Xcel Energy®

PARTNERS IN ENERGY
An Xcel Energy Community Collaboration

ENERGY RESILIENCE TOOLKIT

XCEL ENERGY PARTNERS IN ENERGY

Xcel Energy Partners in Energy provides services to communities in Minnesota, Wisconsin, and Colorado to develop and implement an energy efficiency, electrification, or electric vehicle action plan. Every community has its own unique energy needs and priorities, and Partners in Energy tailors its services to complement each community's vision. As part of this offering, we have developed several toolkits to help communities reach their energy goals.

You can explore all available toolkits on the Partners in Energy Portal. To customize any of the resources with your community's unique brand identity, contact your Partners in Energy facilitator.

The Role of Toolkits

The goal of this toolkit is to provide background, information, and resources for communities seeking to take steps toward community energy resilience. It provides information about the purpose of energy resilience and strategies for communities to consider.

Xcel Energy assumes no liability during project implementation. This toolkit is only intended to provide information and general resources. It is not a substitute for conducting localized research and developing specific plans tailored toward individual community needs.

Who Should Use this Toolkit?

This toolkit is intended for local government staff and stakeholders in communities that are considering or moving toward energy resilience.

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RESILIENCE CONTEXT

Resilience Context

WHAT IS ENERGY RESILIENCE?

In the context of this toolkit, **energy resilience is the ability of communities to withstand and rapidly recover from shocks and stressors that impact community energy supply and use.** Shocks can include natural disasters like extreme heat, drought, extreme cold, wildfires, and flooding. Stressors can include non-weather-related events like social unrest or a security threat. Increases in energy demand due to changes in land development, shifts in energy usage and more renewable use can reinforce the need for considering a holistic energy plan. A holistic energy plan considers things like heating for extreme cold or a battery supply to support buildings during a power outage.

When a community is more energy resilient, buildings within communities continue operating during events that can shock or stress the electrical grid.

It can be a long road for communities to boost energy resilience. While some efforts can be more challenging, like setting up a microgrids and other resilience technologies across multiple buildings, communities can start with easier first steps like focusing on weatherization and energy use in buildings.

The efforts covered in this toolkit include:

1. Energy use in buildings
2. Energy supply and storage solutions
3. Building an equitable workforce that supports energy resilience
4. Improved policy and infrastructure

The Virtuous Cycle of Energy Resilience

Energy use in buildings

Energy supply and storage solutions

Improved policy and infrastructure

Building an equitable workforce that supports energy resilience

> **What does energy resilience in action look like?**
> In 2024, Xcel Energy signed an agreement with Wisconsin-based Gundersen Health Systems to create one of the first 100% renewable energy health care campuses in the United States. In addition to a landfill gas generator and solar energy, the campus will have a microgrid- a local electrical grid with defined boundaries- which will enable resiliency should the larger grid experience service disruptions. Xcel Energy's EMPOWER Resiliency Program is spearheading the effort.

For Partners in Energy communities that track climate goals, some energy resilience strategies also work to lower greenhouse gas (GHG) emissions. While this is not the main focus of this toolkit, it's an important co-benefit of energy resilience.
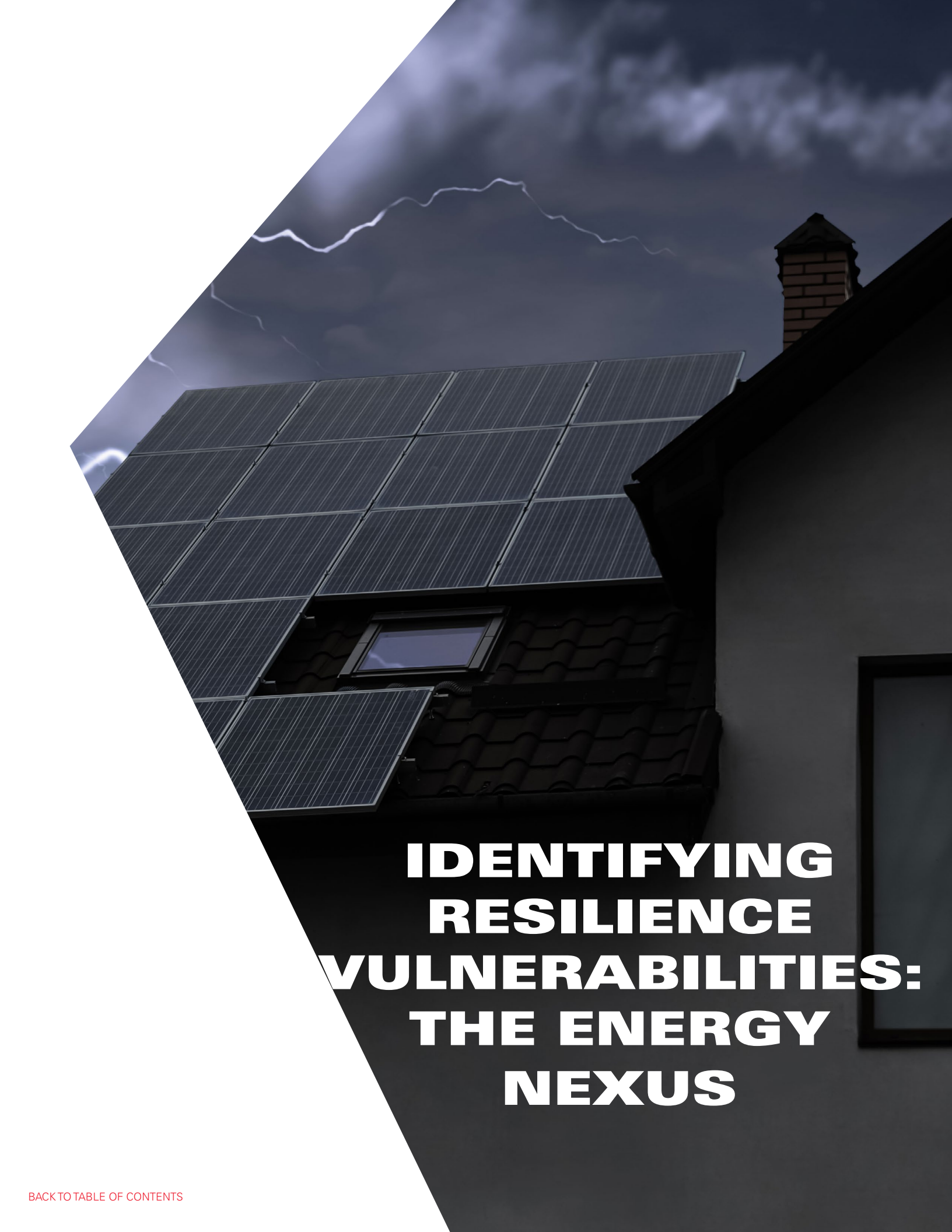
WHAT IS EQUITY IN RESILIENCE?

Socially vulnerable groups such as minorities, individuals who earn an income at or below the federal poverty level, those with no high school diploma, older adults, the unhoused and those who are linguistically isolated are often hit hardest by the impacts of natural hazards (Environmental Protection Agency, 2021). Many vulnerable individuals in these groups are also strained when paying their utility bills (American Council for an Energy-Efficient Economy, 2020).

Focusing on equity can lead to more effective and sustainable resilience strategies. It is important to engage with communities to understand their specific needs and priorities and involve them in the decision-making process for resilience planning and implementation.

By addressing the needs of the most vulnerable populations, we can enhance overall community resilience and reduce the social, economic, and environmental impacts of climate change. Prioritizing equity with energy resilience is a fundamental component of building stronger, more resilient communities for all.

HOW DOES ENERGY RESILIENCE BENEFIT COMMUNITY RESILIENCE?

Community resilience helps people, businesses, local services, and cities avoid, withstand, and recover from adverse situations. Energy resilience ensures the stability of critical services such as healthcare, communication- and emergency services during disruptions. By reducing the impact of power disruptions, energy resilience helps reduce strain on the community and supports businesses by maintaining economic stability.
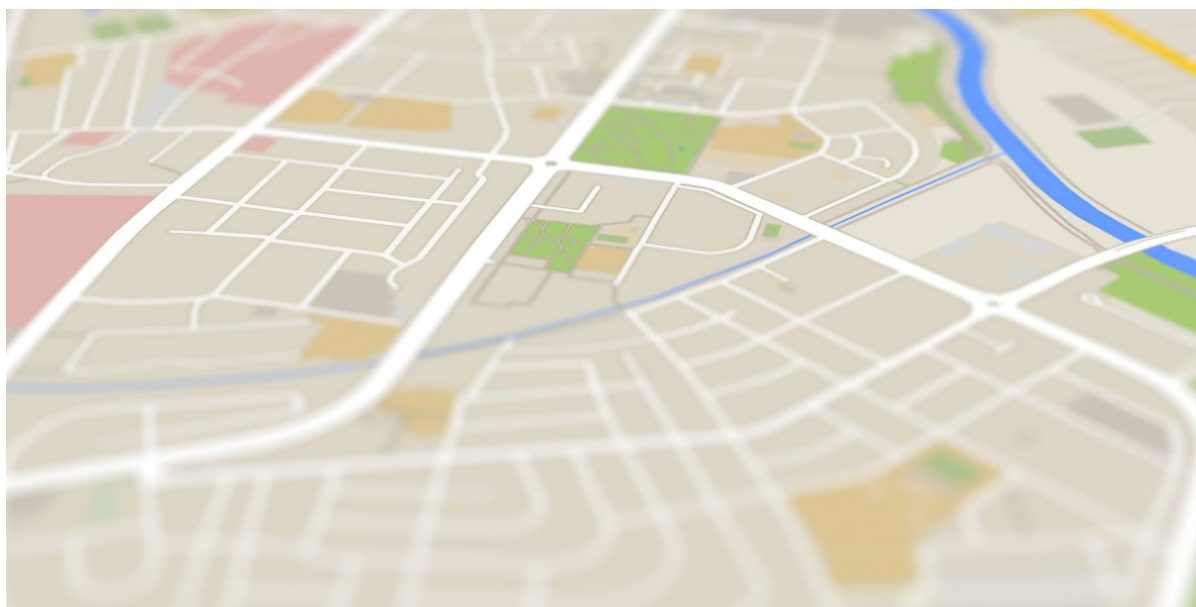
IDENTIFYING RESILIENCE VULNERABILITIES: THE ENERGY NEXUS

Identifying Resilience Vulnerabilities: The Energy Nexus

One of the first steps communities take when trying to build resilience is conducting a Climate Risk and Vulnerability Assessment. While the assessment approach can vary greatly, the general idea is for a community to examine historic and anticipated shocks and stressors, in addition to which groups will be most significantly impacted by past and future events.

Within the energy resilience context, specific items to investigate by communities include:

- **Understanding specific building age and where stock is concentrated** to identify inadequate weatherization. This can indicate vulnerability to extreme heat and cold. The County Assessor's office can often provide data for the age of structures, heating types, and other building-related information.

- **Mapping the urban heat island effect** to understand cooling needs. Information and tools can be found at Heat.gov.

- **Studying past and future power outages** via Xcel Energy Outage Map. It's important to assess potential capacity limitations of electrical transmission and distribution systems.

- **Understanding how the above information interacts geospatially with vulnerable populations** via U.S. Census data and the American Community Survey.

- **Identifying potential security threats** such as access to critical infrastructure data.

After spatial and data analysis are complete, focus groups (virtual and in person) can provide opportunities to reach a larger, more diverse audiences on energy resilience vulnerabilities.

Some easily accessibly tools to help communities identify where vulnerable populations live include:

- Climate and Economic Justice Screening Tool – The federal government developed this tool as part of the Justice40 initiative to identify disadvantaged populations.

- FEMA National Risk Index – The Social Vulnerability map utilizes the Environmental Justice Index of 36 environmental, social, and health factors to identify vulnerable populations.

- U.S. Climate Resilience Toolkit – Tools to assist with climate-related risks and guidance on building resilience to extreme events.

- Resilience Analysis and Planning Tool – provides spatial information about people and communities, infrastructure, hazards, and risks.

Strategy: Consider holding a series of meetings, with access to interpreters of the most prevalent languages spoken in the community, to ensure equitable engagement. **Consulting subject matter experts, community leaders, care home facilities, and community groups through stakeholder engagement not only provides clarity around vulnerabilities in the community but also provides an opportunity to promote resilience as a community-wide effort.**

BUILDING COMMUNITY RESILIENCE THROUGH ENERGY ACTION

Building Community Resilience Through Energy Action

Building community resilience through energy action requires a collaborative approach that involves partnering with local agencies and stakeholders. By working together with organizations such as the emergency management department, school districts, utility providers, and local community groups, communities can approach resilience as a shared responsibility and give a voice to underserved populations.

ENERGY EFFICIENCY AND WEATHERIZATION OF BUILDINGS

Energy efficiency and weatherization measures—such as upgrading insulation, sealing air leaks- and installing energy-efficient appliances—reduce the amount of energy needed to heat, cool- and power buildings.

Buildings boost community resilience by allowing residents to shelter in place longer, reduce annual heating and cooling costs for vulnerable populations, and improve indoor air quality (Ribeiro, 2015). Weatherization and better building efficiency can help communities maximize investments and defer the construction of unnecessary power plants, transmission lines, and distribution infrastructure (Ibid).

Energy Efficiency Benefits and Outcomes		
Benefit Type	**Outcome**	**Resilience Benefit**
Emergency response and recovery	Efficient buildings maintain temperature	Residents can shelter in place as long as a buildings' structural integrity is maintained.
Social and economic	Reduced spending on energy	Ability to spend income on other needs, increasing disposable income (especially important for low-income families)
Social and economic	Improved indoor air quality and emissions of fewer local pollutants	Fewer public health stressors
Climate mitigation and adaptation	Cost-effective efficiency investments	More leeway to maximize investment in resilient redundancy measures, including adaptation measures

Table adapted from "Enhancing Community Resilience Through Energy Efficiency," American Council for an Energy-Efficient Economy.

Xcel Energy programs in Minnesota and Colorado for new homes set high standards for residential energy efficiency.

Mapping can lead to valuable insights. In 2022, the City of Louisville worked with Partners in Energy to promote Home Energy Squad (HES) visits to single-family homes. By conducting a geospatial analysis, the Partners in Energy team identified two U.S. Census block groups, roughly 1,000 single-family homes, to which it sent postcards advertising HES visits. Louisville also promoted HES visits via social media to a more general audience and through its sustainability newsletter. The result was a 425% increase in HES participation between 2021 and 2022.

Creating an airtight building envelope through weatherization offers another benefit to occupants. As buildings are made tighter, occupants should be aware that carbon monoxide could pose a greater risk because it may not escape the building as readily as it did before weatherization so supplemental ventilation may be needed.

Additionally, weatherization can help reduce infiltration of outdoor air entering the home and can effectively **make indoor environments more comfortable and safer**. This is particularly important for vulnerable populations, such as the elderly, children, and individuals with chronic illnesses. **Healthier individuals reduce strain on emergency rooms during natural disasters like extreme heat or wildfire events, therefore bolstering resilience.**

An audit is just the first step. Many communities are working to ensure that residents and businesses follow through on efficiency measures identified via Xcel Energy audits. Promoting available Xcel Energy rebates and Inflation Reduction Act tax credits can provide additional motivation.

Strategy: Xcel Energy's home and business energy audits will identify potential upgrades to make buildings more energy efficient and resistant to extreme temperatures. Xcel Energy provides these services through Home Energy Audits for residential homes and Business Energy Assessments for businesses and multi-family buildings.

Strategy: New construction of homes and businesses provides an opportunity to incorporate efficiency strategies into construction designs. Communities can promote programs such as Business Energy Design Assistance, proving resources and guidance for maximizing efficiencies.

ENERGY EFFICIENCY THROUGH THE NATURAL ENVIRONMENT

Cooling communities through strategic tree planting is a sustainable approach to reducing the need for energy-intensive cooling methods. Deciduous trees provide natural shade in the summer, reducing direct sunlight that reaches buildings and paved surfaces, which helps lower ambient temperatures. In the winter, the leafless tree allows sunlight to warm the building. This natural cooling and warming effect can significantly reduce the reliance on air conditioning systems during hot summer months and reduce daytime heating in the winter.

An added benefit to an increase in trees is their ability to manage stormwater. The leaf canopies help reduce runoff and erosion from rain, and their roots take up water and promote infiltration. This reduces the opportunity for damage to the energy infrastructure and improves water quality (Environmental Protection Agency (EPA), n.d.).

Socially vulnerable neighborhoods are often built without adequate green spaces or trees. This lack of greenery not only contributes to higher temperatures in these areas but also exacerbates existing social inequities. These neighborhoods, typically characterized by lower-income households, face higher energy burdens due to increased cooling needs, leading to higher energy bills and potential health risks from heat exposure.

By strategically planting trees in vulnerable neighborhoods, communities can improve the local microclimate, reduce the urban heat island effect- and enhance the overall livability of these areas. Additionally, increasing green spaces and tree canopy coverage can have numerous co-benefits, such as improved air quality, enhanced biodiversity, better stormwater management- and increased property values. Involving residents in tree-planting initiatives can empower communities and create more resilient and sustainable neighborhoods.

Strategy: Partner with the Arbor Day Foundation or other organizations to promote or assist with community tree planting.

Sustainable Landscaping Xcel Energy provides resources about optimal tree planting locations, tree varieties for your climate, and care tips. Don't miss the additional resources at the bottom of this web page. You will find Plant a Better Future, which provides information for your region of the country.

BUILDING MORE RESILIENT STRUCTURES

Innovative building resilience frameworks provide guidelines and standards for designing, constructing- and operating buildings that enhance their resilience to natural and man-made threats. Resilient structures are designed to withstand the impacts of changing environmental conditions, such as flooding, increased temperatures, and more frequent and severe weather events.

The following frameworks provide building design guidelines that can maintain essential functions during and after disruptions, ensuring the safety and well-being of occupants.

- RELi Resilient Design Guidelines
- Fortified
- Performance Excellence in Electricity Renewal (PEER)
- REDi

Frameworks such as RELi also emphasize community resilience by encouraging building operations that support local infrastructure and provide resources to the community during emergencies. All while promoting sustainable building practices, energy efficiency, and the use of renewable energy sources. The PEER framework dives deeper into energy use by evaluating power systems based on their performance in four key areas: reliability and resiliency, energy efficiency and environment, operational effectiveness, and customer contribution.

Resilient structures that incorporate renewable energy or are tied to a microgrid help ensure that essential services, such as hospitals, emergency shelters, and communication networks, remain operational during and after disasters. This helps communities recover more quickly and supports vulnerable populations.

Strategy: Local governments can lead by example. Consider incorporating resilience frameworks such as RELi, Fortified, PEER, and REDi into new public buildings.
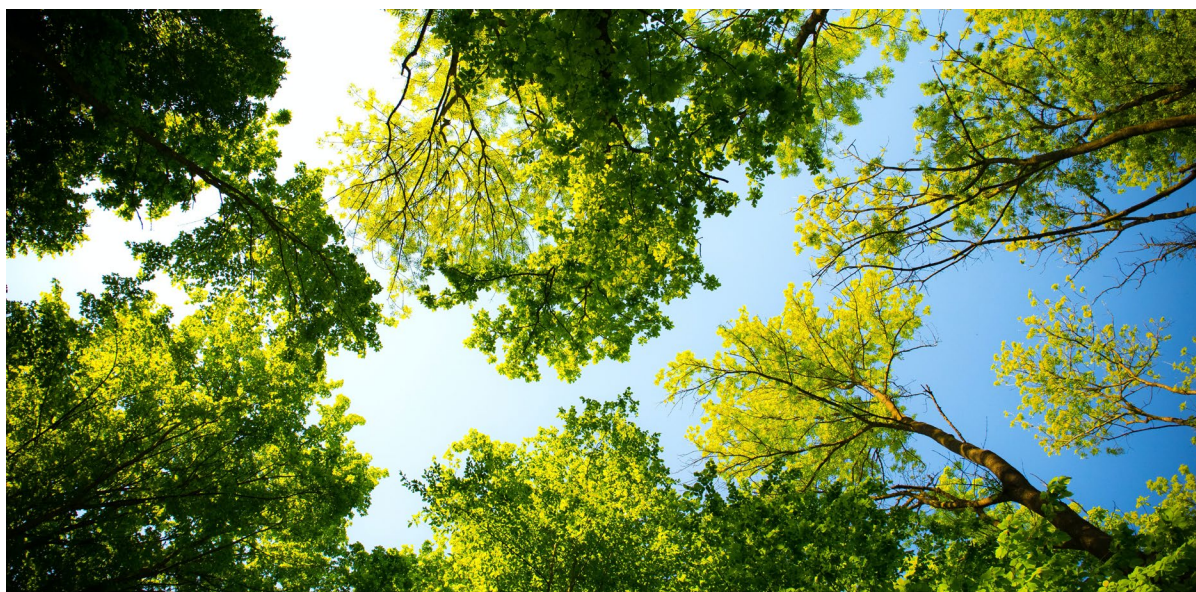
ENERGY SUPPLY AND STORAGE SOLUTIONS

Energy-efficient facilities and distributed energy resources, such as solar panels and battery storage, play a role in enhancing energy resilience at both the building and community levels. By reducing energy consumption and increasing the use of renewable energy sources, these technologies can help mitigate the impacts of energy disruptions and ensure a reliable energy supply during emergencies.

The following outlines steps for building-level and community-level initiatives to increase energy resilience.

- **Building Level:**

  - **Energy Efficiency:** Energy-efficient buildings reduce energy consumption, lowering the impact of disruptions by reducing overall energy demand. Energy-efficient buildings incorporate features such as proper insulation, high-performance windows, efficient heating and air conditioning systems, and ventilation. These elements reduce energy waste and improve comfort.

  - **Electrification:** Incorporating electric-based heating systems, such as electric heat pumps for heating and cooling, can improve energy efficiency and reduce greenhouse gas emissions. Electrification prepares a building to incorporate solar and battery storage systems.

  - **Distributed Energy Resources:** Individual homes, businesses, and municipal facilities can integrate rooftop solar panels, combined heat and power, and other systems to generate electricity, providing a source of backup power during disruptions and reducing reliance on the grid.

  - **Battery storage systems:** Coupling battery storage with solar panels allows excess energy generated during the day to be stored and used when solar production is low or during outages, increasing energy self-sufficiency.

  - **Backup heating:** Backup heat may increase resilience in case of a power outage or extreme cold weather events. Building owners can save on their annual energy costs of they agree to curtail during periods of peak demand. With these, building owners are helping the entire community, leading to resilience and a payback opportunity.

- **Community Level:**

  - Microgrids: Community microgrids are local energy networks that can operate independently of the main grid, ensuring continuous power supply to critical facilities like hospitals, emergency shelters, and communication networks. They can incorporate various renewable energy resources and efficiently distribute power within the community, enhancing resilience during extended outages.

  - Demand Response Programs: Demand response programs help reduce peak electricity demand by incentivizing consumers to reduce or shift their electricity usage during times of high demand, thereby reducing strain on the grid and reducing the danger of overloading the system in periods of high usage.

Energy Efficiency Programs: Energy efficiency programs at the community level can include initiatives such as weatherization and solar incentive programs, and efficient street lighting, reducing overall energy demand and increasing resilience.

SOLAR PANELS AND BATTERY STORAGE

Solar panels and battery storage can enhance the energy resilience of homes, businesses, and municipal buildings by providing a reliable and sustainable source of electricity. Solar panels harness sunlight to generate electricity, reducing dependency on the grid and lowering energy costs over the long term. Switching to electric appliances and systems, such as heat pump HVAC systems, heat pump water heaters, and electric ranges, is an important first step to ensuring that solar and battery equipment is right-sized for the building's electricity needs.

During normal operation, excess energy generated by solar panels can be stored in batteries on the premises for use during times of high demand or when solar production is low. This stored energy acts as a backup power source, ensuring a continuous power supply during grid outages or other emergencies. By generating and storing electricity on-site, solar panels and battery systems reduce vulnerability to disruptions in the centralized grid infrastructure.

Additionally, solar panels that are paired with battery storage systems can help stabilize the grid by reducing peak demand and increasing overall system efficiency, benefiting individual users and the broader energy network.

Solar panels with battery systems **contribute to energy resilience by promoting energy independence and reducing reliance on fossil fuels.**

> **Partners in Energy Network Resource: Renewable Energy Toolkit**
> This resource identifies strategies for communities to grow solar and wind sources. Municipal subscriptions and financing are also covered.

Solar panels and battery systems can provide critical power to essential facilities, such as hospitals, emergency shelters and communication centers, during emergencies, enhancing community resilience. The combination of solar panels and battery systems improves energy resilience by providing a reliable, sustainable, and decentralized source of electricity.

MICROGRIDS

Microgrids offer a localized and controllable energy network that can disconnect and operate independently of the main grid. Comprising a group of interconnected energy resources, such as solar panels, wind turbines, fuel generators, or battery storage, microgrids can become self-sufficient energy systems powering a single building or large enough to power multiple buildings.

Microgrids can serve a single building or multiple customers.

During extreme weather events or disturbances, microgrids can seamlessly disconnect from the main grid and continue to provide power to critical facilities. **This ability to operate autonomously not only enhances grid resiliency but also ensures a reliable power supply for essential services when it's needed most.**

Xcel Energy provided a $2.1 million grant to the University of St. Thomas in Minnesota for a microgrid research and testing program. The St. Thomas Center for Microgrid Research is among the few top-tier research and educational facilities of its type in North America. It will be open for research collaborations with companies and educational institutions nationwide.

Resilience Hubs

Microgrids have the potential to be tied to resilience hubs. A resilience hub is a community facility or location designed to serve as a focal point for resources, support, and services during emergencies or disasters. These hubs are strategically located within communities to provide critical services and assistance to residents when standard infrastructure or services are disrupted. Resilience hubs can vary in size and scope but typically include features such as backup power generation, communication systems, food and water supplies, medical supplies, and space for community gatherings and activities.

The primary goal of a resilience hub is to enhance the community's ability to withstand and recover from disasters by providing a centralized location for resources and support. These hubs can also serve as coordination centers for emergency response and recovery efforts, helping to streamline communication and ensure efficient allocation of resources. By establishing resilience hubs, communities can improve their overall resilience, enhance emergency preparedness, and better protect the health and safety of residents during times of crisis.

Strategy: Local governments can lead by example by installing solar panels on public buildings and facilities, incorporating electric vehicles into their fleet, or establishing resilience hubs for the community. These actions showcase the practicality and advantages of pursuing a path toward energy resilience. NREL can provide technical assistance related to energy use, planning, and future scenarios.

Three community centers in Minneapolis neighborhoods that serve BIPOC populations are in the process of creating resilience hubs that have battery storage and solar panels. If there is extreme heat or other weather challenges, the hubs will offer a place for the community to charge phones and access food and care from first responders. Xcel Energy paid for the three batteries at the hubs with grant money from the U.S. Department of Energy's Grid Resilience and Innovation Partnership, overall representing an $18 million investment.

BUILDING AN EQUITABLE WORKFORCE THAT SUPPORTS RESILIENCE

Building An Equitable Workforce That Supports Resilience

Workforce development encompasses initiatives that aim to meet employment needs for both the employer and potential employee. **A skilled workforce is vital for supporting and growing energy resilience.**

Examples of workforce development programs include:

- Mentorship and skills training for students, job seekers, and workers so they can successfully enter and navigate career pathways.

- Working with employers to understand their needs.

- Connecting employers to talent networks.

The demand for trades like HVAC technicians is outpacing the workforce. The energy efficiency sector continues to grow, with a 2.7% nationwide increase of nearly 60,000 jobs from 2020 to 2021 (U.S. Department of Energy, 2022). Additionally, the U.S. Department of Energy estimates that the jobs needed for solar, wind and battery storage could more than double between 2020 and 2030.

IDENTIFY LOCAL WORKFORCE GOALS

Every community has unique workforce needs and opportunities. The solutions that emerge in a rural community will be different compared to a major metropolitan area. To help potential partners understand and support your local workforce, this strategy involves collecting feedback from residents and businesses in your community.

Key questions for workers might include:

- Asking individuals about their interest in changing careers and what type of support they would need.

Questions for businesses could include:

- Asking businesses about the workforce issues they currently face and what type of support would be most helpful for upskilling their employees.

Strategy: Identify local needs and gaps through resident and business surveys.

By leveraging public funding and existing programs, governments can also help initiate and expand workforce programs. These programs can be within the government enterprise itself, such as internships in different departments, or by working with local businesses to create a workforce development program targeting the community to recruit participants.

Strategy: Integrate workforce development objectives into existing plans and policies.

Partners in Energy Network Resource: Workforce Development Collaboration Toolkit
The Workforce Development Collaboration Toolkit identifies strategies for how communities can promote and retain a qualified workforce. Understand national trends, workforce challenges and how to address workforce gaps through collaboration.

PROVIDE JOB OPPORTUNITIES FOR AN EQUITABLE WORKFORCE

In addition to promoting training and support services for individuals, communities and/ or businesses can also help to spearhead the creation of jobs for them to apply their new skills.

Strategy: Communities can hire an equitable workforce.

It can be as simple as providing internships at your organization (e.g., in facilities management) or working with partners to develop a preferred vendor list for your own facilities or programs to support qualified contractors. By building this pipeline of work, you can also expand your network of workforce contacts and promote future training opportunities to continue the cycle of equitable workforce development.

WORKFORCE EQUITY TO REFLECT THE COMMUNITY

A culturally diverse workforce enables organizations to serve diverse communities better with team members who understand the dominant languages and cultures of the communities they serve and can, therefore, be better prepared for emergencies.

To have a workforce that reflects the community, it is essential to ensure equal access to training and educational opportunities, particularly for marginalized and underrepresented groups. Implement recruitment strategies that reach a diverse pool of candidates, such as advertising job openings in diverse communities and organizations, attending job fairs targeted at underrepresented groups, and using diverse recruitment networks. Demonstrate a commitment to diversity and inclusion in all aspects of the organization.

IMPROVING POLICY AND INFRASTRUCTURE

Improving Policy and Infrastructure

Local government approaches to planning, zoning, and development are crucial in shaping energy resilience. **By implementing supportive policies and regulations, cities can support more resilient structures.**

Planning and zoning regulations that allow for easy installation of solar panels on residential, commercial, and municipal buildings can help facilitate the rapid expansion of solar energy.

Strategy: Local governments can accelerate the growth of solar energy while also holding up equity for underserved communities. SolSmart, a nonprofit funded by the U.S. Department of Energy Solar Energy Technologies Office, offers no-cost technical assistance to local governments in Minnesota, Colorado, and Wisconsin while following the federal government's Justice40 Initiative, which supports equitable opportunities.

Undergrounding powerlines is another step local government can work toward to minimize power outages during extreme weather events and as a supplemental step toward wildfire mitigation. Over an 18-year period, the City of Fort Collins successfully buried 99% of its overhead electric wires and has a policy to ensure all new power lines have underground wires. These efforts have led to a reliable electricity supply during extreme weather events.

In franchise agreements, Xcel Energy allocates 1% of the preceding year's gross revenues for the purpose of undergrounding overhead electric distribution lines. Local governments collect this money in accounts from which they can spend strategically on projects.

Strategy: Local governments consider using their 1% of franchise agreement funds for undergrounding projects that contribute significantly to energy resilience.

> In fall 2024, the City of Boulder is expected to start a phased project to underground many above ground lines in Chautauqua Park using its 1% of franchise agreements funds. The project will help pay to minimize downed electric lines and make the park more resilient to wildfire risks.

APPENDIX

Appendix

GO BIGGER: ADOPT A COMMUNITY RESILIENCE FRAMEWORK

To enhance energy resilience, it's valuable to integrate it into a broader resilience framework. This approach includes energy resilience alongside other community priorities, offering a comprehensive perspective.

Guidelines within this framework can help identify vulnerabilities and prioritize efforts toward enhancing community resilience.

1. Infrastructure and Capital Planning

    -   Plan for critical facility infrastructure hardening and capital projects that limit damage to property, protect human health, and improve operational performance during and after hazard events.

    -   Identify sites such as community centers or schools to act as shelters or resilience hubs during extreme heat or cold, weather events, or wildfire smoke events.

    -   Use a resilient building framework when constructing new facilities.

2. Hazard Event Protocols and Training

    -   Develop protocols for activating resilience hubs or community shelters during times of extreme heat or cold, weather events, wildfire smoke events, or extended power outages.

3. Public Policy and Programs

    -   Integrate resilience planning and climate change hazard considerations in city facility and infrastructure siting, design, construction, and operations.

    -   Incorporate efficient and renewable energy processes, technologies, and energy storage in existing and future city operations for energy load reduction and peak load management.

    -   Implement supportive policies and regulations to expand the adoption of solar panels, batteries, and electric vehicle home charging across the community.

4. Energy Resilience Planning and Integration

    -   Integrate energy resilience within existing and upcoming city policy and planning efforts to support mutual co-benefits and cross-coordination of initiatives and implementation actions.

5. Inter-Agency Community Partnerships

    -   Build, sustain, and leverage partnerships with local and regional stakeholders in the service of collective investment, efficient action, and shared responsibility. This should include utilities, school districts, community leaders and groups, businesses, and other local and regional stakeholders.

6. Public Input, Awareness, and Education

   - Identify community vulnerabilities by consulting subject matter experts and through stakeholder engagement.

   - Develop a public education and awareness campaign exemplifying the city's proactive efforts and leadership in energy resilience, as well as advancing resilience conversations with the community at large.

   - Distribute severe weather education and preparedness information to the public.

7. Ongoing Risk Assessment

   - Support evidence-based, ongoing assessments of the organization's vulnerability and risk.

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