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Supporting the decision making process

"If there is a better route it will come out of the regulatory process." Sempra Energy, Donald Felsing 2007

"Well there is a better route, it's underground and it costs less. However, it's not clear that the regulatory process will provide for its consideration."

Apparently, Sempra/SDGE is ultimately asking for an effective solution that provides for capacity with minimal damages. That is an engineering problem, a community and an environmental problem that can be resolved. Fortunately, the underground alternatives can provide 10,000 to 20,000 megawatts along any of 7 existing east to west highways across San Diego County (see Appendix F) without damaging the environment, impacting private property, becoming a fire ignition source (via carbon conductance), without the ionization of pollutants, EMF emissions or becoming a future medical liability.

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The introduction of long distance underground DC high power lines, that can protect the environment and thousands of private property owners, can also create significant public relations benefit for SDGE and the power industry, as well as save billions in installation costs, property damages, fire and medical liabilities, eliminate the need to install two additional Powerlinks at a cost of over \$3 billion, and protect a significant part of California's \$90 billion per year recreation and tourism industry. Further, if the Sunrise Powerlink could avoid the devastation of our conservancy in this CPUC iteration, then future overhead power lines could still cause massive damages during the next effort to build another power line. Because the power line requirements for San Diego County can easily exceed 20 times the proposed Powerlink, just to accommodate a transition from our extraordinary oil dependency through the plug-in hybrid vehicles. Something that China is now addressing with greater attention to the power line technology and the sustainable alternatives, which we have also been documenting with additional consideration to low impact transmission technology and environmental protection.

We have offered no disagreement with SDG&E's right to build a power line of any capacity, our concern is that little to no considerations is being offered to avoid needless damages to the environment, viewshed, private property and recreational uses, as well as being offered no requirement to support the full restoration and the full economic restitution for all damages and losses, based on equivalent replacement costs, at the time of the replacement, including all personal time, expenses and legal expenditures.

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However, we also realize that if an engineering alternative such as underground power lines is not considered that there will be exclusively destructive impacts.

At the public hearings in Anza Borrego (May 12, 2008) one of the speakers mentioned that contributions of \$50,000 were provided by Sempra Energy to California governor's causes.² While such influences have been extremely well known, naturally it's relevant in this

² (After governor touts Sunrise, his cause gets Sempra cash, By Bruce V. Bigelow , UNION-TRIBUNE STAFF WRITER, May 10, 2008)

Sempra Energy gave \$50,000 to one of Gov. Arnold Schwarzenegger's pet causes last month, just days after the governor complained publicly about activists impeding the Sunrise Powerlink proposed by San Diego Gas & Electric Co.

A SDG&E spokeswoman said yesterday there is "no connection" between Schwarzenegger's comments and the corporate donation, which was first reported by *The Sacramento Bee*.

Environmental activists who oppose the powerline argue that it's unjustified and SDG&E is using renewable energy in a "bait and switch" play to win support for Sunrise. They contend the powerline is instead intended primarily to carry electricity from gas-fired power plants along the border, which would take advantage of abundant new supplies from Sempra's liquefied natural gas terminal in Baja California.

Schwarzenegger complained during an April 18 appearance at Yale University that SDG&E's project faces opposition "even though it would replace an old carbon-based power plant."

Environmental activists and Democrats exhibit a "kind of schizophrenic behavior," the governor said, because "they say that we want renewable energy but we don't want you to put it anywhere, we don't want you to use it."

Six days later, the California governor made similar comments on "The Tonight Show With Jay Leno."

"You want to go and create more solar plants in the desert, and then they don't let you build, sometimes, the transmission lines to get it on the grid," Schwarzenegger said.

"There's no better way to get the love of the governor than to give money to his pet cause," said Michael Shames, executive director of San Diego's Utility Consumers' Action Network, and a Sunrise opponent.

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case to understand how that influence could needlessly devastate our conservancy and projects, and the efforts and survival of thousands of others. Beginning on January 18, 2005 governor Schwarzenegger appointed 4 the 5 current Public Utility Commissioners and apparently has significantly influenced the public utility decision process; the only question remaining is, if large scale and needless damages affecting ¼ to ½ million acres in Southern California will be tolerated, all without even saving money for SDGE.

Perhaps, the Commission can see that transmission capacity can be increased, without damaging the environment, private or public interests, while benefiting Sempra Energy and SDGE and averting many billions in damages. Some of the approaches we proposed could be implemented through any one of over a dozen different approaches to underground DC power lines, or by increasing the capacity of the existing power line routes from 1,000 megawatts in increments to 60,000 megawatts, or by supporting local generation. If paying money to the governor were the deciding factor on whether many billions of dollars in damages are caused to California, then please inform the people how much they need to contribute to the governor to protect the state from damages and everybody could save thousands of hours of wasted effort. It may be possible that the people could, and in fact do, match or exceed any individual contributions. But of course the people know that they could be condemned and accused of bribery or massive public crimes for their efforts to protect California and its irreplaceable environmental treasures, while large contributors would remain sanctioned. Another well known chief of police and mayor of Los Angeles mentioned that there is absolutely no difference between a bribe and a campaign contribution, nor is the understanding or the effect any different.³ It's extraordinary how

As for the timing of Sempra's donation after Schwarzenegger's comments, Shames said, "You don't have to be Oliver Stone to see the connection. It's pretty obvious."

<http://www.signonsandiego.com/news/business/20080510-9999-1b10sunrise.html>

³ The flood of special-interest dollars into politics doesn't only purchase access, it buys elections. Candidates who please those with money are better financed, and better-financed candidates are winning candidates. In last year's Senate races, the better-funded candidate won 85 percent of the time. In House races, the figure was 95.6 percent. Even if most

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these needless conflicts are perpetuated by archaic political and judicial machinery, ultimately with no benefit to anyone, only damages. If a solution is available, which accommodates the interests of the people, the environment and SDGE, why would such a solution be opposed, unless the objective is simply to cause damages to the environment and the people? After listening to hundreds of points of view on this matter other explanations are not apparent, fundamentally because all the nondamaging alternatives for power lines that exist are so far being ignored and not implemented, which leaves only the damaging strategies, in clear violation of California laws. (see appendix B)

Standard of Review, Burden of Proof Not Met

California Public Utilities Commission General Order 131-D provides that no electric public utility shall construct transmission line facilities above 200 kV without the Commission finding that said facilities are necessary to "promote the safety, health, comfort, and convenience of the public, and that they are required by the public convenience and necessity." In D-06-11-018 this Commission confirmed it's "long held finding that the applicant carries the burden of proof in a certification proceeding."

<http://docs.cpuc.ca.gov/published/Graphics/589.PDF>

CPUC Actions Regarding EMFs

A PUC decision on January 27, 2006, affirmed the Commission's November 1993 decision on low-cost/no-cost, policy to mitigate EMF exposure for new utility transmission and substation projects. As a measure of low-cost mitigation, we continue to use the benchmark of 4% of transmission and substation project costs for EMF mitigation, and combine linked transmission and substation projects in the calculation of this 4% benchmark.⁴

<http://www.cpuc.ca.gov/PUC/energy/electric/Environment/ElectroMagnetic+Fields/action.htm>

people want clean air, as long as companies can buy politicians for less than it costs to retool their polluting plants, clean air will have to wait. *Sierra*, Nov-Dec, 2001 by Carl Pope
http://findarticles.com/p/articles/mi_m1525/is_6_86/ai_79747920

⁴ There are seven measures that were ordered in the PUC's November 1993 decision and affirmed in the January 27, 2006 decision are:

- No-cost and low-cost steps to reduce EMF levels: When regulated utilities design new projects or upgrade existing facilities, approximately 4% of the project's budget may be used for reducing EMFs. The PUC did not set specific reduction levels for EMFs . It was

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How is the \$56,000,000 set aside dedicated to reducing EMF, (4% of the project cost) going to be spent? The proposed Sunrise Powerlink does not address or resolve any high levels of EMF radiation or the ionization of pollutants which are known carcinogenic hazards that can cause thousands of fatalities on a long term basis, and which can be fully

inappropriate to set a specific numerical standard until a scientific basis for doing so exists.

- New designs to reduce EMF levels: The PUC's Advisory and Compliance Division and Safety Division held workshops for utilities to develop EMF design guidelines for new and rebuilt facilities. The guidelines incorporate alternative sites, increase the size of rights-of-way, place facilities underground, and use other suggested methods for reducing EMF levels at transmission, distribution and substation facilities
- Measurement of EMFs: Uniform residential and workplace EMF measurement programs were also designed in the workshops; they are available to utilities and their customers. Other utilities are also encouraged to use them.
- Education and Research: The PUC wants the public and groups having a financial or basic interest in EMFs to become involved in developing education and research programs; these programs are established and managed by the DHS. PUC-regulated utilities and municipal utilities use ratepayer funds to pay for their share of development costs for the following programs:
 - EMF Education: This \$1.49 million program will provide credible, meaningful, consistent, and timely EMF information to electric utility customers, employees, and the public. DHS will coordinate a uniform EMF education program to supplement, but not duplicate, those that most electric utilities already have. Utilities without programs should implement one as soon as possible.
 - EMF Research: A \$5.6 million four-year non-experimental research program will be directed by DHS. This program will provide utility participation in state, national, and international research to be pursued to the extent that it benefits ratepayers.
 - Other Research: Utilities are authorized to contribute to federal experimental research conducted under the National Energy Policy Act of 1992.

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eliminated through underground DC lines, at no additional cost (as is required by the CPUC).

We also can only hope that the resolution of the least damaging alternative does not mean primarily addressing procedural issues, which can or have effectively excluded consideration of far less damaging and less costly alternatives. Our approach has been to identify protective solutions and hardware configurations that could have a wide range of economic, technological and health benefits and eliminate damages altogether, including offering some protection for the entire region, both for Imperial and San Diego Counties. Fortunately, these approaches can also be implemented at lower cost than the proposed Powerlink, saving SDGE hundreds of millions to billions of dollars, depending on future capacity requirements, in addition to eliminating over \$20 billion in short term damages to the region. Like thousands of others we could be severely damaged with massive economic, environmental, health and personal losses. Consequently, we have provided our research and documentation to describe several nondamaging alternatives that could also be economically viable for SDGE, as well as benefit the entire region.

Thousands of people in California have spent 10's of thousands of hours addressing the damages that would be caused by the Sunrise Powerlink, and while we have expended considerable efforts to address what could turn out to be needless conflicts between SDGE, the environment and residents, like many others we can only do our best to contribute to finding a functional solution to assist the expressed interests of the people, with full consideration for the environment, as well as the transmission interests of SDGE.

An economic analysis of all significant impacts and damages has not been provided by the CPUC review process, nor has the restitution for damages been considered.

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We encourage greater consideration of the damages that are inherit with overhead power lines, pylon foundations, including access roads, turn around and work clearings, EMF cable radiation and the ionization of pollutants, medical hazards, aircraft and fire risks, including carbon smoke conductance and fire ignition, fire clearings of wilderness, full habitat restoration costs over several decades, household, farm and ranch displacement, paleontological values, threatened species and equivalent wilderness replacement costs, losses of viewshed and protected wilderness areas. As later illustrated the assessment of viewshed losses can be measured on a gradient ranging from directly below the high power lines at 100% loss, to zero loss at 1.5 miles based on the visibility or rate of motion of the viewer. Habitat damages can measured based on restoration costs typically over greater than a 40 year period in arid region habitats, where plant diversity and soil conditions will determine survivability, including water supplementation or well drilling, automated irrigation, botanical expertise, regional plant biodiversity, on-site propagation capabilities, indigenous tree transplantation, electronic moisture monitoring, security, transportation, labor, etc. Property losses can be evaluated based on full and equivalent property acquisition costs, construction and moving costs, in addition to depreciation and business losses, present and future loss projections. Medical costs, related transportation, relocation costs, losses of labor and life can also be evaluated, in addition to regional fire losses and losses to viewshed, and a portion of the losses to California's \$90 billion per year recreation and tourism industry.

Each overhead AC high power line route will impact thousands or people, properties, homes, businesses, conservancies and recreational areas, with a complex economic analysis which is an integral part of any construction process, with or without utilizing eminent domain, unfortunately such an analysis has not been provided for the Sunrise Powerlink. We have initiated a preliminary effort to identify and address the economic losses, which we estimated to be at a minimum of 20 billion dollars for short to medium term losses, which can be more precisely defined through more detailed field studies, to allow a more accurate evaluation and a valid comparison between alternatives, which unfortunately has been avoided. **The overall cost of the proposed Sunrise Powerlink is**

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not \$1.4 billion as commonly described, but undoubtedly well over \$21 billion, on a short term basis, if all economic damages are considered, and far higher on a long term basis.

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Significant economic data which measures damages has not been collected by the CPUC, and the result is that massive environmental, property and personal losses are not being evaluated in the CPUC review process. Other than our own economic summary, we noticed a tendency to measure some issues with great precision, because the data was collected and made available, while ignoring vastly more costly environmental and property damages because the parties were unfamiliar with how to fully restore habitat, or how many decades it would take, what the experience requirements would be, or the property replacement cost issues, or the long-term property losses than would be incurred, based on the evaluations of buyers with actual knowledge of EMF and ionization cancer hazards, losses of viewshed as a portion of California's environment, all information which we disclosed as a part of our economic review process. Naturally, a considerably more detailed economic analysis could be provided and documented with additional time, an effort we noticed was being avoided by the CPUC, on the basis of inadequate research data or limited methods. Well, the research methods and data are available, just being avoided, just as the nondamaging power line alternatives are being avoided. Consequently, the impact and damages that the Sunrise Powerlink would cause cannot be fully evaluated.

What may be overlooked by the CPUC and SDGE is that the nondamaging, environmentally considerate technologies could offer a more efficient, higher capacity, lower-cost transmission technology, without the property, fire and medical liabilities, all of which could financially damage SDGE. Unfortunately, that has not been of any detectable concern by SDGE or the CPUC. If the CPUC authorizes massive damages by restricting the

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review process in order to defend or allow for arbitrary or damaging decisions, then the state would apparently be a participant in, complicit with and liable for the damages. Clearly, needlessly bulldozing 22 square miles of wilderness to reach pylons, to create parking for crews, cranes, leveling work areas and making habitat or fire clearings under power lines, which we have observed under SDGE's Southwest Powerlink is extraordinarily destructive, very costly and a counterproductive strategy both for SDGE and the CPUC, which doesn't even address future capacity requirements in any effective way.

While we are not opposed to power lines when no significant damages are being inflicted and when full restitution and replacement costs provide for all damages, which is a more affordable option, that could save several billion dollars if the capacity and damage issues were considered first. A more thorough technical review could offer significant benefits for the people, the environment, as well as SDGE. Fortunately, inventing a new technology is not required, proven hardware that can offer a nondamaging and less costly alternative is available for review in Europe, Australia and China, all of which would be less costly and vastly less damaging than an overhead 500 kV AC high power line. Consequently, the application for a new overhead power line route should not be approved, which does not need to exclude a large scale, incremental upgrade in capacity on an existing route. While the reconsideration of an approach costs time and effort. However, it is not the obligation of the people to sacrifice many billions of dollars of their property, their businesses and homes, nor endure fire and cancer risks because of a lack of consideration by someone in an office, far away with many other concerns.

Compensation is not exclusive to a narrow strip of land to radiate high powered electro-magnetic fields, ionize pollutants and promote cancers over homes, wilderness, research facilities, camping and recreational areas, nor does it evaluate the damages resulting from the bulldoze roads, work areas and fire clearings. Replacement costs for equivalent habitat, paleontology and geologic monuments, research and recreational capabilities include an area of the Conservancy that would exceed 800 acres based on the restoration and replacement cost of the Reserve at over \$50 per square foot, adjusted for

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future total inflation plus interest at 1% per month above total inflation, secured by the real property, assets and facilities of the utility company, Sempra Energy and its descendants or beneficiaries. It is considered a contractual obligation by any party for the specified value or greater, to fully provide for all damages and Just Compensation for this project and property based on the actual and full geologic, botanical, paleontological, research, facility and replacement value of this reserve, should SDGE, Sempra, individuals, subcontractors or any other entity enter the property and commence to cause damages, engage in construction, electrification or impede any uses of the Anthropological Reserve held or acquired by CBH.

The parties proposing or causing damages have been fully informed of the range of losses being imposed or inflicted in advance, as well as lower cost alternatives including underground power line installation, apparently without intention to consider or implement any nondamaging alternatives, consequently SDGE, Sempra Energy and others are assuming full responsibility for all categories of damages they cause. Ignoring responsibilities and alternatives to causing damages is a public admission of intention to disregard nondamaging options or an intention to cause damages. No party can claim ignorance, or disregard nondamaging alternatives, which do not impede high capacity power lines, then claim they have no choice but to cause major damages. Given a devastating approach and a nondamaging solution which overall costs less, if the lower cost nondamaging approach is rejected, then there is also no doubt that the intention is to cause damages, and any claim of ignorance or any political or technological lapse would be untrue, now, during construction or during a subsequent trial required to review the information provided here. If the utility company is allowed to cause many times more damages than they are willing to reimburse, then providing full restitution for all damages caused, based on full and equivalent replacement costs for the Anthropological Reserve

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becomes the alternative, including full relocation and acquisition costs for a conservancy with equivalent urban access, security, surrounding wilderness, intact habitat and diversity, unobstructed views, aesthetics, geologic monuments, paleontological artifacts, watershed, water and energy resources, architectural, camping and recreational capabilities.

If a nondamaging, higher capacity, safer and lower cost alternative were now considered for the Powerlink by SDGE, no doubt SDGE, the governor and the administration could take credit for being environmentally considerate and continue with their plans to expand renewable generation and transmission capabilities. That's all we are suggesting. So why is there such animosity and resistance to a nondamaging alternative?

Review process procedural alternatives, Community review as a real time process

While a sense of openness was offered, the resolution process does not include any open evaluation of the issues. The concern may be that any valid criticism may need to be addressed, which is time consuming, or that change means inconvenience, based on a procedural interpretation of a review process, consequently a closed and extremely difficult to question system appears to have been implemented, which is not connected to a particularly accessible review process. Our concern is that an inaccessible CPUC review process could lead to a needlessly high-impact and destructive power line that would require

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many additional civil review efforts, because the CPUC review avoided addressing and resolving the essential environmental, engineering, property, health, economic and legal issues. The judicial review models in place are highly confined or exclusionary systems that can readily perpetuate damages, because they are not based on developing a full understanding of the issues, they are based on completing procedures, which are not available to provide time or access to develop a complete review of the critical issues, nor considering alternatives to damages. Expedience and damages appear to be protected by any procedural process, which may be interpreted as more efficient by legal specialists. Whenever expediency became the guiding principle in industry, the result was frequently a rash of litigation, or wrongful death cases, perhaps followed by efforts to improve the system or amend safety procedures. **If there were a data base to identify and catalog damages, that could be verified, which would balance the full set of damages against the cost of nondamaging alternatives, and calculate the cost of the full restitution of all losses, based on verifiable data retrieved through the web from thousands of informed participants, then the review process would have a chance of not only collecting but accurately digesting the information in real-time and arriving at a cost analysis that could lead to beneficial and nondamaging conclusion.** Alternatively, if the current review process allowed people to present relevant environmental, engineering, restoration, health and property damage information, which is incorporated into a review document that is continually updated and evaluated until the issues were fully addressed, and significantly the sum of all that economic and damage data were allowed to determine or block any arbitrary conclusion, that did not take all the facts into account, then there would be a connection between the information which was available and the conclusion, and an opportunity to provide for a mutually beneficial project. Unfortunately, taking the short-cut and allowing massive damages to be caused is almost always thought of as being more efficient, or at least more satisfying to anyone maintaining an incapable but orderly process, something that even a Chinese dictatorship has had the capacity to avoid in their current review of electrical transmission systems. (see: Appendix F) So we can only hope that the commissioners will not support the extraordinarily damaging approaches that have not been provided in the application in

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terms of environmental losses, restoration expenses, equivalent replacement costs, home, business, health and personal losses; along with offering consideration for lower cost, nondamaging technological alternatives, which have not been reviewed by the CPUC, which we have introduced through several documents, in addition to testimony at a number of CPUC hearings. (see: Appendix F and G attachment and www.undergroundpower.us)

If the critical issues could be addressed in the CPUC review process and evaluated in terms of the full cost and capacity for the power line and environmental restoration costs that would be required, as well as full mitigation and equivalent property replacement costs, including habitat, viewshed, facilities, capabilities, time and labor requirements, health, medical costs and losses of life, fire risks and liabilities; then a mutually beneficial solution would be comparatively easy to develop, without much need for conflict. However, procedural complexity which excludes information or provides protection for damages can defeat the interests of each party, or provide a victory based on needless destruction. Unfortunately, when critical engineering and environmental or property issues are addressed as adversarial or procedural issues by trial attorneys, apparently it becomes less likely that an effective, nondamaging solution will ever be found, while only the costs will increase dramatically. Mediation or a process of consensus, based on verifiable research and analysis that could allow anyone to identify a specific problem or source of damage, evaluate the related costs, the functional alternatives and the cost of each solution could dramatically help resolve any problem and could address resolution in a more productive manner, than through an adversarial or procedural dispute.

Existing review procedures, although thankfully are less formal judicial procedures, are still based on formalities designed to address or support adversarial conflicts, that tend to avoid a more cooperative process of review or understanding, which still makes it difficult for anyone to offer information related to environmental, engineering, property or personal losses, or review the research and damages being observed as evidence from recent submissions or even past projects, nor are summarized or accumulated information being

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organized in a data base to create an accurate overview of the damages and losses, the costs of restoration and restitution. Consequently, 10's of thousands of hours can be spent developing conjectures that can be manipulated by legal professionals to draw any conclusion from not fully researched or not completely assembled facts, which leaves any judge, jury or commissioner in a position of making an arbitrary decision, with selective attention to selected facts, which can readily avoid consideration to the devastating losses to be endured by thousands of home, business and property owners, along with our priceless environmental landscapes, as well as our health and survival, all without any significant restitution, which incidentally is absolutely not in the economic interests of Sempra Energy, since there are better engineering and environmental power line alternatives which can benefit both the community and SDGE. Perhaps few legal professionals see much personal benefit in considering Alternative Dispute Resolution, or more significantly see little benefit in addressing the technical issues related to wilderness restoration, power line engineering or constitutional law or case law requirements in order to address full restitution and equivalent property replacement. Nevertheless, the Chinese government has had the foresight to implement the newer technology that we described in order to lower their costs, increase their transmission capacity for sustainable power and at the same time reduce environmental damages by 85% compared to the Sunrise Powerlink, undoubtedly their awareness, public utility procedures and environmental consideration is more advanced.

We greatly appreciate the CPUC's efforts to hold open public hearings, because an entire community had an opportunity to contribute to a solution. Unfortunately, the solutions suggested by the public, while frequently based on very significant and demonstrable

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information, have not been reviewed nor offered an opportunity to be considered and developed into an alternative that could be compared on environmental, engineering or economic terms, and were simply disposed of, cataloged and forgotten, even though they were based on effective, low budget solutions which have been proven. Without a process of research and understanding it may be inevitable that adversarial procedures and attorneys will arbitrarily choose an approach with extraordinarily damaging or tragic consequences, based on a drive to bankrupt their adversaries through compulsory or forceful means. Of course the unlikely possibility of an educated jury could offer the consideration and understanding needed to address needless damages that are perpetrated through force. The alternative may simply amount to a list of objectives and costs provided by the applicant, followed by a list of problems or damages and alternatives, with the costs of each based on full and complete restoration costs and full and equivalent replacement costs, provided to those damaged. When the research and data is collected, it could be summarized in a data base and displayed as a spreadsheet, comparing the cost of all the impacts, damages and solutions, which could make finding a solution not something founded on conjecture. However, such an analysis does not need to be a determinative solution. For example, if solution B is the least costly, while solution C costs a little more, but is less damaging or offers greater capacity, then an environmental group or a utility company can pay the difference and retain solution C; or the difference can be supported by mitigation or restitution for other damages. Fortunately, what we are now seeing is that the least costly and the higher capacity power line technology is also the least damaging, particularly if implemented in a way that minimizes needless impacts and allows for incremental capacity increases.

We can trust that the governor, the Commissioners, Sempra Energy, the Sierra Club and millions of people who want to protect their wilderness or incomes, will all want to make the appropriate decision for themselves. Unfortunately, the information required to understand how to accomplish this without causing needless damages or violating environmental laws has not been offered any resolution in the review process. In other words nobody knows what the evaluation process means, except perhaps the decision makers, because they can override any form of consideration. Perhaps there is real

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apprehension to allowing consideration for any nondamaging approach, which is essential to any mutually beneficial solution. It has been our intention to provide some information regarding economical, high capacity, nondamaging approaches that have been proven worldwide since the 1950's, and as early as Edison's first power plant placed in operation during the Spring of 1881, where the original DC power lines are still intact underground. We can only provide research and information, and accept any rational criticism or questions, with the only issue remaining being a willingness to consider any of the nondamaging alternatives provided through the CPUC, which is apparently the overwhelming intention of the people, while the urban chambers of commerce, who have been described as not representing their memberships, apparently are not concerned with who gets damaged or why, since they are in high population density areas that will not be affected by pylons, and since they have completely ignored all the damages that would devastate others and the environment, and since they have opposed nondamaging alternatives.

Wouldn't the parties demanding needless damages want to be fully responsible for the full replacement costs and all losses they inflict, for all the resulting litigation and collection expenses? I realize that if I inflicted needless damages that I would be charged, prosecuted and required to pay massive penalties on top of paying for everyone's losses. Apparently, there are there 2 different standards of justice for 2 different groups, where over \$20 billion in short term damages will be ignored if caused by one of the groups, and prosecuted if caused by the other group. So the State simply needs to publish those legal standards and exemptions, or point out where they are already published, which may well occur through its decision process, which we await with many thousands of others who could be needlessly damaged. If all the information provided through the CPUC process cannot be digested, perhaps civil litigation will ultimately be required to address the massive losses to our environment, property, business and lives, along with our State and constitutional obligations required to protect and provide "just compensation" perhaps then on the basis of fraud or death, without a statute of limitations on those claims. Unfortunately, the review procedures have not been able to address the unnecessary nature of the conflict, by evading consideration of nondamaging alternatives, which it may defend by condemning the development of nondamaging alternatives, or simply through the exclusion or denial of

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nondamaging alternatives, or by defending needless and massive environmental damages. However, neither SDGE nor the CPUC can claim that they have encouraged or provided a review process to accommodate nondamaging power line alternatives, nor claim that they were unaware of these alternatives, since we presented these alternatives to all parties here and repeatedly in public CPUC hearings since February of 2007.

While we may all have portions of answers and solutions in our own data base or minds related to these issues, and may have presented that information as required or as invited, unfortunately there is no apparent process available for assimilation. People who do not understand the data or have no interest in finding a solution, cannot organize, present or intelligibly describe the information that is available to them, which can lead to a very confused interpretation, or as we have seen can lead to an intentionally erroneous collection of data, which could no doubt lead to an arbitrary or destructive decision; which perhaps may be intentional based on someone's prior experiences, because even damaging decisions are not made in a vacuum, undoubtedly hundreds of hours will have been spent arriving at any mutually beneficial or extremely damaging conclusion. So we might conclude that if massive environmental damages were not decided against and that nondamaging alternatives were fundamentally of no interest, then needless damages were intended or allowed, which would address the issue of responsibility and liability.

Please continue to carefully review the issues. If a damaging overhead route is approved, then the victims along with all communities will need to organize a legal defense to prevent needless damages and confiscations. If the CPUC cares to implement a cooperative and inclusive review process that gathers data from all affected parties and participants, we can help develop web data base to directly collect and analyze data in real-time from all participants. If there are any questions regarding any issue mentioned please write or call.



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Cost and Damage Summary over 30 years: Overhead vs. Underground, to the year 2040

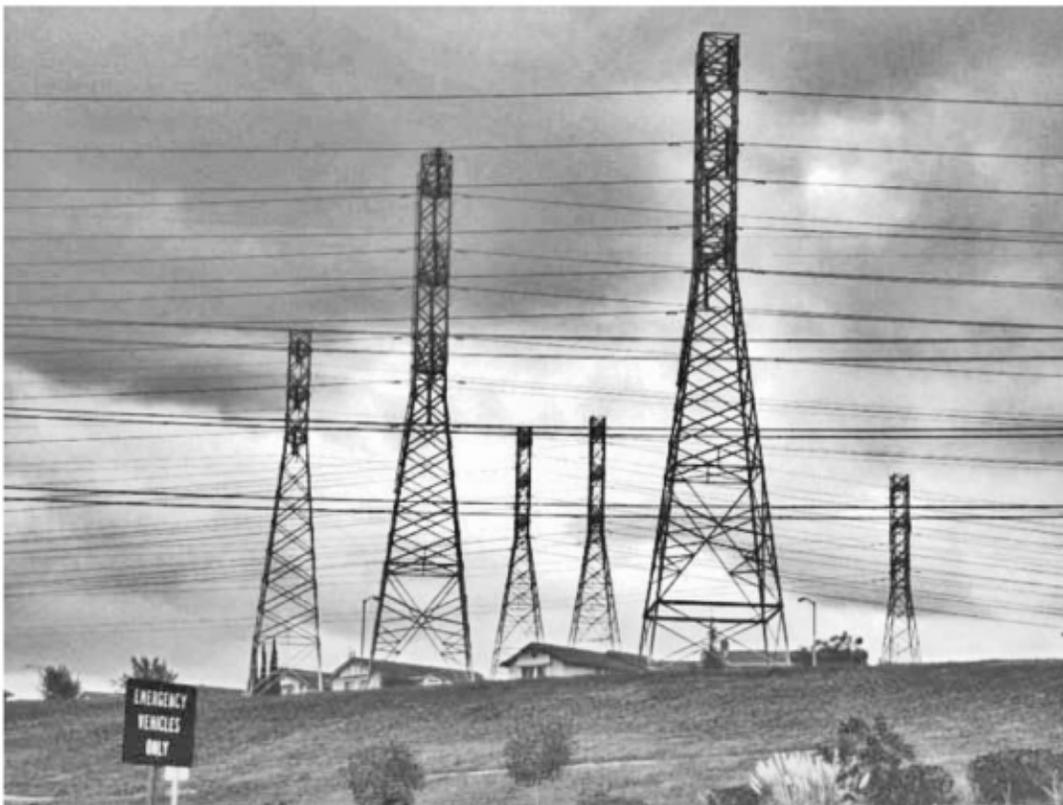
Year 2040	Overhead AC	Underground DC
Capacity (megawatts)	1,000	1,000 to 5,000
Capacity upgradable (MW)	Not upgradable	2,000 to 10,000
Construction cost	\$1,400,000,000	\$870,000,000
Upgrade capacity cost	Complete new system	Upgrade the converters
Maintenance (30/50 year cycles)	\$1 billion	0
Security costs	High and not securable	low
Impacts:		
Hazards fire/aircraft	Over \$2.5 billion in 2007	0
EMF & Ionization cancer deaths	300 to 600 lives/year SD	0
EMF & Ionization cancer losses	Over \$1.5 billion/year SD	0
Property damages, suburban	64,000 acres	0
Property losses, suburban	\$320 billion	0
Property damages, rural	128,000 acres	0
Property losses, rural	\$64 billion	0
Property damages, wilderness	384,000 acres	0
Property losses, wilderness	\$192 billion	0
Viewshed damages	144,000 acres	0
Viewshed losses	\$7.2 billion	0

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G0014-19 cont.

Recreation & tourism damages	\$450 million per year	0
Homes impacted, short term	100's to 1,000's	0
Businesses impacted	100's	0
New roads cleared & bulldozed	9 to 14 thousand acres	0
Habitat restoration costs	\$30.5 billion	0
Property replacement costs	\$15 billion	0
Total 30 year medium term cost:	\$648 billion	Less than \$1 billion



We have reached our environmental limits and are now just observing irreversible damages

Comment Set G0014, cont.
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G0014-19 cont.

**Cost and Damage Summary over 30 years:
Overhead vs. Underground (with footnotes)**

To year 2040 ⁵	Overhead AC	Underground DC
Capacity (megawatts)	1,000	1,000 to 5,000 ⁶
Capacity upgradable (MW)	Not provided	2,000 to 10,000
Construction cost	\$1,400,000,000	\$870,000,000 ⁷

⁵ **Lifespan:** Since very limited capacity power lines installed about 100 years ago are still being used, although the limits are being pushed when air conditioners are turned on, we can expect that new, vastly higher capacity power lines will be in use 200 or more years from now, with regular maintenance and cable replacement. So 30 years of use could be considered near the beginning of a systems life cycle, unless of course scientists and the media decide that the EMF and ionization health risks are too great, in which case the big Powerlinks and local power lines may have to be dismantled.

⁶ **Cables:** Underground DC power lines with a minimum of 3,000 square millimeter copper cross-section and 6.2 inch outer diameter operating at +/-300 kV (using XLPE extruded cables), or +/- 600 kV (using PPL, Paper Polypropylene Laminate), or +/- 800 kV (using SCFF, Self Contained Fluid Filled).



⁷ **Underground DC** power line construction data from the BritNed project providing 1,300 megawatts of capacity over 161.5 miles, including burial under the sea floor. *Note:* Since there are many project specific variables involving costly components which may be individually configured, the power industry is not prepared to provide cost information without engineering effort. Consequently, data may be obtained from industry publications describing similar projects, or hardware component costs may be estimated by equipment manufacturers.

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Upgrade capacity cost	Complete new system	Upgrade the converters
Maintenance (30/50 year cycles)	\$1 billion	0
Security costs	High and not securable	low
Impacts: ⁸		
Hazards fire/aircraft	Over \$2.5 billion in 2007	0
EMF & Ionization cancer deaths	300 to 600 lives/year SD	0
EMF & Ionization cancer losses ⁹	Over \$1.5 billion/year SD	0

G0014-19 cont.

⁸ **Impact categories:** Since data regarding full environmental and property impacts were not collected or provided by SDGE or the CPUC, several models were developed to measure economic degradation and losses, along the 150 mile power line route, where pylons and cables may extend from 160 to over 450 feet above the ground, with EMF, ionization and viewshed degradation extending well beyond the power line route, devaluing well over half a million (576,000) acres along the route. The assignment of more precision numbers for losses related to EMF and ionization (based on uninformed vs. medically informed buyers), viewshed, property degradation, devaluation, equivalent property replacement, the value of current, planned and projected uses, can be provided with field work and research for individual parcels, by area and category as required. Excluding categories of use and development, ignoring medical awareness or equivalent property replacement values will only serve to distort or diminish the value of the long term losses being endured by home and property owners.

⁹ **Litigation:** This is an estimate of \$2 billion over 30 years just for litigation costs for the hundreds of lives lost every year, accounting for just 4.4% of all the cases occurring in San Diego County totaling \$45 billion over 30 years, or an estimated \$2 billion for cases related to the Sunrise Powerlink during 3 decades, and does not include large claims, state or class action awards for damages due to cancers for the entire region, resulting from high power line EMF exposures and the ionization of pollutants. Since the population could more than double for San Diego County during the next 30 years, and estimate of 18,000 deaths due to power line hazards over 30 years could be low, or at least 800 deaths attributed to the Sunrise Powerlink alone, at approximately \$2.5 million each, amounts to perhaps a conservative \$2 billion over 30 years, which could accelerate as research and biological detection methods improve.

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G0014-19 cont.

Property damages, suburban	64,000 acres	0
Property losses, suburban ¹⁰	\$320 billion	0
Property damages, rural	128,000 acres	0
Property losses, rural ¹¹	\$64 billion	0

¹⁰ **Suburban:** A 1 mile linear gradient where zero distance to the power line provides 100% degradation and at 1 mile provides 0% degradation, based on rolling terrain with suburban development in the region where noticeability is not high, while the effects of EMF and ionization may be significant, as well as property value impacts, depending on medical awareness, (which cannot be depended on as an excuse to avoid calculating economic impact). Including an area estimated to increase to 1/3 of the Powerlink or 50 linear miles, or encompassing 200 square miles or 128,000 acres, at 5 houses per acre = ultimately 640,000 houses averaging \$1 million each, (and alternatively at least an equivalent value in business properties) = over \$640 billion, and after extracting damages an ultimate degradation area of 64,000 acres and value or loss of over \$320 billion.

¹¹ **Rural:** A 2 mile gradient on rural terrain, ranch properties and custom homes where noticeability and objectionability to pylons and hot cables is moderately high although acreage may be lower in price than suburban areas, or potentially higher depending on wilderness assets, geologic features, full and equivalent replacement values. (Based on a linear degradation gradient, with losses, noticeability and objectionability that decline based on distance). Including an area estimated to increase to 1/3 of the Powerlink route or 50 linear miles, or encompassing 400 square miles or 256,000 acres, at an average value of 10% of developed land (\$5M) or at least \$500 thousand per acre (a value that is suppressed since calculations are based on income, not potential value or replaceability, of which the total valuation is only 10% of it's developed value, which is not much more than the interest one would pay during one year on a suburban property when paying a mortgage), which equals \$128 billion for the region, with a degradation distributed over half or 128,000 acres with a value or loss of \$64 billion.

Note: Long term calculations cannot be based on current trends, which randomly fluctuate and are replaced by longer term fundamentals, based on measurable values. While property values have over the long term increased, so has inflation, taxes, insurance, maintenance and legal expenses, consequently may not represent a net gain in value.

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Property damages, wilderness	384,000 acres	0
Property losses, wilderness ¹²	\$192 billion	0
Viewshed damages	144,000 acres	0
Viewshed losses ¹³	\$7.2 billion	0

G0014-19 cont.

¹² **Wilderness:** A 12 mile gradient where wilderness reserves or where visual expanses are unimpeded and 170 tall pylons stand in stark relief against their natural setting or wilderness area, or where the primary purpose of a property is its wilderness dedication, consequently is an issue of high sensitivity, objectionability and noticeability. Including an area estimated to decrease to 1/3 of the Powerlink route or 50 linear miles, or 1,200 square miles or 768,000 acres, replaceable at 1/10 the price of developed land, which apparently may not be a possibility, since state and federal wilderness reserves are typically irreplaceable reserves and national assets that in a significant way belongs to the nature that molded its mountains and spawned life, which only includes humanity. So if replaceability were an actual possibility then 768,000 acres at \$500 thousand per acre (1/10 developed value) would be \$384 billion, with the degradation of 384,000 acres with an estimated value or loss of \$192 billion.

Where irreplaceable geologic formations, expansive views and native habitat cannot be replaced through local equivalent acquisitions then the value would be based on full geologic and habitat replacement costs of at least \$25 to \$75 per square foot or \$1.1 to \$3.3 million per acre, which can take years to plan, engineer and implement, and decades of botanical maintenance, electronic monitoring and automated irrigation to complete restoration efforts.

¹³ **Viewshed** losses could range from low or nonexistent at 1.5 miles away from the power lines to not less than 1% of the value of suburban developed land (\$5M/acre) or \$50 thousand per acre, with an average visibility gradient of 1.5 miles, covering 450 square miles or 288,000 acres, or a degradation of 144,000 acres estimated evaluation of \$7.2 billion, (this is a loss to the public not individual residents, owners or conservancies).

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G0014-19

Recreation & tourism damages ¹⁴	\$450 million per year	0
Homes impacted, short term	100's to 1,000's	0
Businesses impacted	100's	0
New roads cleared & bulldozed ¹⁵	9 to 14 thousand acres	0
Habitat restoration costs ¹⁶	\$30.5 billion	0

¹⁴ **Recreation and tourism:** San Diego's recreation and tourism share as a percentage of California's \$90 billion per year industry, is not less than 10%, with a population in excess of 3 million, in a state of over 37 million, with the natural resources of the region representing not less than 25% of the asset, or 1/40 of \$90 billion or \$2.25 billion, a 10% degradation of the resource could provide more than a \$225 million loss, since it could damage the image of San Diego's \$9 billion share by 5% or have an impact of a \$450 million loss, depending on whether it took 1 or more Powerlinks to achieve the 5% level in perceptual degradation. The people of San Diego made it known to the CPUC that they were horrified to see their precious wilderness, whether to the north or through the south of San Diego County degraded for a power line, even if there were no alternatives available. However, there are lower cost alternatives that can fully protect the irreplaceable wilderness of San Diego County.

¹⁵ **Clearings:** Based on observations of 500 kV overhead AC power line road building requirements, construction clearings, off-road extensions and fire clearings.

¹⁶ **Habitat restoration:** With over 9,000 acres of clearing for new roads, construction work space, plus off road vehicle extensions damaging over 14,000 acres, the restoration of habitat and geology in arid regions requiring water, fencing, plant propagation and monitoring over at least 4 decades, costing over \$50 per square foot, for 609.84 million square feet, or \$30.5 billion.

Restoration costs in remote areas, including photographic documentation, electronic sensing and botanical monitoring for a minimum of four decades, plant propagation, transportation, automated irrigation, geological structure reconstruction and monument restoration, ranging from at least 25 and 75 dollars per square foot or until fully completed, plus insurance, legal and collection costs to insure the continuation of restoration.

Comment Set G0014, cont.
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G0014-19 cont.

Property replacement costs ¹⁷	\$15 billion	0
Total 30 year medium term cost: ¹⁸	\$648 billion	Less than \$1 billion

Electrical demand has largely been driven through the promotion of population growth. Apparently, demand will continue to grow based on the cost of oil along with the conversion to electric vehicles and renewable resources. Older less innovative industries have continued to support rapid population growth as their source of their industrial expansion, without significant regard for global resource pressures or large scale damages to humanity, nor the environment and massive economic losses that are being inflicted. None of these impacts exist in isolation, nor do the corporate decisions that create a context of pressure and desperation, or compel a specific solution into existence. However, when a highly damaging plan is proposed and the review process avoids considering those damages, then the result can be the beginning of extreme and unnecessary losses, while lower cost nondamaging alternatives are avoided, which does not benefit the people, the environment, the independent generators or SDGE. We are simply encouraging a review process that carefully considers all the related issues, all the damages and all the alternatives that will be reflected in any decision, instead of maintaining and adversarial dispute that ultimately only extends a conflict, while intentionally avoiding any understanding, cooperative or beneficial solutions.

¹⁷ **Property replacement costs:** Where at least 10% of the rural areas and the entirety of dedicated wilderness regions are rare and do not have equivalent replacement resources that can be acquired at anything close to commercial valuations, conventional commercial appraisals will fail to provide for the acquisition of equivalent property on over 30,000 acres, at least doubling acquisition costs, adding at least an additional 10% of the value of developed property (\$500 thousand) or \$15 billion.

¹⁸ **Summary total** includes costs over 30 years for: Construction cost \$1.4 billion, + Maintenance cable and pylon replacement 30/50 year cycle \$1 billion, + Hazard/fire insurance \$1 billion, + EMF/ionization cancer damages (excluding litigation and award costs) and 4.4% of the \$45 billion estimated total, \$2 billion, + Suburban property losses \$320 billion, + Rural property losses \$64 billion, + Wilderness property losses/devaluations \$192 billion, + Viewshed losses \$7.2 billion, + Recreational losses \$13.5 billion, + Habitat restoration over 4 decades \$30.5 billion, + Equivalent property replacement \$15 billion, Three decade total = \$647.6 billion.