# Newsletter and Update to the Partners

**June 10, 2004**

**Highlights:**

**Manufacturer Recruitment – Major Wind Company Letter Of Intent**

**New Utility Tariff May Allow Renewable Electricity Purchases Without Exiting SPPC**

## Summary

Because Nevada is rich in renewable energy resources, Nevadans have a unique opportunity to reduce energy costs and grow the economy while achieving energy independence. Energy Nevada helps Nevada's public jurisdictions and private companies accomplish these goals by creating public/private partnerships to develop energy efficiency and renewable energy projects. All the development and financial risk for these projects is taken by Energy Nevada's private sector development partners. Working together, we can make Nevada a world class example of the new renewable energy economy.

In this issue of the Newsletter and Update to the Energy Nevada Partners we emphasize key developments including:

- A well known, large wind turbine manufacturer has entered into a Letter of Intent (LOI) Arrangement with Energy Nevada for relocating manufacturing to the region.
- New Utility Tariff May Allow Renewable Electricity Purchases Without Exiting SPPC
- Energy Nevada is implementing projects with partners
- And additional updates on new Partner prospects, conferences and outreach efforts.

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**In the LOI, the company and Energy Nevada describe criteria for locating the company's manufacturing in northern Nevada.**

## Recruitment – Large Wind Manufacturer LOI

Energy Nevada was very pleased to achieve a Letter of Intent (LOI) with a major megawatt-scale wind turbine technology company. The company has both advanced technology and a proven management team. The LOI, describes the criteria for locating the company's manufacturing in northern Nevada. These criteria are quite reachable in the Energy Nevada program, and having such a manufacturer set up in the region will realize much of the economic development potential from the Energy Nevada program. More details will be provided as the confidentiality lifts. This development adds urgency to the process of building out the Energy Nevada Partners group.

In addition to the large wind manufacturer prospect described above, we continue to negotiate with three developers of small wind turbines that have interest in the Energy Nevada project model and interest in moving to the region. These conversations are currently confidential, but an exciting element that is emerging is the opportunity for a **renewable energy incubator**. We have indications that this could both attract grant and investment funds, helping the manufacturers as well as the region. This concept is in early stage development, but shows much promise.

As reported in the last update, we are also pursuing opportunities with manufacturers who would benefit from both an incubator and a large "anchor tenant" wind manufacturer. Discussions proceed with companies in the following industries:

- Large wind
- Small wind
- Wind control systems
- Tower builders
- Composites manufacturers
- Foundry
- Energy Efficiency Equipment Manufacturer

## Partners and Projects

Energy Nevada team members have been reporting on the analysis of Carson City and other Buying Group members' renewable energy opportunities. Although most conversations are confidential at this point, we will be able to report publicly soon.

## Growing the Partners Group

The Energy Nevada model involves a multitude of public and private entities in northern Nevada banding together to create new economic vitality: "Economic growth through renewable energy." In the last

update we reported that both RTC Washoe and Carson-Tahoe Hospital have completed the joinder process. Energy Nevada continues to have meetings with potential Energy Nevada Partners and their boards, and a number of them will soon complete the joinder process. Updates on their participation soon.

**As an Energy Nevada Partner, RTC Washoe has the opportunity to participate in Energy Nevada energy efficiency programs and receive free feasibility studies.**

## RTC Washoe Audit

Energy Nevada is in the processes of completing a report on an energy efficiency potential for RTC Washoe. The results will be used to provide energy efficiency upgrade and implementation options through Energy Nevada. As an Energy Nevada Partner, RTC Washoe has the opportunity to participate in Energy Nevada energy efficiency programs and receive free feasibility studies.

## Carson City LMI Housing Energy Efficiency Report

Energy Nevada has completed a draft report on the Carson City low-to-moderate income (LMI) housing energy efficiency study. The immediate objectives of the research project are to determine what energy efficiency measures are cost effective for a sample group of homeowners in Carson City. We performed site surveys, community outreach, modeling and analysis. Energy Nevada gave the first draft of this report to Carson City in early June. In the report, we present results of the housing surveys, analysis of building energy efficiency opportunities and an outline of future LMI energy efficiency opportunities. The future opportunities focus on rebates for appliances such as refrigerators and washing machines as being especially easy programs to implement in restricted funding circumstances. SPPC grants programs may be able to help on the funding of this project.

## Carson City Street Lighting Demonstration Project

Carson City and Energy Nevada have been exploring a new application of street light technology that promises many advantages. The technology is a new fluorescent, electrodeless, high intensity light applicable to street lighting. It has high energy efficiency and an extraordinary 100,000 hours maintenance cycle, providing the longest life available from a street lighting system in the market today. This promises to greatly reduce operating and maintenance costs. Importantly, ICETRON also has a very good color-rendering white light, far better than the common high pressure sodium yellow lights. SPPC has offered to help fund a pilot project to test and demonstrate this new technology.

## Marlette Hobart Water System Study

Energy Nevada has completed its initial feasibility analysis of this project, giving Carson City a clear understanding of the economic potential for developing this resource. Additional studies and analysis continue.

## Conference Participation

### Economic Development conference

Tom Clark of Energy Nevada represented Energy Nevada at the Governor's Economic Development conference. He reports that a surprising upswing in awareness, on both sides of the political aisle, is evident when talking to policy makers. We are encouraged by the responsiveness to the Energy Nevada concept at this level.

**California will be supply-short sometime between 2006-2010**

### Silicon Valley Manufacturers

KC Mares of Energy Nevada has in the past been involved with organizing the Silicon Valley Manufacturers meetings. He reports that there were many excellent presentations and discussions, including commercial and industrial customers developing renewables, energy efficiency and conservation projects.

Of the many speakers from California and federal energy regulators, Joe Desmond, Deputy Secretary of Energy, California, talked about California's statewide energy policy/plan. He emphasized visions for improved planning and sitting of transmission projects and focus on energy efficiency and renewable energy.

Chairman Keese of the California Energy Commission talked about transmission as the biggest issue in California, and that supply will only meet demand through 2005 if weather remains about normal. If it gets hot, even intermittently, southern California may not have enough supply due to transmission limitations. There will not likely be enough supply in 2006-2010, especially when weather is warmer than normal. While hydro capacity is only 75-85%, which is adequate, 4500 MW of wind is to be developed.

**These California developments can affect electricity prices and stability in NV, also giving us opportunities to export to California.**

In summary, California will be supply-short sometime between 2006-2010 (including expected new generation) unless lots of new generation or transmission supply is built. CA will continue to focus on energy efficiency, renewables, real-time pricing, creating an open market, and fixing transmission constraints and connection to generation. These California developments can affect electricity prices and stability in NV. They also give us opportunities to export to California.

## Press and Community Outreach

### Web site

The Energy Nevada web site at www.energynevada.com is now active and continually updated.

### Sponsoring Recycled Art Contest for Carson City

Energy Nevada sponsored the savings bond prizes for the Carson City Earth Day Art Contest. Judging and presentations culminated in an April 12 awards ceremony at the Carson City Board of Supervisors meeting with Energy Nevada CEO Steve Taber on hand proudly shaking the hands of the winners.

## Utility Communications

SPPC's Major Accounts Rep Charlene Booth has now attended two Energy Nevada Partners meetings resulting in extremely helpful discussions with Partners. John Owens, Director of Major Accounts was also on hand to field detailed questions about the SPPC grid and the issues around AB 661. We appreciate SPPC taking the opportunity to provide this service to their customers. Energy Nevada intends to make as many opportunities as possible for SPPC to benefit from the overall project.

## Miscellaneous Updates

### Solar Rebates Planned for Nevada

A solar rebate program is planned for Nevada. SPPC announced at the beginning of June that the program start is delayed until at least July 1. This will give Energy Nevada another avenue to implement solar projects.

## FEATURE: STREET LIGHT TECHNOLOGY DEMONSTRATION

Here we present extra details on a promising street light technology. Although this initial demonstration project is Carson City focused, we believe this technology will have attractive economics and other benefits for many of the Energy Nevada Partners.

### Overview

**ICETRON is electrodeless so that it lasts much longer than other outdoor lighting systems with an extraordinary 100,000 hours maintenance cycle.**

The ICETRON is a new fluorescent, electrodeless, high intensity light applicable to street lighting. It has high energy efficiency and an extraordinary 100,000 hours maintenance cycle, providing the longest life available from a street lighting system in the market today. This promises to greatly reduce operating and maintenance costs. Importantly, ICETRON also has a very good color-rendering white light, is far better than common high pressure sodium light.

**Figure 1 - ICETRON Lamp and Ballast**

ICETRON lamps have never before been widely rolled out in cobra-head type street lighting. Responding to recently decreasing prices for ICETRON lamps, General Electric has developed a cobra-head fixture for the ICETRON. With increased production of both the ICETRON from Sylvania and the GE cobra-head, the price of ICETRON fixtures should be capable of reaching competitive levels for street lighting.

We believe these convergent developments provide a great opportunity for a technology demonstration project. A utility subsidized project can:

- Show that the new ICETRON technology can reduce energy costs and reduce maintenance costs.
- Demonstrate the cost effectiveness, practicality and lighting characteristics of the new street lighting.
- Open opportunities for energy efficiency technology to bring jobs to the region.
- Show that new technologies can enhance services such as

improving lighting quality.

- Show that the funding utility is involved in improving quality of life and economic vitality in the region.

Energy Nevada is working with Carson City and a broad regional constituency of city, county and other public agencies to implement wide ranging energy efficiency and renewable energy projects to promote energy independence and economic development. Carson City also has a strong desire to brighten the downtown with the better illumination of the ICETRON white lighting. This program will bring lots of good press exposure to a utility subsidized energy efficient technology demonstration project.

## ICETRON Lamp and Cobra-head Details

**ICETRON has yet to be widely implemented in regular cobra-head street lighting so that the Carson City demonstration project will be an excellent test case.**

Sylvania ICETRON lamps have been used for five years in decorative lighting and in lighting applications where low maintenance and high light output are needed. Roadway lighting in tunnels and hard to reach locations are examples of the latter. Until recently the ICETRON lamp has been too expensive for standard street lighting. As a side consequence there has been no cobra-head fixture designed to fully exploit the ICETRON features.

Recent improvements in manufacturing and increased production have reduced ICETRON costs so that the combined energy savings and maintenance savings will be cost effective in many regions. In response, General Electric has designed a cobra-head fixture to take advantage of the lamp's features. ICETRON has yet to be widely implemented in regular cobra-head street lighting.

## ICETRON Lamp and Ballast

ICETRON was developed seven years ago and introduced by Osram Sylvania in 1997. Sylvania applied technologies from induction physics and amalgam lamp chemistry to come up with a lamp that combines features to increase overall performance. The low maintenance ICETRON technology was originally designed for lighting applications that were very expensive to maintain and repair. Typically installations have included tunnels, bridges and high mounting-height commercial applications over equipment and areas where access is difficult.

The combined ICETRON lamp and ballast system reduces maintenance cost due to the long 100,000 hour average rated life. This is four to five time times the typical service life of conventional fluorescent, metal halide lamps and high pressure sodium. Additionally, the system has a good lumen maintenance profile [see figure 2.]

**The color rendering index (CRI) of 80 is better than most building fluorescent lighting.**

The ICETRON lamp provides a white light that reveals much more color, improving both city appearance and roadway safety. The white light source with a high color rendering index (CRI) of 80 is better than most building fluorescent lighting. [See figure 3.]

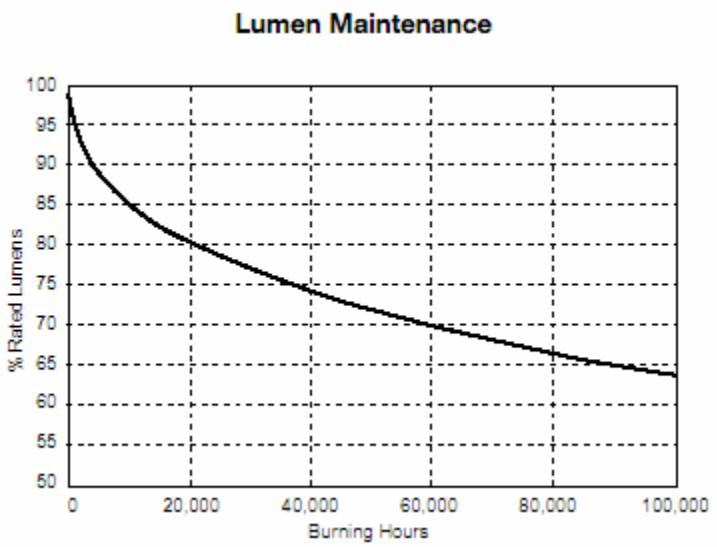


**Figure 2 - Lumen Maintenance**

The inductively coupled electrodeless lamp uses magnetic induction technology instead of an electrode at each end of the fluorescent tube to generate light. The absence of electrodes facilitates much longer lamp life.

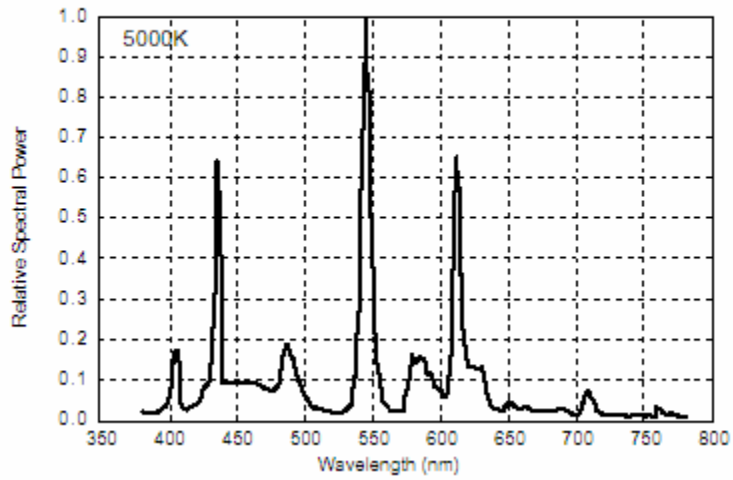


**Figure 3 - ICETRON Color Quality**

The inductively coupled lamp operation also allows the coil to be removed from the lamp, eliminating the main weak point in a fluorescent system. It reduces blackening and provides long lamp life of up to 100,000 hours, with maximum energy efficiency.

The ballast system, QUICKTRONIC ICE, was developed specifically for ICETRON applications. It utilizes a special wire/connector system required for inductively coupled systems.

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## Cobra-head

The ICETRON lamp has not been deployed yet in a cobra-head street lighting application. The only know demonstration of this technology in the roadway application we discuss here was a small study done by Arizona Public Service. As the lamp price and availability have improved, the need increased for a fixture. General Electric developed an improved cobra-head fixture specifically for the ICETRON lamp. The new cobra-head fixtures provide excellent light distribution as well as full cut off, increasing lighting effectiveness and reducing effects on night-sky. Since the ICETRON lamp has unique physical geometry and lighting distribution, direct replacement of lamps for other lamp types is not practical. The IESNA full cut off M400 cobra-head is available with MSCL flat glass.

## Summary of Features of the Combined ICETRON and Cobra-head:

- Average life of 100,000 hours
- M400 Cobra-head (MSCL and MSRL) with glass lens
- White light source, high CRI of 80+
- 100 watt ICETRONTM lamp/ballast system at 8,000 lumens
- Instant on and instant restrike
- 120-277 volt system
- GE photometric curve is 452870
- The IESNA distribution classifies as a Short, Full-Cutoff, Type 2

**Figure 4 - General Electric Cobra-head**

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