

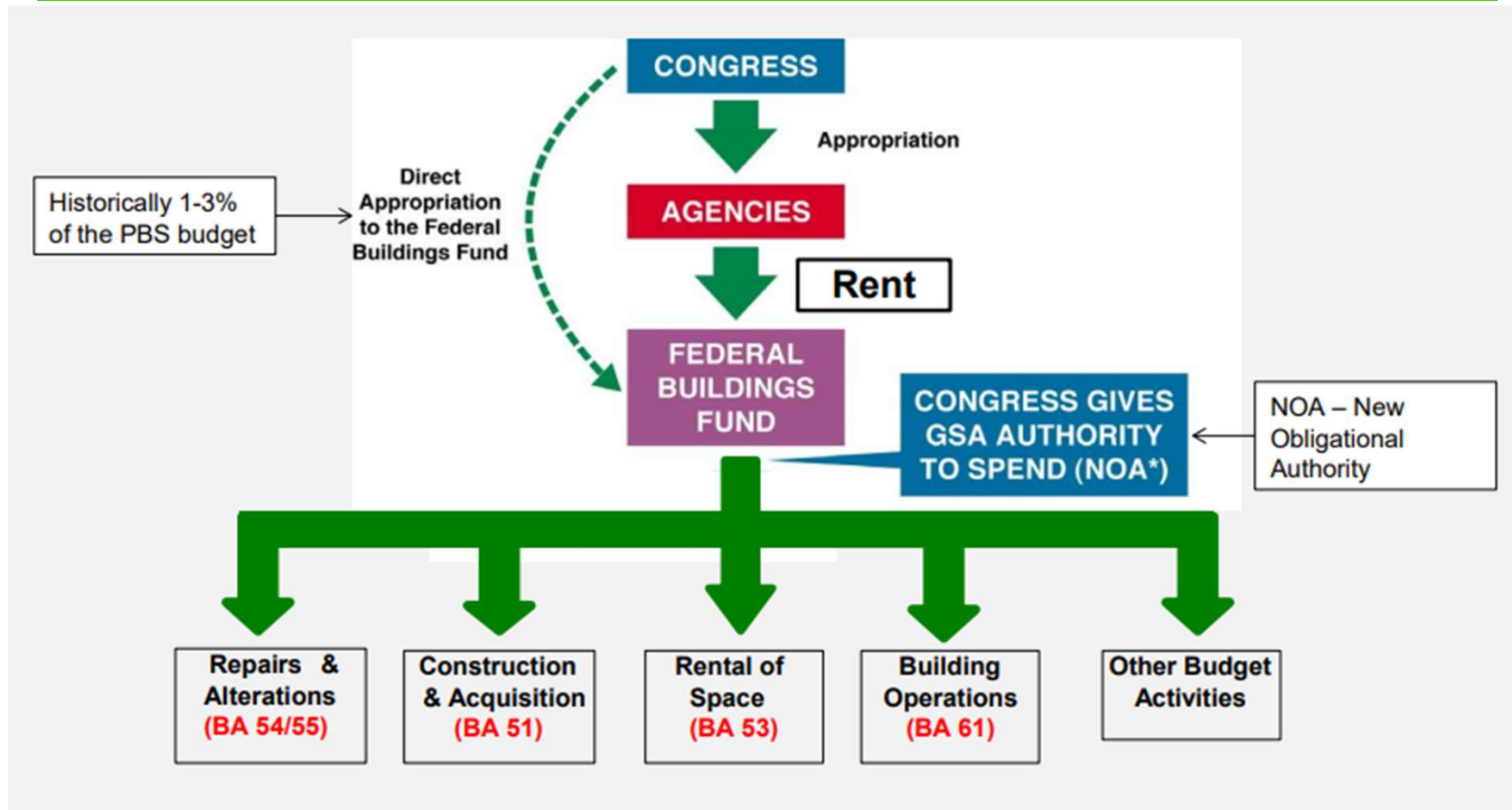
The Color of Money

What Works in Performance Contracting

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The Federal Buildings Fund



Three Main Funding Sources

1) Appropriations

2) ESPCs

- Financed by private investors
- Paid for by guaranteed savings in utility and maintenance bills

3) UESCs

- Similar to ESPCs, but implemented through utility providers

ESPC

- Contract with an ESCO
- 25 year max contract term
- Existing IDIQ contracts that can be used
- Agency pays for FEMP project facilitation
- Savings guarantee

Both

- Allow third party financing
- Viable options to attain energy efficiency goals

UESC

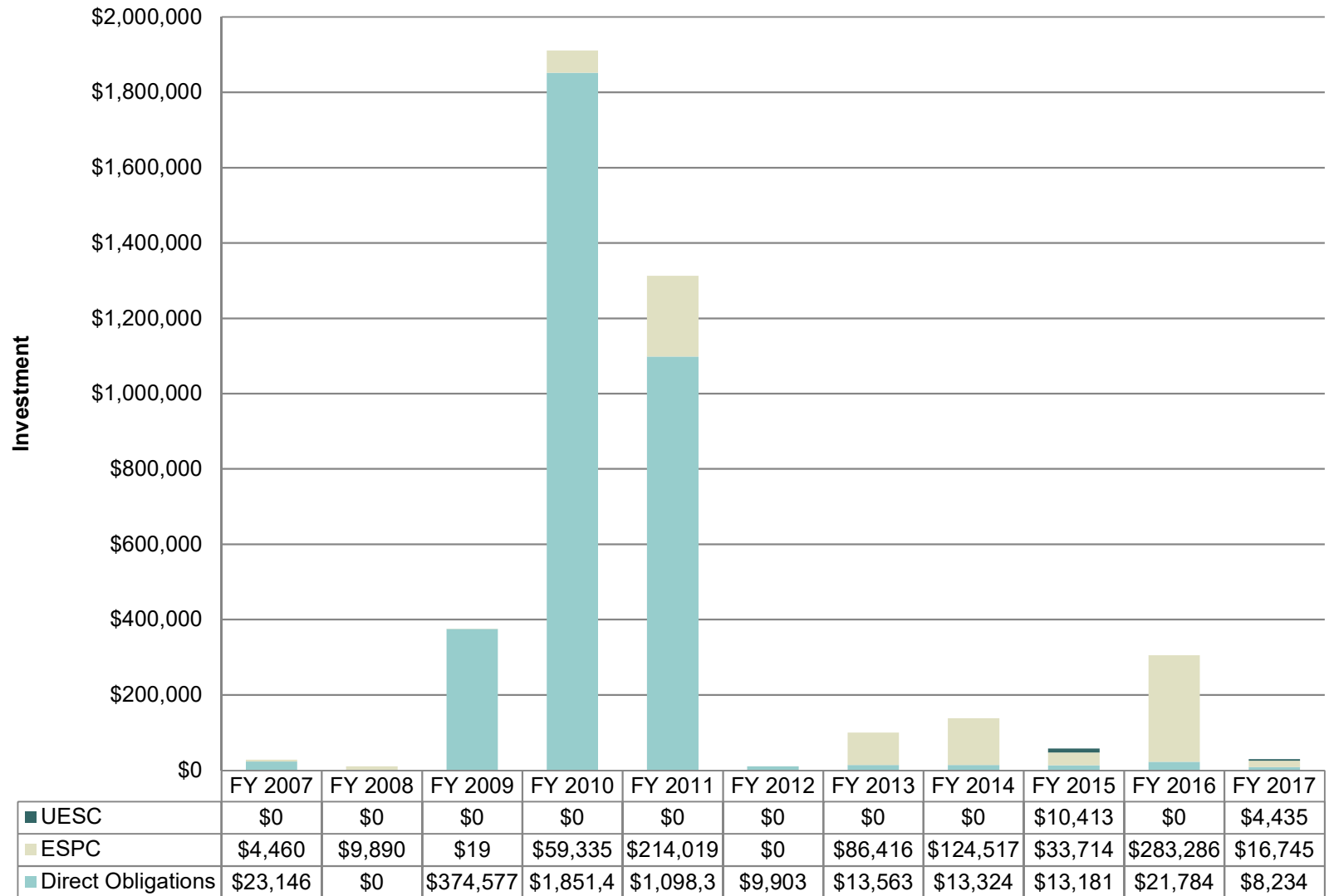
- Title of energy saving devices vests in U.S.
- Utility company contracts allowed
- FAR applies
- FEMP available at no cost
- No savings guarantee, economic evaluations and performance assurance planning

Federal Government Invested \$20.3 billion in Facility Efficiency from 2007 through 2016



- In 2016, ESPC and UESC represented almost 2x appropriated funding.
- Direct Obligations include Recovery Act infrastructure funding, 2009 - 2012

GSA Investment in Energy Efficiency and Renewable Energy



GSA Energy Conservation Investment History

- From 2005-2017, breakdown had been approximately as follows on average:
 - 50% appropriations (28% in 2017)
 - 47% ESPC (57% in 2017)
 - 3% UESC (15% in 2017)

GSA Energy Conservation Investment History

- American Recovery and Reinvestment Act of 2009 appropriated \$4.5 billion for GSA to modernize buildings, address deferred maintenance, and save energy and water (some blended \$\$)
 - 43 whole building modernization projects accomplished
 - 439 individual energy and water projects
- After Recovery Act, private investment through ESPC and UESC became more important than ever

GSA Emphasizes Deep Energy Savings

- Assembled a group of buildings across the US for inclusion in a deep retrofit challenge
- Funding through ESPC with minimal appropriations
- Challenged ESCOs to dig deeper and come up with higher energy savings than typically offered
- Average savings proposed are around 34%, considerably higher than previous average of 17%
- Projects use conventional conservation measures (lighting, controls, etc.) and envelope measures combined in unique ways—*appropriations allow for more expensive envelope improvements and deferred maintenance*

Fully Leverage Appropriated Funding

- Inevitably, appropriations will fall short of cost effective upgrade needs
- Plan B should include combined private ESPC/UESC funding
- Longer payback measures should be funded through appropriations and shorter term measures financed through ESPC/UESC—*you must evaluate the entire package*
 - Timing is key – ESPC work must align with appropriated funding.
 - Legal understanding and engagement

Main Interior Building

ESPC awarded to Ameresco by DOI:
\$77 million over 20 years



Main Interior Building

- Water conservation, energy efficiency measures, and ongoing energy management services
 - Harvests groundwater that is currently collected under the building and discharged to storm drains
 - Repurposes water in a chilled water storage tank for non potable uses:
 - Irrigation
 - Cooling tower supply
 - Bathrooms



Main Interior Building

- ESPC will reduce
 - Domestic water consumption by 70%
 - GHG emissions by 24%
 - Electricity consumption by 31%
 - Steam utilization by 12%
- Helps DOI meet federal sustainability requirements
- **Average savings of nearly \$1 million/year through the year 2036**

William Jefferson Clinton (EPA) Building

- Renovation funded through ESPC
- Upgrades and optimizations:
 - Control system
 - Cooling system
 - Lighting
 - Electrical & distribution
 - Water conservation
 - Wastewater minimization
 - Building envelope

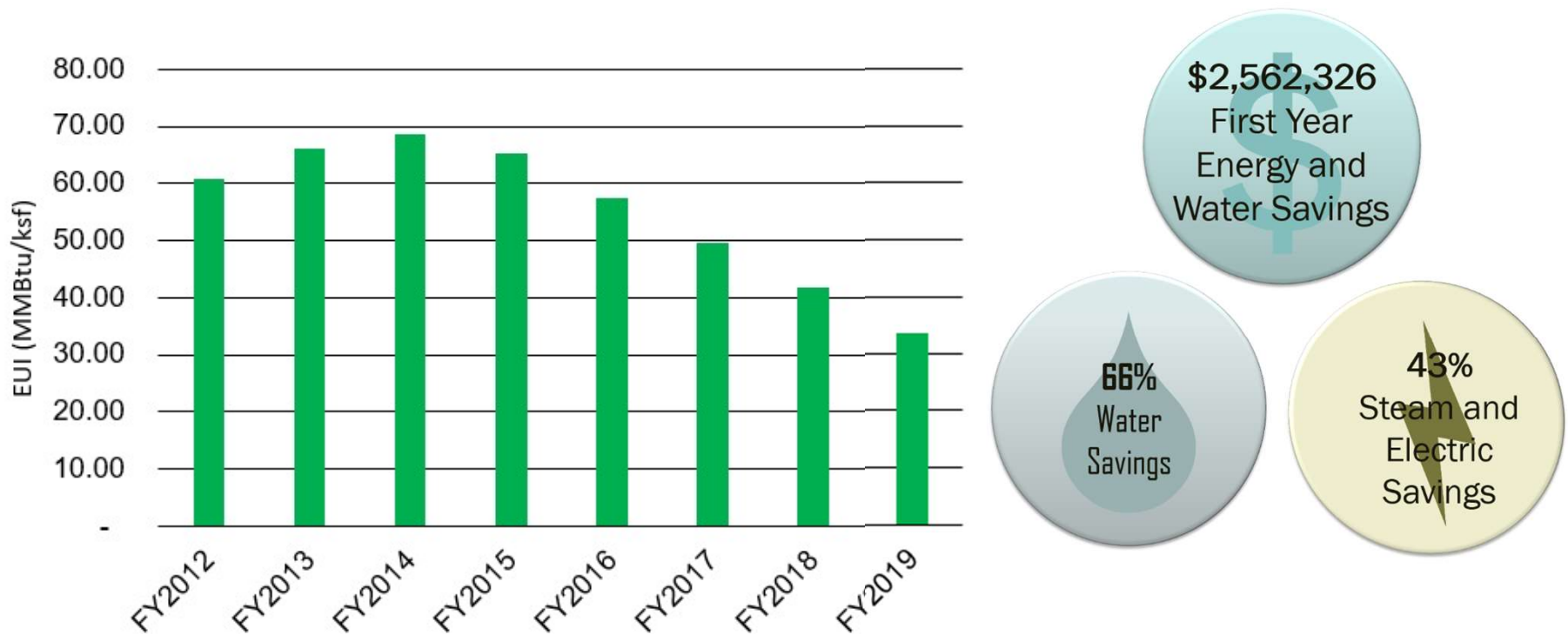


William Jefferson Clinton (EPA) Building

- Window replacement was tenants' highest priority
 - Could not be funded by the ESPC

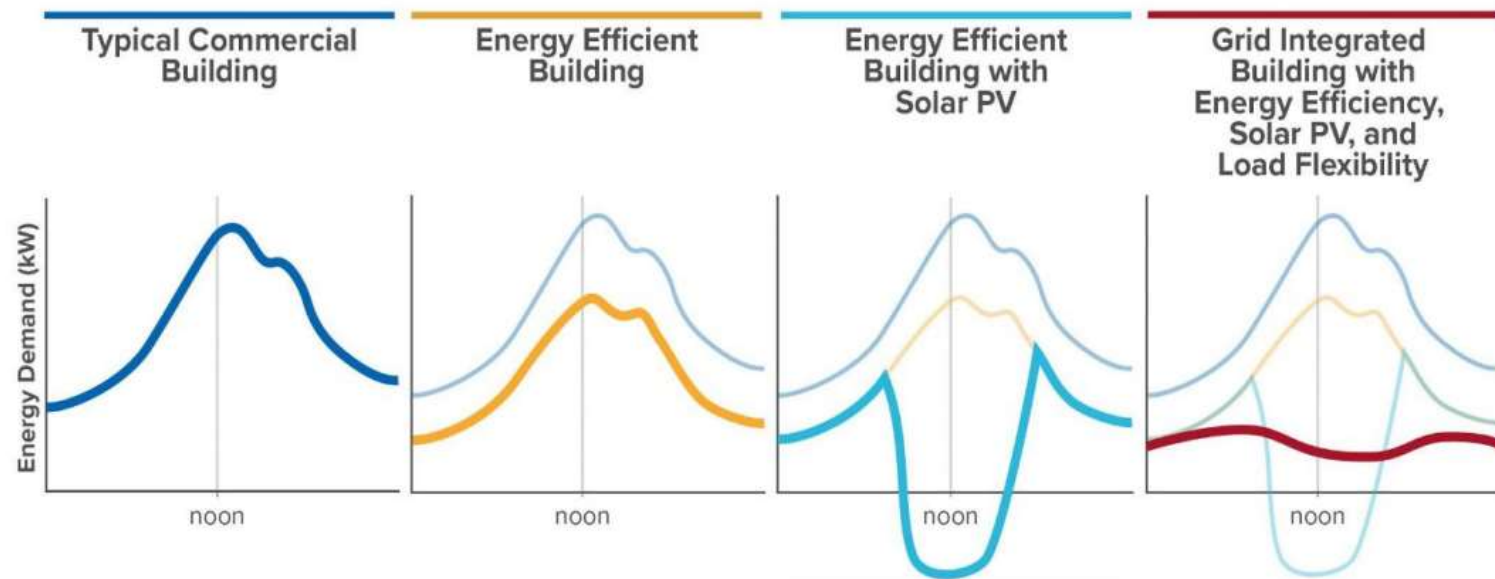


William Jefferson Clinton (EPA) Building – ESPC Results



Grid-Interactive Efficient Buildings (GEBs) Research

- Invest in controllable fixtures and building controls



Grid-Interactive Efficient Buildings (GEBs) Research

- Stage large building loads
- Battery storage and solar PV make sense in most locations, but to varying degrees
- GEBs improve grid resilience, balance loads, and reduce grid carbon intensity



Grid-Interactive Efficient Buildings (GEBs) Research

- GSA (RMI/LMI) evaluated 29 measures in 6 locations
- These measures can generate 350 MW of peak load reduction and 317 GWh/year in energy savings across the GSA's owned office portfolio
- The full portfolio can generate \$99MM in annual cost savings – *almost one-third of the GSA's annual energy spending*
- Short payback and high NPV, the value of GEBs will continue to increase
- **Should be considered in all upcoming projects**

Thank You

- Kevin.kampschroer@gsa.gov
- Gsa.gov/sustainability
- SFTool.gov
- Www.whitehouse.gov/ceq/

