

Aug 15th, 3:50 PM - 4:10 PM

Solar Generations

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Nevada Power

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WORKING TOGETHER FOR A BRIGHT FUTURE



SolarGenerations

UNLV Energy Symposium

August 15, 2007



Sierra Pacific™

The People You Can Count On



Nevada PowerSM



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The People You Can Count On



Nevada PowerSM



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Program Description

➤ SolarGenerations Creation

- Passed by the Nevada State Legislature in 2003 in AB431
- Utility became implementer with direction from the Nevada Energy Task Force and the PUCN.
- Scheduled to be a 3 year program with declining rebates
- 2005 - program extended 3 more years with set program caps and increased rebates for Schools and Public Buildings.





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SB 437 SG - 2007 Legislature

SolarGenerations becomes a permanent program!

- ☐ PUCN opened rulemaking docket – Workshops planned
- ☐ Program caps expanded to 2 MW for schools, 760 kW for public buildings and 1 MW for residential/small businesses
- ☐ Increased small business to businesses with 500 employees or less
- ☐ School Pilot Program established – 10 school sites to be selected
- ☐ New wind and hydro power demonstration programs



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Incentives

- Residential and Small Business Incentive Amounts
 - \$3/watt in Year 3 ~ 4
 - Permanent Program ?
- kW limits
 - 5 kW Residential
 - 30 kW Schools
 - 30 kW Small Business (less than 500 employees)
 - 30 kW Public Buildings





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Renewable Energy - The Big Picture Goals

- Good for Nevada
 - Economic Development
 - Expanding the solar business and bringing in new contractors and consultants
 - Building a stronger industry by increasing competition
 - Making customers more aware of renewable energy
 - Encouraging customers to increase energy efficiency of their homes
 - Reduced energy needs of the state reducing imported energy
- Good for the environment
- Good for electrical grid reliability
- Encourages distributed generation



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The SolarGenerations Team

- SolarGenerations Program Administration Team
- Electrical and Solar Contractors
- PV Suppliers, Contractors and Manufacturers
- Nevada Renewable Energy and Energy Conservation Task Force
- Public Utilities Commission of Nevada



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Customer Benefits

- Residential/Small Business
 - Promotes PV technology
 - Encourages energy conservation
 - Increases awareness
 - Reduces emissions
- Schools/Public Buildings
 - Demonstrates the technology to the public and students
 - Provide teachers and Public Officials with visual method to demonstrate benefits
 - Fat Spaniel software display at www.SolarGenerations.com
 - Promotes quality PV installations with contractor training classes, public workshops and solar events and demonstrations



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Photo Voltaic is here to stay

Completed PV Installations:
232

Total kW since January 2005: **1144**

Rebates paid: **\$4,294,560**



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Program Benefits

- Cash incentives to help reduce costs of photovoltaic systems
- Customer service
- Technical assistance
- Quality assurance
- Helps customers achieve cost reductions in their electric bill (net metering)







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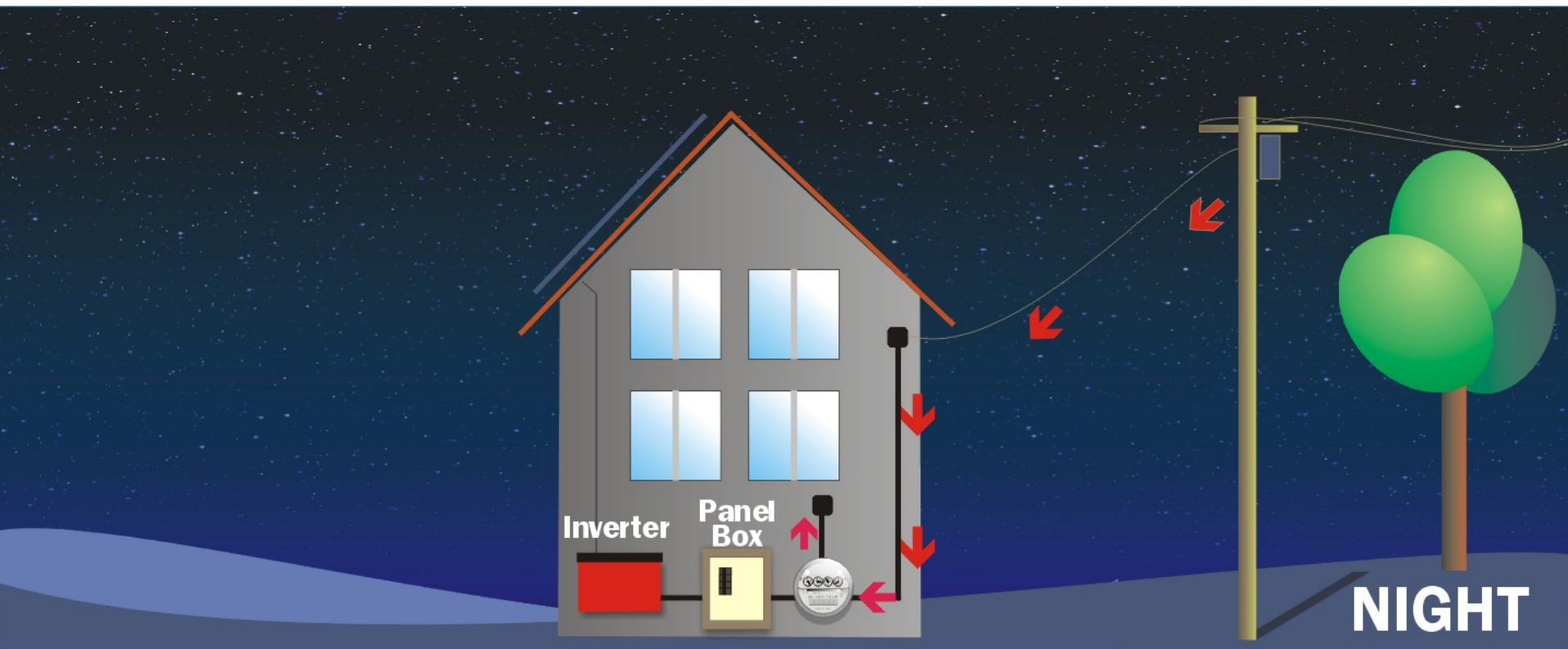
Net Metering

- Customers get benefit of using the energy generated to offset their energy bill
- Net Metering allows customers who over-generate and put energy back into the grid to receive kWh credit for each hour
- Use credit first when the sun is not shining



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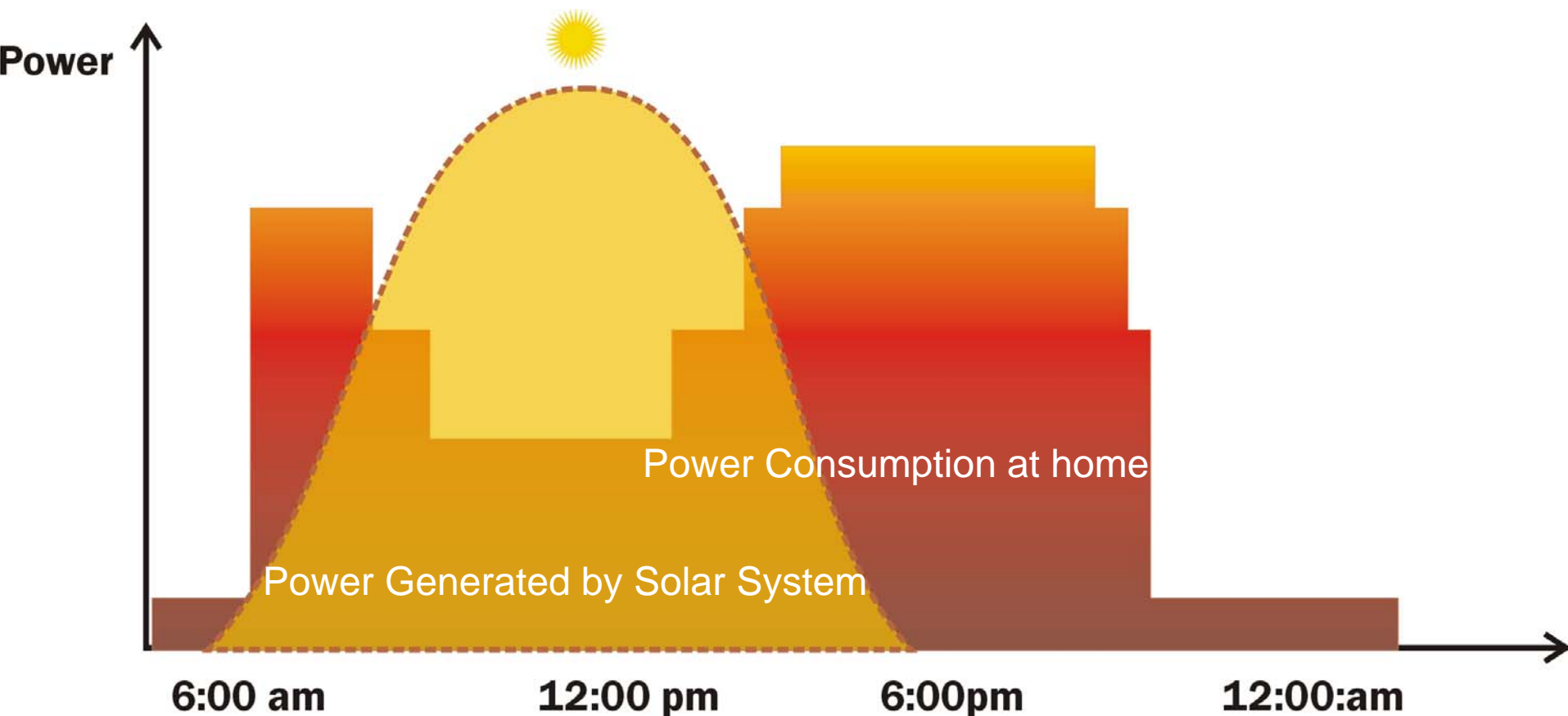
How does Net Metering work?





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Peak demands vs. production





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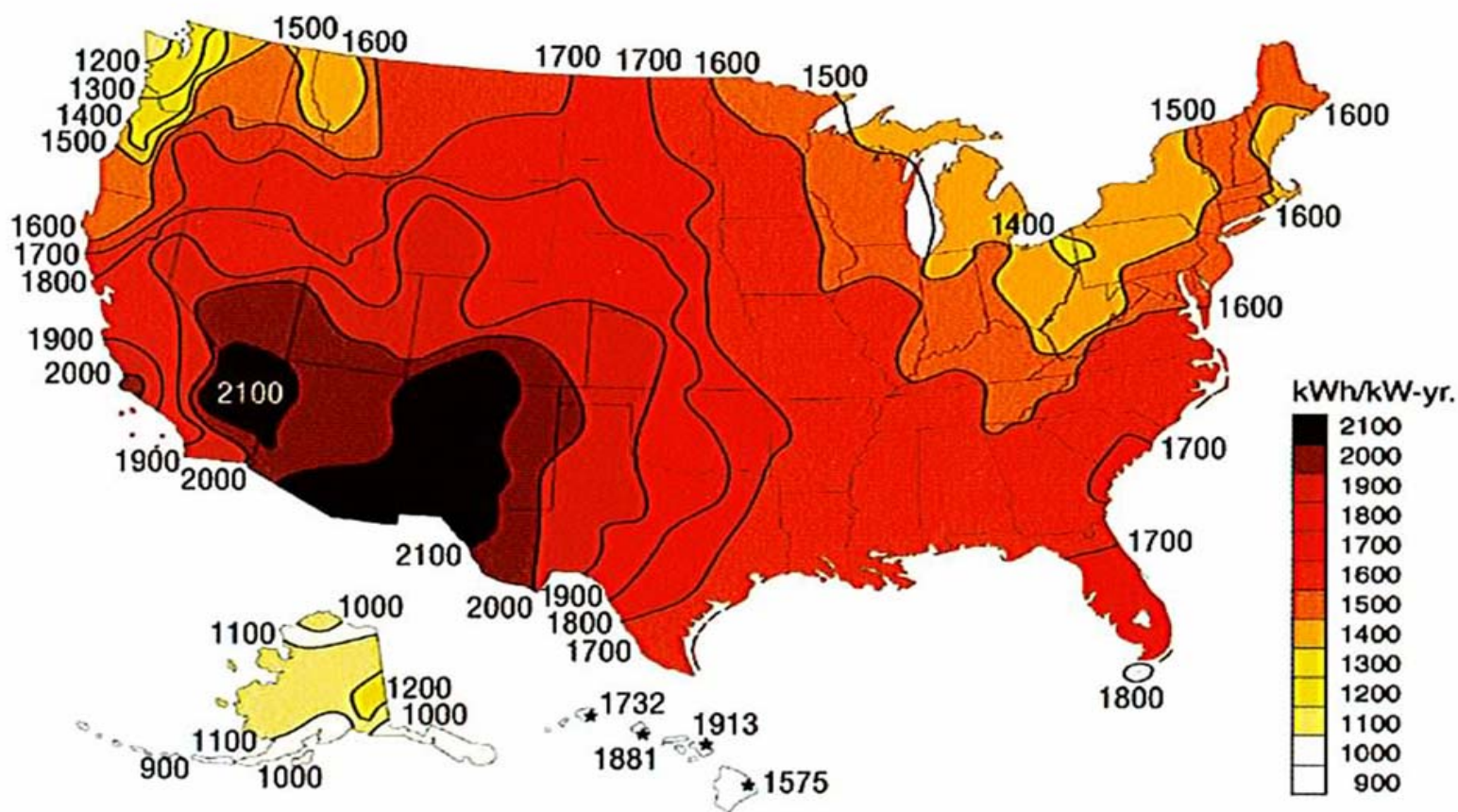
The entire electrical needs of the U.S. could be met by covering an area of about 110 miles by 110 with solar



Source: National Center for Photovoltaics. http://www.eere.energy.gov/solar/pv_quick_facts.html



Sunshine Index





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What is Photovoltaic (PV)?

- Photovoltaic (PV) energy generated from sunlight
- Clean
- Renewable
- Environment friendly
- Reliable
 - No moving parts 20 year warranty
- Dependable
 - Sun rises regularly



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Reliable and Dependable





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But what's in it for Nevada?



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Benefits to Nevada

- Growing technology across the state
- Existing businesses are growing and new ones are moving to the state
- Great interest by suppliers and manufacturers in looking at Nevada to expand their business
- Community College of Southern Nevada and TMCC creating a renewable energy technician curriculum
- UNR – Redfield Campus developing a bachelor of science degree in renewable energy engineering



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Small Business





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Mendive Middle School — Sparks, Nevada

Right Now 12:13 PM May 08, 2006

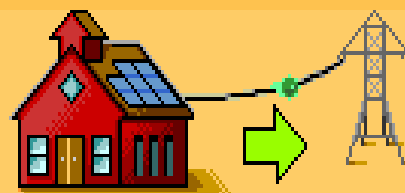
System Size: 1.8 kW

Generating

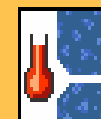
Solar PV 1,122 W AC



Wind 1 W DC



Irradiance
93%



Cell
Temp
159°F



Ambient
Temp
82°F

So Far This...

Day

Week

Month

Year

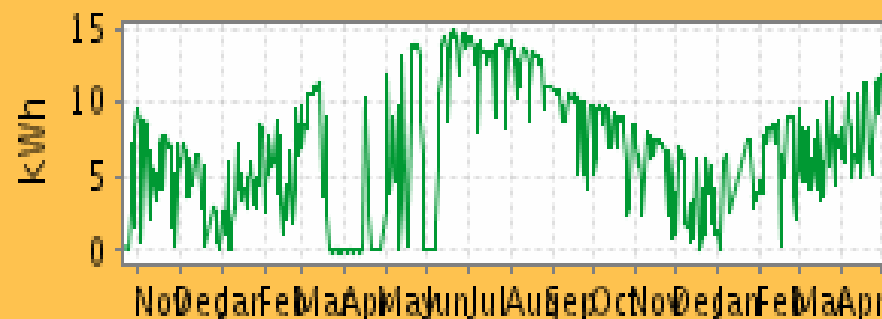
Since Installation

Generated

Solar PV 3,779 kWh DC



Wind 32 kWh DC



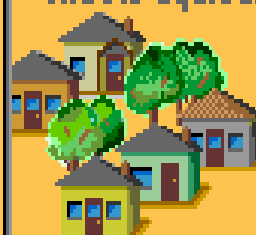
Greenhouse Gases Avoided Since Installation

CO₂ 4,726 lbs.

NO_x 16 lbs.

Average household CO₂ output is 22,750 lbs./yr.

That is equivalent to:



The energy to
power 76 homes
for one day.



The energy to
operate a TV for
26,486 hours



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Sample Payback Calculation

Sample Based on a 1 kW Photovoltaic System

Average Cost	\$9,000
Est. Electricity Generation per year	2,200 kWh
Est. Value of Generated Electricity	\$200 @ \$.10/kWh
Payback without Rebate	45 Years (\$9,000/\$200)
Rebate for 1 kW System	\$3,000
Payback with Rebate	30 Years (\$3,000/\$200)







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The Roads in Nevada are Paved for Solar





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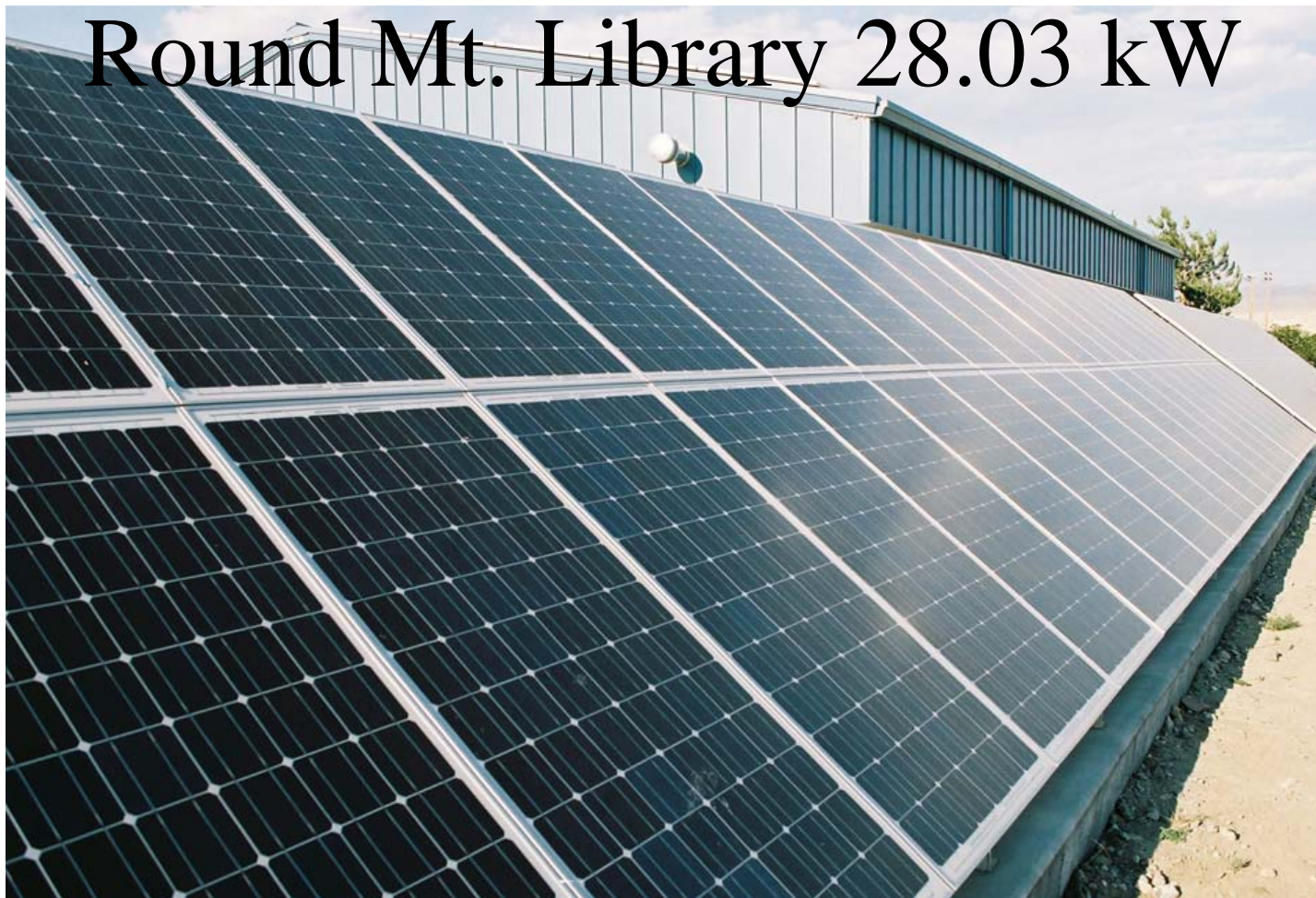
Cold Springs Station 30.35 kW





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Round Mt. Library 28.03 kW









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Contact and Mailing Information

Toll Free Hotline

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- Fax Number (775) 834-5514

Website

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- www.NevadaPower.com
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