Comment Set 12
David Weisman

Comments on draft EIR
Diablo Canyon Power Plant Steam Generator Replacement Project
Application No. A.04.01.009
SCH No. 2004101001

Submitted to:
Andrew Barnsdale, CPUC
C/o Aspen Environmental Group
235 Montgomery Street, Suite 935
San Francisco, CA 94104

Submitted by:
David Weisman
375 Surf Street, # C
Morro Bay, CA 93442
Davidweisman@charter.net

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On the operating table before us is the DRAFT Environmental Impact Report on the project to replace the aging and leaking steam generators at the Diablo Canyon Nuclear Power Plant. I have reviewed this draft EIR and executive summary, and find it to be woefully lacking in both its thoroughness and detail. In certain instances, the information is simply erroneous. I take these errors and omissions very seriously, for at stake is our safety and well being in this county, and the continued production and storage of high level radioactive waste here on the seismically active central coast deserves the closest scrutiny. In addition to the safety and security of our environment, there is a great cost associated with this project, and while the scope of the EIR is not specifically to address the economics of this project, it is required under California law to explore an option known as the "No Project Alternative," which examines what happens if this steam generator project is not approved, and what alternatives can be explored and implemented. **12-1**

In October of last year, a "scoping session" was held here in San Luis, and members of the team preparing this EIR came to hear our comments and suggestions. They did not bring a transcriber nor a recorder with them, and though we were promised they were taking notes, they appear not to have heard much of what the dozens of people who offered comments were saying. Their draft EIR accepts assertions made by PG&E, the applicant, without question. **12-2**

They report on the "aging" steam generators, but fail to note that these pieces of equipment were meant to last the entire 40 year license of the plant...and their "aging" may in fact be due either manufacturing defects, poor maintenance, or at the very least, poor planning in that these problems were not foreseen nor addressed earlier in the life **12-3**

Comment Set 12, cont.
David Weisman

of this nuclear power plant. If this major technological "glitch" was unexpected, what future ones may be anticipated...or worse, are *failing* to be anticipated? 12-3

They report that Diablo Canyon Power Plant provides "low-cost, zero-emission power to the California power supply." In a short time it is not possible to discuss how extraordinarily expensive nuclear power is, given subsidies that have ranged from research and development to free—yet inadequate—insurance, courtesy of *our* tax dollars. Suffice to say, as a nation we were originally promised "power too cheap to meter" and I think the fact that electric bills continue to increase will attest to the fact that *that* promise remains unmet. Not to mention that "zero-emission" does not include tons of highly radioactive spent fuel... a *solid* emission. 12-4

While the EIR does not evaluate the impacts that could occur if Diablo Canyon is relicensed to operate beyond its original licenses that end in 2021 and 2025, the replacement of the steam generators as proposed in this project are required to make that possible. This draft EIR states "At this time PG&E has not formally proposed to renew the licenses, and license renewal is speculative and not a reasonably foreseeable outcome of the Proposed Project."

In response, first of all, the Nuclear Regulatory Commission has itself stated that it fully expects all reactor sites in the nation to apply for license renewal, in fact a transcript of their public meeting on July 15, 2003, at Anaheim, California hears them saying, "All indications are that multiple license renewal applications will continue to be filed with the Commission over the next decade and eventually the entire fleet of nuclear plants will request license renewal." PG&E acknowledges that it is performing "feasibility studies" for license renewals at DC*N*PP. In addition, we have this overhead projection from their presentation at the DCISC meeting of just a couple years ago.... It says, "50 More Years of Generation Begins with 1 R 11" which means refueling outage 11, Unit 1. Well, 50 more years from 2003 is 2053, and that certainly would require a license renewal. What will be the safety consequences of running a 65 year old reactor? 12-5

On the matter of the DEIR's consistency: At D.3.1.5.1 the DEIR presents the "Consent Judgment" on the continuing marine impacts of DCNPP's cooling water entrainment and thermal discharge and their proposed mitigation as though this were a matter of settled fact. As we note of D.3.1.5.1, there is, as yet, no Consent Judgment, and the issuance of an NPDES permit is therefore in doubt. If the DEIR wishes to cite PG&E's relicensing as "remote and speculative" because an actual request has not yet been filed, it must find the terms of the not-yet-entered Consent Judgment equally "remote and speculative," and cannot cite these terms as mitigation for the impacts of the plant's continued operation as facilitated by the Proposed Project. If CPUC considers the prospect of a consent judgment and NPDES permit likely, then the prospect of PG&E's request for relicensing is also likely. The DEIR cannot have it both ways. 12-6

Perhaps the most glaring omission in the more than 500 pages that comprise this draft EIR is found under the No Project Alternative section of the document. The authors first write, "The surroundings would experience beneficial environmental effects by 12-7

2

Comment Set 12, cont.
David Weisman

shutting down the routine operation of DCPP, mostly notably in the areas of marine biological resources and public safety. CONSIDER THAT CAREFULLY: They acknowledge that there is an environmental benefit to shutting down Diablo Canyon. And yet, when it comes to determining how California will meet its energy needs without Diablo Canyon, they are short-sighted and negligent. Here is what they write: "At this time, it would be remote and speculative to predict exactly how replacement power would be provided; given the wide range of possibilities, the types, sizes, number or location of replacement power projects that might be constructed under the No Project Alternative. Because of these limitations, the environmental assessment for the No Project Alternative does not analyze specific replacement power scenarios. The analysis discusses potential replacement power solutions in a more general manner and at a lesser level of detail than the proposed project." 12-7 12-8

How much less a level of detail? Here is your answer: Out of a 500 page document, I found 6 pages on possible safe, renewable and alternative energy sources... and the footnotes for more than ¾ of it come from PG&E, the applicant. Those residents who were at the scoping meetings back in October heard as one person after another stressed the importance of evaluating the No Project Alternatives. In essence, we have been ignored. 12-9

This draft EIR is in need of serious life-support. It cannot at once conclude that shutting down Diablo Canyon is best for the environment, and then dismiss and disregard all potential for its replacement. To do so flies in the face of just a few of the following: This report from Texas, by The Union of Concerned Citizens and Public Citizen "Increasing the Texas Renewable Energy Standard: Economic and Employment Benefits," and this citation was submitted to the CPUC and Aspen in October, it does not appear in their footnotes; or this example from Lamar, Colorado, which was also submitted but does not even appear to have been considered. 12-10

Or the fact that in our own state, the Governor has supported our SB 1 legislation, which would mandate 3 gigawatts of power by the year 2018 provided by independent, rooftop solar panels on homes. Those 3 gigawatts equals approximately all the power from Diablo Canyon plus almost 50 percent more thrown in for future growth... and the governor wants all that accomplished before the current license on these nuclear plants expires!

Where is the foresight? Where is the vision? Continued reliance on nuclear power is unreliable in a post 9/11 environment... one event at a nuclear power plant... anywhere in the country, and you can bet they will all be shut down—like the grounding of our entire airline fleet in those days following the dreadful attacks. What will that do for the 20 percent of our nation's power that is provided by nuclear sources? The time to begin planning for this is now. This is not the time to ignore the No Project Alternative as if it were some kind of placebo. 12-11

People are worried about keeping the lights on...they want a steady state stream of electricity, and remind you that the wind doesn't always blow when you need it most.

3

Comment Set 12, cont.
David Weisman

OK, how about something simple, like "efficiency" (pull out compact fluorescent bulb)... efficiency works almost immediately, and it works 24/7. It is dismissed in one paragraph in this EIR. **12-12**

How many of you have a multi-outlet power strip under your desk or behind the sofa, brimming with small AC to DC converters that power cel phone chargers, answering machines, laptop computers, CD players and the like? Do you feel the heat coming from these transformers? That is lost energy. These little devices are called "vampires" in the energy world, because most of them are left "on" all night long, slowly draining small amounts of energy that add up over an entire state. Switch these off and make energy efficiency work... again, a formula not explored in this E.I.R.

Solar energy is equally ignored in this report. And yet, Germany has the first office building with photovoltaic cells built into the windows... and where was this system manufactured? By Sunpower Corp., right here in our state of California. So, Europeans are buying our advanced solar systems and putting money into our economy... and where does PG&E plan to buy their new steam generators? Europe ! That is sending our jobs and economy in the wrong direction! **12-13**

But most importantly, let's not forget the cost of all this: PG&E wants $800 million or more dollars to replace these aging steam generators. And they want it from the rate payers. You might ask, if this is a corporation, and this is a business venture which they claim is necessary for years to come—and they must be hoping that it will make them a profit for years to come, because what successful business wouldn't?—why don't *they* pay for it, and then reap the rewards when they come in? **12-14**

That question was asked at the last CPUC forum held here in San Luis. And do you know what CPUC Commissioner Geoff Brown answered? "That $800 million would be too big a bit for the PG&E shareholders to undertake and it would threaten the company's international bond rating, and as you know, Standard and Poor's rules the world."

"Standard and Poor's rules the world?" Excuse me, but do we California rate payers have the reliability and security of our energy system subject to the speculation of manipulative cartels and international investors? Haven't we seen how that worked out in the last deregulation fiasco, the false energy crisis of 2000, and the disgrace of Enron?

This is not the time to throw our money down the sinkhole of old, dead-end technology. Nuclear power is, *so* Twentieth Century.... The time has come to join other states and indeed other nations in looking towards renewable, safe and secure energy independence. The precedents and examples are out there, and this EIR needs to address that. I want to make sure the CPUC and its consultants know that we support the No Project Alternative and that we want to see an EIR that actually takes into account the comments they have come here to hear from us. **12-15**

4

Comment Set 12, cont.
David Weisman

12-16

Renewing Texas' Economy

A National Renewable Electricity Standard Will Create Jobs and Save Consumers Money

A national renewable electricity standard (RES)[1] would require electric utilities to supply a set percentage of their electricity from renewable sources such as wind, solar, geothermal, and bioenergy. Similar programs have already been put in place in Texas and 15 other states.

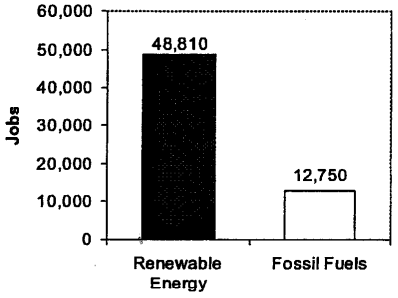
Over the past four years, an unprecedented surge in natural gas power plant construction has contributed to rising natural gas and electricity prices. Consumer natural gas prices have more than doubled. High gas prices are forcing industrial users such as the petrochemical industry to move their operations overseas. U.S. chemical workers have lost approximately 78,000 jobs since natural gas prices began to rise in 2000.[2] Farmers are also feeling the pain because natural gas accounts for 90 percent of the cost of fertilizer. These prices show no signs of abating.

Renewable Energy Creates Jobs and Economic Benefits

A new UCS analysis found that under a national 20 percent RES, Texas would increase its total homegrown renewable power to more than 25,900 megawatts (MW) by 2020.[3] The majority of this development would be powered by Texas' strong wind and bioenergy resources. This level of renewable development would provide the equivalent of nearly 23 percent of electricity sales in the state and reduce the use of imported coal. Texas has the technical potential to generate nearly 8 times its current electricity needs from renewable energy.

Renewable energy development would create new high-paying jobs and other economic benefits in Texas. By 2020, the 20 percent standard would create more than 48,800 new jobs in manufacturing, construction, operation, maintenance, and other industries. Renewable energy would create nearly 4 times more jobs than fossil fuels—a net increase of more than 36,000 jobs by 2020.[4] It would also generate an additional $860 million in income and $590 million in gross state product in Texas' economy.

Renewable Energy vs. Fossil Fuel Jobs
Texas, 2020
(20 percent by 2020 RES)



Renewable Energy Boosts Rural Economies

A national RES would also provide a tremendous boost to rural economies in Texas. Many of the jobs identified above would be created in rural areas where the renewable resources and facilities would be located. By 2020, a 20 percent national standard would provide:

- $10 billion in new capital investment
- $1.1 billion in payments to farmers and rural landowners from producing biomass energy
- $665 million in new property tax revenues for local communities
- $225 million in lease payments to farmers, ranchers, and rural landowners from wind power[5]

Renewable Energy Saves Consumers Money

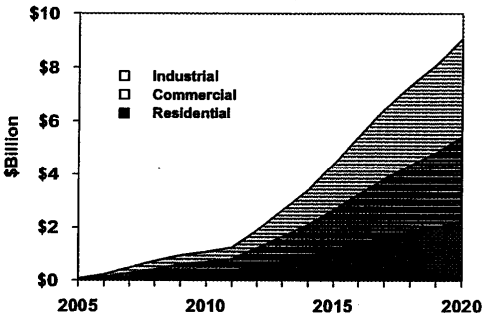
The 20 percent by 2020 national RES would reduce long run energy costs to consumers. Increased competition from renewable energy leads to slightly lower natural gas and electricity prices. By 2020,

Comment Set 12, cont.
David Weisman

12-16

total consumer savings in Texas from lower energy prices would be more than $9 billion. All sectors of Texas' economy would benefit from the national RES, with industrial, commercial, and residential customers total savings reaching $3.6 billion, $3.2 billion, and $2.3 billion respectively by 2020.

Cumulative Energy Bill Savings by Sector, Texas (20 percent by 2020 RES)[a]



[a]Excludes transportation.

Renewable Energy Conserves Resources and Provides Environmental Benefits

Increasing renewable energy use will reduce the amount of air pollution from power plants that threaten people's health by burning coal, oil, and natural gas. Carbon dioxide emissions, which trap heat in the atmosphere and cause global warming, would also be reduced. Nationally, the 20 percent RES will reduce about 434 million metric tons of power plant carbon dioxide emissions a year by 2020—a reduction of 15 percent below business as usual levels. The RES will also reduce harmful water and land impacts from extracting, transporting, and using fossil fuels and conserve resources for future generations.

A 10 Percent National RES Will Provide Important—but Fewer—Benefits

UCS also examined the costs and benefits of the national 10 percent by 2020 RES and renewable energy tax credits passed by the U.S. Senate in July 2003 as part of a comprehensive energy bill (HR 6). Under a 10 percent RES, Texas consumers would still see new job growth, economic and environmental benefits, as well as savings on electricity and natural gas bills. However, these benefits would be less than what would occur under a 20 percent RES. Through 2020, the 10 percent national standard would produce:

- a net increase of 14,200 new jobs
- $5 billion in new capital investment
- $4.7 billion in total consumer energy bill savings
- $349 million in new property tax revenues for local communities
- $138 million in lease payments to farmers, ranchers, and rural landowners from wind power
- $90 million in payments to farmers and rural landowners from producing biomass energy

Providing jobs, economic development, and a cleaner, safer energy future

A national renewable electricity standard would make Texas' energy supply—and the energy supply of the entire United States—more reliable and secure. It would use homegrown energy sources to create high-skilled homegrown jobs, boost rural economies, and put energy dollars back into the pockets of consumers. The RES is a sensible step toward a balanced approach to meeting future energy demands, and is far more responsible than continuing to rely on unstable and polluting power sources.

For additional information, visit the UCS Clean Energy web site at www.ucsusa.org/clean_energy.

[1] The renewable electricity standard is also known as a renewable portfolio standard or RPS.
[2] Wall Street Journal, February 17, 2004.
[3] UCS used a modified version of the U.S. Energy Information Administration's (EIA) National Energy Modeling System computer model to examine the costs and benefits of increasing renewable energy use. We evaluated a 20 percent by 2020 RES proposal by Senator Jeffords (I-VT) and the tax credits for renewable energy that were supported by the Senate energy bill conference committee in November 2003. For the national results, see *Renewing America's Economy* (September 2004). More information about UCS' modeling approach can be found in the October 2001 report *Clean Energy Blueprint: A Smarter National Energy Policy for Today and the Future*, which is available at *www.ucsusa.org/clean_energy/renewable_energy/page.cfm?pageID=44.*
[4] We conservatively assume that 33 percent of the manufacturing for the wind and solar technologies installed in Texas is produced by businesses located in the state. We also do not include any jobs or economic development from Texas manufacturers exporting equipment to other states or countries. If Texas is able to attract renewable energy manufacturers to produce equipment for facilities in the state and for export, the jobs and income from the RES would increase significantly.
[5] Results are presented in cumulative net present value 2002$ using a 7 percent real discount rate. Job results are for the year 2020.

Comment Set 12, cont.
David Weisman

12-17

Executive Summary

Increasing the Texas Renewable Energy Standard: Economic and Employment Benefits

A growing number of states have taken steps to increase their use of renewable energy sources like wind, solar, and bioenergy. Eighteen states, including Texas and the District of Columbia, have enacted renewable energy standards—also known as Renewable Portfolio Standards (RPS)—that require electric companies to increase their use of renewable energy. Fifteen states have created renewable energy funds, which provide financial resources for renewable energy development. Five states have revisited initial standards and have subsequently raised or accelerated them.

In 1999, Texas enacted its RPS—requiring 2,000 megawatts (MW) of new renewable energy capacity by 2009—as part of legislation that restructured the state's electricity market. Today, the Texas RPS is one of the most effective and successful in the nation. The state is ahead of its annual requirement schedule with nearly 1,200 MW of new renewable energy already installed.

Given the success of the existing law and the state's vast renewable energy potential, at least two proposals have been made to increase the state's standard. The Texas Renewable Energy Industries Association (TREIA) and a coalition of Texas environmental organizations are advocating for a long-term 20 percent by 2020 RPS, with one percent of the requirement set aside for distributed resources like solar energy and farm-based technologies.[1] The Texas Energy Planning Council (TEPC) is recommending a more modest increase of the standard to 5,000 MW by 2015 (500 MW from non-wind renewable resources), with a goal of 10,000 MW by 2025. We project that the TEPC proposal would yield approximately 8 percent renewable energy in 2025.

The Union of Concerned Scientists analyzed the costs and benefits of increasing the current Texas RPS based on the proposals made by TREIA and the TEPC, using the Energy Information Administration's (EIA) National Energy Modeling System. Under the more likely scenario that primarily utilizes renewable energy technology cost projections from the Department of Energy's national laboratories, we found that both the 20 percent proposal and the 10,000 MW proposal would result in significant new benefits for Texas' economy and environment (Table ES1). Under the 20 percent proposal, economic development and environmental benefits would be much greater because it stimulates more renewable energy development—a total of 17,820 MW by 2025.

Table ES1. Comparison of Benefits*, Texas RPS Proposals (More Likely Scenario)

	20 Percent by 2020 RPS	10,000 MW by 2025 RPS
Consumer Benefits		
Electric Bill Savings	$4.6 billion	$5 billion
Natural Gas Bill Savings	$1 billion	$0.5 billion
Total Energy Bill Savings	$5.6 billion	$5.5 billion
Economic Benefits		
New jobs created	38,290	19,950
New capital investment	$9.4 billion	$4.7 billion
Biomass energy revenues	$542 million	$197 million
School tax revenues	$1.1 billion	$628 million
Wind power land lease royalties	$154 million	$111 million
Environmental Benefits		
Power plants annual CO_2 emission savings	20 MMT	5 MMT

* Results are in cumulative net present value 2002$ using a seven percent real discount rate. Job results are for the year 2025.

[1] TREIA is also recommending a shorter-term expansion of the current RPS to be adopted by the Texas Legislature in 2005, requiring 10,000 MW of renewable energy capacity (500 MW from distributed renewable resources) by 2015. This shorter-term goal is not analyzed in this report.

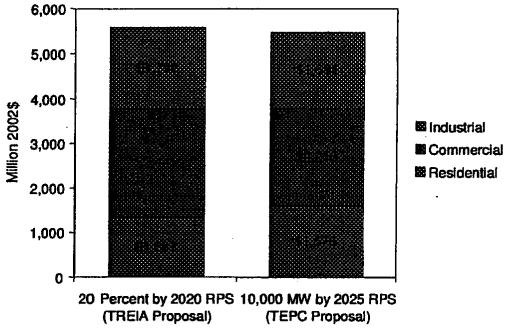
Comment Set 12, cont.
David Weisman

12-17

Renewable Energy Saves Consumers Money. New renewable energy generation would create much needed competition with natural gas power plants, leading to reduced gas demand and lower natural gas and electricity prices. Under the 20 percent standard, average consumer electricity prices would remain virtually unchanged through 2012, with prices beginning to decline thereafter. By 2025, average electricity prices would be nine percent lower under the 20 percent standard compared with business as usual. Average annual natural gas prices would be as much as three percent lower than business as usual during the forecast period.

Lower natural gas and electricity prices lead to a reduction in the overall cost of energy for consumers. By 2025, total consumer energy bills (natural gas and electric) would be nearly $5.6 billion lower under the 20 percent standard. All sectors of the economy would benefit, with residential, commercial, and industrial customers' total savings reaching $1.3 billion, $2.4 billion, and $1.8 billion, respectively (Figure ES1).

Figure ES1. Cumu ative Consumer Energy Bill Savings, Comparison of Proposals by Sector, 2005-2025[a]



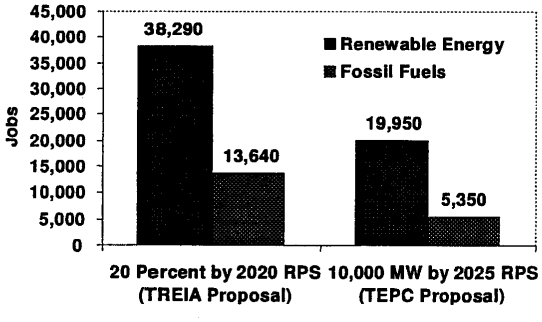
[a]Net present value 2002$ using a seven percent real discount rate.

New renewable energy generation would also lead to slightly lower natural gas and electricity prices under the 10,000 MW proposal. By 2025, consumers would see cumulative energy bill savings of nearly $5.5 billion compared with business as usual, with savings reaching residential, commercial, and industrial customers.

If natural gas prices exhibit either short-term price spikes or long-term sustained increases beyond those currently projected by the EIA, or if the federal production tax credit for wind and other renewable resources is extended beyond 2005, consumer savings would be greater under both policy proposals than reported here.

Renewable Energy Creates Jobs and Boosts the Economy. By 2025, the 20 percent RPS would create 38,290 new jobs in manufacturing, construction, operation, maintenance, and other industries. In fact, the amount of renewable energy needed to meet the requirement would create 2.8 times more jobs than fossil fuels—a net increase of 24,650 jobs by 2025 (Figure ES2). These jobs would generate an additional $950 million in income and $440 million in gross state product for Texas' economy.

Figure ES2. Renewable Energy vs. Fossil Fuel Jobs, Comparison of Proposals (2025)



Comment Set 12, cont.
David Weisman

12-17

Rural Texas would also receive a tremendous boost from increasing the current renewable energy standard. Many of the jobs identified above would be created in rural areas where most of the facilities would be located. By 2025, the 20 percent standard would provide:

- $9.4 billion in new capital investment
- $1.1 billion in new property tax revenues for local school districts, and $750 million in additional new property tax revenues for other local public services
- $542 million in additional revenues to farmers, rural landowners, and other biomass energy producers
- $154 million in income to farmers, ranchers, and rural landowners from wind power land leases[2]

The 10,000 MW proposal leads to significantly less development of renewable energy capacity compared with the 20 percent by 2020 standard, resulting in fewer jobs and other economic benefits (See Table ES1 for comparison).

Renewable Energy Diversifies the Electricity Mix. Currently, Texas relies heavily on fossil fuels and nuclear power for most of its electricity. This reliance on fossil fuels—particularly natural gas and coal—for electricity generation will increase if Texas continues on its current path. Increasing the existing state RPS would stimulate additional renewable energy development and help diversify the electricity mix. Under the 20 percent proposal, Texas would increase its total homegrown renewable power to more than 17,800 MW by 2025[3]—producing enough electricity to meet the needs of 4.9 million average-sized homes.[4] Texas' strong wind resources would power the majority of this development, with bioenergy and solar resources also making significant contributions to the mix. For much of the 20-year forecast period, renewable energy primarily displaces natural gas generation. In the later years, renewable energy also helps to displace new coal generation.

Under the 10,000 MW proposal, wind power would constitute the majority of development, while nearly all of the 500 MW of non-wind capacity would come from bioenergy by 2015. The 10,000 MW proposal would lead to about 8 percent of statewide electricity sales from renewable energy by 2025. It would also help to displace fossil fuel generation, primarily from natural gas.

Renewable Energy Improves the Environment. Increasing renewable energy use will reduce the amount of air pollution from coal-, oil-, and natural gas-fired power plants, resulting in better air quality and fewer pollution-related illnesses. Carbon dioxide (CO_2) emissions, which trap heat in the atmosphere and cause global warming, would also be reduced. The 20 percent RPS will reduce about 20 million metric tons (MMT) of power plant CO_2 emissions per year by 2025—a reduction of 7.4 percent below business-as-usual levels. This reduction is equivalent to taking 2.5 million cars off the road or planting 4.8 million acres of trees—an area the size of New Jersey. The 10,000 MW proposal would reduce annual CO_2 emissions from power plants by 5 MMT—a reduction of 1.7 percent below business-as-usual levels. Increasing the RPS will also reduce the impact on water and land resources through extraction, transport, and use of fossil fuels, and conserve resources for future generations.

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[2] Results are in cumulative net present value 2002$ using a seven percent real discount rate.
[3] This development includes residential solar water heating systems that offset an estimated 390 MW of peak generating capacity.
[4] Based on EIA Electric Sales & Revenue Report 2002 data for residential sector of 1,140 kWh per month.

Comment Set 12, cont.
David Weisman

12-17

Consumers Still Benefit With EIA's Conservative Renewables Assumptions. Even with EIA's more pessimistic assumptions for renewable energy technology costs, increasing the current RPS under both policy proposals would provide significant benefits for Texas (Table ES2). In fact, our results show that—with a few key exceptions—many of the benefits are comparable with those from our more likely scenario under both proposals. One of the more important differences is that while wind resources still power the majority of the renewable energy development under the less likely scenario, EIA's higher cost assumptions for wind power lead to considerably more generation from new bioenergy facilities under both policy proposals.

Because bioenergy power plants require more jobs to construct and operate than wind power facilities, the additional bioenergy development results in greater job creation under the 20 percent standard for our less likely scenario compared with the more likely scenario. The increased use of bioenergy, combined with less total renewable energy generation in the business as usual case for our less likely scenario compared with our more likely scenario, also leads to larger net reductions in CO_2 emissions from power plants under both policy proposals. Bioenergy facilities can directly displace more generation from natural gas and coal plants—which are the greatest source of global warming emissions in the country.

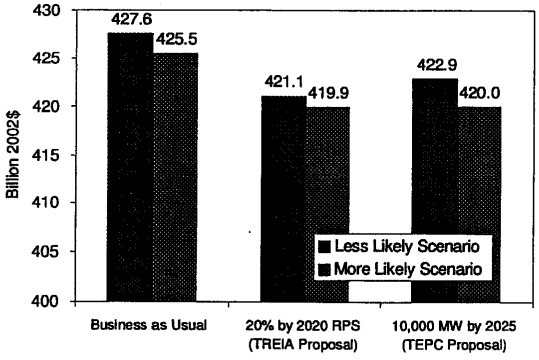
Table ES2. Comparison of Benefits*, Texas RPS Proposals (Less Likely Scenario)

	20 Percent by 2020 RPS	10,000 MW by 2025 RPS
Consumer Benefits		
Electric Bill Savings	$5.9 billion	$4.5 billion
Natural Gas Bill Savings	$0.6 billion	$0.2 billion
Total Energy Bill Savings	$6.5 billion	$4.7 billion
Economic Benefits		
New jobs created	45,470	17,060
New capital investment	$9.7 billion	$4.0 billion
Biomass energy revenues	$1.5 million	$433 million
School tax revenues	$1.2 billion	$534 million
Wind power land lease royalties	$133 million	$98 million
Environmental Benefits		
Power plants annual CO_2 emission savings	27 MMT	9 MMT

* Results are in cumulative net present value 2002$ using a seven percent real discount rate. Job results are for the year 2025.

In our less likely scenario, the increased use of renewable energy would still stimulate competition with natural gas facilities under both policy proposals, resulting in significant savings for energy consumers. Cumulative energy bill savings through 2025 under the 20 percent proposal would be $6.5 billion, when compared with its respective business-as-usual case. These net savings are greater than those achieved for the 20 percent proposal in our more likely scenario. However, cumulative consumer energy bills through 2025 are still the lowest under the 20 percent proposal when using our more likely set of assumptions (Figure ES3).

Figure ES3. Cumulative Energy Bills* Comparison, 2005-2025



*Excludes Transportation.

Comment Set 12, cont.
David Weisman

12-18

From Snack Bars to Rebar:
How Project Development Boosted Local
Businesses Up and Down the Wind
Energy 'Supply Chain' in Lamar, Colorado
Craig Cox
March 2004
Conducted on behalf of Bob Lawrence & Associates
for U.S. DOE under Grant Number SF22339

Background: Xcel Energy Rejects Windfarm Proposal

- 1999-2000: Xcel Energy issues RFP for new power generation.
  Xcel rejects 162MW Enron Wind proposal
  – Xcel opts for all-natural gas portfolio.

- 2001: Advocates take case to Colorado Public Utilities Commission
  Lead plaintiffs: Colorado Renewable Energy Society and Land and Water Fund of the Rockies* *The Land and Water Fund is now "Western Resource Advocates"
- February 2001: PUC Orders Xcel to Negotiate Wind Acquisition

"We find that adding Enron's Lamar wind energy bid to [Xcel's] preferred resource plan is in the public interest and comports with the IRP rules, [and will] likely lower the cost of electricity for Colorado's ratepayers...After a careful analysis of the economics of the wind bid, we find that it is justified on purely economic grounds, without weighing other benefits of wind generation that could be considered under the IRP rules." (Colorado PUC, Decision No. C01-295, page 34.)

Important Results from Colorado PUC's 2001 Decision

- New wind generation on Xcel's system is predicted to cost less than new gas-fired generation, assuming that gas costs are more than $3.50 per million cubic feet (mcf)
- New wind power receives a fair capacity value, based on Xcel's method and data
- Ancillary services to back up new wind power are not a major cost.

From NREL/CP-500-30551, "Colorado Public Utility Commission's Xcel Wind Decision The PUC was Right: Xcel Energy Says Wind Energy Will Save Consumers $4.6 Million

- The new wind farm that Xcel Energy is building near Lamar will save consumers $4.6 million in their power bills.

– From Xcel Energy testimony by Ronald Darnell to FERC, 16 June 2003October 2003: Project Sold by GE Wind Energy to PPM Energy and Shell for $211 Million... Largest-Ever Capital Investment in Prowers County

Economy of Lamar and Prowers County Colorado, Before Windfarm
- Primarily agricultural
– Alfalfa, corn for grain, corn for silage, grain sorghum
- Farm economy has been depressed
- Population and jobs have fallen since 2000
– Lengthy drought has harmed local economy
– Retail sales down
– Sharp drop in oil and gas production

Construction of Windfarm Starts in mid-2003
Herling Construction
- Built 25 miles of roads
- Excavated the project's 108 foundations

1

Comment Set 12, cont.
David Weisman

12-18

• Poured concrete into the bases: 35,000 yards @ 300 yards per turbine
• Gate City Steel did the rebar: 45,000 pounds of rebar in each foundation
• Had 87 people pouring concrete, with "a couple" of locals staying on
– 12-14 people did rebar
• Bottom line: 1.25 million pounds of concrete and rebar in each foundation

Christensen
• Installed the backbone of the system: 20 miles of
• Laid the cable to 105 turbines: 590 V converted to 34kV, then stepped up to 230 kV
• Built the substation underground cable
• Had 46 employees at height of construction [Colorado] Land and Environment

Southeastern Wilson Construction
• 44 miles of 230 kV poles and transmission lines strung to new Xcel Energy substation
• 50+ miles of direct buried cable laid from the turbines to the substation
• 25 people employed during construction; IBEW 12

Ridge Crane of Fort Collins
Kevin MacDougal of Fort Collinsbased company said that the project helped its business "a lot" and provided three months of work for two cranes. Ridge Crane is now expanding its operations.

All-Rite Paving & Redi-Mix
"Project has been a lifesaver" The Lamar (pop. 8,800) All-Rite did more business than the company's Pueblo (pop. 141,472) facility, because of project construction. It laid concrete for 32 miles of poles and for the new substation.

At Height of Construction, Subcontractors at Colorado Green Employed Nearly 400 Workers.....from Around the Country...And Their Presence Had a Tremendous Impact on Lamar's Economy Local Rental Housing Units Booked Solid owner of Country Acres Motel and RV Park "My rental units have been booked solid because of the windfarm construction." — Brad Semmens,
High Occupancy at Local Motels "Occupancy would normally run at about 20 percent in mid-December, but it hovers from 50% to completely full on some nights."
– Manager James Emrie

Quote from article by Steve Raabe in Denver Post, 14 December 2003
Texaco Food Mart – Doug Johnson, The project was a "shot in the arm...it got so busy in the early morning that I had to bring in more help...I had 60 customers in a half-hour: that's one every 30 seconds!" Owner Hay Stack Restaurant – Jamie, Manager

"We've seen a lot of workers coming in...the project has helped increase our business at least 30 percent." of Hay Stack RestaurantDaylight Donuts "We've had an increase in business, and the windfarm guys come in almost every morning."
– Clerk at Daylight Donuts

DeLoach's Water Conditioning
— Jim DeLoach, The project was a "shot in the arm...the workers drank lots and lots of water."

Owner Wallace Gas & Oil
• Project has been a "Godsend...it's helped us to keep our heads above water."
Brett Buxton of Wallace Gas & Oil
– Company has delivered 110-115K gallons to the project, representing about $250K more than it would otherwise have taken in.
Movie Gallery "We've seen business increase by about 20 percent because of the windfarm workers."

2

Comment Set 12, cont.
David Weisman

12-18

Workforce Colorado [State Job Service Agency] "Because of the drought, the economy has been really bad, and the windfarm has been a real blessing... we would love to see them come back and do more!" – Linda Mulbery, Workforce Colorado

Interest in Business Relocation Soars "Because of the windfarm, business relocation inquiries have begun increasing from small manufacturers and oilfield services firms."
– Jan Anderson, Executive Director, Southeast Colorado Enterprise Development, Inc.

Best Made Mattress Company of Denver – Thomas Jay Wacker, Business Manager, Best Made Mattress Company, "The new windfarm project has made us take a second look at relocating [our] mattress plant to Lamar."

Denver [from Lamar Daily News of 22 January 2004] Thomas Wacker and Jason Lucas of Best Made Mattress Co.Windfarm Instills "New Spirit of Community in Lamar" — Chris Rundell, "The windfarm has instilled a new spirit of community in Lamar...it's ntangible but very real." local rancherTremendous

Local SupportSite Services for a Typical 100MW Windfarm
Man-hours 121,080 72,000
Turbine & Tower Installation Svcs.
Concrete Construction Services
Equipment Transportation Services 42,650
Project Management Services 36,775
Engineering & Surveying Services 25,300
Vendor Field Services 20,535
Road Building Services 18,940
Underground Cable installation Svc. 17,250
General Labor Services 15,000
Local Material Delivery Services 12,500
Electrical Installation Services 8,770
Concrete Services 6,800
Equipment Repair & Fueling Svc. 6,000
Inspection & Testing Services 5,000
Food Preparation & Delivery Svcs. 3,500
Housing & Lodging Services 3,000
Real Estate & Legal Services 2,800
Communication System Services 1,120

419,020
The total site services required for construction of a typical 100MW windfarm is about 419,020 man-hours —equivalent to approximately 53,377 days of work at the site.Construction Boosted County Sales Tax Revenues
Prowers County Sales Tax Collection Skyrockets
$95,158 October 2002
$154,452 October 2003

Landowner Payments Boost Entire Region Property owners will receive royalty payments based on the amount of power generated Property owners Kenneth and Michael Emick. characterized as between $3,000 and $6,000 for each of the project's 108 turbines. from Pueblo Chieftain Colorado Green Has Brought 15-20 Full-time Permanent "Well Paying" Local Jobs Prowers County Assessor Andy Wyatt Outlines Some of the Windfarm's Benefits...Project Has Increased Prowers County's Tax Base by 29%.....Providing $917,000 Annually for Re-2 School District General Fund... ...$203,000 Annually to the School District's Bond Fund:..$189,000 Each Year to the Prowers Medical Center...And New County Revenues of About $764,000 Annually

3

Comment Set 12, cont.
David Weisman

Summary of Wind's Benefit to Prowers County • $764,000/year: new county revenues

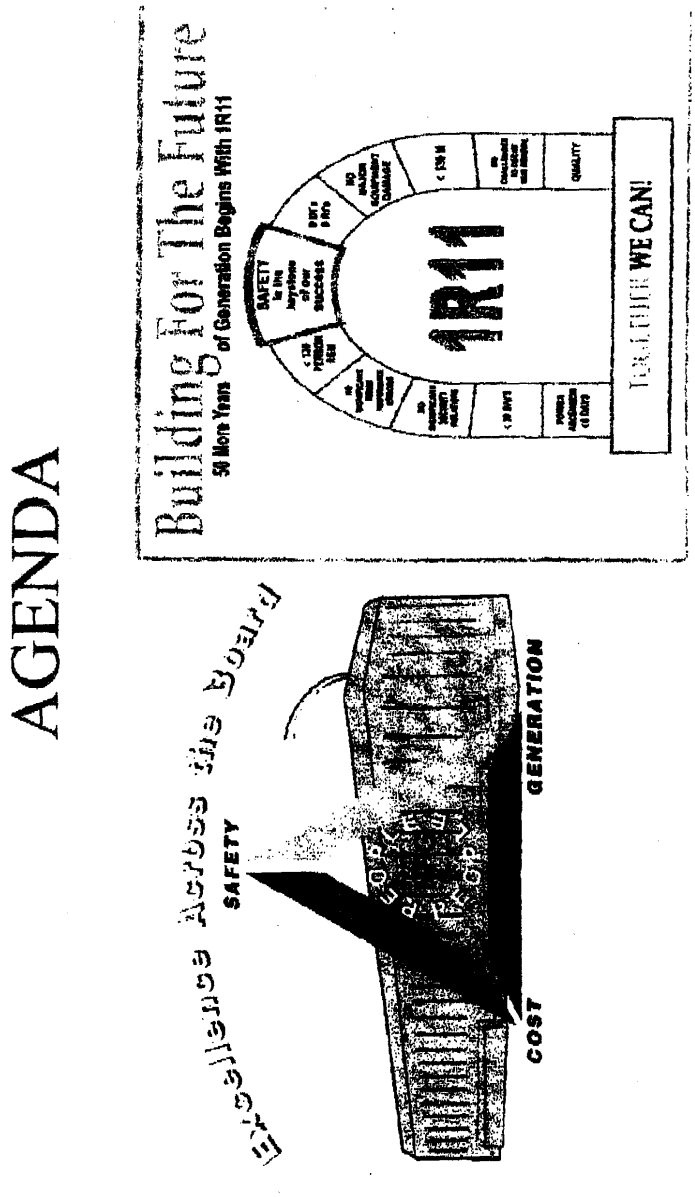
12-18

• $917,000/year: School General Fund
• $203,000/year: School Bond Fund
• $189,000/year: Prowers Medical Center
• 29% Increase in County Tax Base
• Tremendous Support from Community
From article by Virgil Cochran in Lamar Daily News, 29 October 2003:
"Wind farm construction an economic boon for county" Windfarm a "Blessing" to the Entire Area
"It's the greatest thing that has happened to this area, and it's a blessing to Prowers County and Southeast Colorado." — Leroy Mauch, Prowers County Commissioner
Support From Neighboring Baca County Springfield, county seat of Baca County, Colorado
"A windfarm in Baca County would provide real benefits to us, too, tax-wise, employmentwise and energy-wise. I hope to see new wind energy development in our county very soon."
— Baca County Commissioner Ray Miller
— Community Wind: Lamar Light & Power, ARPA and Springfield made possible by Colorado Green These Community Projects (five 1.5MW turbines) were Capture the Benefits of Wind in Your Community
Video clip courtesy GE Wind
Thank You!
Craig Cox
coxcraig@att.net
303-679-9331

4

Comment Set 12, cont.
David Weisman

12-19



Comment Set 12, cont.
David Weisman

Page 12, line 11-15 "…All indications are that multiple license renewal applications will continue to be filed with the Commission over the next decade and eventually the entire fleet of nuclear plants will request license renewal."

NRC Transcript, July 15, 2003 Anaheim Hilton public meeting.

12-20

Comment Set 12, cont.
David Weisman

12-21

CALIFORNIA

SANLUISOBISPO.COM MONDAY, FEBRUARY 28, 2005 THE TRIBUNE B7

SOLAR ENERGY

Schwarzenegger to unveil compromise plan

Governor's proposal would create a 10-year incentive fund that would encourage homes, buildings to install solar power

By DON THOMPSON
Associated Press

SACRAMENTO — Gov. Arnold Schwarzenegger aims to make California a world leader in solar energy with a new proposal he's sending to lawmakers today.

The plan, which drops some controversial provisions that doomed his "million solar homes" proposal last year, would create a 10-year incentive fund encouraging both residences and commercial buildings to install solar power. But it would drop a requirement that half of all new homes eventually be solar powered. Those changes are designed to mute opposition from businesses and the building industry.

The Public Utility Commission would decide how electricity consumers pay into the incentive fund, most likely with a new fee on utility bills. The administration and solar advocates say consumers will save money because the fee would be offset by money earned from the extra solar power generated by some consumers and used by others.

The revised proposal requires some larger developers to offer solar power as an option by 2010, and to inform home buyers of the costs and savings.

California builds about 150,000 new homes a year. Experience shows about 10 percent of homeowners would choose solar if offered the option — about 15 times the roughly 1,000 solar homes currently built each year in the state, said Bernadette Del Chiaro, a solar advocate for the nonprofit Environment California.

"It's clearly the most ambitious solar initiative ever proposed in the United States," said David Hochschild, policy director for the nonprofit organization Vote Solar.

The incentive approach is modeled on Japan, the world leader in solar power, which has seen a 72 percent drop in solar costs as 70,000 homes have been outfitted for the alternative power over the last 10 years.

California already is the third-largest consumer of solar power equipment, behind Germany, but gets 40 percent more annual sunlight than Germany and 20 percent more than Japan. Hochschild calls California "the Saudi Arabia of sunlight."

That's part of the appeal for a state that may soon again see a repeat of the power shortages that led to rolling blackouts and soaring electricity costs in 2000 and 2001, said Sen. John Campbell, R-Irvine, who is sponsoring the bill package with Sen. Kevin Murray, D-Culver City.

"The sun shines in California — it's homegrown. No other state or country can take it from us," Campbell said.

The goal is to have 3,000 megawatts worth of solar power by 2018, which amounts to about 5 percent of the state's entire electricity usage at peak periods — generally hot summer afternoons when electricity is most in demand, most expensive, and when solar panels are most efficient.

That's the equivalent of 40 new, $30 million, 75-megawatt natural gas plants. One megawatt is enough to power about 750 homes.

Responses to Comment Set 12
David Weisman

12-1 The Draft EIR as prepared is specifically intended to provide relevant information to decision-makers on the environmental effects of the Proposed Project. The comment asserts that there are errors and omissions in the Draft EIR, but doesn't specify what changes are needed, which doesn't allow for a fuller response to the commenter's concerns on this matter. Responses to specific comments follow in Responses 12-2 through 12-21.

As noted in Draft EIR Sections D.1.2.5 and D.5.1.4, the seismic safety of DCPP and its ongoing operations are aspects of the environmental baseline. In addition to the responses to specific comments below, please see Responses PG-124 and PG-125 for information on how the OSG Storage Facility would be designed to safely withstand seismic effects, and please refer to Master Response MR-1 (Baseline) for a discussion on continued operation.

For a discussion of the Proposed Project cost, please refer to Responses CC6-3 and 1-3. The No Project Alternative is discussed in Section C.6 (page C-26), and its treatment is described on Section D.1.2.3 (page D.1-3) of the Draft EIR and in each of the individual issue areas in Section D and in the Executive Summary (Section 3.1) of the Draft EIR.

12-2 Please refer to Responses CC5-11 and CC5-12. A copy of all 67 written comments and a summary of the 54 verbal comments (52 individuals spoke at the scoping meetings and two verbal comments via the project's voicemail) from the scoping meetings are included in the Public Scoping Report, which was published in December 2004 and is available on the Project's website at http://www.cpuc.ca.gov/environment/info/aspen/diablocanyon/toc-scoping.htm. A summary of the Scoping Report and of the comments received is also included in Section I.1.4 (page I-2) of the Draft EIR.

The description of the Proposed Project, as proposed by PG&E, and much of the setting information was drawn from PG&E's Application and Proponent's Environmental Assessment (PEA); however, staff site reconnaissance and research confirmed all baseline information included in the Draft EIR. The assessment methodology (Section D.1 of the Draft EIR), significance criteria, impact analyses, mitigation measures, and comparison of alternatives for each issue area included in the Draft EIR were developed and evaluated independently and objectively by the CPUC and the EIR Preparers.

12-3 Please refer to Master Response MR-1 (Baseline) and Response CC5-3, which discuss the Proposed Project compared to plant operations. Ongoing plant operations include routine maintenance and replacement of aging equipment, and much minor maintenance occurs without necessary CPUC action. The Proposed Project requires CPUC action because of the request for cost recovery. The General Proceeding at the CPUC also addresses the effort of PG&E pursuing litigation against Westinghouse for failure of the steam generators.

12-4 For a discussion of project cost, please refer to Responses CC6-3 and 1-3, above.

Radioactive spent fuel is considered a solid hazardous waste generated by the Proposed Project and is discussed in the environmental baseline in Section D.12.1 (page D.12-7) of the Draft EIR. The ISFSI Safety Analysis Report found that these baseline accident scenarios would not cause substantial public safety impacts. Please also refer to Responses CC5-17 and 9-1 for a dis-

cussion of radioactive materials. The potential impacts associated with the Proposed Project, including storage of the low-level radioactive OSGs, are addressed in Section D.12.3.4 of the Draft EIR.

12-5 Please refer to Master Response MR-1 (Baseline) for a discussion of the project's environmental baseline and MR-2 (License Renewal) for a discussion of license renewal.

12-6 Please refer to Master Responses MR-1 (Baseline), MR-2 (License Renewal), and MR-4 (Consent Judgment) for discussions of the Proposed Project's environmental baseline, relicensing, and RWQCB Consent Judgment, respectively.

12-7 Please refer to Master Response MR-1 (Baseline) for a discussion of the Proposed Project's environmental baseline, MR-2 (License Renewal) for a discussion of relicensing, and Responses CC5-15 and CC6-92.

12-8 Please refer to Responses CC2-9, CC5-10, and 1-5 for a discussion of replacement power for DCPP and the No Project Alternative. Additionally, Response 12-9 below provides further information on how the No Project Alternative was developed. See Response C-4 for a discussion of why a detailed analysis now would not be meaningful.

12-9 Please see Response 12-2 for a discussion of project scoping. The No Project Alternative is adequately discussed in Section C.6 (page C-26) and Section D.1.2.3 (page D.1-3) of the Draft EIR, as well as analyzed in each of the individual issue areas in Section D and in the Executive Summary of the Draft EIR. Section 4.3 (page ES-53) and E.3 (page E-8) of the Draft EIR compare the No Project Alternative to the Environmentally Superior Alternative. Based on this full evaluation and weighing *all* issue areas, the No Project Alternative was *not* found to be overall environmentally superior to the Proposed Project. In addition, there is no currently available technology that can reliably replace DCPP's 2,200 MW of base-load generation capacity in the intervening time period before DCPP would need to shut down. See also Responses CC5-10 and C-4.

12-10 Please see Responses 12-9 and 12-15 through 12-18 for more detailed information on the alternative energy technology content in the Draft EIR. Please refer to Sections C.6.3.1 and C.6.3.2 (page C-28) of the Draft EIR for a discussion of solar energy technologies. Among other environmental effects, the intermittent nature of solar power makes solar thermal and photovoltaic systems unsuitable for base-load applications. In addition, there is no way to guarantee that the SB 1 legislation will be put in place in a timely manner. Neither PG&E nor the CPUC have authority to require the installation of solar panels on private rooftops, therefore, their installation is uncertain. Under the Renewable Portfolio Standard (RPS) Program, utilities, such as PG&E, are required to supply at least 20 percent of sales from renewable energy sources by 2017. Therefore, solar technologies are an important energy source, but because of their intermittent nature, they are not a viable replacement for DCPP.

12-11 Facility security and terrorism issues exist in the environmental setting for DCPP, as described in Draft EIR Section D.12.1. For further discussion of the No Project Alternative, please see Responses 12-9 and 12-15, below, for additional discussion of alternative energy technologies.

12-12 Demand-side management or energy conservation is discussed in Draft EIR Section C.6.4.1 (page C-35), and it would likely offset only a fraction of the energy supply lost by the shutdown of DCPP. The CPUC supervises various demand side management programs administered by

the regulated utilities, and many municipal electric utilities have their own demand-side management programs. PG&E already has a program of voluntary reduction in electricity known as Customer Energy Efficiency (CEE) in place. However, the projected CEE benefits would not defer the required capacity addition (approximately 2,200 MW), and it would not meet the project objective of ensuring that the continued supply of power remains available to California users through the end of the current NRC licenses.

Demand-side management is not a true alternative to the Proposed Project, as suggested in the comment. The Proposed Project is the replacement of steam generators at DCPP, not the replacement of power plant operations or power generation. Demand-side management are relevant only as part of replacement generation scenarios under the No Project Alternative.

12-13 Sections C.6.3.1 and C.6.3.2 (page C-28) of the Draft EIR describe how solar energy technologies could be used for replacement generation. As described in Response 12-10, solar technologies cannot replace base-load power supply provided by DCPP.

12-14 For a discussion of project cost, please refer to Responses CC6-3 and 1-3.

12-15 The commenter's preference for safe, renewable energy and the No Project Alternative is noted. As discussed under Alternative Energy Technologies in Section C.6.3 (page C-28) of the Draft EIR, technologies, such as solar, wind, geothermal, hydroelectric, biomass, and fuel cell energy, also have environmental consequences, feasibility problems, and may not meet the objectives of the Proposed Project. In addition, there is no currently available renewable technology that can reliably replace DCPP's 2,200 MW of base-load generation capacity in the intervening time period before DCPP would need to shut down. Conscious efforts are being made by the State to increase the renewable resource component of California's generation supply, as evident in SB 1078, which established the California Renewables Portfolio Standard (RPS) Program. PG&E is also working on a renewable resource transmission plan (SB 1038). Similar to demand-side management addressed in Response 12-12, distributed generation, such as small-scale renewable energy, is not an alternative to the Proposed Project, but is relevant only as part of replacement generation scenarios under the No Project Alternative.

12-16 The Commenter's submission of the article regarding Texas and the national renewable electricity standard is noted. Please see Response 12-15 and Draft EIR Section C.6.3 for information on renewable energy and California's Renewables Portfolio Standard Program.

12-17 Please see Response 12-15.

12-18 The Commenter's submission of the article regarding Colorado's implementation of wind energy technology and its effect on the local economy is noted. Please see Response 12-15 for a discussion of renewable energy in general. As discussed in Section C.6.3.3 (page C-33) of the Draft EIR, the large area needed for wind electricity generation (a minimum of 3,055 acres to produce 2,200 MW) would create significant land use, biological, cultural, and visual concerns. In addition, the Draft EIR notes that the environmental impacts caused by wind turbines include noise and raptor kills because these fast-flying birds do not account for movement of the rotating blades. Another significant barrier to wind power development is the lack of available transmission access in areas with wind resources. Finally, their intermittent power makes them unsuitable for base-load applications, such as what would be needed to replace DCPP.

12-19 Please refer to Master Response MR-1 (Baseline) for a discussion of the Proposed Project's environmental baseline and MR-2 (License Renewal) for a discussion of relicensing.

12-20 Please refer to Master Response MR-1 (Baseline) for a discussion of the Proposed Project's environmental baseline and MR-2 (License Renewal) for a discussion of relicensing.

12-21 The Commenter's submission of the article regarding the Governor's solar power proposal is noted. Please refer to Responses 12-10 and 12-13 for a discussion of solar technologies under the No Project Alternative. Although the goal of the program identified in the comment would be to have 3,000 MW of solar power by 2018, the intermittent nature of solar power makes it unsuitable for base-load generation, which is what would be required to replace DCPP. In addition, the program is incentive-based and PG&E would have no way to implement the program or guarantee its effectiveness in the intervening time period before DCPP would need to shut down.