



Solar Energy Trends For Alaska

2011 Update

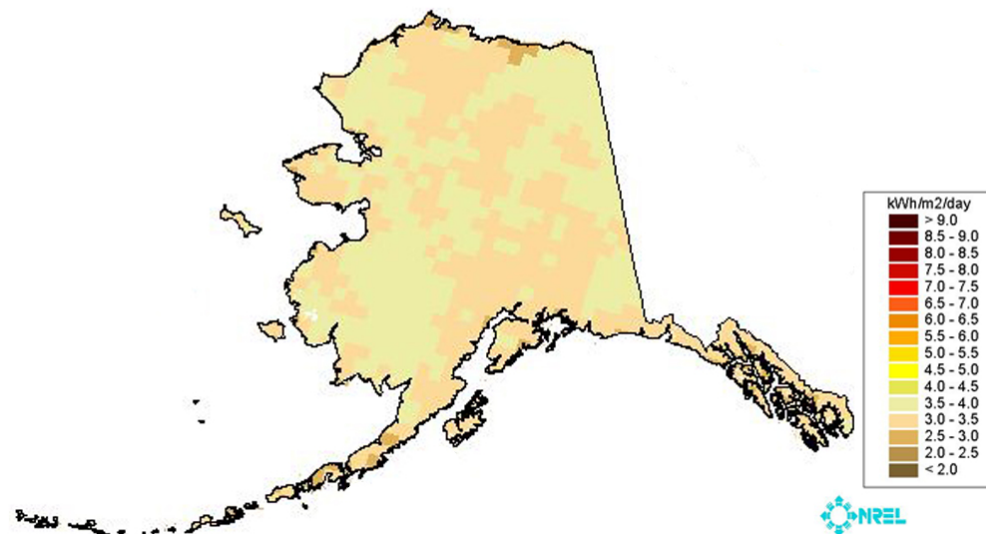
Rich Stromberg – Alaska Energy Authority

Solar Energy Resource

- Alaska isn't known as a major source of solar energy, but the state is not completely void of sun.

PV Solar Radiation Annual
(Flat Plate, Facing South, Latitude Tilt)

Model estimates of monthly average daily total radiation using inputs derived from satellite and/or surface observations of cloud cover, aerosol optical depth, precipitable water vapor, albedo, atmospheric pressure and ozone resampled to a 40km resolution. See http://www.nrel.gov/gs/tilt_csp.html documentation for more details.



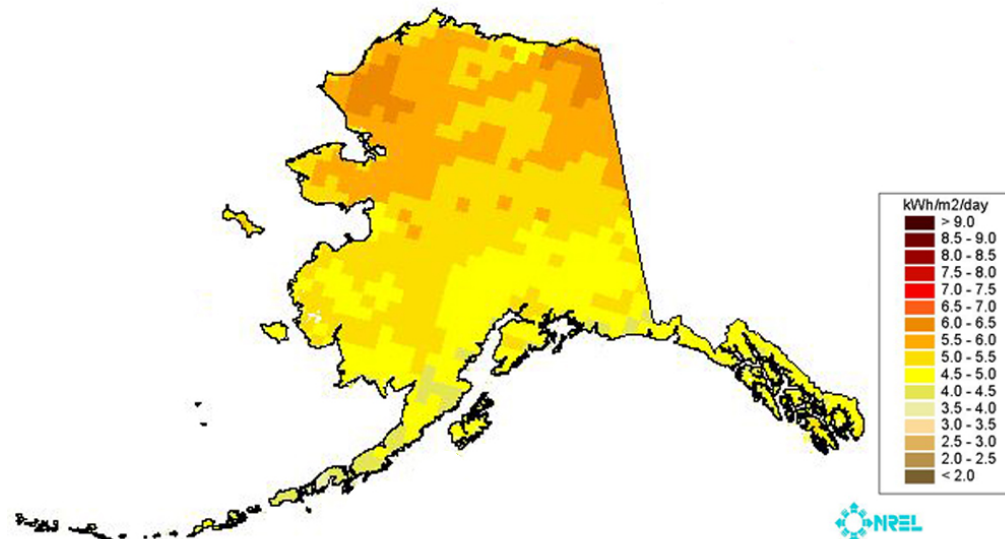
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Technologies & Systems Center - May 2004

Solar Energy Resource

- Remote fish camps, lodges and other light-load applications can benefit from summer sun.

PV Solar Radiation June
(Flat Plate, Facing South, Latitude Tilt)

Model estimates of monthly average daily total radiation using inputs derived from satellite and/or surface observations of cloud cover, aerosol optical depth, precipitable water vapor, albedo, atmospheric pressure and ozone resampled to a 40km resolution. See http://www.nrel.gov/gis/i_csp.html documentation for more details.



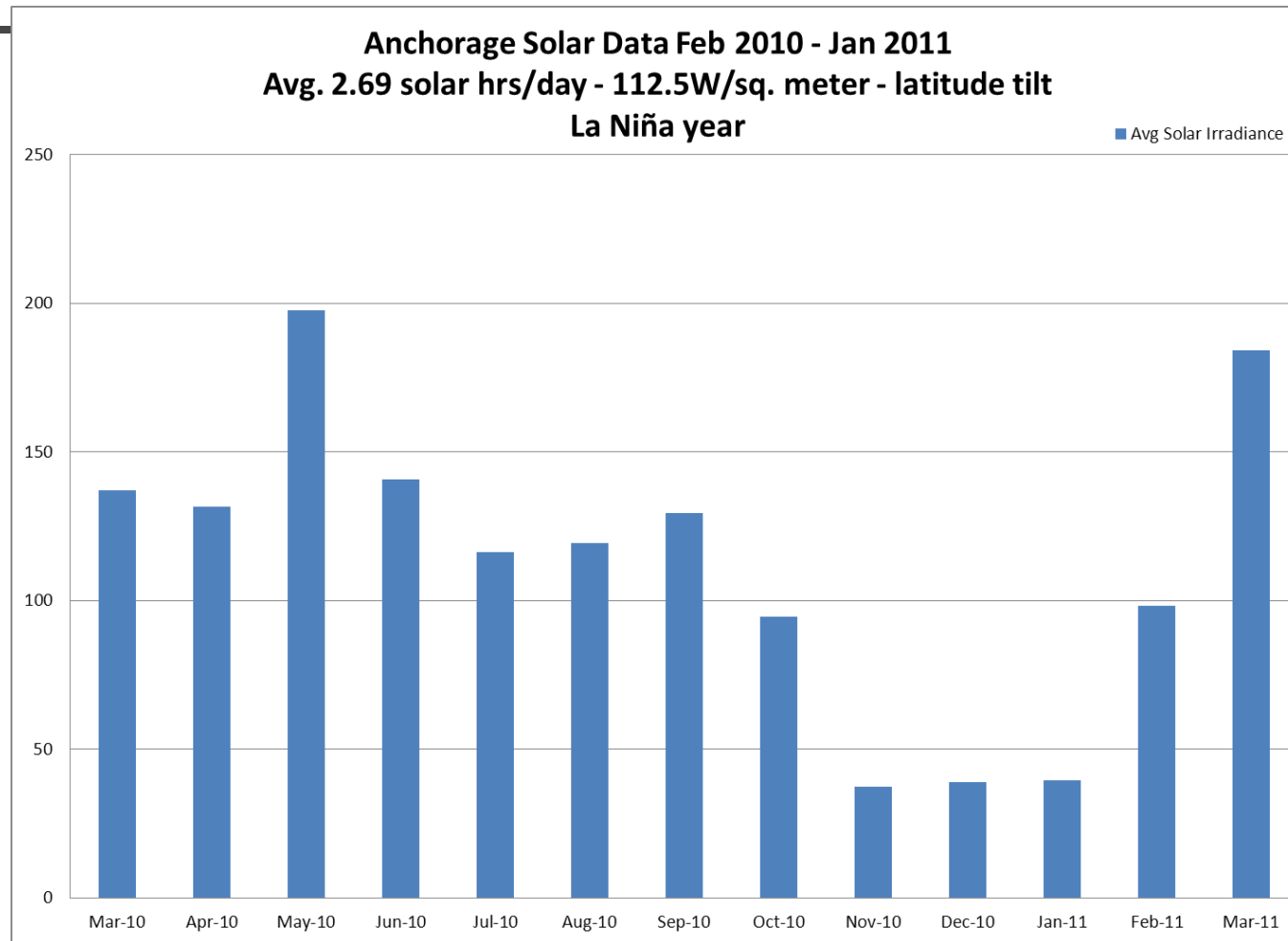

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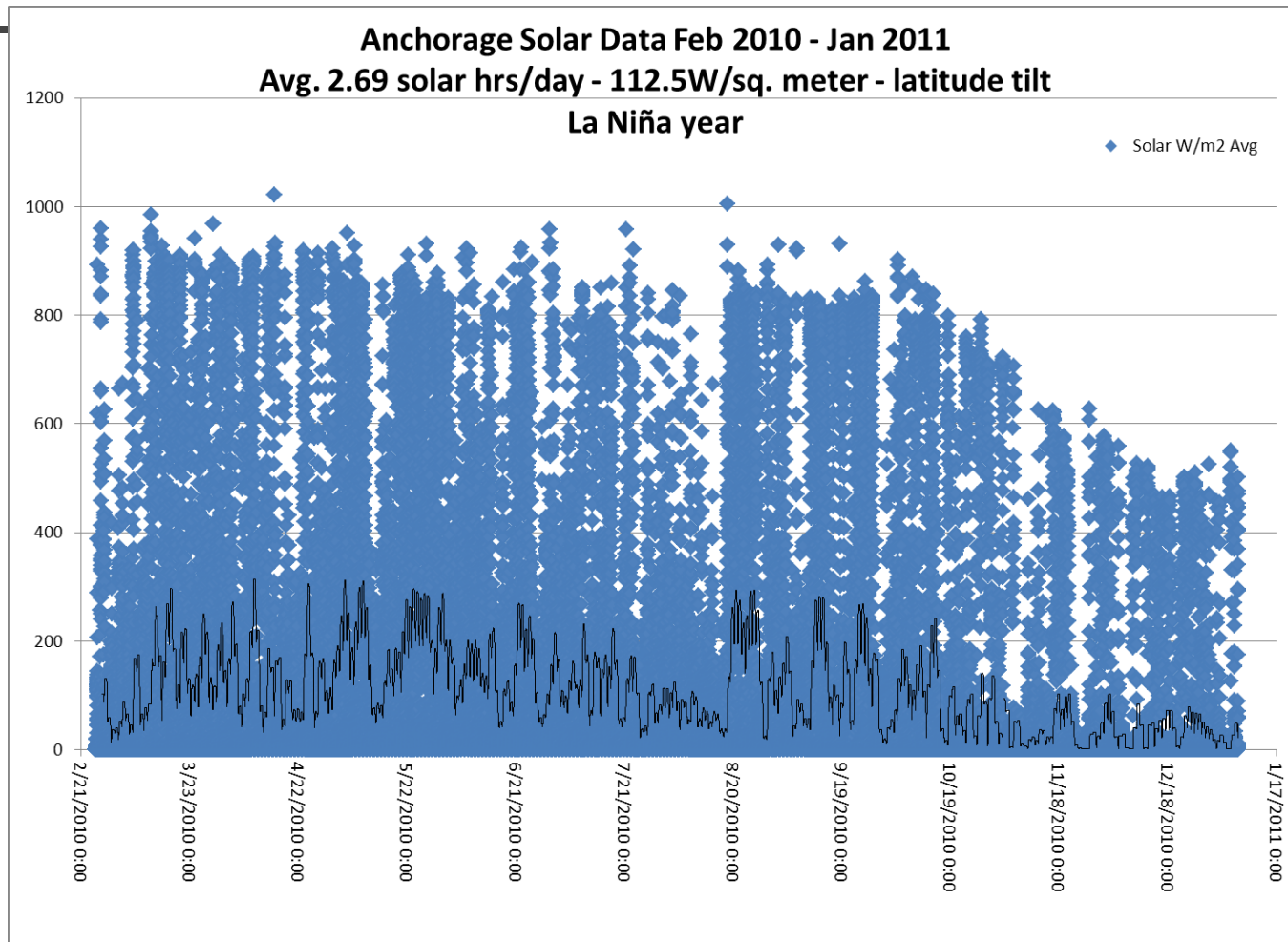
The Reality

- Economic utility-scale solar energy is at best a niche market in Alaska under current conditions, but market conditions will change in time – specifically village fuel prices and solar system costs.

What The Data Says - Anchorage



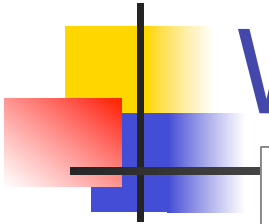
What The Data Says - Anchorage



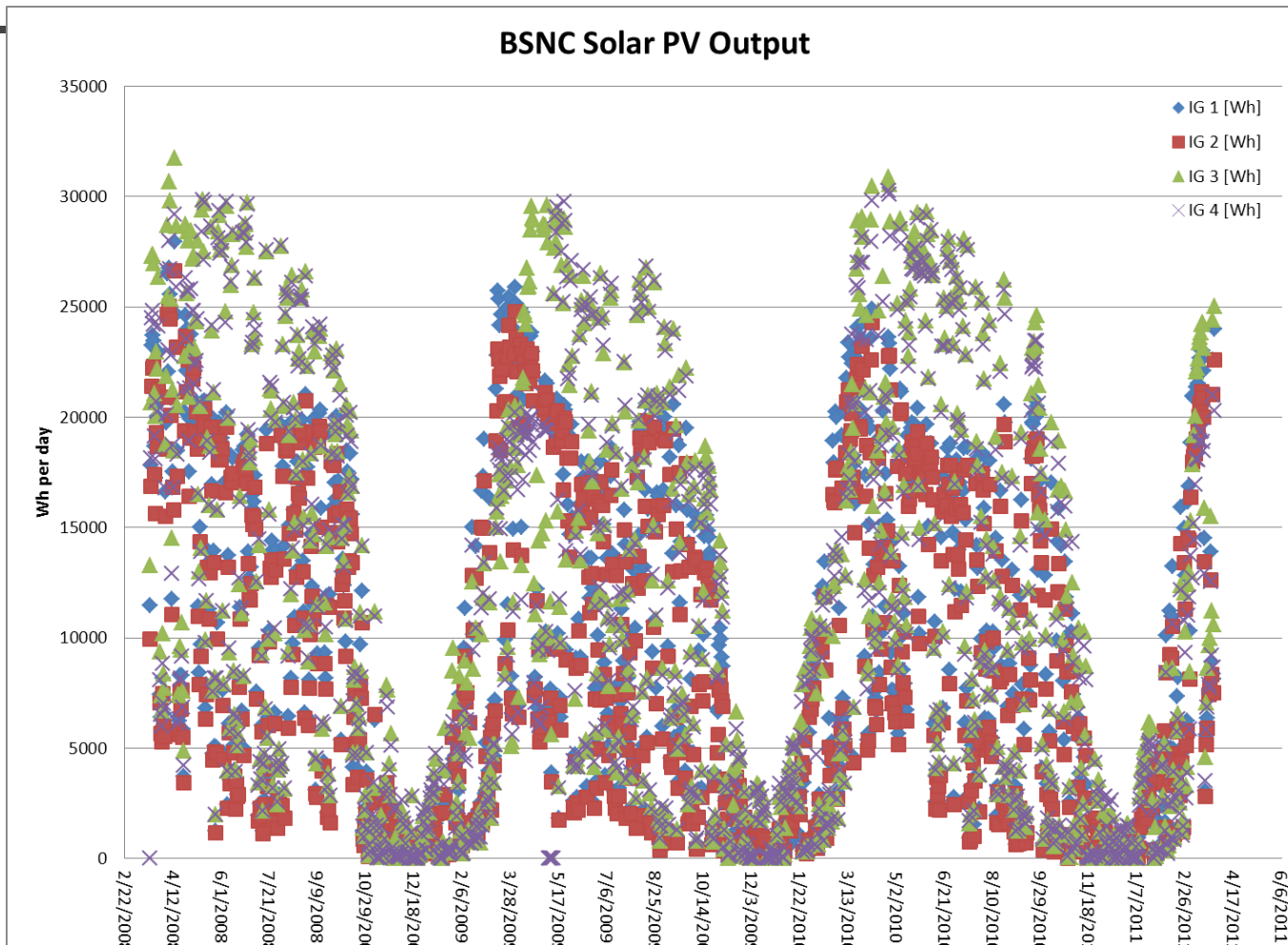
BSNC Installed Arrays- Nome

- 16.8Kw: 96 175-watt panels





What The Data Says - Nome

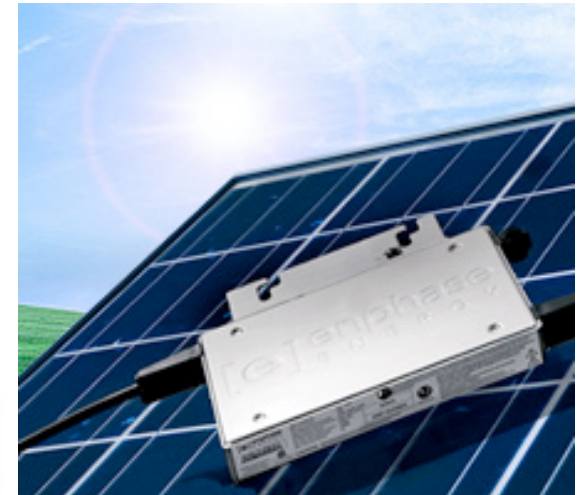


April 29

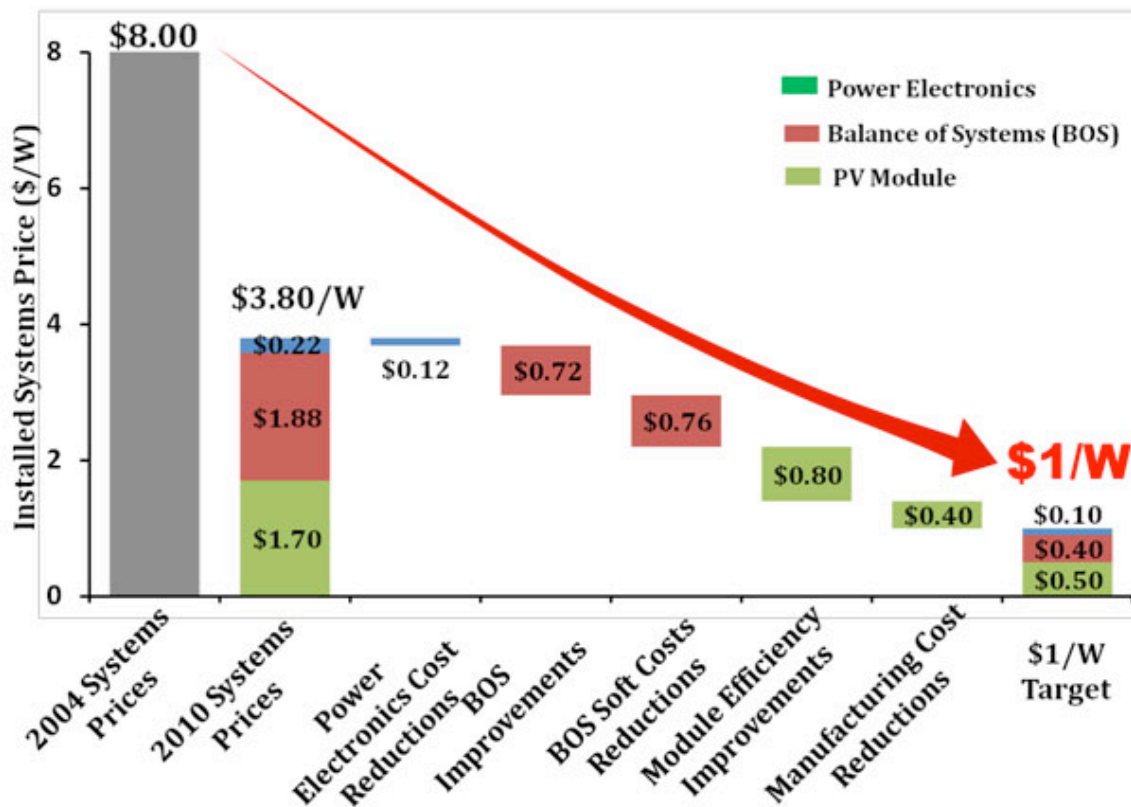
Business of Clean Energy Conference



Microinverters changing the industry



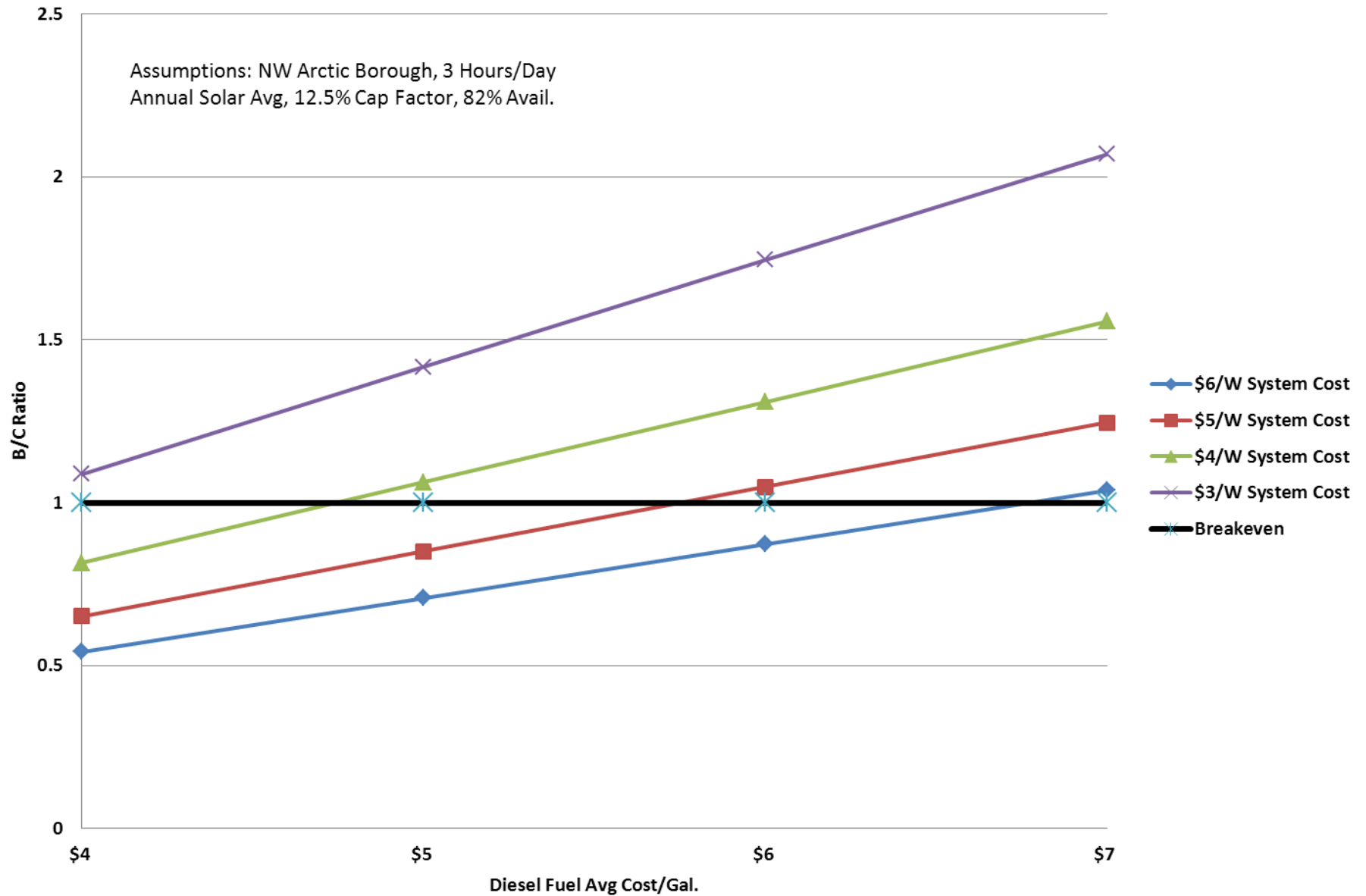
SunShot Solar Initiative



- Reduce total solar system costs to \$1 per watt by 2017.
- Currently \$3.125 in Apr 2011.

When Does Solar PV Become Economical In Alaska?

Assumptions: NW Arctic Borough, 3 Hours/Day
Annual Solar Avg, 12.5% Cap Factor, 82% Avail.





KEA Solar Thermal Pilot

- Denali Commission funds to explore residential heating and hot water heating options in the NANA region.
- A variety of configurations are being evaluated.
- Current system costs are high.