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CAPITOL POWER PLANT

Architect of the Capitol Should Update Its Long-term Energy Plan before Committing to Major Energy Projects

GAO Highlights

Highlights of GAO-15-436, a report to congressional committees

Why GAO Did This Study

AOC's CPP heats and cools 25 buildings in the complex, including the Capitol and House and Senate office buildings. CPP does not have the infrastructure to distribute electricity to the buildings it serves. CPP buys fossil fuels (mostly natural gas) to run boilers that make steam and buys electricity to run chillers that make chilled water. CPP distributes the steam and chilled water for heating and cooling using a network of tunnels. AOC seeks to install a 'cogeneration' system that would produce steam and electricity.

The House of Representatives report accompanying the Legislative Branch Appropriations Bill, 2014 included a provision for GAO to analyze potential cost savings at CPP. GAO analyzed (1) measures AOC implemented since 2008 to manage the energy-related costs of the complex and opportunities, if any, to further manage these costs, and (2) how AOC decided to procure a cogeneration system and the extent to which AOC followed leading capital-planning practices. GAO analyzed AOC budgets and plans; reviewed federal guidance on capital planning; and interviewed AOC staff and other stakeholders, including other heating and cooling plant operators.

What GAO Recommends

AOC should (1) update its long-term energy plan while following key leading practices, including considering a full range of measures to further manage costs, before committing to major energy projects at CPP, and (2) seek independent review of its plan. AOC disagreed with GAO's recommendations; GAO continues to believe they are valid, as discussed further in this report.

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What GAO Found

The Architect of the Capitol (AOC) implemented many measures since 2008 to manage the energy-related costs of the Capitol Complex (the complex) and has opportunities to further manage these costs. AOC updated some of the Capitol Power Plant's (CPP's) production and distribution systems to reduce energy use and increase efficiency. AOC also implemented measures to reduce energy consumption in the complex, such as conservation projects improving lighting and air-handling systems that yielded monetary savings. AOC has opportunities to implement other conservation measures in the complex. For example, energy audits by contractors identified additional opportunities to implement similar measures or other upgrades to lighting, mechanical, and plumbing systems to achieve additional energy and monetary savings. However, AOC officials said they have not implemented these measures but intend to act as resources become available.

AOC decided to procure a cogeneration system to produce electricity and steam based on a 2009 long-term plan and subsequent partial updates but did not follow key leading federal capital-planning practices. In 2009, AOC issued a long-term energy plan that stated it should pursue cogeneration to meet future steam demand and provide a new source of electricity for its chillers, enabling the agency to decrease electricity purchases. Partial updates to the plan in 2014 sought to justify the choice of a cogeneration system. However, AOC's planning did not follow key leading capital-planning practices developed by GAO and the Office of Management and Budget (OMB). First, though called for by leading federal planning practices, AOC has not fully updated the 2009 long-term plan, although changes in key planning assumptions, such as on fuel prices and the complex's demand for energy, have occurred. Instead, AOC intends to make a decision on implementing an $85 million cogeneration system before updating its long-term plan later in fiscal year 2015. Second, the 2014 partial updates to its 2009 plan that AOC has used to justify the project did not include complete information on the need or problem that the project would address. Third, the 2014 updates did not identify a full range of options for cost-effectively meeting projected future needs, including non-capital measures such as conservation. Fourth, the updates did not have valid sensitivity or uncertainty analyses to test key assumptions about whether the system would achieve sufficient savings over time—from decreased electricity purchases—to justify its costs. Related to this, AOC officials said that since upfront appropriations would likely not be available to procure the system, they had decided to use a third party to finance the project, thereby increasing its costs. These officials also said they relied on federal guidance for analyzing and financing energy projects. However, such guidance does not substitute for first completing an up-to-date capital plan. Finally, GAO's prior work has recommended using independent panels of experts to review complex projects such as a cogeneration system, but AOC has not engaged such a panel to review its 2014 updates to its long-term plan. AOC officials said they were unaware of some of these practices and that they needed to sign a contract quickly to avoid the risk of losing construction and air quality permits. Without updating its long-term energy plan and obtaining independent review, AOC may pursue a project that does not cost-effectively meet its needs.