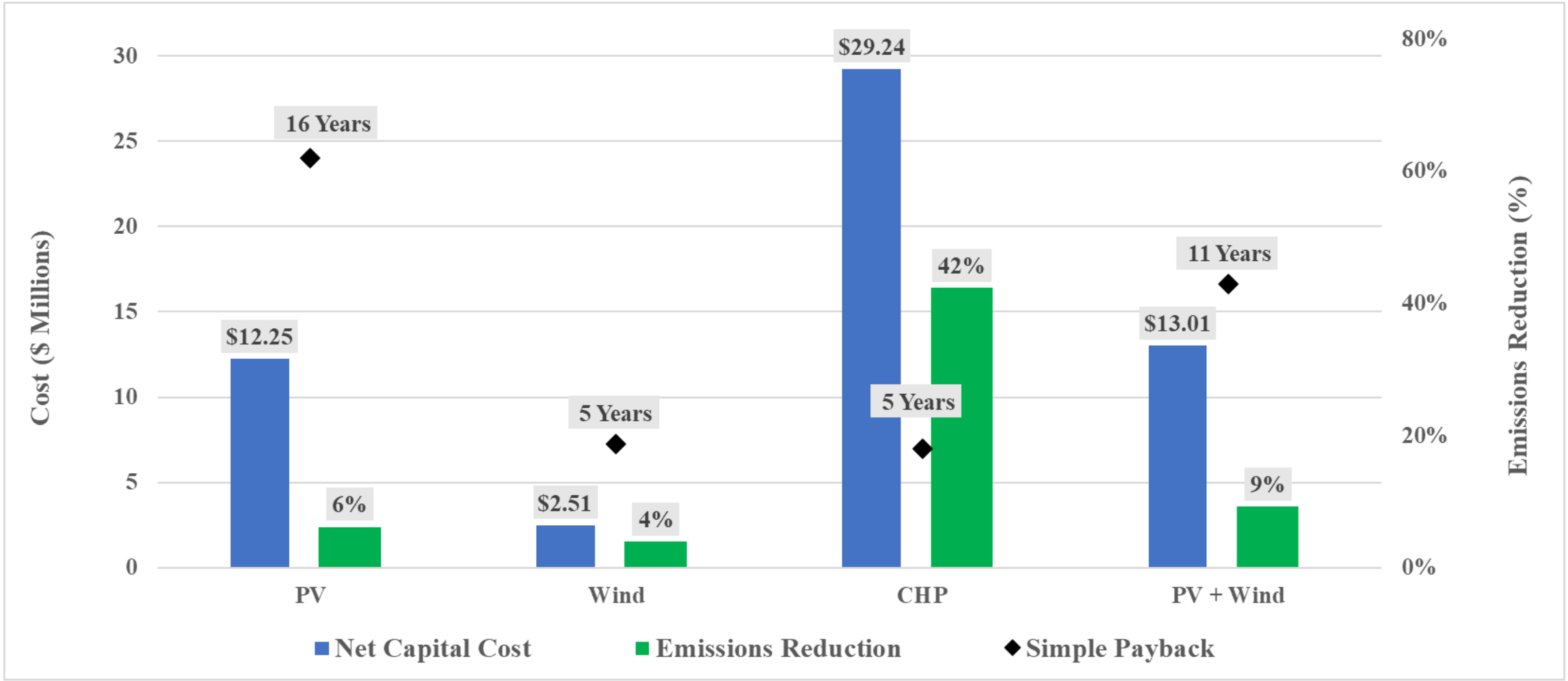
Case Study Results

PV = 5.8 MW-AC (7.0 MW-DC)

Wind = 1.5 MW

CHP = 13.0 MW

PV + Wind = 5 MW-AC (6 MW-DC) + 1.5 MW



Onsite TAP Services Across Project Development Phases

Identification
- Operational goals
- Portfolio analysis
- Technology screening
- Economic analysis
- Regulatory review

Design & Development
- Planning
- Equipment options
- Equipment siting
- Third-party reviews
- Utility rate analysis

Procurement
- Specifications review
- Finance identification
- Permitting support

Operations & Maintenance
- Measurement & verification
- Optimizing performance
- Reporting

Technical Assistance Touchpoints

Getting Started:
How to Work with Your Onsite Energy TAP

Contact Your Regional TAP

Contact the Onsite Energy TAP in your region to start exploring onsite energy opportunities.

Discuss Site Characteristics, Goals, Objectives

Meet with the Onsite Energy TAP to discuss preliminary interest in onsite energy and learn about the facility's needs and energy-related goals.

Collect Site Data

Work with the Onsite Energy TAP to collect data needed to perform technical assistance (e.g., facility size, operations, electric and gas usage, etc.).

Conduct Analysis

Onsite Energy TAP works with technical analysis team to perform initial screenings for multi-technology options or advanced analysis to support project installations.

Review Results

When the results are ready, meet with your Onsite Energy TAP to review and discuss next steps (e.g., options worth further analysis or additional support available)

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