

C4SB: Coalition for Smarter Buildings

Smarter Connected Buildings Reduce Carbon, Drive Economic Growth, Create Great Jobs, and are a Federal Policy Priority

June 2021

Introduction: Transforming today's old and new buildings into truly smarter, connected, and more energy efficient buildings is essential if America is to achieve the national goal of reducing carbon emissions 52% by 2030. The technology exists to make every building a smarter building through the deployment, at scale, of solutions that are affordable for every building owner. This transformation includes an opportunity to spawn new industries that can produce thousands of jobs, helping drive the post-pandemic economic recovery, and restore national vitality and dynamism to our nation.

The Coalition for Smarter Buildings (C4SB) advocates for smart building technologies to build a world that is more sustainable, resilient, comfortable, and efficient. The Coalition is made up of the world's premier technology providers in smart building automation solutions working together as small businesses and industry thought leaders to deliver practical policy, technology, and commercial solutions to the toughest challenges in our built environment.

PERFORMANCE: Our members deliver comprehensive and multifaceted building monitoring and management systems from a carefully qualified list of vendors and installer partners. Building owners, facilities directors, and executives choose solutions from members of C4SB because they work.

EFFICIENCY: Smart buildings are smart business. We deliver intelligent, integrated solutions that save time, save money, possess outstanding ROI, and enable sustained growth. That's the bottom line.

SUSTAINABILITY: From energy monitoring and management to microgrid renewable projects, our results and projects reduce carbon, save energy, and benefit our communities and the environment.

The Coalition's advocacy work includes helping building owners, operators, occupants, designers, builders, industry vendors and policy makers with:

I. Smarter Buildings Reduce Carbon

A smarter building is a building outfitted with inter-connected systems that enable measurable and predictable data-enhanced operations, including carbon and energy savings, better occupant comfort and productivity, and lower and more streamlined operational and capital costs.

Smarter building best practices deploy technologies and services with important attributes such as:

- **Reducing Carbon and Energy:** Cutting a building's carbon emissions and energy use by 50%. Overall, doing so for the 93 billion sq ft of commercial buildings (including multi-tenant residential > 3 stories) would reduce U.S. carbon emissions by 6%-points or 1/8th of the national 52% goal.
- **Everything Works Together:** "Smarter" buildings are born when all their "smart" devices are connected together (such as smart thermostats, HVAC, water heaters, and other utility provided power equipment and accessory devices, among many others). Technologically, this means the solution is open & interoperable, and includes single-pane-of-glass user access, an independent data layer, and is application- and intelligence-layer-ready (such as for Digital Twins).
- **Engaging Occupants:** Invites building occupants to be part of the solution by sharing information and providing ways for them to contribute to savings, growth and productivity.
- **It's Cost Effective:** The costs of considering, acquiring, installing and running smarter building solutions need to be in line with the size and complexity of all buildings, from big to small. C4SB is pioneering affordable, scalable, customizable smarter building solution for every building.

II. Smarter Buildings Drive Growth and Boost Jobs

Smarter buildings deliver more comfortable spaces, higher productivity, and put many people to work.

- **Commerce:** Smarter buildings enable higher output from business occupants, creating more value for businesses and building owners. And with innovation driven mainly by small business vendors across all 50 states, smarter buildings promote broad economic growth in all corners of the country.
- **Labor:** Smarter buildings will employ millions of people, engaging a full range of skill levels, from installers & service techs to coders and designers to artificial intelligence experts. To achieve connected smarter buildings in the 85% of buildings without a power management system will itself create jobs across the supply chain which can fuel the nation's post-covid economic recovery.
- **Education:** Community colleges, trade institutes, high schools, colleges and universities can all play a significant role in training and getting people into the needed jobs.

III. Plan to Reach 5 Million Smarter Buildings

The Coalition developed and is promoting a plan to make all of America's 5 million commercial buildings smarter which will reduce our CO₂ emissions by 80 million metric-tons/year (6%-points of the 2030 national goal of 52% reduction), including separate tracks for:

- **Building Owners:** How to explore, consider, design, procure, install and run truly smarter connected building solutions that fit your building(s) – physically, operationally and financially.
- **Policy Makers:** How to understand smarter building technology, develop policy outcomes that drive commercial adoption (including financial incentives), engage the public with collective goals, make government buildings the models, establish new disclosure, performance and procurement requirements, promote a carbon marketplace, fund "Shovel Ready – Browser Ready" building projects, and fund job training in the smarter buildings field.
- **Industry Players:** How to supply compatible products + services, scale to reach wide adoption, and contribute to advocacy efforts.
- **Workers and Professionals:** How to supply and access the wide range of skills needed by the smarter building industry and connect to good paying, sustainable jobs.

IV. How The Coalition for Smarter Buildings Can Help

The Coalition helps building owners, operators, occupants, designers, builders, industry vendors and federal, state and local policy makers by:

- **Being a Resource:** For specifying and selecting smarter building solutions, and matching projects to multi-vendor solution teams, for any type or size of commercial or multi-family residential building.
- **Advising on Technical Issues:** Including determining what can and needs to work together, for project designers and product suppliers.
- **Accelerating Widespread Adoption:** Including scaling solutions and how to buy for and deliver to buildings and portfolios, big and small.
- **Advising on Legislation & Policy:** Including draft policy development and providing expert testimony, in Washington, D.C., state capitols, city halls and local jurisdictions.

Conclusion: Never before has the opportunity to transform the built environment into truly smart, connected buildings been so attainable. And the new federal policy priority – including the *National Roadmap for Grid-Interactive Efficient Buildings* released by U.S. Department of Energy on 17 May 2021[†]– enhances the demand for and technology solutions now available to every building. We invite you to contact us to learn how we can help you navigate the world of smarter building systems!

[†] <https://gebroadmap.lbl.gov>

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The Coalition for Smarter Buildings brings expertise, thought leadership and industry resources to achieve the goal of tripling energy efficiency in buildings by 2030,

as laid out in the U.S. Department of Energy's *National Roadmap for Grid-Interactive Efficient Buildings* (17 May 2021)[‡]

Coalition for Smarter Buildings member companies are ready *today* to accelerate adoption of GEBs based on technology that already exists, to drive innovation of new, gap-filling solutions over the coming years, and to do so in scalable ways that can affordably reach all types and sizes of buildings.

The Coalition and its smart building industry members can help Federal and State policy makers and other public and private stakeholders achieve the following specific recommendations:

Table based on Figure 12. STAKEHOLDER INVOLVEMENT IN IMPLEMENTATING THE ROADMAP RECOMMENDATIONS (*National Roadmap for Grid-Interactive Efficient Buildings*, pp. 72-73)

Recommendation	Coalition Contribution
Pillar 1: Advancing GEBs Through Research, Development, and Data	
Develop/accelerate deployment of GEB technologies	<ul style="list-style-type: none"> • Continue to develop innovative GEB technologies and processes, scalable to reach all types and sizes of buildings. • Promote new delivery methods for scoping, buying, installing and operating GEB solutions, especially for the 5.4 million commercial buildings (97.5%) < 99k SF. • Develop control algorithms for HVAC, water heating, and other DERs. • Deploy connected demand flexible devices such as appliances, electronics and MELs.
Accelerate technology interoperability	<ul style="list-style-type: none"> • Promote and expand open standards such as Haystack data tagging. • Provide access to data from commercially deployed projects for evaluation of interoperability. • Deploy <i>existing</i> open, interoperable technologies. • Develop additional, affordable interoperability functionality and APIs where gaps exist, for integrating legacy and new systems, and for specific building types and sizes.
Improve access to and use of Demand Flexibility data	<ul style="list-style-type: none"> • Develop and implement standard methods for DF data collection and M&V. • Create new marketplaces for GEB building data and services, enabling better control of and access to data, and new categories of market opportunities.

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[‡] <https://gebroadmap.lbl.gov>

Pillar 2: Enhancing the Value of GEBs to Consumers and Utilities

Develop innovative incentive-based programs	<ul style="list-style-type: none"> • Test new incentive programs with real customers • Incorporate incentives and ROI visibility into pricing and delivery mechanisms
Expand consumer knowledge and consideration of price-based programs	<ul style="list-style-type: none"> • Provide technical solutions for pilots (if necessary).
Introduce incentives for utilities to deploy demand-side resources	<ul style="list-style-type: none"> • Work with utilities to educate them on demand flexible solutions and interactions with the grid.

Pillar 3: Empowering GEB Users, Installers, and Operators

Understand user interactions with GEBs and role of technology	<ul style="list-style-type: none"> • Provide samples of existing projects to share models that work, lessons learned, and data for researchers, all informing public policy and private decision makers. • Provide data for research on prices, incentives, technology and demand flexibility adoption.
Develop GEB design & operation decision-making tools	<ul style="list-style-type: none"> • Incorporate DF and DERs into existing and new decision support and analysis tools. • Incorporate GHG emissions into analytics. • Provide data on hard and soft costs of installing and configuring advanced sensing and control technologies needed for fully optimized GEBs and related DERs.
Integrate smart technology training into existing programs	<ul style="list-style-type: none"> • Help create smart building and DF tech training content. • Provide industry-experienced professionals who can be trainers and industry ambassadors.

Pillar 4: Support GEB Deployment Through Federal, State, and Local Enabling Programs and Policies

Lead by example	<ul style="list-style-type: none"> • Provide GEB solutions for federal, state and local buildings.
Expand funding and financing options	<ul style="list-style-type: none"> • Cooperate to help create new funding mechanisms. • Bring GEB solutions to underserved communities across the country where Coalition member companies are based.
Expand codes & standards to include DF	<ul style="list-style-type: none"> • Advise on creating new DF codes and standards, at federal, state and local levels.
Consider implementing state targets/mandates	<ul style="list-style-type: none"> • Provide advocacy resources and industry advisory expertise at the state level. • Inform legislation or regulatory requirements.

For more information, contact us at Coalition for Smarter Buildings:

<ul style="list-style-type: none"> • Rick Justis • Jeff Williams • Kennedy Gales 	<p>Managing Director, Strategy Government Relations Director, Operations</p>	<p>rick.justis@yahoo.com jeff@skycentrics.com kennady@c4sb.org</p>
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Select Member List

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Company	HQ	Individual(s)	Company Organization Profile
Coalition for Smarter Buildings	Kansas City, MO	Rick Justis Managing Director Kennady Gales Operations Lead	Smart building industry advocacy & resource group
75F	Minneapolis, MN	Chris Runquist CFO	Smart building controls technology
Ace IoT Solutions	Chattanooga, TN	Bill Maguire CEO Andrew Rogers CTO	Open-source Smart Building Systems Master Integrator
AutomatedBuildings.com	Sidney, BC	Ken Sinclair Publisher	Online web resource providing news and connection to the change agents creating the definition of smart, intelligent, integrated, connected, green, and converged buildings.
Blackfin Real Estate Services	Kansas City, KS	Scott Ullrich Director	Provider of building operation, technical and engineering services to property and building owners in 12 states
Cimetrics	Medford, MA	Jim Lee CEO	Expert providers of analytics and automation networks.
E2C Technology	Dallas, TX	Anno Scholten CEO	Developer of applications and solutions that connect Smart Buildings with Smart Energy and Analytic solutions
Engenuity Systems	Chandler, AZ	Tracie Markie CEO	Supplier of advanced networked control and IoT products and the platforms and solutions to manage and monitor them
Lynxpring	Lees Summit, MO	Marc Petock CMO	Smart Building Systems Integrator
Padi	Asheville, NC	Anto Budiardjo CEO	Master Systems Integrator and smart building solution designer
PlantImpact	Kansas City, MO	Brett Krug CEO	Building analytics platform enabling carbon neutrality.
SkyCentrics	Berkeley, CA	Red Smith CEO Tristan DeFrondevile Founder	Provider of CTA-2045, OpenADR and Volttron for real time, open standard, IoT smart building solutions and Distributed Energy Resource Mngt (DERMs)
SkyFoundry	Glen Allen, VA	John Petze Founder	Fault detection diagnostics and AI for smart building solutions

Company	HQ	Individual(s)	Company Organization Profile
Switch Automation	Denver, CO	Gina Elliott Vice President	Smart building platform that helps customers make effective, timely decisions to reduce operating and energy expenses while delivering an exceptional occupant experience.
Tosibox	Suwanee, GA	Bill Behn President	Fully automated digital infrastructure global OT network standard for IIoT
Totem Building Cybersecurity	Midlothian, VA	Tom Shircliff Founder	Commercial real estate (CRE) SaaS solution that automates the oversight of the #1 cause of cybersecurity events in building control systems: human behavior.
Verdicity	Newton, MA	Peter Scanlon CEO	Marketplace for Smarter Building Solutions that all work together
Woodward Consulting	London, UK	Roger Woodward Principal	Expert on technologically advanced controls solutions in building automation

For more information, contact us at Coalition for Smarter Buildings:

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