

Agenda Item: 7.

MEMO TO: Programs, Projects and Operations Subcommittee
FROM: Jim Becic
DATE: 7 July, 2014
RE: Nebraska Environmental Trust (NET) Grant Application for Installation of Solar Panel Array and an Information and Education Component at the P-MRNRD (NRD) Headquarters.

Project

This project application request is a collaborative effort involving the Papio-Missouri River Natural Resources District (P-MRNRD) and a community partner, Nebraskans for Solar Inc. (NFS), a public interest 501(c) (3) nonprofit organization www.nebraskansforsolar.org.

Utilizing the expertise and internal capabilities of NFS, we are proposing to install a 25-kilowatt (KW) array of solar panels on the south-facing roof of the NRD headquarters - contingent upon a structural analysis of the building's roof and existing warranties. The array would consist of approximately 100, 250 watt panels – or the maximum rated 'net metering' capacity allowed by OPPD (currently at 25KW). The cost estimate for the project, based on a review and analysis of contractor bids for actual installed systems in Lincoln and Omaha in 2011 and 2012, is estimated at an installed cost of \$4.00 per watt or \$100,000.

Also, a significant component of this project will be the inclusion of an Information and Education feature that displays in real time, the various functions of the solar array both in a kiosk at the NRD headquarters building as well as via a web connection. This will require an additional, estimated \$10,000 expense to the installed solar panel array total.

The proposed funding mechanism would consist of the NET providing 75% (\$82,500.00) of the total \$110,000 cost and the NRD the remaining 25% (\$27,500). If approved, the NRD's budget would not be affected until FY-2016.

Background

The NFS board approached the NRD last summer with this solar project concept. They understood that "...there is clearly a need for solar demonstration or model installations in places where people will see them. A part of human nature is to do what we see others doing. Behavior psychologists have noted that this is the greatest single motivation in getting people to adopt positive change." There is simply a general lack of awareness by the citizens of our state regarding the benefits of solar.

Their "...mission is to provide solar energy installations to low-income residents and non-profit organizations in Nebraska and to develop a Solar Schools Program in our state. We encourage community-based and other cooperative solar projects throughout the state."

Discussions, meetings and refining further details with the NFS and the NRD to develop this joint request for funding of this solar project by the NET/NRD, ensued.

The NRD's ten year average of power consumed at the headquarters alone was nearly a half million kWh (492,728 kWh) at a total annual cost of \$32,425.00. Even with efficiency increases in equipment and the building envelope, electric usage and expenditures are not expected to decline. With an annual average of 214 sunny days in Omaha, a 25KW photovoltaic system, providing power to the building and into the grid via 'net metering', operating week days, weekends and holidays – it is anticipated that at today's electricity costs, a minimum return on investment for the NRD will amount to less than half of the system's 25 year lifespan, which would double our initial investment.

It should be noted that the NRD's 2007, *A New Environmental Direction for the Papio-Missouri River Natural Resources District – A White Paper*, recommends for the installation of "Solar Panels" and/or to "Install photovoltaic (PV) systems where feasible for electricity."

The NRD headquarters is a highly visible location with an estimated 400,000 potential visitor impacts per year to include school children, business and industry leaders and the general public. By establishing a physical monitoring/information kiosk for visitors and a website interface for anyone to access and monitor the system's performance off site, this impact will only grow.

Finally, a principal motivation to carry out this solar project in addition to real, demonstrable cost savings to taxpayers, comes from a desire to legitimize to individuals, businesses, and governmental entities that there are local, cost-effective ways to have a positive influence on the projected effects of climate change. By harnessing solar energy to generate electricity, direct impacts are made to improve air quality and conserve water resources that would otherwise be drawn from ground water reservoirs, streams and rivers to assist in fossil-fuel production and electricity generation.

Therefore, management recommends that the Programs, Projects and Operations Subcommittee recommend to the Board of Directors that the General Manager be authorized to submit a \$110,000 project request to the Nebraska Environmental Trust at a 75% NET (\$82,500.00), 25% NRD (\$27,500.00) cost share for the installation of a solar array and informational kiosk at the NRD headquarters.
