Building a Resilient Workforce:
The Detroit Clean Energy Contractor Accelerator Program

May 3, 2023
WEBINAR LOGISTICS

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Clean Energy Group (CEG) works at the forefront of clean energy innovation to accelerate an equitable and inclusive transition to a resilient, sustainable, clean energy future.

Visit www.cleanegroup.org to learn more about our current initiatives, recent publications, and upcoming events.
THE RESILIENT POWER PROJECT

• Increase public/private investment in clean, resilient power systems (solar+storage)

• Protect low-income and vulnerable communities, with a focus on affordable housing and critical public facilities

• Engage city, state and federal policy makers to develop supportive policies and programs

• Visit www.resilient-power.org for more information and resources
SUPPORTING 250+ PROJECTS ACROSS THE COUNTRY

- **Boulder:** Nonprofit transportation center serving elderly and disabled residents
- **Puerto Rico:** Supporting the installation of solar+storage at multiple community medical clinics
- **Boston:** Multiple housing properties representing 1,000+ units of senior and affordable housing
- **New Mexico:** Added resilience for remote wildfire operations command center
- **DC:** First solar+storage resilience center at affordable housing in DC
- **Puerto Rico:** Supporting the installation of solar+storage at multiple community medical clinics
Providing technical support to build local resilience

Provided over $1 million in funding for communities to evaluate resilient solar+storage at essential community-serving facilities.

Advanced local energy resilience capacity and knowledge building with more than **100 community-based organizations across 27 states**, the District of Columbia, and Puerto Rico, as well as Tribal Governments.

Assisted with the deployment of **over 40 solar+storage installations** delivering reliable backup power and energy savings, with more projects working towards completion every day.

“With our Technical Assistance Fund grant, our small grassroots non-profit was able to hire a local consultant to work with us on finding a low-budget solar+storage system for our small food hub in a rural community highly impacted by Hurricane María.”

Tara Rodriguez Besosa
Co-founder of El Departamento de la Comida, TAF Awardee 2019

DONATE or APPLY:
[www.cleanegroup.org/initiatives/technical-assistance-fund](http://www.cleanegroup.org/initiatives/technical-assistance-fund)
Clean Energy Group
Technical Assistance Fund

- Supports the development of clean energy projects aimed at decreasing energy burdens and increasing resiliency
- Funds preliminary technical and financial feasibility analyses to help determine size, cost, and benefits of solar, battery storage and other resilient energy technologies
- Grants range from $5,000 - $15,000 depending on scope of project
- Prioritizes projects serving low-income populations or Black, Indigenous, and People of Color (BIPOC) communities
- Low barrier to entry

[www.cleanegroup.org/initiatives/technical-assistance-fund](http://www.cleanegroup.org/initiatives/technical-assistance-fund)
Clean Energy Group
Resilient Power Leadership Initiative

• Goal: Seed long-term, community-led programs that further advance energy equity and environmental justice.
• CEG one-on-one support throughout
• Low barrier to entry
• Minimal reporting requirements
• Grants are $10,000 for one year
• Average of 2 – 3 awards per year
• Prioritizes organizations serving low-income populations or Black, Indigenous, and People of Color (BIPOC) communities

www.cleanegroup.org/initiatives/resilient-power-leadership-initiative
WEBINAR SPEAKERS

• Tim Skrotzki, Senior Market Development Lead, Elevate Energy
• Elizabeth Wallace, Senior Program Manager, Elevate Energy
• Nate Mills, Vice President of Operations, American Microgrid Solutions
• Richard Ackerman, Chief Sustainability Officer, Eastside Community Network
• Karanja Famodou, Chief Operating Officer, Ryter Cooperative Industries
• Marriele Mango, Project Director, Clean Energy Group (moderator)
Thank you for attending our webinar

Marriele Mango
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Clean Energy Group
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Find us online:
www.resilient-power.org
www.cleanegroup.org
www.facebook.com/clean.energy.group
@cleanenergygrp on Twitter
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Wednesday, May 3, 2023
• Elevate seeks to create a just and equitable world in which everyone has clean and affordable heat, power, and water in their homes and communities, no matter who they are or where they live. Making the benefits and services of the clean energy economy accessible to everyone is how we fight climate change while supporting equity.
<table>
<thead>
<tr>
<th>Resilient Structure</th>
<th>Emergency Services</th>
<th>Engagement &amp; Communications</th>
<th>Programmatic Services</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Energy and water efficient &lt;br&gt; - Solar, storage, and backup power &lt;br&gt; - Flood mitigation and water management &lt;br&gt; - Resilient and redundant communications systems &lt;br&gt; - High indoor air quality &lt;br&gt; - Secure and accessible</td>
<td>- Heating/cooling centers &lt;br&gt; - Communications hub &lt;br&gt; - Food, water, and medical supply storage and distribution &lt;br&gt; - Safe, secure, and accessible space &lt;br&gt; - Transportation for mobility-challenged</td>
<td>- Disruption planning and protocols &lt;br&gt; - Community needs and resilience gap assessments &lt;br&gt; - Strengthening outreach before, during, and after disruptions &lt;br&gt; - Training for resiliency</td>
<td>- Everyday, mission-driven services &lt;br&gt; - Emergency services during disruptions &lt;br&gt; - Logistics and coordination during disruptions &lt;br&gt; - Water, energy, and resilience strategies for the community &lt;br&gt; - Resources and communications</td>
</tr>
</tbody>
</table>

2023 Elevate
Connecting the Network

Envisioning a Network of Resilience Hubs across Detroit’s Eastside
Walkable, accessible, and always available
Coordinating Partners
- Eastside Community Network
- Elevate
- City of Detroit

Technical Partners
- American Microgrid Solutions
- Ryter Cooperative Industries

Community-based Organizations
- Brilliant Detroit
- 8-12 additional CBOs TBC

City of Detroit Agency Partners
- General Services Department. (GSD)
- Department of Homeland Security (DHS)
- Community Health Core (CHC)
- Parks and Recreation (P&R)
- Detroit Health Department (DHD)
- Housing and Revitalization Department (HRD)
- Department of Neighborhoods
Stakeholder Engagement and Emergency Planning

Objectives:
- ✓ Build network of resilience hub CBOs
- ✓ Select three hubs for solar + storage design
- ✓ Engage residents to define and plan resilience
- ✓ Coordinate continued services planning with CBOs and City of Detroit
- ✓ Coordinate emergency planning and information and resource sharing with City of Detroit, Sister Agencies, Emergency Planning Agencies, and CBOs
- ✓ Document emergency plans for climate events, power outages, and other hazardous events
- ✓ Formally launch Resilient Eastside Network

Led By:
  - Eastside Community Network

In Partnership With:
  - Elevate
  - Cohort Organizations
  - City of Detroit
  - CoD Dept. of Homeland Security
  - CoD Sister Agencies

Funded By:
  - Kresge
# Resilience Hubs - Solar + Storage in Progress

## The Stoudamire Wellness HUB
- **Resilient System Scope**:
  - 80 KW Onsite Solar
  - 126 KW / 111 kWh Battery Storage
  - 48 Hour Critical Load
- **Costs & Funding**: Total: $677,254

## Brilliant Detroit
- **Total Rehab Scope**: Gut Rehab, including roofing, and envelope. All new mechanicals and electric energy systems. Solar + storage
- **Extended Services**: Health and Wellness. Senior Support Services. Children’s Activities. Community Center
- **Resilient System Scope**:
  - 7.2 KW Onsite Solar
  - 8 KW / 40.5 kWh Battery Storage
  - 48 Hour Critical Load
- **Costs & Funding**: Total: $551,237

## The Lenox Center
- **Total Rehab Scope**: New Construction, 8,433 sq. facility with community rooms, indoor athletics, kitchen, and large recreation/event space.
- **Extended Services**: Community Center. Enrichment Programs. Indoor Sports, kitchen, and event space.
- **Resilient System Scope**:
  - 72 KW Onsite Solar
  - 30 kW / 60 kWh Battery Storage
  - 100 KW Diesel Generator.
  - 72 Hour Critical Load
- **Costs & Funding**: Total: $3,600,00

## Resilience Benefits
- **Reduced operating costs. 48-hour critical load service during power outage. Emergency heating, cooling, and medical supply storage. Grid stabilization**
- **Environmental Benefits**:
  - 33% reduction in carbon emissions; 74 tons annually, 1,850 tons lifetime.
  - 1,030,294 car miles avoided annually
- **$13,398 average annual operating cost reduction**

## Resilience Benefits
- **Reduced operating costs. 48-hour critical load service during power outage. Emergency heating/cooling. Grid stabilization**
- **Environmental Benefits**:
  - 89% reduction in carbon emissions. 6.5 tons annually, 160 tons lifetime.
  - 90,368 car miles avoided annually
- **$2,208 average annual operating cost reduction**

## Resilience Benefits
- **Reduced operating costs. 72-hour critical load service during power outage.**
- **Environmental Benefits**:
  - 33% reduction in carbon emissions, 63 tons annually, 1,575 tons lifetime.
  - 878,139 car miles avoided annually
- **$14,434 average annual operating cost reduction**

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*2023 Elevate*
Resilience Hub Solar + Storage Designs – Next Three

Objectives:
✓ Engage facility managers to determine electrical loads
✓ Critical load assessment
✓ Load modeling as needed
✓ Solar and storage system design
✓ Financial modeling
✓ Solar + storage designs, ready for funding

In Partnership With:
• Resilience Hub Sites
• Property Managers
• American Microgrid Solutions

Funded By:
• Kresge/Clean Energy Group

Led By:
• Elevate
Support minority-contracting businesses seeking to expand into energy efficiency, solar, and storage. Leverage the design and construction processes for Resilience Hub deployment.

- Systems Design
- Construction
- Permitting & Interconnection
- Contracting & Bidding
- Networking
Our Workforce Network

Resilience

ELEVATE
Equity through climate action

Is Our Future
<table>
<thead>
<tr>
<th>Contractor</th>
<th>Skills</th>
<th>Years of Experience</th>
<th>No. of Employees</th>
<th>Clean Energy Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Detroit Voltage</td>
<td>Electrical Contracting</td>
<td>6 Years</td>
<td>6</td>
<td>EV, Solar, Battery Storage</td>
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<tr>
<td>Ryter Cooperative Industries</td>
<td>Solar Project Management</td>
<td>7 Years</td>
<td>7</td>
<td>Solar, Battery Storage</td>
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<tr>
<td>Blanket Insulation Services</td>
<td>Insulation &amp; Energy Efficiency Assessments</td>
<td>12 Years</td>
<td>15</td>
<td>Solar, Battery Storage</td>
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<tr>
<td>KMR Construction</td>
<td>Electrical and Construction Contracting</td>
<td>18 Years</td>
<td>7</td>
<td>EV, Solar, Battery Storage</td>
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<tr>
<td>Flintstone Construction</td>
<td>General Contracting Electrical Engineer</td>
<td>3 Years</td>
<td>1</td>
<td>Solar, Battery Storage</td>
</tr>
</tbody>
</table>
Deana Neely is a licensed electrical contractor, founder, and CEO of Detroit Voltage. Detroit Voltage is a certified Woman Business Enterprise headquartered in Detroit – offering both residential and commercial services. Deana’s background includes the Detroit Buildings & Safety Engineering Department. Detroit Voltage specializes in all phases of residential and commercial electrical from small repairs to powering and wiring a complete home or building.

https://detroitvoltage.com/
Blanket Insulation Services is a Minority-Owned, Southfield based, energy efficiency general contractor, a second-generation firm owned by Reginald Bailey. They specialize in insulation, energy efficiency assessments, and energy efficiency retrofits with a goal to transform your home into a more energy-efficient and comfortable space.

https://www.blanketinsulationco.com
KMR Construction Services, Inc. is a Women/Minority-Owned, Detroit headquartered Electrical Contracting and Construction Management firm led by Kimberly Redd. They specialize in energy optimization and conservation and believe that while helping clients they are also helping the planet and building a better future for all.

https://kmrcon.com/
Shaker Manns is an independent Certified Energy Manager/Electrical Engineer and President of Flintstone Construction. During the past decade, his work has been focused upon developing cost-effective methods for increasing system reliability and power quality as Energy Program Manager at the Great Lakes Water Authority. Flintstone Construction is a real estate investment company with a focus on making utility use more efficient in residential and commercial buildings.
Ali Dirul is CEO and President at RCI headquartered in Highland Park. He participated in a university project where he and classmates were charged to create a net zero home. Ali wanted to take this idea of Energy and creating net zero possibilities back to his community and thus RCI was born, to provide a community platform to educate the community about solar and renewable energy as well as introduce the community to the benefits and components of the technology.

https://www.ryterci.com/
Contact information

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Wednesday, May 3, 2023
Karanja Famodou
Ryter Cooperative Industries
Chief Operating Officer
Ryter Cooperative Industries

Lenox Community Center - Lead Microgrid Installer
Solar + Storage + Generator
Ryter Cooperative Industries Implementation Phases: Contracting

Launch
Develop
Contracting
Design
Procurement
Installation

Execute Finance
Contracts
Execute Installation
Contracts
Implementation Phases: Design

- Contracting
- Develop
- Design
- Procurement
- Installation

- Finalize Design
- Interconnection / Permit Application
Implementation Phases: Design

- Launch
- Develop
- Contracting
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Proposed Battery ESS Locations

Finalize Design
Interconnection / Permit Application

Cabinet ESS Solutions
- Indoor location preferred
- Easy access to utility lines and distribution

Wall Mounted Solution
- Solar inverters can be installed in doors adjacent to the mechanical room
Implementation Phases: Design

Proposed Generator Locations

- Design
- Procurement
- Installation
- Develop
- Contracting
- Launch

Finalize Design
Interconnection / Permit Application

Diesel Generator
Ground Slab
There is space on the south side of the building on the western corner to install a generator. Installing the generator on the ground provides easier access but increase risk of damage due to flooding. Generator gas and electrical line burial recommended.
Implementation Phases: Design

Launch
Develop
Contracting
Design
Procurement
Installation

Finalize Design
Interconnection / Permit Application
Ryter Cooperative Industries: Procurement

- Launch
- Develop
- Contracting
- Design
- Procurement
- Installation

Supply Chain Management

450W PV Panels

Automatic Transfer Switch – 6 Month Lead Time
Ryter Cooperative Industries: Procurement

- Launch
- Develop
- Contracting
- Design
- Procurement
- Installation

Supply Chain Management

125kW 220kWh Lithium Ion Battery + Microgrid Controller

150kW Natural Gas Generator – 1 Year Lead Time
Ryter Cooperative Industries: Procurement

Major Components

- 70kW of PV Rooftop Solar
- 450W Solar Panels
- 125kW 220kWh Lithium Ion Battery
- ELM Microgrid Controller
- 150kW Natural Gas Generator
Ryter Cooperative Industries: Procurement

Components:
- Automatic Transfer Switch (non-service rated)
- Contactors
- Disconnects
- TAP Box
- Over Current Protection Devices
- Transformer
- Iron Ridge Racking and Ballast System
- (2) 43kW Solar Edge 3 Phase Commercial Inverters
- eGuage Monitors
Ryter Cooperative Industries Implementation Phases: Installation

- Installation
- Complete Installation
- Commissioning Testing
- Interconnection / Permit Approval
- Punchlist
Ryter Cooperative Industries Implementation Phases: Installation

- Launch
- Develop
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Complete Installation
Commissioning Testing
Interconnection / Permit
Approval
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Complete Installation
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Wednesday, May 3, 2023
American Microgrid Solutions: Turnkey Services

- Identify facilities that will benefit from microgrids
- Operate & Maintain microgrids
- Manage installation and commissioning of the systems
- Secure Permits & Authorizations
- Model, optimize and design microgrid solutions
- Source, secure & manage project finance for the microgrid

American Microgrid Solutions manages each stage to deliver turnkey projects.
Lenox Center at A. B. Ford Park

70 kW solar – 125 kW / 220 kWh ESS – 150 kW generator

- 2020: Feasibility Analysis funded by Clean Energy Group (American Microgrid Solutions)
- 2021: Grant secured by Elevate (Urban Sustainability Directors Network)
- 2022: Building size change +50%, construction begins (City of Detroit)
- 2023 Q2: Power system installation begins (Ryter Cooperative Industries)
- 2023 Q4: Power system installation complete
The goal of a feasibility analysis:
A right-sized system that the client understands, and balances outcomes according to their values.
Thank you for the opportunity to work with you!
American Microgrid Solutions

Nate Mills, Vice President of Operations

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