DOCKET
09-RENEW EO-01
DATE MAR 30 2009
RECD. MAR 30 2009

BEFORE THE CALIFORNIA ENERGY COMMISSION AND

THE DEPARTMENT OF FISH AND GAME

OF THE STATE OF CALIFORNIA

Facilitating Renewable Energy Development to meet the Governor's Renewable Energy Executive Order and Natural Resource Conservation Planning	Docket #09-Renew EO-01 Renewable Energy Executive Order

SOLFOCUS, INC. COMMENTS ON IMPLEMENTING THE RENEWABLE ENERGY EXECUTIVE ORDER AND NATURAL RESOURCE CONSERVATION PLANNING

SolFocus, Inc.

Prepared by: Kelly Desy
Telephone: (650) 623-7262
Facsimile: (650) 623-7263
Email: kelly_desy@solfocus.com

Date: March 30, 2009

Associate of SolFocus, Inc.

Facilitating Renewable Energy Development to meet the Governor's Renewable Energy Executive Order and Natural Resource Conservation Planning	Docket #09-Renew EO-01 Renewable Energy Executive Order

SOLFOCUS, INC. COMMENTS ON IMPLEMENTING THE RENEWABLE ENERGY EXECUTIVE ORDER AND NATURAL RESOURCE CONSERVATION PLANNING

Faced with a changing climate and threatened natural resources, the proper stewardship of our planet now requires that we alter our energy mix and move towards a more abundant and sustainable energy supply in California. While California's energy demand continues to grow, the Governor and the California Legislature push to meet more of that demand with sources of energy that do not emit greenhouse gases. Most recently, and in concert with the California Global Warming Solutions Act of 2006, Governor Schwarzenegger issued an Executive Order calling for 33% of California's electricity to come from renewable energy resources by 2020. We estimate that for investor-owned utilities, this could amount to nearly 80,000 gigawatt hours (GWh) annually in 2020[1] - a more than twofold increase over 2007 renewable energy generation levels of 35,545 GWh[2]. This marked increase in the amount of power generated by renewable energy resources will require a significant build-out of new infrastructure in and near some of California's most environmentally sensitive areas, creating the challenge of pursuing one environmental public policy goal without undermining another.

Solar energy technology has evolved. Today, emergent solar energy systems which have higher conversion efficiency, require less of the Earth's resources, are more scalable, and have an overall lower environmental footprint, are available. SolFocus is an example of an innovative technology provider committed to providing the world with a viable solution for clean energy throughout our product's lifecycle. Environmental stewardship is a value that SolFocus holds in high regard. It is SolFocus' view that the greatest opportunity to meet an increased demand for renewable energy while maintaining environmental integrity and minimizing the impact to rate-payers lies within advanced, high efficiency solar energy technology. SolFocus has developed leading concentrator photovoltaic (CPV) technology which combines high-efficiency solar cells (approaching 40%) and advanced optics to provide solar energy solutions which are scalable, dependable, and capable of delivering on the promise of clean, low-cost, renewable energy with a minimal environmental footprint.

As California's energy and environmental decision makers pursue the delicate balance between natural resource conservation planning and large-scale renewable energy projects, regulatory

[1] Based on California Energy Commission Energy Consumption Data Management System 2007 Investor-Owned Utility consumption levels and a 1.6% annual growth rate.

[2] California Energy Commission Energy Almanac.

criteria should be developed that will guarantee deployment of renewable energy technologies that can best achieve this balance while at the same time providing for greater permitting certainty. In the specific case of medium and large utility-scale solar power plants, projects having the following attributes should be favored by federal and state agencies in their permitting, environmental impact assessment, zoning, and Renewable Energy Transmission Initiative (RETI) processes:

- **Scalable technology that can be sited closer to demand-load:** Solar energy technologies with high energy density can be effectively used to form energy islands in the 2-20MW range, thus reducing the need for transmission across environmentally sensitive lands.

- **Low land usage with relation to energy output:** Solar energy technologies with high conversion efficiency of 25+% yield a much higher energy output per area of land compared to other solar technologies with lower efficiencies.

- **Less permanent shadowing:** Solar energy technologies which utilize trackers high off of the ground and move throughout the day result in less permanent shadowing to disrupt the natural ecosystem around the installation.

- **Zero water consumption to produce electricity:** Solar energy technologies which require water, fresh or waste, to produce electricity compete with water-starved desert ecosystems, as well as industry and agriculture activity. The National Renewable Energy Laboratory estimates that solar electric generating systems which operate a wet-cooled, Rankine cycle system, consume approximately 800-1000 gallons of water per MWh generated[3].

Added to this list of attributes are those that achieve public policy goals relating to sustainable manufacturing practices that have global environmental sustainability benefits:

- **High percentage use of recyclable/non-toxic materials:** To the greatest extent possible, solar energy technologies should be manufactured from non-toxic materials which can be easily recycled and transformed into future products at the end of the systems' useful life.

- **Small GHG footprint and short energy payback:** Solar energy technologies that use less energy in the component manufacturing process and the build-out of a solar power plant have less indirect greenhouse gas emissions and a shorter timeframe for energy payback.

---

[3] National Renewable Energy Laboratory (NREL). Data available at: http://www.nrel.gov/csp/troughnet/power_plant_systems.html