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NextGrid Alliance Summit Report

Executive Summary

The NextGrid Alliance (NGA) Summit 2024 gathered more than 250 senior leaders from utilities, startups, government, and energy-adjacent industries October 14-15 in Boston. The Summit, themed “Modernizing, Building, Scaling: Transforming the Grid for the Future,” highlighted the NGA’s commitment to fostering cross-industry collaboration and innovation to address climate change and the growing global demands for clean, affordable, and resilient energy. Hosted by National Grid Partners, the event brought together thought leaders and decision-makers to confront the complex challenges posed by electrification, artificial intelligence, climate imperatives, and shifting regulatory landscapes. The objectives of the NGA Summit included:

Driving towards net-zero via co-innovation.

The Summit emphasized the NGA’s role in uniting utilities, startups, investors, and policymakers to co-develop and scale innovative solutions for a low-carbon, resilient grid. The urgency for grid modernization and expansion is more pressing than ever, and the NGA offers a platform to address these challenges with shared insights, technologies, and strategies.

Enhancing industry relationships and knowledge sharing.

The Summit emphasized cross-sector partnerships to drive forward-looking solutions. Workshops, panel discussions, and pitch sessions encouraged utility-startup collaborations, offering startups a platform to present innovations for key energy challenges. Attendees engaged in dynamic networking, fostering relationships for future development.

The NGA Summit featured a distinguished lineup of speakers, including:

Vanessa Chan
Chief Commercialization Officer and Director, Office of Technology Transitions, U.S.Department of Energy (DOE)

Eric Dresselhuys
CEO, ESS; Co-founder, Silver Spring Networks

Yvonne Hao
Massachusetts Secretary of the Executive Office of Economic Development

Greg Jackson
Founder and CEO, Octopus Energy

Jeff Marootian
Principal Deputy Assistant Secretary, Office of Energy Efficiency & Renewable Energy, DOE

Mari McClure
President & CEO, Green Mountain Power

Jigar Shah
Director, Loan Programs Office, DOE; cofounder, SunEdison, Generate Capital

Steve Smith
Chief Strategy & Regulation Officer, National Grid; President, National Grid Partners

Lisa Wieland
President, National Grid New England

Ben Wilson
President, National Grid Ventures

The NGA Summit led attendees on a journey from big-picture vision to actionable insights. A morning keynote from best-selling author Russell Gold set the stage for exploring grid modernization challenges and opportunities.

In back-to-back morning discussions, utility leaders and pioneering cleantech founders offered their respective on achieving the future grid. Then, National Grid Partners' portfolio companies showcased innovative solutions designed – and currently being deployed by utilities across the globe – to help address opportunities and meet the moment.

The afternoon included breakout sessions addressing topics critical to energy transformation:

01/ Steering Towards Grid Enhancing Technologies

02/ Energy Priorities and Investments in as Harris or Trump Administration

03/ Innovation to Drive Heat Electrification

04/ How Virtual Power Plants can be Expanded to Help Reduce Customer Costs

The NGA Summit concluded with perspectives from US Department of Energy leaders. First, Jeff Marootian and Jigar Shah highlighted crucial support provided by the Inflation Reduction Act to early-stage startups and innovators. Finally, Dr. Vanessa Chan underscored the critical role of public-private collaboration in accelerating the clean energy transition.

The NGA Summit 2024 reinforced the importance of innovation in building a future-ready energy grid. As the energy evolution continues, the NGA's ecosystem and forum will be instrumental in driving large-scale transformation, ensuring a sustainable and resilient energy future.

" Climate change is a global problem, so if we succeed and every other utility fails, we haven't achieved anything."

Steve Smith

Chief Strategy & Regulation Officer, National Grid

Attendees

The NGA is an organization for utilities by utilities. More than 30 regulated utility companies from across North America and Europe participated in the Summit to collaborate on advancing a clean, fair, affordable and resilient energy future:

AES, Avangrid, Baltimore Gas and Electric, Consolidated Edison, Dominion Energy, Duke Energy, EDF S.A., EDP, ENEL, Energir, ENGIE, Eversource, Green Mountain Power, Idaho Power Company, LADWP, National Fuel Gas, New York Power Authority, NextEra Energy, NRG, Pacific Gas & Electric, Rhode Island Energy (PPL), Southern California Edison, Southern Company, Tucson Electric Power, Tennessee Valley Authority, and Vermont Electric Power Co Inc etc.

> **“ Any time I can network with a lot of high-quality startups in one place, it’s very, very valuable. So is the opportunity to meet with utility innovation professionals, compare notes and try to find commonalities.”**
>
> Adam Sledd
> Executive Director, Dominion Energy Innovation Center

Key Takeaways

Collaboration as a Foundation for Progress:

Reaching net-zero hinges on close collaboration between utilities, regulators, and startups. Building trust and mutual understanding was a major theme, as industry leaders emphasized cross-sector partnerships are essential for tackling the energy transition’s complex challenges. By breaking down silos and sharing knowledge, the NGA and its members are better equipped to accelerate the development and implementation of scalable solutions that align with industry and policy goals.

Balancing Reliability, Affordability, and Urgency

Discussions at the Summit highlighted the critical need to address growing concerns around reliability and affordability while advancing decarbonization efforts. Speakers stressed that for the clean-energy transition to succeed, solutions must be practical and sustainable without compromising service quality or accessibility for consumers. Meeting ambitious climate goals will require a diversified energy mix, along with strategic investment in both existing and new technologies, to ensure a smooth and reliable transition to a low-carbon grid.

Scaling Innovation with a Growth Mindset

A primary theme was the need to scale innovative solutions to meet rapidly rising energy demand from electrification and artificial intelligence. Utility leaders emphasized the importance of fostering a growth mindset that encourages experimentation, resilience and quick adaptation. By moving from small-scale pilot projects to full deployments, utilities and startups can implement transformative technologies that make the grid smarter and more resilient, ultimately bringing meaningful change to the sector.

Through these strategic discussions, the NGA Summit highlighted actionable pathways for growth and collaboration across the utility sector.

Sessions

Opening Remarks:

Yvonne Hao

Yvonne Hao, Massachusetts Secretary of the Executive Office of Economic Development (and a former startup operator and investor), welcomed attendees and introduced the “Team Massachusetts: Leading Future Generations” economic development plan. This initiative aims to address climate challenges and promote sustainable growth in the state. The plan includes a $3.5 billion economic development bill, with $1 billion allocated specifically for climate technology. This investment aims to support an ecosystem where sustainable innovation can occur, combining business growth with environmental goals.

Key points:

- Targeted government intervention is crucial in areas like climate tech, where market solutions alone may fall short.
- Establishing clear goals and metrics is essential to guide progress.
- Addressing climate change is not only necessary but also an opportunity for job creation and economic growth through innovation.

Opening Keynote:

Russell Gold

Russell Gold, long-time senior energy and climate reporter for the Wall Street Journal and the author of two books on energy innovation, stressed the need to achieve net-zero emissions by 2050. He outlined significant changes in the energy sector over the past 25 years, particularly in fracking and renewables, and emphasized the importance of continued innovation like geothermal and fusion to ensure a resilient energy mix.

Key points:

- The energy transition requires parallel improvements in infrastructure and technology.
- Achieving net-zero involves not just replacing existing systems but also investing in clean energy and grid upgrades.
- Adopting diverse strategies and supporting new technologies can help meet future energy needs and reduce geopolitical energy risks.

Morning Fireside Chat:

Utility Leaders Achieving the Future Grid

Mari McClure, CEO of Green Mountain Power, and Lisa Wieland, President of National Grid New England, participated in a discussion moderated by Julia Hamm, partner at The AdHoc Group and longtime CEO of the Smart Electric Power Alliance. The trio emphasized the need for a long-term vision to achieve a net-zero grid, and they highlighted the importance of collaboration between utilities, regulators, and the broader energy community. A customer-focused approach, they noted, is also essential for the future of the grid. The leaders stressed that utilities must prioritize reliability and resilience, especially in the face of severe weather events. Mari discussed Green Mountain Power's "Zero Outages" initiative, which aims to storm-harden infrastructure and enhance energy storage. Meanwhile, Lisa outlined National Grid's "Electric Sector Modernization Plan" in Massachusetts, marking the first instance of collaborative agreement between regulators and utilities on the future energy system and underscoring the critical role of regulatory support in fostering innovation.

Key points:

- A shared, long-term vision - emphasizing strategic collaboration among utilities, climate tech startups, and regulators - is essential for achieving net-zero emissions.
- Open dialogue with regulators is vital to streamlining the path to a cleaner grid. Such partnerships can align goals and simplify regulatory processes to support clean energy investments.

> **"The time for small initiatives is past. Take risks, pilot quickly, use data from the successful programs to set goals. Tell those stories, and get community and regulators' support."**
>
> Mari McClure
> President and CEO, Green Mountain Power

Plenary Panel:

Founders' Perspective - Breaking through as a Clean Tech Startup

Steve Smith, Interim Chief Strategy & Regulation Officer of National Grid, led a discussion with distinguished pioneers and leaders in the clean tech space, including Eric Dresselhuys (ESS, Silver Spring Networks); Greg Jackson (Octopus Energy); Raghu Belur (Enphase); and Tim Healy (EnerNOC). The panel underscored the unique advantages clean technology startups bring to the energy sector, particularly their capacity for rapid innovation and adaptation compared to larger, more established companies. Speakers noted that this agility is crucial as the utility industry navigates rapid shifts in electrification, renewable energy costs, and customer priorities around reliability and affordability. The panelists also called for utilities to embrace collaboration with innovators and adopt a "default allow" mindset that prioritizes solutions over risk avoidance. This approach, they said, is essential to achieve clean energy objectives.

Key points:

- Founders' expertise and agile decision-making enable startups to develop innovative solutions more quickly than larger companies, providing a competitive advantage in the utility sector.
- Startups can be long-term partners focused on success. The panel highlighted the importance of viewing risk with an emphasis on experimentation and trials over inaction.
- As energy demand increases due to electrification, new solutions for reliable and affordable energy are becoming critical. Innovations in large-scale battery storage, for instance, will play a key role in balancing environmental objectives with customer needs.

National Grid Partners'

Portfolio Company Pitch Session and 1:1 meetings

National Grid Partners' portfolio companies presented their solutions across four strategic themes, followed by one-on-one sessions with utilities to promote collaboration and practical applications. Each startup showcased innovations aimed at addressing key energy challenges and improving utility operations.

Key points:

- **Customer First:**

  Companies like Copper, ev.energy, HelixIntel, Leap, and Viridi presented technologies focused on enhancing customer experience and engagement, including solutions for demand response, electric vehicle integration, and energy efficiency.

- **Future of the Electric Network:**

  Innovators such as CNIguard, Exodigo, LineVision, Sitetracker, Transcend, TS Conductor, and VEIR introduced approaches to grid modernization, asset management, and resilience. These solutions are designed to make the electric network more efficient, adaptable, and robust in response to increasing demand and environmental challenges.

- **Clean Energy Vision:**

  Companies including Captura, Modern Hydrogen, and Urbint demonstrated their contributions toward a low-carbon future with technologies that support carbon capture, hydrogen production, and infrastructure resilience.

- **Operational Efficiency through Innovation:**

  To meet the need for secure and efficient operations, Accuknox, Aperio, AptEdge, Baffle, Cogniac, Cyolo, Dragos, Panaseer, SparkCognition, Sync Computing, and Tomorrow.io highlighted advancements in cybersecurity, artificial intelligence, data analytics, and operational automation.

Breakout Sessions | Track 1

Taking the Helm: Steering Towards Grid Enhancing Technologies

The session emphasized the need for grid modernization to meet demand, advance decarbonization, and improve resilience. Panelists from LineVision, ev.energy, AES, and National Grid discussed the potential of grid-edge technologies to benefit utilities and customers, despite slow progress due to regulatory constraints and the industry's conservative culture. Utilities can advocate for these technologies to regulators, who can adjust incentives to foster innovation via "innovator bonuses" or penalties for slow adoption. Still, the challenge of deploying grid enhancing technologies can be seen in Green Mountain Power's seven-year effort to secure rate-base approval for battery storage.

Breakout Sessions | Track 2

Reading the Currents: Energy Priorities and Investments in a Harris or Trump Administration

Both major US political parties are courting young voters, acknowledging that climate change is key to this demographic. Domestic energy production is expected to rise regardless of the election outcome, with bipartisan support for nuclear energy despite cost concerns. In response to competition with China, AI development is being encouraged within US borders. Tax policy and the fiscal deficit are hotly debated topics. Clean energy is increasingly seen as a bipartisan issue, with state-level policies significantly influencing energy investors, utilities, and stakeholders.

Breakout Sessions | Track 3

Opportunities and Challenges for Electric and Gas Utilities: Innovation to Drive Heat Electrification

Panelists discussed strategies for utilities to engage customers in the shift towards sustainable energy practices and to foster collaboration between gas and electric sectors. Customer engagement highlighted the use of trusted channels, such as community organizations or regulatory bodies, for effective communication and education. Other suggestions included using gamification to simplify energy management and considering a "Climate Savings Account," similar to Health Savings Accounts, to help fund energy transition costs. This transition to electrified heat requires cooperation with regulators, technology providers, and other stakeholders to align goals and create value-sharing models, as gas utilities face customer loss to electric systems.

Breakout Sessions | Track 4

VPP Panel: Steering Energy Demand: How Virtual Power Plants can be expanded to help reduce customer costs

The Virtual Power Plants (VPP) session highlighted their importance in reducing costs, balancing grid demand, and supporting the energy transition. Panelists emphasized prioritizing customer needs for effective VPP development, with Massachusetts as a model. They discussed the Department of Energy's efforts to address deployment barriers using recent legislation that targets equitable access for underserved communities. The panel also highlighted National Grid's $35 billion investment in the energy transition, focusing on expanding infrastructure; enhancing Distributed Energy Resources management; and promoting customer participation through initiatives like the Connected Solutions program.

Afternoon Fireside Chat:

Investing in Innovation

Jigar Shah, Director of the DOE's Loan Programs Office, and Jeff Marootian, Principal Deputy Assistant Secretary at the DOE's Office of Energy Efficiency & Renewable Energy, discussed government roles in the energy transition. With moderator Ben Wilson, President of National Grid Ventures, they highlighted support from the Inflation Reduction Act and Infrastructure Law for startups and technical innovation. They noted barriers in the utility sector's conservative culture and dependence on legacy systems like natural gas. With rising electricity demand, there is a need for improved grid reliability, energy storage, and transmission infrastructure. The panelists stressed that, with adequate support and innovation, consumer demand for resilient energy solutions could lead to cost-effective alternatives.

Key points:

- Innovation and deployment in the utility sector are crucial to meet decarbonization goals amid rising electricity demand.
- Investments in transmission infrastructure and energy storage are essential for integrating new energy sources and technologies.
- The U.S. can lead in clean energy technology and manufacturing to support domestic and global decarbonization efforts.

Closing Keynote:

Vanessa Chan

Dr. Vanessa Chan, Chief Commercialization Officer at the DOE, discussed the role of public-private partnerships in driving the clean energy transition. She noted that government support can help reduce risks and stimulate private innovation and investment. Strategically using public funds to encourage private sector participation can create sustainable energy solutions that meet both regulatory requirements and market demands. Vanessa highlighted the need for innovation at every stage of development, from research to commercialization. She concluded by encouraging the private sector to mobilize resources with agility, emphasizing that urgency and collaborative action are essential to address today's energy challenges and ensure a sustainable future.

Key points:

- Public-private partnerships boost clean energy innovation by using public funds to attract private investment.
- Vanessa's team developed the Adoption Readiness Levels (ARLs) framework, which helps evaluate technology for market fit, supply chain readiness, and regulatory alignment and can guide startups to overcome barriers.
- The DOE's "Pathways to Commercial Lift Off" initiative offers adaptable roadmaps to commercialize clean energy technologies, continuously aligning with sector changes and inspired by Moore's Law and the Manhattan Project.

QUOTES FROM NGA MEMBERS

“ We have so many challenges amongst all of us [utilities], and we’re going to need to solve these challenges together. Making sure we’re coordinated, connected, and sharing different insights has been invaluable over the past two days. ”

Adam Richins
COO, Idaho Power

“ The most valuable part of participating in the NextGrid Alliance Summit is the connections and reconnections we’ve made with entrepreneurs, peer utilities, investors, and others in our space to help solve the challenges we’re all facing.”

Eric Davis
Research & Development Manager, Innovation Hub, ConEd

“ We are on the journey of transforming the grid, for how we plan, design and operate; so hearing about the different technologies and innovation models has been fantastic.”

Shinjini Menon
SVP System Planning and Engineering, Southern California Edison

“ The NGA summit was quite possibly the best utility industry event I’ve attended to date. I made several valuable connections at your event, and we’re exploring potential tech pilots and other new partnerships with multiple organizations.”

Bryan Jungers
Principal, Emerging Technology & Innovation, Tucson Electric Power

Thank You