



How to Ensure Energy Storage Policies are Equitable

**[Union of
Concerned Scientists**

Federal Support for Electricity Storage Solutions

On March 8, 2018, UCS convened 21 experts from 13 states on Capitol Hill to identify the most important breakthroughs needed to scale up electricity storage as well as **how the federal government can support innovation and prioritize investments in energy storage**. The policy brief includes recommendations for federal policymakers on **how to best support electricity storage RD&D** that drives innovation, lowers electricity prices, and increases the reliability of the US electric grid.

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POLICY BRIEF

HIGHLIGHTS

On March 8, 2018, the Union of Concerned Scientists convened 21 experts, from 13 states, on Capitol Hill to identify the most important breakthroughs needed to scale up electricity storage as well as ways the federal government can support innovation in this strategically important industry. This expert convening was sponsored by the Bipartisan House Advanced Energy Storage Caucus. This paper synthesizes the discussions, including recommendations for federal policymakers on how to best support electricity storage RD&D that drives innovation, lowers electricity prices, and increases the reliability of the US electric grid.

Federal Support for Electricity Storage Solutions

State Perspectives on Research, Development, and Demonstration

Energy storage has the potential to fundamentally transform the way we produce and use electricity, just as the refrigerator was a game-changer for food. However, the private sector is not making the needed investments in electricity storage research, development, and demonstration (RD&D) to achieve this transformation. Specific, strategic efforts are needed by the federal government to advance the technology and increase national energy security.

Our economic and national security are dependent on a continued abundance of electricity, which is also clean, affordable, and reliable. But the nation's electric grid is aging, and it is increasingly vulnerable to disruptions from extreme weather and cyberattacks. Our electricity infrastructure is inadequate to the task of managing short-term differences between supply and demand and integrating diverse energy resources—such as wind and solar—that increase electricity resilience and lower overall costs. Energy storage is the keystone technology for increased grid security—integrating new energy resources, serving as a replacement for aging infrastructure, and providing reliable backup power during outages.

The United States is losing its leadership on energy storage technology to other countries (Hart, Bonvillian, and Austin 2018). China is already cornering the markets for key components needed for battery manufacturing (Ayre 2017) and planning major demonstration projects over the next 10 years (CNESA 2017). How does the United States take a giant leap forward and regain its position as the global leader in this critical technology? Innovation. US policymakers must lead a cultural shift toward better valuing innovation—specifically, ensuring that the economic benefits of technological advances are realized here at home. With robust federal investments and wise policy, the United States can become a global leader in designing, developing, and manufacturing energy storage technologies into the next decade and beyond.



Energy storage experts from across the country meet with UCS staff to discuss the role of the federal government in supporting energy storage.

<https://www.ucsusa.org/sites/default/files/attach/2018/07/federal-energy-storage-convening-summary.pdf>

Equitable Energy Storage Deployment Convening

In December 2018, the Union of Concerned Scientists convened a diverse group of stakeholders to discuss the equitable deployment of energy storage. The group—which included **environmental justice and grassroots organizations, policy experts, industry, labor, consumer advocates, faith groups, and renewable energy advocates**—collectively developed a set of **consensus principles for equitable storage deployment**.

The principles—which have been signed by **26 participating organizations**—are intended to help state policymakers promote energy storage, address the needs of disadvantaged communities, and avoid inadvertent harm.

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POLICY PRINCIPLES

Principles of Equitable Policy Design for Energy Storage

The Union of Concerned Scientists convened a group of diverse stakeholders, including environmental justice and grassroots organizations, policy experts, industry, labor, consumer advocates, faith groups, and renewable energy advocates, in December 2018 in Chicago, Illinois, focused on the equitable deployment of energy storage. Energy storage is poised to expand dramatically, transforming the way we produce and use electricity. It is critical that this expansion and the transition to a clean energy economy address the needs of vulnerable residents of disadvantaged neighborhoods and frontline communities without inadvertently causing harm.

The participants developed a set of consensus principles for storage deployment that elevate the critical importance of community-led clean energy solutions. Together these principles can help state policymakers focus on solutions that ensure that the growth of energy storage improves all communities, including environmental justice communities, communities of color, low-income residents, tribal communities, and historically disadvantaged communities. Importantly, these principles are not meant to constrain organizations taking stronger positions on particular policies, regulatory proceedings, or project proposals.

Principles

Reducing emissions. Incentivize energy storage in a variety of applications to help replace fossil fuel-fired power plants and pipelines or to substitute generation from those plants, thus improving the health of frontline communities by cutting emissions that harm local air quality and contribute to climate change.



Panelists discuss energy storage policies at the state level during the convening.

These principles elevate the importance of community-led clean energy solutions, and help state policymakers ensure that energy storage improves all communities.

Improving resilience. Ensure that energy storage helps make residents and communities more resilient to both human-caused and natural disasters—which will become more frequent and severe due to climate change—by deploying local, onsite power to keep essential services operating during extended power outages and by restoring power after a disaster.

Promoting local economic development. Ensure access to federal, state, and local job training and career-oriented apprenticeship programs, including those certified by the Department of Labor, for energy storage installation and commissioning. Include complementary policies that drive local economic development in historically underinvested communities, train residents for long-term career opportunities, and provide economic benefits to disadvantaged communities without increasing costs of living.

Accelerating greater levels of renewable energy deployment. Accelerate the development and deployment of energy storage that accommodates higher levels of renewable energy on the grid to reduce heat-trapping emissions and other harmful pollutants, with a special focus on local reductions in environmentally overburdened communities.

Protecting consumers. Ensure that energy storage lowers electricity bills for ratepayers and is used maximally to ensure savings from all services it provides, and incentivize ownership models that lead to direct community benefits.

Ensuring participation. Engage in a robust and transparent stakeholder process that empowers community self-determination, facilitates collaboration, and responds to community perspectives so that industry can ensure that energy storage projects are successful and adequately elevate the views of most affected parties.

See reverse for information on participants and supporters.

<https://www.ucsusa.org/resources/principles-equitable-policy-design-energy-storage>

How to Ensure Energy Storage Policies are Equitable

UCS advocates for a **just and equitable transition** to a clean energy economy, prioritizing underserved populations: frontline, fenceline, and fossil-dependent workers and communities.

Storage can improve and **directly benefit underserved communities** beyond accommodating high levels of renewables on the grid.

Well-designed policies that bring storage into communities can **reduce local air pollution, expensive demand charges, and power outages.**

<https://www.ucsusa.org/resources/equitable-energy-storage>

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POLICY BRIEF

How to Ensure Energy Storage Policies Are Equitable

HIGHLIGHTS

Energy storage is playing an increasingly critical role in accommodating high levels of renewable electricity generation. The ability to store energy and use it when it's needed the most allows the grid to operate more flexibly, while also reducing demand for electricity from dirty, inefficient fossil fuel power plants that harm local communities.

In December 2018, the Union of Concerned Scientists convened a diverse group of stakeholders who developed consensus principles of equitable policy design for energy storage. The participants envisioned these principles as guideposts for policymakers seeking to deploy energy storage in a way that puts communities' needs and interests first. This policy brief examines storage and equity policies in leading states and offers recommendations for policymakers in designing equitable energy storage policies.

The Union of Concerned Scientists (UCS) advocates for a just and equitable transition to a clean energy economy, prioritizing frontline, fenceline, and fossil fuel-dependent workers and communities. Frontline communities bear the brunt of climate change impacts and often have the least amount of resources to adapt or move out of harm's way (USGCRP 2018). Fenceline communities live near power plants or other industrial facilities and bear the greatest burden of pollution impacts (Makati et al. 2018; USEPA 2015). And record coal plant retirements are creating severe economic challenges for workers and their communities (Gimon et al. 2019; Richardson, Gomberg, and McNamara 2017). This policy brief explores how one emerging technology—energy storage—can be deployed in a just and equitable way. Considering the equity implications of policies when setting targets for storage deployment and designing incentives, and in utility planning proceedings, can contribute significantly to building a clean energy economy that works for everyone (UCS 2019).

Background

With the potential to fundamentally change the way we generate and use energy, the widespread deployment of energy storage represents the dawn of a new era for the electricity grid (UCS 2018). The term “energy storage” refers to multiple technologies, ranging from mechanical to thermal to electrochemical, that can save, store, and discharge energy when it is needed (Zablocki 2019). Energy storage is not new—pumped hydroelectric storage was first used in the 1920s and today still represents, by far, the most installed storage capacity in the United States (ESA n.d.a.).



Well-designed policies can ensure that energy storage projects drive direct benefits to local communities, such as reduced pollution from power plants, lower electricity bills, and fewer power outages.

States have combined policies with mixed results

- Policies that drive storage deployment:
 - Binding **targets**
 - Financial **incentives** such as tax credits, rebates, grants
 - Utility **planning and implementation**
- Ambitious policies for both clean energy and equity :
 - CA: target carve-outs and dedicated funding for disadvantaged communities
 - NY: 100% carbon-free by 2040; 35% of clean energy revenue to underserved communities
- Smaller scale efforts on storage and equity:
 - MA: some programs to prioritize development (SMART)
 - MD: resiliency grants, state investment tax credit

Recommendations for legislators (1)

- Design energy storage policies around **specific community-centered outcomes**, prioritizing storage projects that replace fossil fuel peakers and reduce harmful emissions, improve community resilience, lower energy bill burdens for low-income customers, and help support community wealth generation;
- **Combine different policy mechanisms** to achieve stated outcomes, including carveouts, incentives, and financing mechanisms aimed at ensuring that underserved communities share in the benefits of storage deployment, and **ensure these policies are aligned**;
- **Combine storage deployment policies with ambitious targets for renewable energy and energy efficiency** and other policies to reduce emissions that drive climate change;

Recommendations for legislators (2)

- Develop broad policies around and identify funding streams for **economic development, workforce training, and education in underserved communities**;
- Encourage the use of **project labor agreements and community benefit agreements**;
- Encourage or require manufacturers to **develop end-of-life recycling programs and decommissioning protocols, especially for hazardous materials**;
- Provide **guidance to regulators** about considering the equity dimensions of storage in utility planning and implementation; and
- **Learn from what other states have done**, especially in the context of program design and implementation and by building on the results from cost-benefit studies from other states, especially those that account for benefits that are difficult to monetize, like resiliency.

Recommendations for regulators

- Require utilities to include consideration of energy storage and **evaluate equitable outcomes in their long-term plans**.
- **Ensure comprehensive and transparent stakeholder engagement and targeted outreach**, information, and education for underserved communities, along with dedicated funding for community-based organizations to support such efforts, and reduce barriers to participation;
- Ensure **conformity with state and national fire safety guidance and requirements**, and ensure **hiring of trained professionals** for the installation and operation of battery storage projects;
- Ensure that all consumers benefit from storage projects, **emphasizing benefits to low-income consumers and enabling community ownership of projects**.

Future Work

Identify opportunities for state-level policymaking on storage and equity

Support allies and advocates in pushing for equitable storage policies

Explore opportunities to collaborate and work together in advancing equitable energy storage policies

Have ideas or questions about the policy brief and outreach? Please contact us!

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