

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**



FILED

12-10-10
02:50 PM

Order Instituting Rulemaking Regarding
Policies, Procedures and Rules for the
California Solar Initiative, the Self-
Generation Incentive Program and Other
Distributed Generation Issues.

R-10-05-004

**REPLY OF FOUNDATION WINDPOWER, LLC TO BLOOM ENERGY, INC.'S
COMMENTS ON STAFF PROPOSAL REGARDING MODIFICATIONS TO
THE SELF-GENERATION INCENTIVE PROGRAM**

Matthew B. Wilson
Chief Executive Officer
Foundation Windpower, LLC
200 Middlefield Road, Suite 203
Menlo Park, CA 94025
Tel: (415) 320-9342
Fax: (415) 358-4506
Email: Matt.Wilson@foundationwindpower.com

December 10, 2010

**BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA**

Order Instituting Rulemaking Regarding Policies, Procedures and Rules for the California Solar Initiative, the Self-Generation Incentive Program and Other Distributed Generation Issues.

R-10-05-004

**REPLY OF FOUNDATION WINDPOWER, LLC TO BLOOM ENERGY, INC.'S
COMMENTS ON STAFF PROPOSAL REGARDING MODIFICATIONS TO
THE SELF-GENERATION INCENTIVE PROGRAM**

INTRODUCTION

Pursuant to Rule 6.2 of the California Public Utilities Commission's Rules of Practice and Procedure, Foundation Windpower, LLC ("Foundation Windpower" or "FWP") respectfully submits the following Reply of Foundation Windpower, LLC to Bloom Energy, Inc.'s Comments on Staff Proposal Regarding Modification to the Self-Generation Incentive Program ("Reply Comments") pursuant to Administrative Law Judge Ebke's Ruling Requesting Comments on Staff Proposal Regarding Modifications to the SGIP, filed Sep 30, 2010.

The positions advocated in Bloom Energy's comments, directed primarily at preserving oversized ratepayer subsidies for directed biogas fuel cell projects, are in direct conflict with California ratepayer interests because:

- **Directed biogas fuel cell projects consume the largest SGIP subsidy per watt, while delivering significantly lower financial and greenhouse gas reduction (GHG) benefits to California ratepayers per subsidy dollar spent than fully renewable projects such as wind.**
- **Directed biogas fuel cell projects result in California ratepayer funds subsidizing out-of-state biogas recovery projects which may already be capturing biogas resulting in no new net GHG emission benefit.**

- **As currently configured, directed biogas fuel cell projects are open to manipulation at ratepayers' expense because they are only restricted to biogas feedstock for five years, allowing the project to switch back to cheaper, dirtier and more profitable natural gas after five years.**

For each of these reasons and as further explained below, the Commission should immediately order Program Administrators to promptly notify all program applicants that new reservations for directed biogas are suspended until certain program modifications can be implemented to halt over-subsidizing directed biogas projects. Our detailed comments below are addressed section by section.

I. Technologies Considered for Potential SGIP Eligibility (Section 4.2)

A. Cost Effectiveness (Section 4.2.1)

Bloom Energy's suggestion that a minimum level of venture capital investment be considered as one possible indicator of commercial viability of directed biogas driven fuel cell projects is preposterous and should be rejected by the Commission.

For example, considering a minimum level of venture capital investment could provide third party validation, vetted by significant due diligence, of a path towards cost reduction and profitability. While far from a perfect barometer, investment by venture capital is often a good indication in showing the potential for commercial viability. (Bloom Energy Comments submitted November 15, 2010 (“Bloom Comments”), p. 2).

Of course, virtually every technology potentially eligible for SGIP subsidies has *some* minimum level of private investor backing. Highlighting Bloom Energy's access to venture capital, therefore, adds nothing to the cost-efficiency and commercial viability debate. If anything, Bloom Energy's substantial reliance on venture capital – a form of investment capital with a unique tolerance for high-risk gambits – should alert the

Commission of the need to recalibrate before the balance of what remains in the SGIP budget is wagered on the Bloom Energy juggernaut.

As for the cost effectiveness requirements of the SGIP, Foundation Windpower must stress that it is not in the ratepayers' best interest to lock down the bulk of the SGIP budget at a technology incubator which invests in "*efficiency improvement roadmaps*" and "*market transformation*" (terms used in the Bloom Comments) Rather, we believe the intent of the original AB 970 from 2000 was clearly stated as distributed generation, and that the intent of SB 412 from 2009 has clearly added a second policy goal of GHG reduction. Attempts by companies to utilize the SGIP to fund the commercialization of their unproven technology should be rejected by the Commission. On the other hand, utility-scale wind generation equipment is commercially proven to be reliable, predictable and cost-effective. Foundation Windpower is relying on this fact to install utility-grade wind equipment on site at large energy consumers. The use of SGIP funds to support such installations is the most consistent with the SGIP's two Legislatively-mandated policy goals of distributed generation and GHG reduction.

B. GHG Reductions Requirement (Section 4.2.2)

It is important to determine the baseline GHG emissions threshold that will be offset by distributed generation for the purpose of calculating the total effect on GHG of various distributed generation projects. Foundation Windpower agrees with the measurement approach detailed in the Staff Proposal. Bloom Energy disputes this approach, arguing that the effect of the installation of distributed generation is a curtailment of dispatchable natural gas generation, and that the renewable component of the energy mix should not be factored into the baseline CO₂ emission threshold that distributed generation projects should be scored against.

While Bloom Energy's approach has superficial appeal as it is mechanically correct in the immediate term, it fails to provide an accurate assessment of the GHG

emissions reduction of a distributed generation project over the entire life of the project in the context of an emissions regime governed by AB 32.

Any distributed generation project results in a net decrease in utility demand over the life of the project. As California brings additional generation capacity online, and continues to deploy renewable energy generating capacity to move toward its Renewable Portfolio Standard (RPS), the effective decrease in demand created by a distributed generation project will result in a slight reduction to the size of California's utility generation portfolio. This utility portfolio will, by definition under AB 32 and the RPS, consist of 33% renewable energy. The decreasing baseline carbon emissions of grid power must be factored into any GHG reduction analysis for a distributed generation project. Technology deployed today using SGIP funds will maintain its emissions profile through the project lifetime, whereas the overall GHG emissions of grid power will be driven down in the future due to RPS and AB 32. As renewable-weighted future GHG baseline emissions decrease, so too will the GHG savings associated with a distributed generation project. It is not at all hard to imagine that, should the baseline emissions drop below the threshold of a GHG emitting project such as a fuel cell, reciprocating engine or micro turbine (should the later two be allowed to re-enter the program), a project that was, at one time, a net GHG reducer will eventually become a net emitter of GHG. Likewise, as future grid power becomes cleaner, the GHG reduction benefit of non-emitting projects such as wind or solar will be decreased incrementally, but with zero GHG emissions to begin with, the benefit will always remain positive, and the relative benefit to zero emitting distributed generations projects will grow.

In addition, we urge the Commission to use this SB 412 process to reconsider the directed biogas fuel cell incentive structure. It has been argued by some parties that capturing and upgrading the biogas to pipeline quality for insertion into the gas grid can reduce GHG emissions. Foundation Windpower concedes that while this concept has merit, in implementation, the current SGIP grossly and inappropriately over-values the GHG benefit resulting in an incentive that is 3x the incentive for zero emission, utility-scale distributed wind. Additionally, and perhaps more egregiously, current program

rules allow the biogas to be treated and captured anywhere, including outside the State of California (or perhaps even outside the United States). In effect, this means that Bloom Energy, and other biogas fuel cell developers, may (and are) sourcing biogas from sites located outside California. In so doing, current program rules encourage exporting California ratepayer dollars to purchase biogas from recovery systems in locations outside California. Furthermore, current program rules do not require such investments to be made into the construction of **new** biogas recovery systems. This means ratepayer funds may be going to purchase biogas which is already being recovered through capture systems which are already installed and which already reduce GHG emissions. Such an investment departs from most renewable energy portfolio standards and emission reduction incentive programs which account for project benefits only if the project creating the new renewable energy or GHG reduction capacity is not already built into the existing infrastructure.

We believe the Commission must fully understand these downstream issues and potential unintended consequences of current SGIP rules and should immediately issue an order directing Program Administrators to promptly notify all program applicants that new reservations for directed biogas are suspended until program modifications can address the inequities described in these and other comments from this SB 412 process. Additionally, the Commission should notify the Program Administrators that any action to reallocate funds from Tier 3 to Tier 2 will be rejected by the Commission if such changes occur before certain program modifications can be implemented. Such immediate action is important so that all program participants including small businesses such as Foundation Windpower, as well as large venture capital funded businesses such as Bloom Energy, can appropriately make their business plans in an environment of regulatory, funding and program rule certainty for the remainder of the SGIP's life.

C. Need for Financial Incentives (Section 4.2.3)

Directed biogas projects consume the highest per-watt subsidy in the SGIP program, offer a low value per subsidy dollar to the ratepayer, and are consuming the vast

majority of SGIP funds, at the expense of technologies which better serve California ratepayer interests. It is critical to ratepayer interests that this be corrected immediately.

Bloom Energy is here emphasizing that *“it is important to understand that the premium for delivered biogas is \$6-\$7 per MMBtu”* to justify a higher incentive, i.e., higher costs mean higher financial need. (Bloom Comments, p. 12-14). This stands in contrast to what Bloom argued when it succeeded in persuading the Commission to provide additional incentives for directed biogas in its original petition to modify the SGIP program, i.e., that such payments would incentivize California biogas production and lower costs. Now, Bloom implies that, despite the CPUC adopting the over-subsidization of directed biogas as it urged, this market effect still has not materialized: *“As biogas production comes online in California, the high delivery costs should go down which should trigger lowering the incentive level due to decreased financial need.”* (Bloom Comments, p. 13-14). Ultimately, what this means is that the ratepayer is either (a) subsidizing an inherently cost-inefficient resource of “renewable” fuel cell energy running on directed biogas, or (b) paying for a failed economic experiment to incentivize local biogas production which, in theory, would make “renewable” fuel cell energy in California more cost-effective and allow for reduced incentives “over time”. After SB 412, and in light of the diminishing SGIP resources, neither of these programs can be justified at the expense of efficient, renewable, non-GHG emitting resources such as wind.

Furthermore, Bloom Energy's position on the price premium commanded by biogas calls attention to an economic reality that the Commission cannot ignore. A directed biogas project is significantly less profitable when running on biogas feedstock. This creates a strong economic incentive for any directed biogas fuel cell project to minimize its biogas use and take the following measures:

1. Procure and use as little biogas as possible. Currently a 75%/25% biogas to natural gas ratio is still considered biogas, so the closer a project operator can operate at this minimum biogas ratio, the more profitable the operation.

2. Switch to a 100% natural gas fuel mix as soon as the SGIP program can no longer claw back biogas subsidy dollars. Under current rules, any directed biogas project operator can and will greatly increase their profitability by immediately abandoning biogas after the SGIP's five year clawback period expires.

Any directed biogas fuel cell project owner interested in optimizing profits will only run on 75% biogas for five years then switch immediately to 100% natural gas at the end of the fifth year. The Commission must assume that any economically rational actor would take this action. Assuming a 20 year project lifetime, **biogas is only guaranteed to compose 18.75% of the fuel cell's fuel mix**, with owners dis-incentivized to exceed this requirement. For this 18.75% consumption, directed biogas fuel cells currently receive an 80% larger subsidy than fuel cell projects that run solely on natural gas. Thus, the benefits that directed biogas claims to deliver to California ratepayers are only enforceable to 18.75% of the promised benefit under the current program rules. In contrast, operators of distributed wind generation have no incentive to ever deprive ratepayers of subsidized benefits by switching to a cheaper, less renewable fuel source. Wind is already free and fully renewable. To this point, Foundation strongly recommends the Commission re-evaluate not only the subsidy level of directed biogas, but its classification as a renewable technology as well.

II. Technology Recommendations (Section 4.3)

A. Fuel Cells (Section 4.3.2)

Bloom Energy seeks to draw a distinction between thermal and electrical efficiency and encourages the Commission to again create a special separate standard which confers an unfair advantage for a certain sub-categories of fuel cell equipment. Bloom Energy argues that a their fuel cell should be allowed a 42.5% efficiency, but that other fuel cells which make more efficient conversion of natural gas BTUs through a combination of electricity and heat should be held to a higher standard. In fact, Bloom's solid oxide fuel cell design chooses to utilize waste heat in a less efficient manner

through higher internal temperatures than other fuel cell designs which export and utilize waste heat, making the overall efficiency of non-Bloom fuel cells higher than Bloom's design. Foundation Windpower makes no claim on which fuel cell approach is superior, however, from the ratepayers' perspective; we encourage the Commission to hold all fuel cells to the same efficiency standard and not to bifurcate fuel cell efficiency thresholds between *electrical* and *thermal* standards. Essentially, if exporting and utilizing waste heat from a fuel cell generates more energy efficiency from a system, then the ratepayers are better served by encouraging fuel cell systems that combine heat with power rather than creating differing, competing, confusing standards for different types of equipment. Furthermore, we concur that the efficiency standard for all fuel cells should appropriately be raised as recommended in the Staff Proposal to at least 62%.

III. SGIP Incentive Design Issues (Section 4.4)

B. Technology Differentiated Incentives (Section 4.4.2)

The assertion by Bloom Energy that the increased energy generated by fuel cells vs. solar justifies a differentiated incentive level relies on the faulty assumption that a kilowatt hour of energy output from a fuel cell delivers the same economic benefit to the ratepayers as a kilowatt hour of energy output from a solar array.

Accordingly, using the observed capacity factors in the Itron report, while a 1 MW Bloom Energy installation will produce approximately 8,000 MWh annually, a 1 MW solar array will produce less than 1,500 MWh. The significant increase in generation should be appropriately incentivized to achieve California's policy goals. Therefore, while ratepayers may make a higher per watt investment in a fuel cell compared to other technologies, the fuel cell incentive results in significantly more clean electricity generated in California on a per kilowatt-hour basis. Staff should recognize these benefits and ensure the fuel cells receive proper SGIP incentives. (Bloom Comments, pp. 15-16).

This plainly misstates the comparative effect of utilizing two different resources, primarily because a solar array (or a wind turbine) generates power utilizing a 100% free, 100% renewable energy source, while fuel cells catalyze gas drawn from the grid. In fact, even directed biogas fuel cells utilize gas drawn from the grid. Solar or wind energy delivers the full benefit of all power generated to the ratepayer: energy is generated that would not have existed otherwise, displacing the need for the energy to be generated elsewhere through combusting or catalyzing natural gas, and no GHG is produced. The energy generated by fuel cells, in contrast, delivers only a fractional benefit to the ratepayer: the difference between the fuel cell output and the power that would have been generated had the fuel cell's feed gas been combusted in a conventional combined cycle gas turbine power plant. Unlike solar or wind energy, fuel cells produce GHG. Though slightly cleaner burning than traditional natural gas power plants, the per kWh avoided emissions from a fuel cell are significantly below that of solar and wind energy. When evaluating the benefits to ratepayers of the energy generated, the Commission must recognize the distinction between fossil fuel based, GHG emitting fuel cell energy output and the energy produced by GHG free, 100% renewable technologies such as solar and wind.

Regarding capacity factor, the advantage that natural gas fed fuel cells may have over wind turbines is largely negated by the over-subsidization of the fuel cells. The subsidy for directed biogas fuel cells is currently 3X that of wind turbines (and even higher considering the California adder available to some vendors) and therefore, the total kilowatt hours produced per subsidy dollar must compare the output of three 1MW wind turbines to that of a single 1MW fuel cell. Depending on the wind resource at the project sites, the total wind output per subsidy dollar essentially matches, or exceeds, that of a fuel cell. CO2 emitting fuel cells do not come close to matching the per kWh GHG emissions benefit of wind power (see Opening Comments of Foundation Windpower for detailed study), nor do they make up for this per kWh shortfall by producing a materially higher amount of total kWh per subsidy dollar.

Bloom Energy also argues that distributed biogas fuel cells should garner an incentive premium and that somehow, "...the high delivery costs should go down which should trigger lowering the incentive level." Bloom Comments, p. 14. As previously noted, there is no available data to substantiate the claim by Bloom Energy that paying a premium for delivered biogas now will incentivize the development of more biogas recovery systems in California in the future. Again, it appears that Bloom Energy is purchasing biogas recovered from locations outside California precisely because sufficient sources of recovered biogas do not exist in California. This should lead the Commission to question the appropriateness of using ratepayer funds for this purpose, and whether the Program Administrators will ever have sufficient resources and expertise to tour, audit and validate the biogas recovery systems to ensure the biogas is being properly cleaned, conditioned and injected into the gas grid at reliably measurable quantities and qualities.

G. SGIP Budget Allocation amongst Technologies (Section 4.4.7)

As noted elsewhere, the current barrage of directed biogas SGIP reservations that is tying up the majority of SGIP funds necessitates that carve-outs immediately be established to protect proven technologies such as wind from being crowded out of the program by over-subsidized fuel cell projects. With proven, fully renewable, emission-free technology such as wind readily available, ratepayers are not well-served by making a very expensive wager on out-of-state directed biogas and Bloom's "emerging technology" when the initial promise supporting the preferential treatment afforded to the directed biogas concept still shows no sign of being realized. Even if the benefits of heavy subsidized directed biogas could be justified at some point in the distant future, and there is no available evidence to support such a justification, standard financial prudence would favor diversification: hedging ratepayer risk by reserving a significant allotment of SGIP funds for commercially proven, zero emission technologies.

Therefore, until such time as the SGIP rules change and directed biogas projects are given incentives at levels consistent with all other technologies, Foundation

Windpower strongly supports retaining all Level 3 funds in the non-renewable category and not having the Program Administrators reallocate those funds to the renewable category. These funds should be moved only after the outcome of this SB 412 process and only after the Commission reconsiders the fundamental assumptions around how, and how many, directed biogas projects are funded by the SGIP.

H. Status of SGIP Budget Availability (Section 4.4.8)

Foundation Windpower supports and agrees with Bloom Energy's comments about extending the commitment of new program funds beyond the 2011 timeframe.

IV. Additional SGIP Program Modifications (Section 4.5)

D. Export of electricity to the grid (Section 4.5.4)

Intermittent renewable resources, such as wind or solar energy, often do not align with customer usage profiles, as many customers operate facilities that have idle shifts during evenings, weekend, etc. California's Net Energy Metering law allows such customers to realize the benefits of emission-free solar or wind power. The SGIP currently limits the nameplate rating of SGIP self generation projects to 200% of a customers' peak 12 month demand. Foundation has found this rule to effectively preclude projects that are net energy exporters from full SGIP eligibility. Furthermore, we have found that customers are more open to hosting distributed generation at their facilities if they have the safety net in place of having some ability to export power to the grid.. Foundation Windpower therefore supports maintaining the current SGIP screen for project sizing (200% of customer's trailing peak 12 month demand), and does not see a need to place a specific cap on exported power provided the initial project sizing constraint remains in place.

H. Issues for Further Consideration (Section 4.5.8)

Bloom Energy refers to a "*market transformation role*" of the SGIP program to justify its opposition to any further subdivision of the program which could shield SGIP funds from the heavily subsidized Bloom directed biogas projects which are already designated to receive the vast majority of SGIP funds.

“Bloom Energy does not support any subdivision of existing incentive pools, beyond the separation of funding for eligible renewable and non-renewable projects. Subdividing incentive levels between combustion/catalyzing vs. non-emitting technologies, creating carve-outs for competitive grants and other sub-allocations of available pools of funds could result in solely funding one-off projects which would limit the SGIP’s important market transformation role.” (Bloom Comments, p. 26)

Foundation Windpower disagrees with Bloom's position as it overlooks two critical factors:

1. Directed biogas fuel cell projects are currently eligible for an out-of-market subsidy in comparison to other SGIP technologies, making the opportunity cost to California ratepayers of deploying a directed biogas project very high: The subsidy dollars consumed by a single 1MW directed biogas fuel cell project at a single project site could support up to 3.6MW of emission-free wind self generation at 4 distinct project sites. By concentrating subsidy dollars to fewer projects, directed biogas fuel cell projects are limiting the number of customer sites that can benefit from self generation, and therefore limiting the market transformation role of the SGIP program.

2. Any market transformation role (despite the fact such a role is arguably inconsistent with legislative intent for SGIP) delivered by the heavy concentration of directed biogas fuel cell projects are only partially beneficial to the California market (and California ratepayers), since a large portion of the subsidy dollars are being used to fund biogas

cleanup projects outside California. Rather, the Commission should be encouraging the investment of ratepayer funds into projects that are proven feasible and are significantly more cost-effective mechanisms for promoting distributed generation and greenhouse gas emission reductions such as utility-scale distributed wind generation.

Respectfully submitted,

By: _____ /s/ _____

Matthew B. Wilson
Chief Executive Officer
Foundation Windpower, LLC
200 Middlefield Road, Suite 203
Menlo Park, CA 94025
Tel: (415) 320-9342
Fax: (415) 358-4506
Email: Matt.Wilson@foundationwindpower.com

December 10, 2010

CERTIFICATE OF SERVICE

I hereby certify that I have this day served a copy of the “Reply of Foundation Windpower, LLC to Bloom Energy, Inc.’s Comments on Staff Proposal Regarding Modification to the Self-Generation Incentive Program” on all known parties to R.10-05-004 by transmitting an email message with the document attached to each party named in the official service list. Parties without email addresses were mailed a properly addressed copy by first-class mail with postage prepaid.

Executed on December 10, 2010 at San Francisco, California.

/s/

Steven Sherr

SERVICE LIST
R.10-05-004

HYao@SempraUtilities.com
andrew.mcallister@energycenter.org
haines@westnet.com
pstoner@lgc.org
martinhomec@gmail.com
Michael.Brown@utcpower.com
steven.huhman@morganstanley.com
Ethan.Brown@Ballard.com
jstanton@solarcity.com
ghilberg@tas.com
kelsey@heatispower.org
peter.thompson@solar.abengoa.com
lglover@solidsolar.com
kavila@mac.com
SDPatrick@SempraUtilities.com
EGuise@NationalEnergySolutionsLLC.com
jrathke@capstoneturbine.com
lrosen@eesolar.com
annette.gilliam@sce.com
fmazanec@biofuelsenergyllc.com
scott@debenhamenergy.com
scott@everydayenergy.us
kirk@NoElectricBill.com
liddell@energyattorney.com
Joseph.Perry@flexenergy.com
rsantos@guardian.com
eric@harpiris.com
vargalaw@MBAY.net
vargalaw@MBAY.NET
alipanovich@westinghousesolar.com
adam.simpson@etagen.com
matt.wilson@foundationwindpower.com
susanne@emersonenvironmental.com
julia@jasenergies.com
dil@cpuc.ca.gov
adam@alphabetenergy.com
matt@sustainablespaces.com
marcel@turn.org

nes@a-klaw.com
michael.hindus@pillsburylaw.com
abrowning@votesolar.org
Eriks@ecoplexus.com
jkarp@winston.com
mday@goodinmacbride.com
rjl9@pge.com
ssmyers@att.net
bill@brobecksolarenergy.com
wbooth@booth-law.com
info@calseia.org
gopal@recolteenergy.com
hank@wasteheatsol.com
rknight@bki.com
jody_london_consulting@earthlink.net
emackie@gridalternatives.org
jharris@volkerlaw.com
kfox@keyesandfox.com
gmorris@emf.net
cmurley@ccleagu.org
jlevin@actransit.org
kdzienkowski@pvtosolar.com
john@proctoreng.com
sebesq@comcast.net
kelly_desy@solfocus.com
mary.tucker@sanjoseca.gov
stanimoto@sna.sanyo.com
julie.blunden@sunpowercorp.com
michaelkyes@sbcglobal.net
elee@davisenergy.com
lwhouse@innercite.com
mkober@pyramidsolar.com
Nick@goodwin-self.com
jgg@eslawfirm.com
lmh@eslawfirm.com
hodgesjl@surewest.net
kmills@cfbf.com
atrowbridge@daycartermurphy.com
jmaskrey@sopogy.com
william.martini@tecogen.com
aholtz@fafco.com
ALRc@pge.com
ablauvelt@eahhousing.org

ben.ford@member.ams.org
clamasbabbini@comverge.com
chris.lavery@powergetics.com
chuck.hornbrook@itron.com
DRJF@pge.com
elvine@lbl.gov
e.paul@altaterra.net
HHH4@pge.com
heidi.ochsner@cadmusgroup.com
jkhuebner@hotmail.com
jpepper@svpower.com
jlin@strategen.com
jpittsjr@pcgconsultants.com
jhoffman@goodwinprocter.com
katrina.fritzintwala@utcpower.com
nlong@nrdc.org
Richard.S.Flood@jci.com
tam.hunt@gmail.com
ttutt@smud.org
mrw@mrwassoc.com
DWTCPUCDOCKETS@dwt.com
benjamin.airth@energycenter.org
cbeebe@sustainable-edge.com
dan@energysmarthomes.net
EGrizard@deweysquare.com
irene.stillings@energycenter.org
Jennifer.Barnes@Navigantconsulting.com
jennifer.porter@energycenter.org
JLTg@pge.com
jna@speakeasy.org
jon.fortune@energycenter.org
katrina.perez@energycenter.org
katrina.phruksukarn@energycenter.org
Kris.Kim@bloomenergy.com
m.stout@meridianenergyusa.com
naronson@fafco.com
nick.chaset@tesseractosolar.com
NJSa@pge.com
r.raushenbush@comcast.net
RKCO@pge.com
ryan.amador@energycenter.org
ssachs@aalrr.com
sephra.ninow@energycenter.org

sbarata@opiniondynamics.com
siobhan.foley@energycenter.org
terry.clapham@energycenter.org
terry.mohn@balanceenergysolutions.com
Tim@onlinecleanenergy.com
robert.tierney@utcpower.com
ensmith@mwe.com
mdorn@mwe.com
myuffee@mwe.com
jconway@paretoenergy.com
sa@zeropex.com
rsiada@guardian.com
jimross@r-c-s-inc.com
bchao@simmonsco-intl.com
jrohrbach@rrienergy.com
kirby.bosley@jpmorgan.com
Paul.Tramonte@jpmorgan.com
phammond@simmonsco-intl.com
bbarkett@summitblue.com
kcooney@summitblue.com
dprall@goldenpowerpartners.com
tim_merrigan@nrel.gov
LSchell@EmpoweredEnergy.com
WPark@FIRSTSOLAR.COM
robert.pettinato@ladwp.com
david.eaglefan@gmail.com
astele@hanmor.com
npedersen@hanmor.com
jpalmer@solarcity.com
rrkriete@earthlink.net
social.forum@yahoo.com
dnemtzw@ice-energy.com
susan.munves@smgov.net
rick.ruiz@zenviro.net
tbardacke@globalgreen.org
rzhang@cityofpasadena.net
eklinkner@cityofpasadena.net
sendo@ci.pasadena.ca.us
thamilton@icfi.com
bjeider@ci.burbank.ca.us
fred.lyn@cityofrc.us
akbar.jazayeri@sce.com
case.admin@sce.com

gary.barsley@sce.com
mike.montoya@sce.com
michael.tomlin@sce.com
Shiela.Linao@sce.com
walter.gordon@sce.com
marc@negawattconsult.com
rishii@aesc-inc.com
dbruder@onsitenergy.com
rsperberg@onsitenergy.com
kdavidson@de-solutions.com
dave@skellyelectric.com
Jcox@fce.com
allenseligson@yahoo.com
mowrysswr@cox.net
fortlieb@sandiego.gov
ctai@edgetechsolar.com
lisab@cleantechsandiego.org
CManson@SempraUtilities.com
DAKinports@semprautilities.com
JYamagata@SempraUtilities.com
CentralFiles@SempraUtilities.com
elee@sandiego.gov
tblair@sandiego.gov
jackm@calpwr.com
bob.ramirez@itron.com
hesusman@stoel.com
jmgarber@iid.com
ctoca@utility-savings.com
ebrodeur@steadfastcompanies.com
wlscott@earthlink.net
lnelson@westernrenewables.com
jk.stevens@cox.net
ssciortino@anaheim.net
warehouse@mohrpower.com
janet.gagnon@solarworldusa.com
mbirney@cecmail.org
dalbers@americandairyparks.com
c.cruzon@mainstreamenergy.com
tom@alcowater.com
ek@a-klaw.com
John.Pimentel@FoundationWindPower.com
kevin.hauck@foundationwindpower.com
steve.sherr@foundationwindpower.com

bkarney@comcast.net
matthew.kilkenny@skywatchenergy.com
linda.forsberg@mountainview.gov
mdjoseph@adamsbroadwell.com
michael.mcdonald@ieee.org
jrichman@bloomenergy.com
jade.juhl@sfgov.org
jeanne.sole@sfgov.org
APatane@sfwater.org
fsmith@sfwater.org
andre.devilbiss@recurrentenergy.com
jim.howell@recurrentenergy.com
luke.dunnington@recurrentenergy.com
mike@ethree.com
CJSv@pge.com
CAMb@pge.com
efm2@pge.com
G1GK@pge.com
jwwd@pge.com
filings@a-klaw.com
kxn8@pge.com
l1sb@pge.com
MEWR@pge.com
mxw8@pge.com
SGraham@navigantconsulting.com
spauker@wsgr.com
sww9@pge.com
sww9@pge.com
tjl@a-klaw.com
croaman@ccsf.edu
Johng@ecoplexus.com
steven@moss.net
june@globalexchange.org
sreineccius@gmail.com
bcragg@goodinmacbride.com
bdille@jmpsecurities.com
jarmstrong@goodinmacbride.com
jclark@gmsr.com
rafi.hassan@sig.com
sdhilton@stoel.com
mmattes@nossaman.com
cem@newsdata.com
cem@newsdata.com

C2M1@pge.com
bawilkins@sbcglobal.net
ronnie@energyrecommerce.com
cp@kacosolar.com
AXY4@pge.com
lgk2@pge.com
mgh9@pge.com
regrelcuccases@pge.com
grant.kolling@cityofpaloalto.org
colin@tiogaenergy.com
jordan@tiogaenergy.com
paul@tiogaenergy.com
ben@solarcity.com
ecarlson@solarcity.com
rguild@solarcity.com
Shoeless838@comcast.net
JMCLA@comcast.net
mburnett@edenhousing.org
sewayland@comcast.net
bchastain@aalrr.com
sbeserra@sbcglobal.net
Dana.Rotariu@navigantconsulting.com
timea.Zentai@navigantconsulting.com
kbest@realenergy.com
JerryL@abag.ca.gov
sgreschner@gridalternatives.org
zfranklin@gridalternatives.org
adougherty@opiniondynamics.com
jwiedman@keyesandfox.com
kmerrill@energy-solution.com
mcampbell@opiniondynamics.com
sstanfield@keyesandfox.com
jlarkin@us.kema.com
karin.corfee@kema.com
nellie.tong@us.kema.com
gteigen@rcmdigesters.com
taram@greenlining.org
telipman@berkeley.edu
gjs8@att.net
gjs8@att.net
tomb@crossborderenergy.com
heidi@sunlightandpower.com
jason.jones@tiltsolar.com

katie@sunlightandpower.com
lauren@sunlightandpower.com
gtrobinson@lbl.gov
rhwiser@lbl.gov
tdfeder@lbl.gov
cchappell@sunwatersolar.com
justin@sunwatersolar.com
sara@solaralliance.org
nsantos@solarpowerpartners.com
johnspilman@netzero.net
joelene.monestier@spgsolar.com
wem@igc.org
jtengco@akeena.com
drauschhuber@comfortenergy.com
jian.zhang@gridx.com
steve.peck@peachtreepower.com
emahlon@ecoact.org
michael@ecoact.org
andrew@chromasun.com
francis@focalpointenergy.com
peter@peterlelievre.com
kevin.armstrong@sanjoseca.gov
dmcfeely@solartech.org
njfolly@tid.org
fwmonier@tid.org
preston@sonomaenergymgt.com
brbarkovich@earthlink.net
dgrandy@caonsitegen.com
will@solarroofs.com
lmerry@vervesolar.com
rmccann@umich.edu
george.simons@itron.com
smita.gupta@itron.com
ann.peterson@itron.com
dennis@ddecuir.com
kenneth.swain@navigantconsulting.com
cmkehrrein@ems-ca.com
geofs@coddling.com
amber@iepa.com
dcarroll@downeybrand.com
dseperas@calpine.com
dchong@energy.state.ca.us
jmcfarland@treasurer.ca.gov

jamckinsey@stoel.com
shears@ceert.org
kellie.smith@sen.ca.gov
laurene_park@sbcglobal.net
bernardo@braunlegal.com
blaising@braunlegal.com
Paige.Brokaw@asm.ca.gov
abb@eslawfirm.com
glw@eslawfirm.com
rpistoc@smud.org
mdavis@barnumcelillo.com
chuck@csolt.net
karen@klindh.com
jbarnet@smud.org
rhuang@smud.org
sfrantz@smud.org
whughes@smud.org
dsanchez@daycartermurphy.com
sas@a-klaw.com
mpa@a-klaw.com
erickpetersen@pvpowered.com
jholmes@emi1.com
brenda.latter@itron.com
Kurt.Scheuermann@itron.com
psaxton@energy.state.ca.us
loe@cpuc.ca.gov
arr@cpuc.ca.gov
as2@cpuc.ca.gov
aes@cpuc.ca.gov
cjm@cpuc.ca.gov
df1@cpuc.ca.gov
dbp@cpuc.ca.gov
dot@cpuc.ca.gov
cln@cpuc.ca.gov
joc@cpuc.ca.gov
jf2@cpuc.ca.gov
jnr@cpuc.ca.gov
kar@cpuc.ca.gov
lau@cpuc.ca.gov
lp1@cpuc.ca.gov
meb@cpuc.ca.gov
mvc@cpuc.ca.gov
unc@cpuc.ca.gov

mts@cpuc.ca.gov
mc3@cpuc.ca.gov
mdd@cpuc.ca.gov
nmr@cpuc.ca.gov
rl4@cpuc.ca.gov
sgm@cpuc.ca.gov
tcr@cpuc.ca.gov
wmb@cpuc.ca.gov
deden@energy.state.ca.us
fnasim@energy.state.ca.us
lkelly@energy.state.ca.us
pnarvand@energy.state.ca.us
smiller@energy.state.ca.us
dvidaver@energy.state.ca.us
pbarthol@energy.state.ca.us
rbaybayan@energy.state.ca.us

By first class mail:

Sunfund Corporation
P.O. Box 3206
Los Altos, CA 94024

Steven A. S. Morrison
City & County of San Francisco
City Hall, Suite 234
1 Dr. Carlton B. Goodlet Place
San Francisco, CA 94102-4682

Enrique Gallardo
Attorney at Law
Latino Issues Forum
1918 University Avenue, Ste 3D
Berkeley, CA 94704-1051

Melissa Jones
Executive Director
California Energy Commission
1516 9th Street, MS-39
Sacramento, CA 95814