

Note: This presentation represents the deliberations of a task group to an independent advisory committee, and as such, may not be consistent with current GSA or other Federal agency policy.

Accelerate the Adoption of High Performance Federal Buildings

GREEN BUILDING ADVISORY COMMITTEE

JUNE 7, 2017

Task Group Objective

Accelerate the deployment of technologies and practices to upgrade existing Federal facilities towards high performance levels.

Objective Takes Into Account:

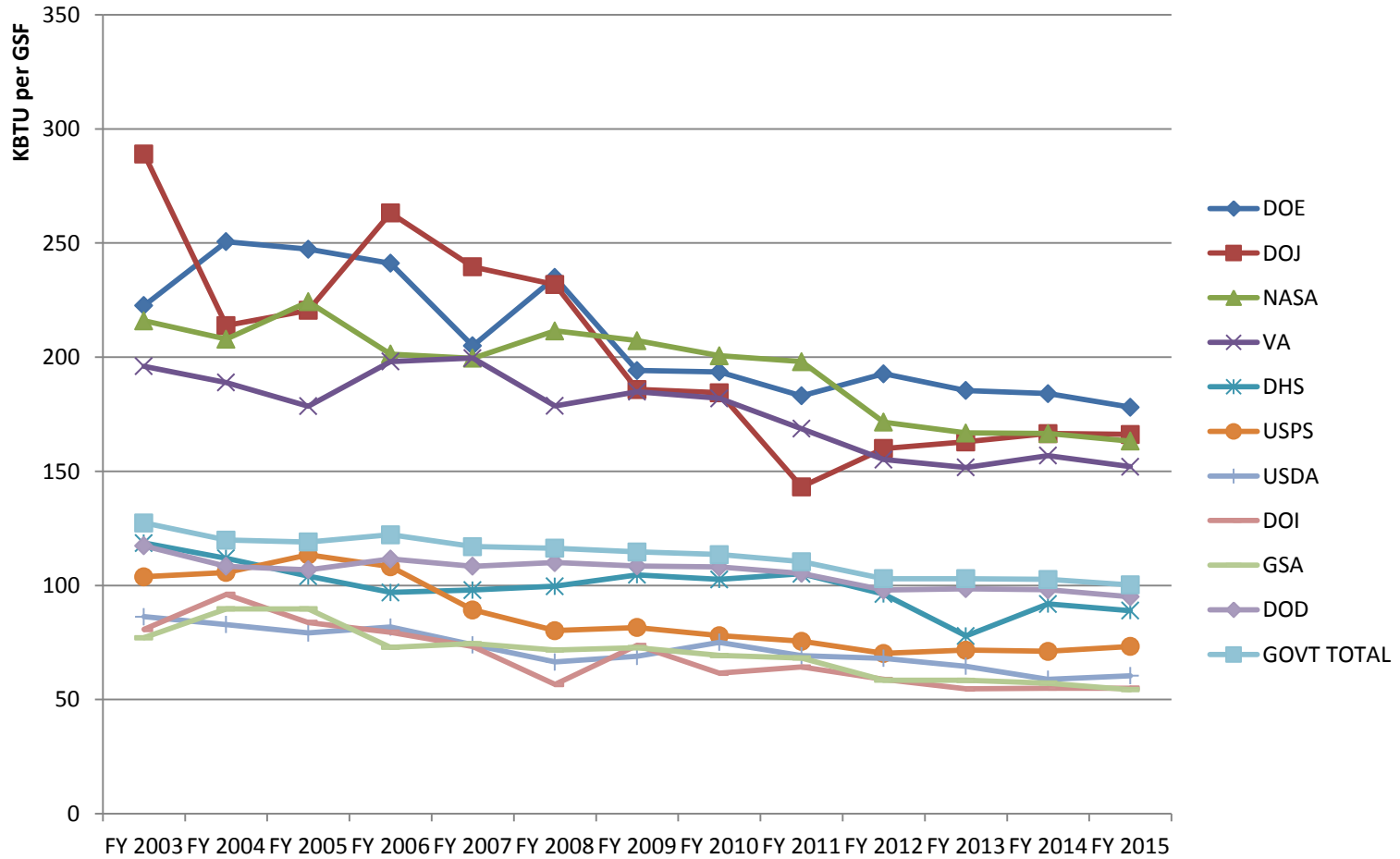
- **Business case**, including utility cost savings, resource conservation, and supporting the local economies with job creation and workforce development
- **Improved Federal workplace environments**, improves occupant performance and agency effectiveness in fulfilling missions
- **Improved Federal resilience**, greater Federal building energy and water security

Progress to Date

- Gathered existing information on Federal HPB progress to date
- Presentations from several Federal agencies on energy financing and deep energy retrofits (DOE FEMP, DoD, Army, GSA)
- Scope has been narrowed to focus on overcoming financial and administrative barriers

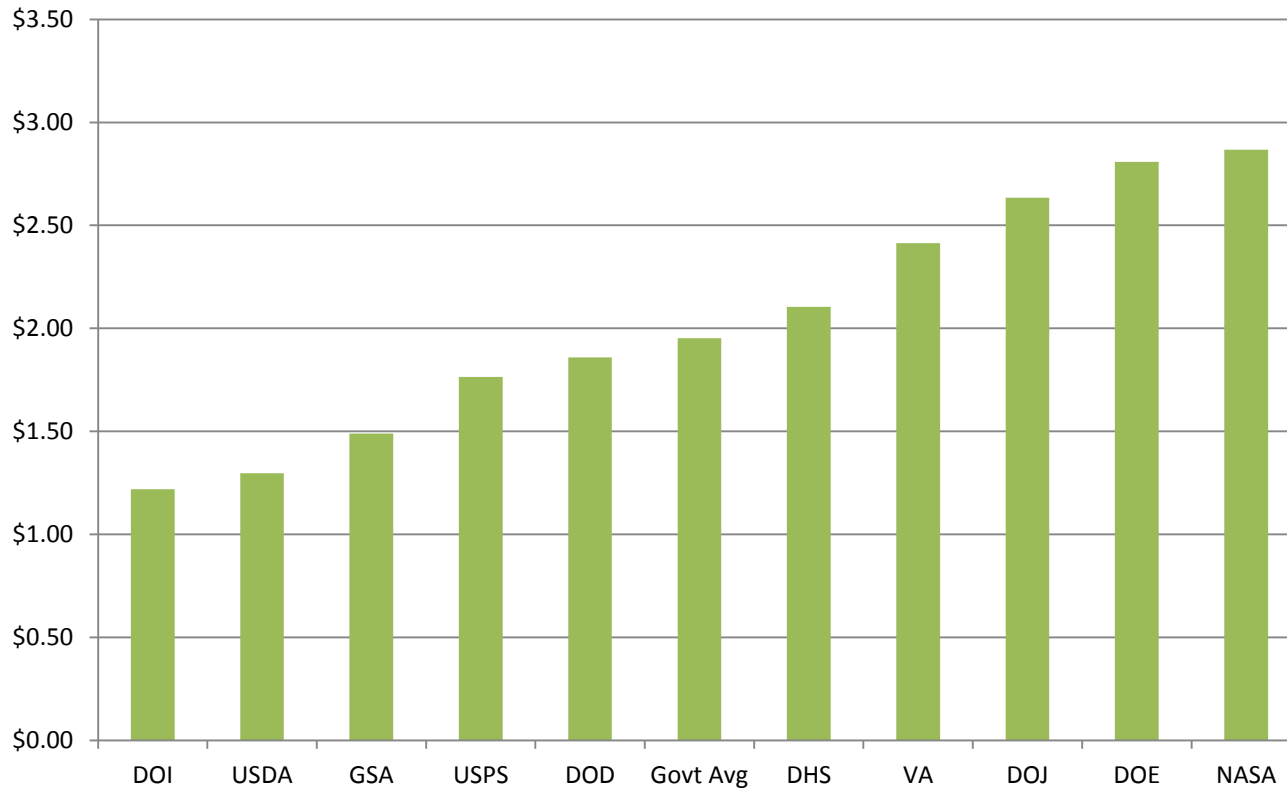
Energy Use Intensity (EUI)

Table I: Agency EUI trend, 2003-2015



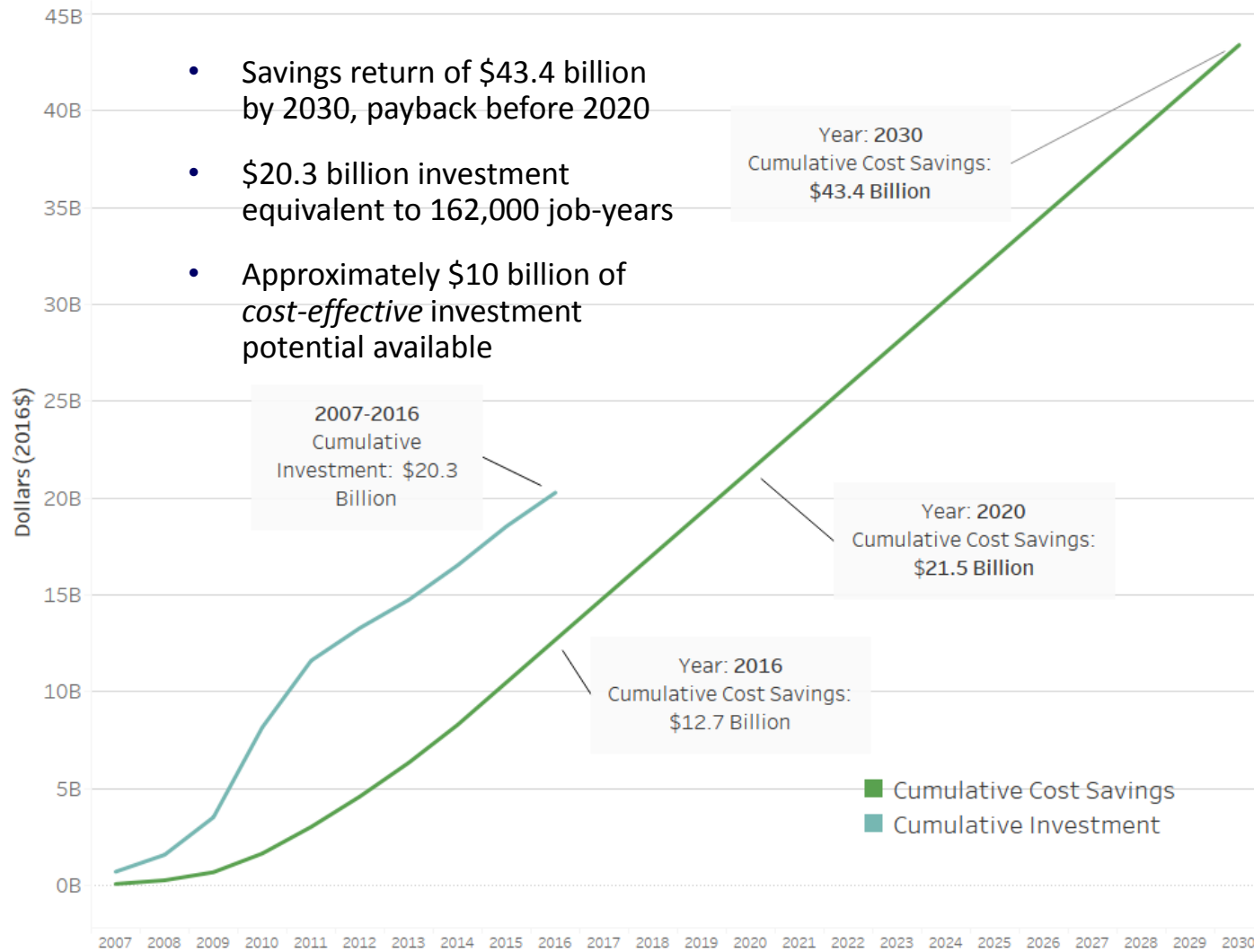
FY 2015 Energy Costs Per Square Foot

FY15 Goal-Subject Building Energy Costs, \$ per GSF



Federal Building Energy Return on Investment*

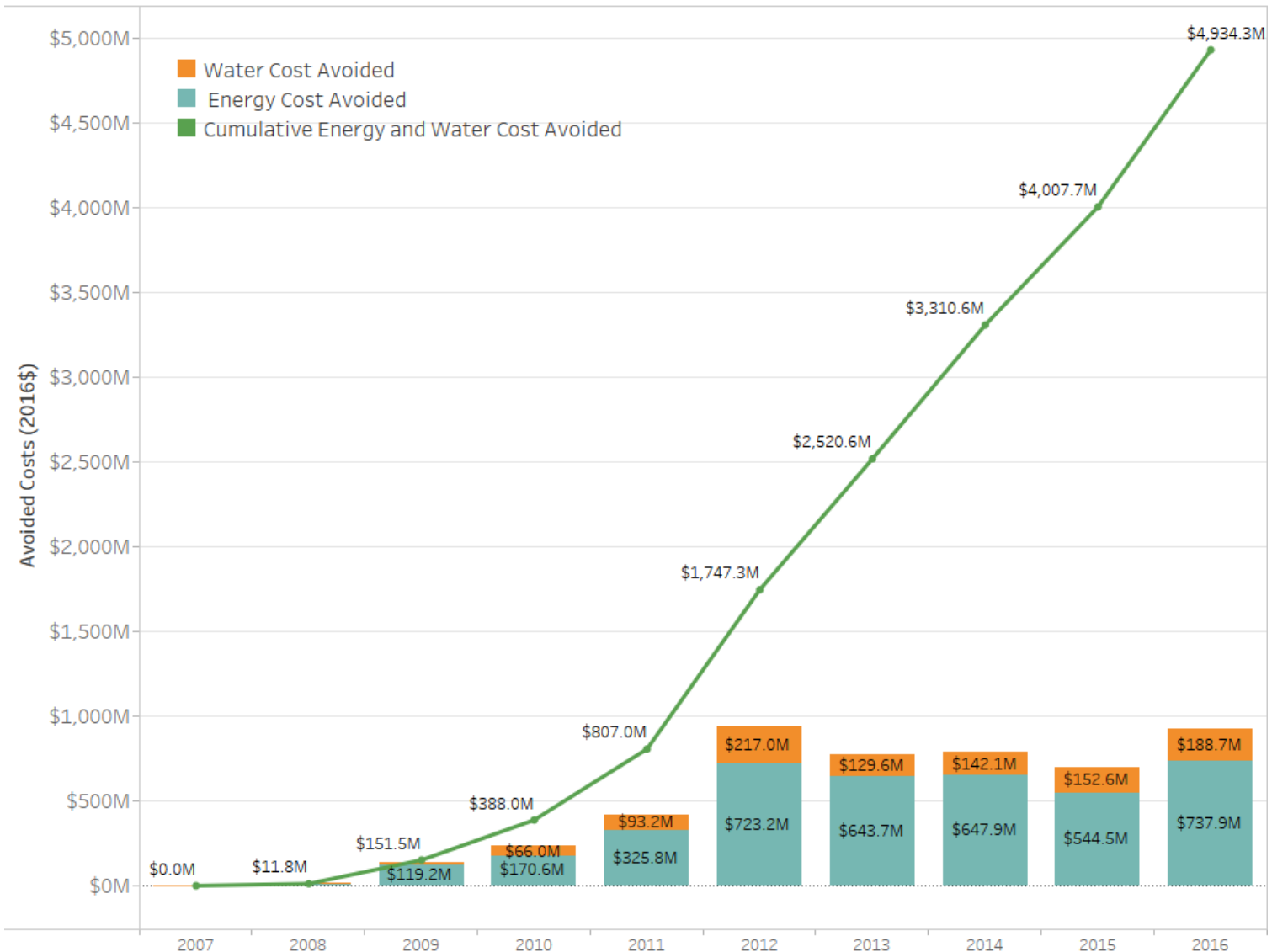
Savings Return on Federal Facility Energy Efficiency Investment of \$20.3 Billion (2016\$)



*(FY16 figures subject to change)

Federal Building Energy & Water Cost Avoidance

Cost Avoided from Reduced Energy and Water Use in Buildings (2016\$)



Alternative Financing Options

- On-Site Renewable Energy Projects with Gov't Ownership
 - Appropriated Funding
 - Alternative Financing
 - Energy Service Performance Contracts (ESPCs)
 - ESPC ENABLE (PV only)
 - Utility Energy Service Contracts (UESCs)
 - “Retention of Savings for Reinvestment in HPB Initiatives” (EISA, 2007, sec. 436)
- On-Site Renewable Energy Projects with Private Ownership
 - Power Purchase Agreements
 - Real Property Arrangements

Alternative Financing: Current Findings

- **Current success** is very dependent on agency goals and local champions
- Between Dec 2011 and Jan 2017, US Federal Government awarded \$4.2B of energy performance contract investment (ESPCs & UESCs)
 - Of that amount, DOD accounted for over \$2B, the Army executing \$1.108B of it
 - GSA achieved \$540M in ESPCs
- For Army, every dollar of seed money leverages \$75M in third party investment
- GSA has shown that deep energy retrofits can be implemented with no more work than typical ESPCs, with double the energy & cost savings

Federal Deep Energy Retrofit Barriers & Solutions

Barrier	Solution
Absence of public funding	Leverage ESPC
Lack of opportunity for deeper savings in smaller projects	Bundle projects, take integrated whole building approach
Long and inconsistent contract award process	Create a project management office at GSA HQ to streamline contract award and management
ESCOs indicate agencies have not been requesting deep retrofits	Ensure major project goals include achievement of deep energy savings

Best HPB Process Approaches (in Progress)

- Set aggressive goals early, per EISA and ASHRAE 189.1 definitions
- Remove artificial project limits such as term length and payback thresholds on ECMs
- Develop strong communications plan early that engages all stakeholders
- Engage building occupants, IT & security personnel, and O&M staff as well as financial managers, leadership and utilities
- Establish a support system
- Centralize resources and streamline the ESPC process
- Develop consistent practices between national & regional offices
- Include appropriated funds where available to increase scope and potential savings
- Bundle energy and water conservation measures into comprehensive package
- Utilize a holistic and iterative design process
- Measure and verify success
- Achieve NZE where possible
- Promote large-scale, portfolio-level projects rather than independent building projects
- Use a phased approach so personnel are not overwhelmed by projects that are so large that staff resources cannot support

Alternative Financing Resources & Process Improvements

○ FEMP

○ Renewable Energy Procurement

- <http://energy.gov/eere/femp/renewable-energy-procurement-federal-agencies>

○ FEMP ESPC Energy Savings Agreements (ESA)

- IRS Guidance released to clarify use of this option: <https://www.irs.gov/pub/irs-drop/rp-17-19.pdf>
- Toolkit Under Development

○ GSA

○ RMI: Federal Deep Energy Retrofits

- <https://rmi.org/our-work/buildings/pathways-to-zero/federal-deep-energy-retrofits/>

○ DOD

○ Energy Conservation Investment Program (ECIP):

- http://www.acq.osd.mil/eie/IE/FEP_ECIP.html

○ Army

○ Office of Energy Initiatives: <http://www.asaie.army.mil/Public/ES/oei/index.html>

○ Suggested needs:

- DER Best Practices Guide
- Benchmarking and Trigger Criteria Data
- Accounting for non-Energy/Water Benefits - General Performance Contracting?

Desired TG Outcomes

- Identify **barriers and opportunities** to significantly expand Federal HPB retrofits for large-scale, portfolio-level implementation
- Identify **highest priority practices, technologies and strategies** for increased adoption and implementation

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Discussion Questions

1. Is the TG moving in the right direction?
2. What potential or actual barriers do you feel need to be addressed, and how?
3. Are there additional financial or process solutions worth pursuing, not mentioned here?
4. What additional information or presentations would be useful for the TG to review in developing its recommendations?
5. What specific organizations, reports, or other resources can you suggest to provide such information to the TG?