

Summary Report: Divisions 8 & 15 Solar Generation Project



Operations Committee
October 19, 2006

Divisions 8 & 15 Solar Generation Project

Maintenance Shops



Transportation Buildings

Project Specifics

- **Division 8 (Chatsworth) and Division 15 (Sun Valley)**
- **Design/Build Project Delivery**
- **\$3.3 Million Contract**
- **Rebates totaling \$1.8 Million from Gas Co. and LADWP**
- **Total Out-of-Pocket Costs: \$1.5 Million**
- **1,648 panels for total of 426kW**
- **Panels in operation May 2005**
- **Largest solar system installed by a transit property to date**
- **19th Largest in the Nation**

Project Completion Photos



Actual Results and Financials

- Based on 1st Year of Data (June 2005-June 2006)...
- 16,016 kWh generated per week
- Electricity Generation is 835,120 kWh/year
- Assuming blended average of high and low peak pricing (\$0.19/kWh), electrical savings are approximately \$165,000 per year (approx. \$217,000 to date)
- Final rebate value from LADWP and Gas Co. is \$1,821,622
- Metro capital investment (after rebates) is only 45% of the total cost, or \$1,478,378
- Assuming continued performance and a rate increase, Return on Investment will be approximately 8 years, exceeding Metro expectations.



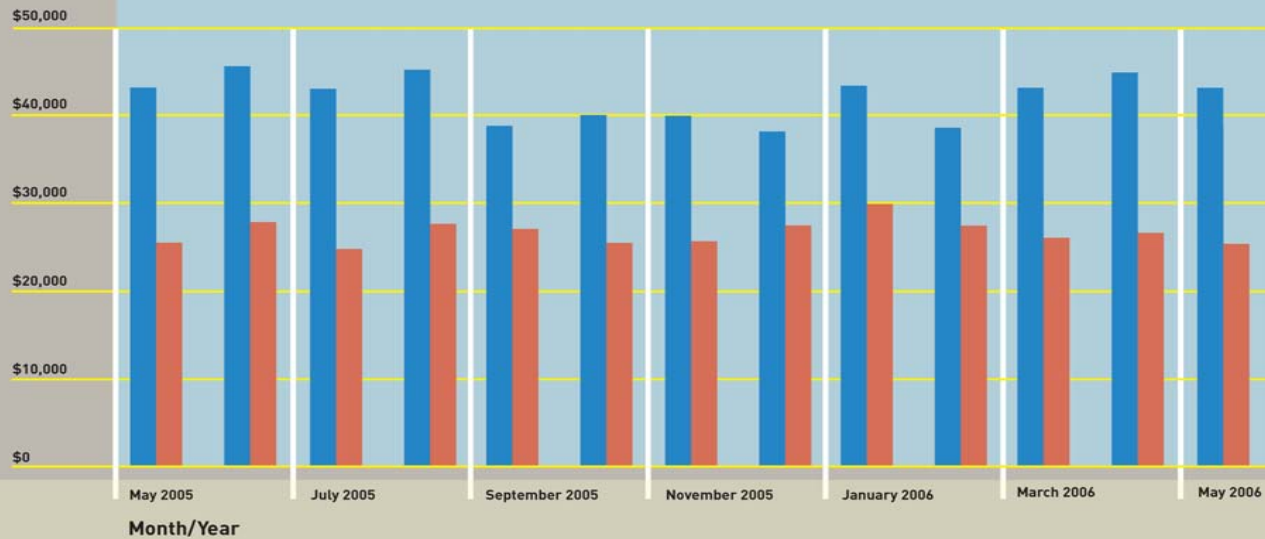
Metro

Monthly Savings

Cost Savings to Date

Division 8 & 15 Solar Panel Project

Cost of Electricity
[per month]



■ Typical Cost of Electricity (no solar panels)
■ Metro's Cost of Electricity (with solar panels)
Expected return on investment - 8 years



Global Benefits of this Single Project

System generates enough “green” electricity to power 200 homes



Avoided emissions are the equivalent of removing more than 500,000 pounds of carbon dioxide, 1,000 pounds of nitrogen oxide, and 2,500 pounds of sulfur dioxide per year (or 100 cars)



PR Benefits of this Project

L.A. SHOWS OFF SOLAR SAVINGS



Alex Collins/Special to the Daily News

Metro Project Manager Tim Lindholm, left, and Supervising Engineer Rudy Rey pose for a portrait Friday next to solar panels on the roof of the Metro Bus Division 15 in Sun Valley.

A press conference Friday morning gave Mayor Antonio Villaraigosa, L.A. County Supervisor Zev Yaroslavsky and other dignitaries an opportunity to inform the public of the new energy-saving solar panels placed on the top of bus divisions in Sun Valley and Chatsworth. The panels are one of the largest solar-power generation projects by any transportation agency in the United States, and have saved the agency \$185,000 in electricity costs in the first year.

— Daily News



Muy pronto, nuevo servicio de enlace

Metro
San Fernando Valley

Rider Update

- > New shuttle service
- > Solar power has arrived

1,648
solar panels

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The PV array covers more than 62,000 square feet of space.

Choose your battles. Progress. Know your ROI and make sure you have support at the top. Tim Lindholm, project manager, Facilities Operations at Metro, Los Angeles County's Transportation Provider, the above statements aren't quite a slogan. However, for contractors, architects or building designers that, like Tim, have found ways to save their organizations or clients money if they can just get them to spend some of it up front, they are well-worn phrases worthy of a battle.

With a budget set in billions of dollars, one might think there would be plenty of money to go around. Considering that about half of the budget, \$2,200 billion, is earmarked by Metro for operating and capital expense and support for municipal bus operators and paratransit programs countywide, one should remember that transportation Metro had operating, construction and capital costs total about \$613 million, and another \$519 million will go to highway and other regional transportation programs. With next year's debt service at \$300.7 million, little left for new transportation projects, and Lindholm faced that

getting one, let alone two photovoltaic (PV) or solar electric projects funded to be a challenge.

However, the challenge did not deter him from pushing forward with the project. He knew two things that project would pay for itself in a few years and it would be more than a project, it would be a prototype for a solar power, energy savings program that could be put to use throughout Metro's operations. Upon proving the value of the PV systems and obtaining future funding, Lindholm knows installing more solar electric systems throughout the agency's new office bus divisions, on catcops, subway facilities, and passenger terminals, saving the agency money as such systems reduce the agency's electrical bills while essentially paying for themselves.

"As an agency tasked with developing and managing transportation alternatives for one of the country's largest, most populous counties, Metro is constantly looking for ways to improve services as well as its own operations," said Lindholm. "Every dollar spent must, in some way, improve our customer's experience. So, when it comes time for each division to

street sale of this pass is illegal

Largest transit agency solar panel system

Jan

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15	16	17	18	19	20	21
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Monthly 2006 **\$52**



What's Next for Sustainable Facilities?

- **Build new solar panel system at Division 18 (Carson) (to be discussed today)**
- **Enter public/private partnership to retrofit all mechanical, lighting, and electrical equipment at Regional Rebuild Center. Audits show cutting \$1.5 million utility bills by 50%, with ROI less than 15 years. Includes construction of the largest solar array in the nation by a non-utility. Federal earmark for partial funding has been received.**
- **Perform audit and energy retrofit of Metro Headquarters Building (General Services)**
- **Continue lighting replacements at all maintenance divisions**
- **Complete construction of the LEED Silver Division 9 Transportation Building in El Monte (40% complete)**
- **Continue to construct all new facilities projects sustainably, with LEED certification if applicable.**

