



U.S. GENERAL SERVICES ADMINISTRATION  
Office of Inspector General


---

August 18, 2010

MEMORANDUM FOR

PAUL F. PROUTY  
REGIONAL COMMISSIONER, PBS  
ROCKY MOUNTAIN REGION (8P)

FROM:

  
JOSEPH MASTROPIETRO, ACTING REGIONAL  
INSPECTOR GENERAL FOR AUDITING  
GREAT LAKES REGION (JA-5)

SUBJECT:

Audit Memorandum: Procurement of Photovoltaic System at  
the Denver Federal Center: a Limited Scope Project Funded  
by the American Recovery and Reinvestment Act of 2009

**FINDING:** The GSA Office of Inspector General (OIG) believes that the Public Buildings Service's (PBS) procurement of a photovoltaic system at the Denver Federal Center (Region Eight) does not represent the most economic use of taxpayer funds. Aside from reducing fossil fuel use and carbon footprint, there is no expectation of a reasonable return on investment. It will take two to three times the warranted life of key components of the system to recoup the investment through energy savings.

**BACKGROUND:** PBS is constructing a photovoltaic system to generate electrical power for the Denver Federal Center. The system, which will connect to the local power grid, has a construction cost of \$18.4 million. It will employ 15,160 photovoltaic panels<sup>1</sup> installed on 13 acres and will produce almost seven percent of the Denver Federal Center's needs. Some of the panels (about 30 percent) will be installed on 10 carports. The GSA Office of Inspector General (OIG) is conducting oversight of the projects funded by the American Reinvestment and Recovery Act of 2009 (Recovery Act)\*. One objective of this oversight is to determine if PBS is awarding and administering contracts for limited scope and small construction and modernization projects in accordance with prescribed criteria and Recovery Act mandates.

We found that the project's payback represents an unreasonable return on investment. The carport-mounted photovoltaic system, built specifically for the panels, produced a payback (after accounting for maintenance) of 85 years. We determined that it was at

---

<sup>1</sup> A panel is approximately five feet long, three feet wide, two inches thick and weighs 44 pounds.



least 65 percent more costly to produce a unit of power by constructing carports instead of using a ground-mounted system. The carport system represents about 40 percent of the project's cost while contributing approximately 25 percent of the electricity.

Region 8 PBS provided the Project Management Office (PMO) with a project justification that indicated annual energy savings of \$382,000 balanced against an estimated cost of around \$21,157,000. The resulting calculation is a payback of 55 years when using the figures provided by PBS to the PMO. In addition, PBS' Recovery Act Program Plan (Plan) emphasizes investment in energy-efficient technologies, a reduced carbon footprint, and decreased energy consumption. The Plan also states that investment in the Government's real estate infrastructure will provide a significant return on investment for the taxpayer. However, a payback range of 55 to 85 years is, arguably, well beyond what can be construed as a significant return on investment for the taxpayer.

Region 8 PBS officials were apprised of our concerns about the project's payback.

If you have any questions about this memorandum, please contact me at 312-353-7782.

\*The American Reinvestment and Recovery Act of 2009 (Recovery Act) provides the General Services Administration (GSA) with \$5.5 billion for the Federal Buildings Fund. In accordance with the Recovery Act, the GSA Public Buildings Service (PBS) is using the funds to convert Federal buildings into High-Performance Green Buildings as well as to construct Federal buildings, courthouses, and land ports of entry. The Recovery Act mandates that \$5 billion of the funds must be obligated by September 30, 2011.



**Figure 1: Example of a carport photovoltaic system**

**Denver Federal Center carports will be 38 feet wide and approximately 260 feet long.**