Nevada Program to Accelerate the Market for Distributed PV Systems Using Incentive in the Renewable Portfolio Standard

Background: Distributed electric generation using Photovoltaic technology can play an important role in Nevada's energy future. Even though each individual system is small, the combination of a large number of installations on homes, businesses, schools, and public buildings can reduce the demand at times of peak power consumption. Perhaps even more important, a large demand for these systems can create a "market pull" that will in turn create new, skilled jobs and even lead to the location of manufacturing and research and development related to the systems in the state. The purpose of this Program is to offer incentives through the RPS to accelerate the market demand and build public awareness of the benefits of PV systems.

The recently passed Nevada legislation to establish a Renewable Portfolio Standard intended to bring these additional values of economic diversification to the state and this proposal builds on that effort by establishing a three-year pilot program to accelerate the market development for distributed PV installations in schools, public buildings, and individual residential and small business establishments.

The Program will offer specific incentives in order to encourage the development of these markets, develop the skilled labor force necessary to implement the projects, and to capture valuable public benefits these projects offer.

The Program will offer incentives to encourage the use of trained and certified installers, to obtain the maximum public exposure and educational value from projects, and to obtain the maximum economic development stimulus from the projects.

The Pilot Projects will attempt to encourage the maximum economic development from the implementation of the RPS by offering additional incentives to projects that locate manufacturing activities related to the renewable energy technology in Nevada.

The awards will be offered to projects after competitive selection. A Special Pilot Project Committee made up of representatives of the Renewable Energy Task Force will make the selection initially. All selections of the Special Pilot Project Committee will be subject to review and approval by the Public Utilities Commission.

Programs: The Pilot Programs will be run for three years with a total installed capacity for all sectors of the program will be 5 MW broken down by year as 500 KW or .5 MW for the first year, 1.5 MW for the second year, and 3 MW for the third year. The program, if successful, will continue to operate at or above the third year target for the entire period of the RPS program.

Schools: Distributed energy systems placed on schools can provide valuable education and direct experience to students. In order to develop these markets, the legislation will offer incentives to projects that are designed to maximize student exposure and support trained and certified installers. PV systems on schools will be placed in order to offer both direct generation benefits and provide access to students to promote the educational aspect of the systems. Incentives will also be offered to

encourage the use of trained and certified installers to install systems. All school systems will be eligible for net metering. In order to capture these benefits, PV systems placed on school buildings will be awarded double credits and be allowed to select an optional time of day rate for purposes of net metering the systems. Schools projects will be allocated 100 KW for the first year, 450 KW in the second year, and 900 KW in the third year.

Public Buildings: Distributed energy systems placed on public buildings can also provide valuable education and direct experience to the general public. The legislation will offer incentives to projects that are placed to maximize public exposure and support trained and certified installers. Proposals to place PV systems on public buildings will be encouraged to place systems in order to offer both direct generation benefits and provide access to the general public to promote the educational aspect of the projects. Incentives will be the same as for schools. Public buildings projects will be allocated 200 KW for the first year, 450 KW in the second year, and 900 KW in the third year.

Homes and Small Businesses: Projects to install PV systems on homes will be awarded incentives based on their ability to demonstrate that the installations will be done by trained and certified installers and that the projects have a reasonable likelihood of establishing the continued viability of this market. Incentive will be the same as for schools. Home and small business projects will be allocated 200 KW for the first year, 600 KW in the second year, and 1200 KW in the third year.

Specific Incentives Related to the Implementation of the RPS: In order to encourage the accelerated development of these markets, the program provides specific incentives that can be awarded to selected projects in order to make them more economically attractive to participants. The incentives are extra renewable credits that can be sold or traded to retailers of electricity and drive down the net cost of the systems to participants. In addition, projects selected under this program will also be eligible for a time of day tariff that can be used by the projects for net metering.

Double or Increased Credits for Desired Programs: The Nevada Commission has already designed a system to allow for the trading of renewable credits to allow retailers of electricity to purchase the credit from a distributed or other system. This allows retailers to meet the requirements without having to either build a renewable system themselves or enter a long-term purchase power contract. The trading of credits should make the cost of complying with the RPS as low as possible. Tradable credits establish an additional value for renewable projects. Increasing the award of credits to specific projects is a way to accelerate the development of a market and to influence the development so that important public values are realized. The value of the credit will be at least equal to the penalty for non-compliance. Once that penalty is set the tradable credits can be sold and the value of the sale used to reduce the net cost to the individual owner of systems.

PRICE POINT FOR PV MARKET INSTALLATIONS

	Target Case	Base Case	Actions Required
Module Cost per Watt	3.5	3.75	Bulk purchasing, streamlined installations.
Balance of SystemCost	2	2.25	
Installation Cost	2	2.75	
Total Installed Cost	7.5	8.75	Net savings of 15% or $1.25 per watt.
Interest Rate	6%	6%	
Discount Rate	10%	10%	
After Tax Rate	0.042	0.042	
Capacity Factor	20%	20%	
RPS Credit Multiplier	2	1	PV Development Program - Extra Credits
Value of Credit	$0.10	$0.10	
Avoided tariff kWh Charge	$0.17	$0.10	PV Development Program - Peak Price Net Metering
Expected Tariff Inflation	2%	$0.02	
COST ANALYSIS			
Annual kWh Production	1752	1752	
Annual RPS Credits	3504	1752	
Annual Value of Credits	350.4	175.2	
Present Value of Credits	$2,983.15	$1,491.58	
Total Cost Installed KW	7500	8750	
Net Cost of System	$4,516.85	$7,258.42	
ANNUAL COST COMPARISION			
Annual Cost of System	$338.27	$543.59	
Annual Avoided Tariff	297.84	175.2	
Annual Net Cost to Consumer	$40.43	$368.39	
Net Cost per KWH	$0.0231	$0.2103	

Net Metering on Peak Price Basis: PV systems generate a majority of kWh at a time that is very likely to be a peak or near-peak period of demand on the Nevada electrical grid. Nevada law now allows for small renewable system to be net metered. This pilot will allow qualified projects to be net metered under a time of day or peak load pricing tariff.

As the Table above demonstrates, the combination of the double RPS credits and the value of electricity generated during the peak period will reduce the net cost of the PV system. Under the assumptions listed above, the Program would reduce the net cost to consumers to as little as $.0231 per kWh. This cost difference does not take into account the value of the PV system offering stable prices for twenty (20) years while the utility rates will escalate by some assumptions as much as 2.5% per year.