

**GSA Office of Federal High-Performance Buildings
Advisory Committee Meeting
1800 F Street, NW, Washington, DC, Room 1459
Thursday, September 27, 2018
Meeting Notes**

Committee Chair

Outgoing: Greg Kats	Capital E
Incoming: Projjal Dutta	NY State Metropolitan Transportation Authority

Committee Members

Ash Awad*	McKinstry
Charlene Bayer	Hygieia Sciences LLC
Chris Castro**	City of Orlando
CJ Córdova	U.S. Department of Veterans Affairs
Ralph DiNola	New Buildings Institute
Jennifer Frey	Sellen Construction
Dave Gibson	U.S. Environmental Protection Agency
David Kaneda	Integral Group
Yvonne Medina**	U.S. Department of Transportation
Clay Nesler	Johnson Controls
Victor Olgyay	Rocky Mountain Institute
Brendan Owens	U.S. Green Building Council
Andrew Persily	National Institute of Standards and Technology
Kent Peterson	P2S Engineering
Sonia Punjabi	Pacific Gas & Electric
Jane Rohde	JSR Associates
Sarah Slaughter	Built Environment Coalition
Maureen Sullivan	U.S. Department of Defense
Cynthia Vallina	Office of Management and Budget

GSA Participants

Jessica Salmoiraghi	Associate Administrator, Office of Government-wide Policy
Kevin Kampschroer	Chief Sustainability Officer and Director, Office of Federal High-Performance Buildings (OFHPB)
Ken Sandler	Designated Federal Officer, OFHPB
Michael Bloom	OFHPB

* denotes those who attended via web conference

** denotes those not present at the meeting

Opening Remarks and Introductions

- Kevin Kampschroer, Chief Sustainability Officer and Director, GSA Office of Federal High-Performance Buildings (OFHPB), opened the meeting and introduced Jessica Salmoiraghi, Associate Administrator, GSA Office of Government-wide Policy (OGP), noting the broad range of OGP's programs providing customer services across the federal government.
- Jessica Salmoiraghi welcomed Committee members and guests to GSA. She thanked Committee members for bringing their extensive expertise to GSA, on a voluntary basis, greatly helping the Agency to meet its high-performance building mission. She cited the example of the Committee's healthy buildings recommendations, which GSA is helping implement through a new interagency Health & Wellness Group and a new [Buildings and Health page](#) on the Sustainable Facilities Tool (SFTool.gov).
- Ken Sandler, Designated Federal Officer (DFO) outlined the essential role of advisory committees to the federal government, the statutory basis of the Green Building Advisory Committee to advise OFHPB in achieving its mission, and the requirements of the Federal Advisory Committee Act (FACA).
 - o Per FACA, advisory committees are required to be transparent, unencumbered by conflicts of interest, balanced and independent.
 - o This Committee meets in person twice a year, reaches consensus on high-performance building topics on which to advise GSA and the federal government (as the group will do this afternoon) and creates task groups to develop findings and recommendations to the Committee, for approval and presentation to GSA.
 - o Ken announced his plans to go on detail to the Department of Energy's Building Technologies Office, during which time Michael Bloom will manage the operations of the Committee as Alternate DFO.
- Greg Kats, Outgoing Committee Chair, thanked the Committee for working with him as Chair over the past 4 years, and expressed his enthusiasm to help identify new initiatives for the Committee to tackle at this critical time.

Building & Grid Integration: Task Group Update & Discussion

Ralph DiNola, New Buildings Institute

Victor Olgyay, Rocky Mountain Institute

Mark Frankel, New Buildings Institute (guest speaker)

- **Background:**
 - o Mark Frankel observed that building integration with the electric grid is being driven by several trends challenging the traditional model of large fossil-fuel plants providing cheap power through a one-way grid. The growth of distributed energy sources, including renewables that follow certain daily patterns with significant variation, is converging with new technologies allowing for a smarter, two-way, responsive grid, including smart meters, buildings, devices, etc., as well as energy storage. These

developments correspond with demands for the grid to be more efficient, less polluting, more resilient, consumer-friendly and flexible.

- The rapid deployment of solar technology in markets like California is leading to the [“duck curve”](#) phenomenon. Traditionally, a graph of daily net electric load (the difference between electricity demand and production) shows load and generation rising in tandem as additional plants are ramped up to meet peak demands. But increased solar generation can lead to over-generation during mid-day, at which point other generation sources must be ramped up quickly as the sun sets and demand stays high. This can create strain on the grid and power supply disruptions.
- Building-grid integration strategies aim to make the shape of the demand curve more manageable and flexible to avoid such problems. Energy efficiency can flatten the overall demand curve, while energy storage can shift the peak period, based on when it is dispatched, and demand response reduces peaks by triggering energy use reductions in response to warning signals.
- The New Buildings Institute and U.S. Green Building Council are exploring bundling these strategies into a program, GridOptimal, to encourage and reward buildings for being grid-friendly. Stakeholders, from utilities to the building sector to regulators and service providers, have different needs but win-win solutions may be devised.

- **Building-Grid Integration Task Group**

- The Advisory Committee agreed to tackle this issue and created the Task Group to develop findings and recommendations for a flexible policy framework to accelerate adoption of grid-integrated federal buildings. Ralph and Victor led the Task Group and discussion of its findings.
- The group defined its mission as:
 - To advance grid-integrated federal buildings that leverage technologies and strategies to dynamically shape energy loads, providing resilience and valuable services to the power grid, while saving money for the taxpayer.
- Its vision is:
 - Federal buildings are designed, built, retrofitted and operated to be smart, connected, responsive assets for optimal interaction with the power grid. These solutions provide a compelling business case for GSA through operational cost savings and increased property value, while also reinforcing national priorities like a more resilient power grid. Fully integrated solutions (i.e., a balanced solution of energy efficiency, distributed energy generation, energy storage, and load flexibility) become standard such that the whole strategy is greater than the sum of the parts.
- The group proposed overarching recommendations for:
 - New buildings to be designed and existing buildings to adopt operations and maintenance best practices, to facilitate grid

integration through energy efficiency, distributed energy generation, energy storage and load flexibility, including smart controls;

- GSA to work with utilities to pilot and implement mutually beneficial rate structures, and gain information about location and time-of-use-specific energy cost and emissions factors.
- More specific recommendations included:
 - Policies for GSA to work with utilities and grid operators to:
 - 1) Develop regional grid load profiles;
 - 2) Understand and take advantage of flexible rate structures.
 - Policies for all federal buildings to:
 - 3) Plan grid integration improvements over time, piloting and implementing in the short term, while enabling for future flexibility;
 - 4) Investigate, consider and pilot use of Advanced Metering Infrastructure and OpenADR;
 - 5) Enhance building resilience, arming buildings for passive survivability;
 - 6) Investigate, consider and pilot use of energy storage (including “storage-ready” facilities);
 - 7) Investigate and promote greater use of distributed energy resources and onsite generation;
 - 8) Investigate whether ESPC and UESC projects could incorporate demand charges in pricing and planning, consider and pilot promising approaches;
 - 9) Modify federal energy goals that focus only on energy reduction to also include targets pertaining to demand reduction, load factor, energy costs, and carbon reduction.
 - 10) Enhance electrification.

- **Comments on Building-Grid Task Group Draft Findings and Recommendations**

- Challenges:
 - Building decision makers want to know the return on investment of these practices; however, such calculations have many complexities, including different contexts depending on regions, rate structures, etc. Meanwhile, energy storage cost projections and rates are continually evolving. Hence, analyses must explore various scenarios covering how building integration actions in key regions will impact demand, energy and cost.
 - Electric vehicles (EVs) are another factor expected to bring major change, ultimately representing perhaps 50% of electric load.
 - Cyber security issues must be a major consideration.
- Enhance stakeholder involvement:

- Find utilities interested in partnering and participating in pilots as well as the Task Group; they can help test the cost-effectiveness of different strategies.
 - Other stakeholders that should be brought into the discussion include: Public Utility Commissions; Independent System Operators (ISOs)/Regional Transmission Organizations (RTOs); service aggregators; National Association of Energy Service Companies (NAESCO); DOE's Federal Energy Management Program (FEMP) and other federal partners.
 - Pilot projects:
 - There are benefits to conducting pilots at all scales: buildings, campuses, regions. Even small building projects can have major impacts if planned well, as substation investment decisions can be affected by local "duckling" curves. Bigger projects may provide more benefits but also add greater complexities.
 - Pilot building selection will need to take into account which buildings are likely to be maintained as critical assets not subject to elimination under "Reduce the Footprint" goals.
 - Goals:
 - Revise mission statement to clarify importance to federal agencies of achieving their missions, which capital assets exist to enable. Maintaining the grid is not their mission, but their mission is dependent on the grid providing reliable access to power.
 - Revising recommendations:
 - Narrow down the recommendations, and indicate which are for the present vs. the future.
 - Electrification recommendation should be dropped as it precludes use of combined heat and power and natural gas use in peak shaving, and leaves out need for upgrades to gas infrastructure.
 - Beyond greenhouse gases, other pollutant impacts are worth noting.
- Conclusions:
 - The Committee commended the Task Group for its outstanding work on this topic.
 - **Approved Motion: Task group to resubmit Advice Letter with revisions incorporating Committee comments.** Further comments due to Ken by October 2nd.

Lunch Presentation & Discussion: Implementing Executive Order 13834 on Efficient Federal Operations

Cyndi Vallina, Office of Management and Budget

- Executive Order 13834:

- Aims to drive continuous action to increase building and vehicle operational efficiencies. Focus is on meeting statutory requirements, cutting agency costs, streamlining and providing flexibility for agency implementation.
- Provides similar overarching goals as recent EOs on sustainable government operations – on energy & water efficiency, renewable energy, high performance sustainable buildings, waste, acquisition, fleet and greenhouse gases – although with greater flexibility for agencies to achieve goals and meet mission needs.
- Implementation:
 - CEQ and OMB are developing Implementing Instructions for the EO, which will go out as a draft to agencies for comment.
 - Agency Chief Sustainability Officers (CSOs) facilitate compliance and interagency coordination
 - Agencies develop Sustainability Implementation Plans
 - Report on successes/challenges, plan for coming year to meet goals
 - Helps agencies that are struggling focus their efforts where needed.
- Reporting and tracking results:
 - CEQ and OMB are working to make data collection more cost-effective and less burdensome.
 - OMB Scorecards assess agencies on their progress under each goal area.
 - Current government-wide progress and FY17 Agency Scorecards, and other resources, are available at www.sustainability.gov
- Federal government-wide progress (FY2017 preliminary findings):
 - Guiding Principles for Sustainable Federal Buildings met for 10.5% of federal building square footage
 - Federal building energy intensity (Btu/gross square foot) cut by 26.7% since 2003, with 7.6% reduction in the last 2 years.
 - 10.7% of government electricity use identified as renewable, with about half coming from purchases of renewable energy credits (RECs) and half from DOD onsite projects.
 - \$1.5 Billion in energy efficiency investments made in FY17, with projected savings of nearly \$50 billion by 2030.
 - Potable water intensity down 26% since 2007 (3.8% from last year).
- **Comments on Implementing Executive Order 13834 on Efficient Federal Operations**
 - The government should not rely on REC purchases to meet renewable energy goals, as many RECs do not have any real impact on the renewables market. The rapidly falling prices of renewable power makes investments like power purchase agreements more viable for the government to pursue instead.

Committee Chair Election

- **Approved Motion: Projjal Dutta was elected to be the new Committee Chair for the next two years.**
 - o Projjal acknowledged the solid groundwork laid by the previous two Chairs, Bob Fox and Greg Kats. He expressed his enthusiasm to guide the group forward through interesting times, e.g., during which renewable energy costs continue to fall, opening new opportunities and business models. He suggested recognizing excellence in the federal government and identifying market-friendly high performance building solutions.

Exercise: Future Directions for the Committee

Facilitator: Michael Bloom, GSA

- The Committee conducted a brainstorming and decision-making exercise to identify the next topics on which the committee should develop recommendations to GSA. Criteria included the market failure to be addressed, whether the proposed solution is likely to have a substantial impact, whether it is an appropriate issue for the Federal government to address, whether the benefits of such a proposal would outweigh its costs, and indicators of success.
- Approved motions were:
 - o **Prioritize grid integration strategies and develop implementation plan and scenarios with future rate structures, including consideration of EVs and energy storage.**
 - Will go beyond scope of current Building-Grid Integration Task Group, after current group completes its Advice Letter.
 - o **Document and recognize advanced integrated building systems use cases that demonstrate the business case and quantify the multiple benefits of integrating building technologies with other systems.**
- Sonia Punjabi volunteered to co-chair the Grid Integration Strategies Task Group, while Clay Nesler agreed to co-chair the Integrated Building Systems Task Group. Ken noted which members expressed interest in being members of these groups and will follow up to identify additional members and Co-Chairs, set dates and times for Web meetings and publish a Federal Register notice announcing these meetings.

Public Comment Period

- There were no public comments.

Closing Comments & Adjournment

- Kevin thanked the Committee for the new ideas and energy it infuses into the government, which helps GSA move forward with innovations, better practices and continuous improvement. The Building-Grid Integration Task Group accomplished an amazing amount in a short amount of time, as did the Committee at today's meeting. Having other agencies actively participating allows the government to have the biggest impact through collective action.

- Ken adjourned the meeting expressing great appreciation to all Committee members for their impressive work and thoughtful contributions.