

# GREEN energy's *invisible pollution* & Adverse Health Impacts: the view from rural sacrifice zones

Presentation by Donna Tisdale

Chair ,Boulevard Planning Group; co-founder & President, Backcountry Against Dumps;  
Secretary, The Protect Our Communities Foundation ;

PCL's CEQA conference at UC Davis Law: January  
12, 2013

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Any errors or omissions are unintentional

# Main issues with Industrial scale wind, solar, and related infrastructure

- Rural sacrifice zones & Environmental Justice issues.
- Adverse health effects: noise, electrical & visual pollution
- CEQA waivers for industry over community plans, character and vision.
- Industry /government forced amendments to community plans, zoning ordinances, agriculture, health and safety,
- Increased risk of fire in Very High Fire Severity Zones with limited services, and impediment to fire fighting.
- High use of limited sole source groundwater resources.
- Unjustified bias for so-called 'green' energy
- Adverse impacts to power quality and grid stability.

# State definition of Environmental Justice

- **“Environmental justice”** is defined in California Government Code Section 65040.12 as “the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies.” (<http://www.leginfo.ca.gov/cgi-bin/displaycode?section=gov&group=65001-66000&file=65040-65040.12> )
- **"The California Environmental Protection Agency (Cal/EPA) and our Boards, Departments, and Office (BDOs)** shall accord the highest respect and value to every individual and community, by *developing and conducting our public health and environmental protection programs, policies, and activities in a manner that promotes equity and affords fair treatment, accessibility, and protection for all Californians, regardless of race, age, culture, income, or geographic location.* (CalEPA Environmental Justice Home: <http://www.calepa.ca.gov/envjustice/> )

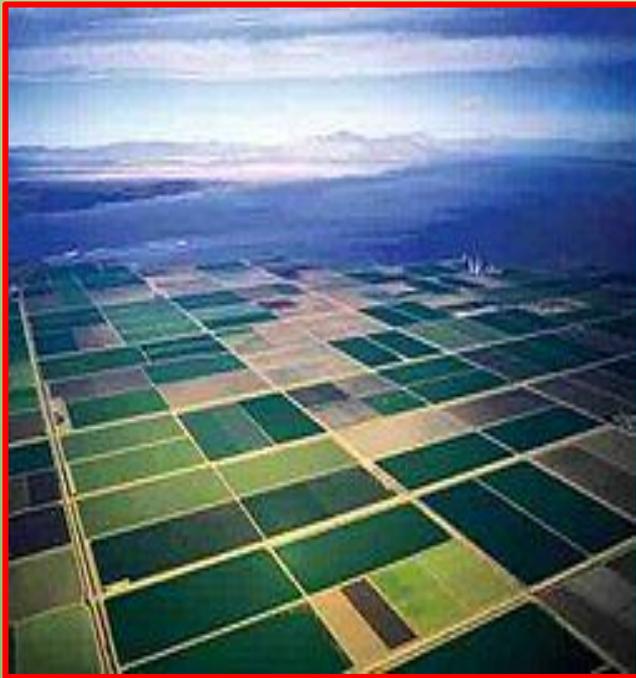


# AB2551: Renewable Energy Infrastructure Zones—vetoed but not dead

- Promoted by vested interests
- Specifically for the disproportionately targeted Boulevard Community Planning Area
- Benefits would go to developers; landowners; and their out-of-area favorite beneficiaries
- Opposed by unwilling impacted community and County Supervisor Dianne Jacob
- *Supported by legislators—even when the right for a community vote was eliminated*

Imperial Valley's productive farmland/ wildlife habitat/ open space being "temporarily" converted to solar – for 40 years! Dedicated irrigation Water may be transferred to cities for further growth inducement. Farmland gone forever=new dust bowls in area with some of the highest asthma and COPD rates

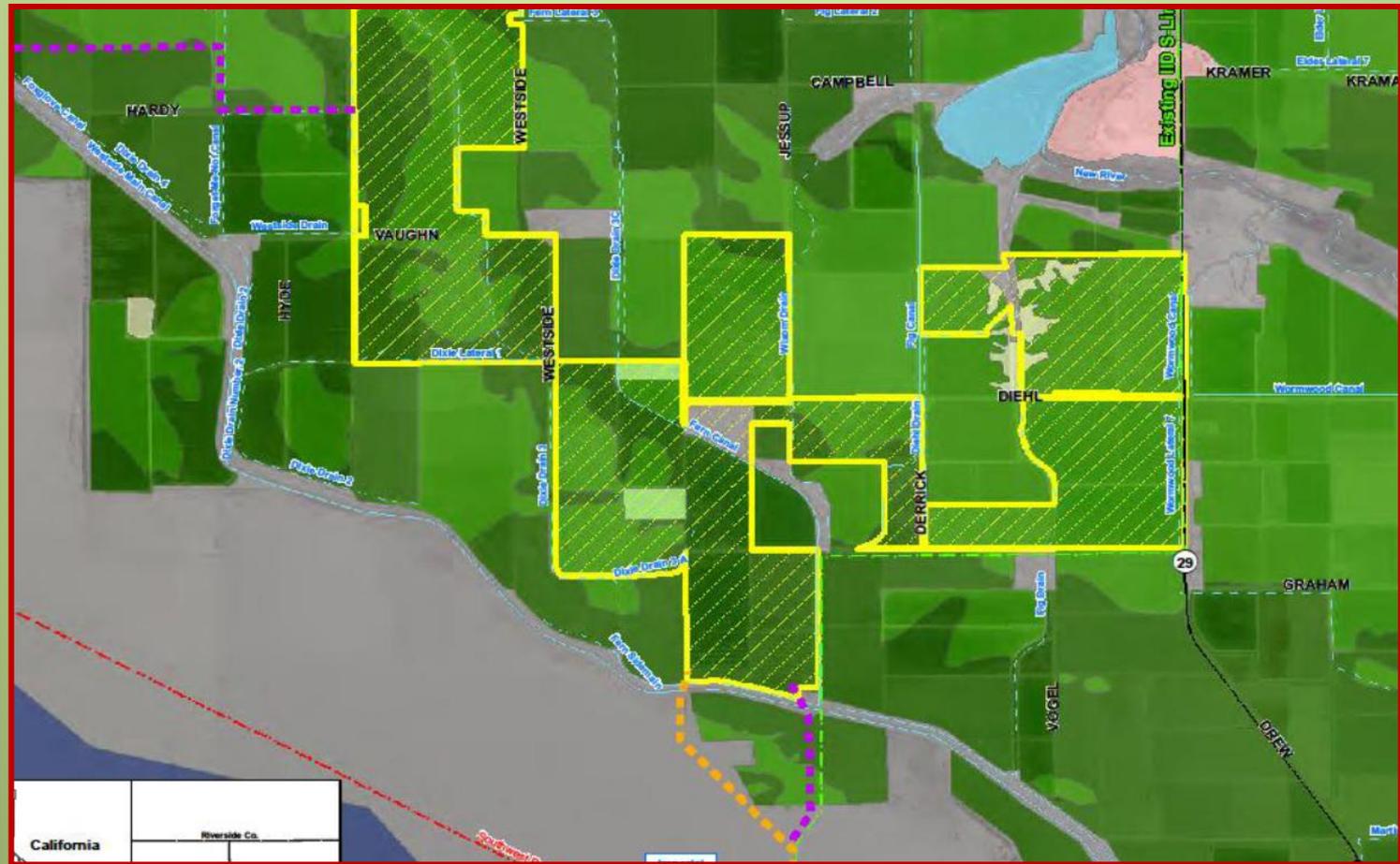
**Before...**



**After...**



1,900 acre Campo Verde Solar: One of about 36,000 Imperial Valley acres slated for ag-to-solar conversion = loss of field's cooling effects, jobs and farming businesses. One small area harvesting company had to sell 10 combines and lay off about a dozen workers had been with them for many years.



# Boulevard's Rural sacrifice zones

Golden Eagles and Bighorn Sheep have been witnessed in these locations that have historic, cultural , and biological value— located adjacent to scenic Historic Route 80, and abutting the sole access to McCain Valley Conservation & Recreation Area

**Soitec's 6.5 MW LanWest site**



**Soitec's 22MW LanEast site**

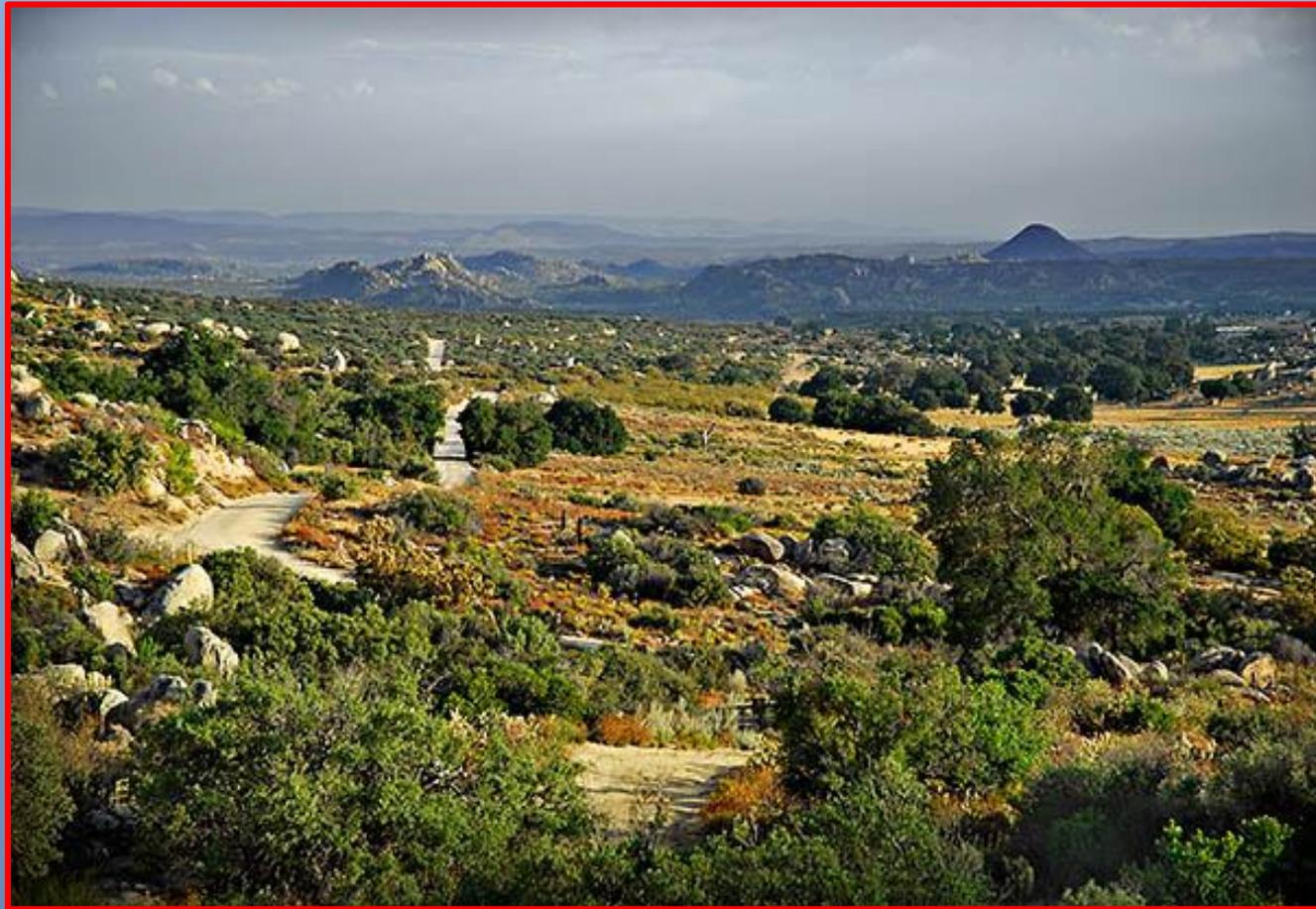


## **Boulevard's ruggedly beautiful**

**Mc Cain Valley National Cooperative Land and Wildlife Management & Recreation Area,**

a local resource that attracts visitors that help support local businesses.

**Previously protected for visual, biological, and significant cultural resources / sacred sites**



# Big Rock & McCain Valley

Unlawfully down zoned to industrial by BLM in 2008 for Iberdrola's 201 MW Tule Wind and the 500kV Sunrise Powerlink



## 2005: 50 MW Kumeyaay Wind built without an EIS

on leased tribal land in Boulevard

December 2009: Unexplained catastrophic failure ~

witnesses saw blue light ball arc out to all 25 turbines ~ off-line about 4 months ~

All 75 blades, rotors, electronics were replaced.

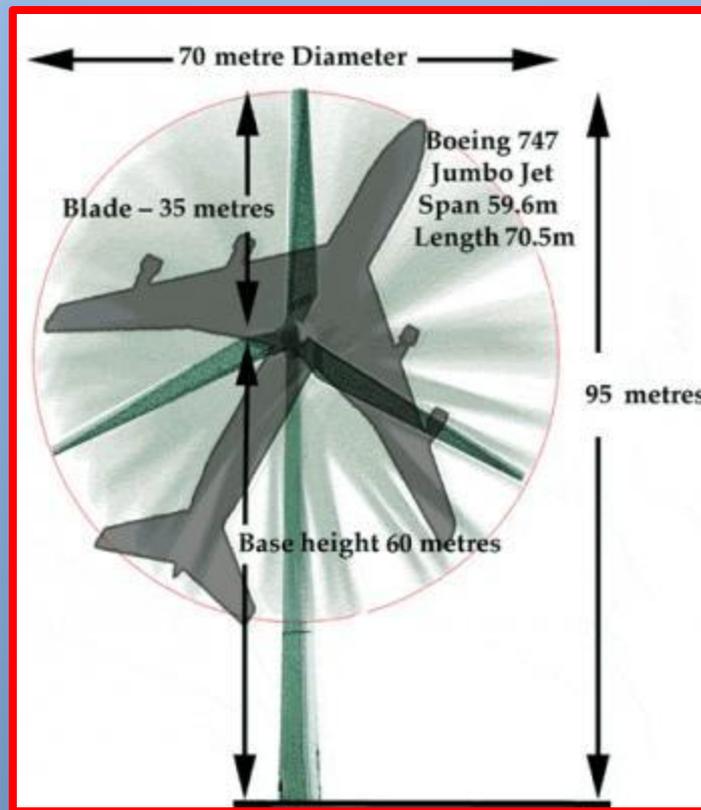
Impacted neighbors said it was the best 4 months they had since 2005!



What's the fuss? How big are they?

Average **480-515 feet tall**

they change the air pressure



# Doctor Sarah Laurie's Notice of Explicit Caution now warns turbine siting decision makers that they can be held liable:

"The combination of fraudulent denial of serious health problems by wind developers and willing blindness on the part of bureaucrats and health officials is simply unacceptable, and it now leaves elected officials, bureaucrats, and wind developers open to serious legal consequences"

source: <http://www.epaw.org/events.php?lang=en&article=uk3>; [http://www.epaw.org/documents/The\\_Sunday\\_Post\\_27Nov2011.pdf](http://www.epaw.org/documents/The_Sunday_Post_27Nov2011.pdf)



The **SCOTLAND'S FAVOURITE READ FOR ALL THE FAMILY** November 27, 2011  
£1.20 No. 5537-2

# SUNDAY POST

# DANGER ZONE

If you live within **10k** your health is at risk warns expert

**LIVING** within 10km of a windfarm could be bad for your health.

**EXCLUSIVE**  
By Euan Duguid

An expert warns that problems caused by long-term exposure to noise and vibrations can be "real, serious and life-threatening".

The Government has been urged to set up 10km exclusion zones.

**Full story page 7**

Just one of the homes impacted by Infigen's Kumeyaay Wind turbines that can generate noise, low frequency noise, and electrical pollution



# From a tribal Chairman's letter...

to San Diego County Planning Commission ( 6-6-12) (excerpts)

- *“Our Manzanita citizens currently live in close proximity to a high voltage wind project operating adjacent to our residential reservation homelands. We are experiencing an inordinate level of health challenges for our people.”*
- “In order to determine the nature of our health issues Manzanita has engaged in an academically valid research based study conducted by the NATIONAL LATINO RESEARCH CENTER, which is under the umbrella of CALIFORNIA STATE UNIVERSITY, SAN MARCOS.”

*Contrary to public denials the feds provide this admission:*

## **Wind Turbines: Human Health and Safety**

from the Dept of Interior's Tribal Energy & Environmental Information (TEEIC)

<http://teeic.anl.gov/er/wind/impact/op/index.cfm>

- Possible impacts to health and safety during operations include exposures to [electromagnetic fields \(EMF\)](#);
- Turbines obstructing aircraft; interference with electromagnetic signals including radar, radio communication, television and microwave transmission; low-frequency sound; and [shadow flicker](#).
- There is an increased potential for fires from electrical discharges from energized equipment.

# Wind Turbine Grounding

## increases ground currents that migrate off-site

<http://www.est-aegis.com/wind-turbine-grounding.htm>

- **Dangerous Voltages and Currents Present on Wind Power Turbine Generators – Must be Discharged to Ground for Reliable Operation. Bearings and other critical components frequently fail because of high shaft currents generated in the wind turbine nacelle.**
- **Problem:** Wind turbine generator stator windings and rotors are directly connected to the power grid. Unlike the stator, the rotor is connected to the same grid via a converter. The converter makes operation possible at variable rotor speeds while maintaining constant stator voltage and frequency outputs to the grid. This system introduces dangerous rotor shaft voltages, and due to the high frequency converter switching, the generators, gear boxes, and other critical components are exposed to dangerous high frequency shaft currents causing EDM (Electrical Discharge Machining).
- **The AEGIS<sup>®</sup> WTG, a grounded conductor ring, is placed between the stator winding and the rotor. Dangerous rotor shaft voltages are diverted to ground, protecting bearings and other vulnerable components.**

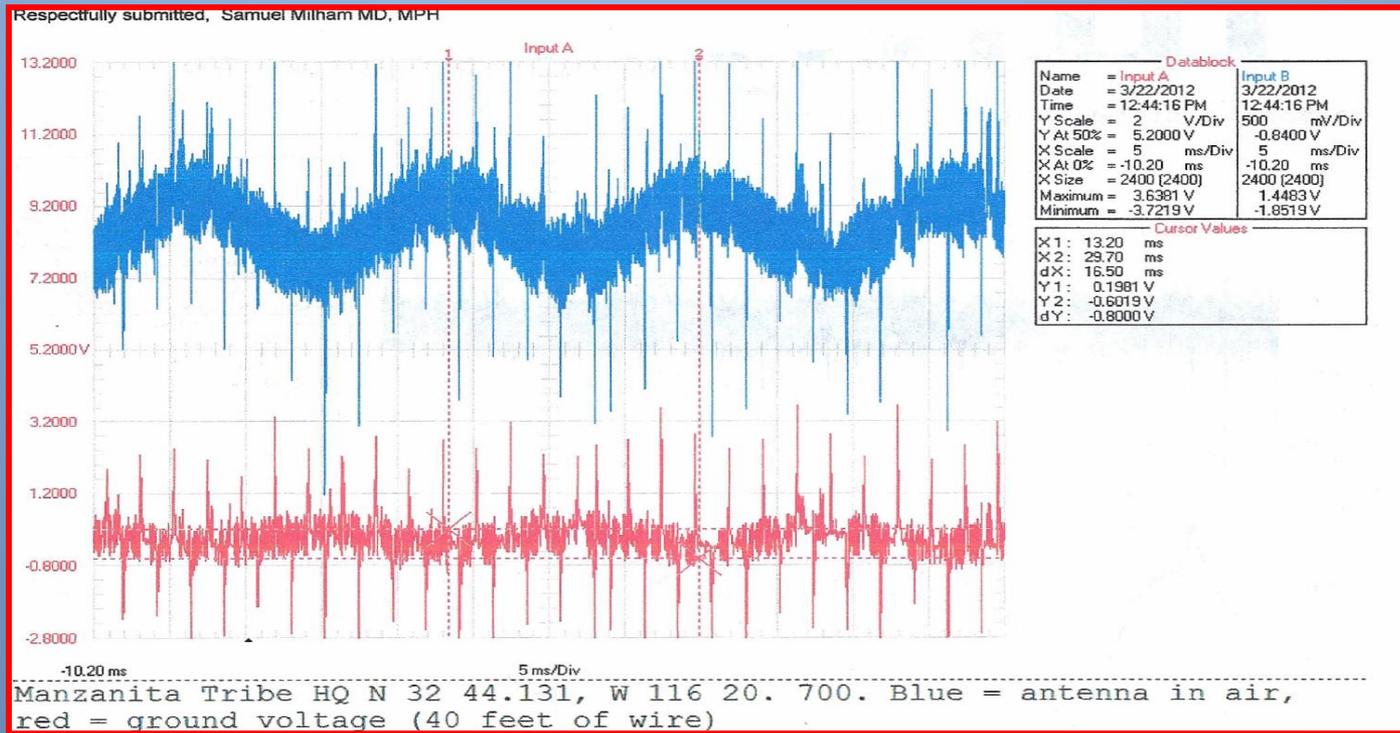
# Stray Voltage not stray at all

- "Stray Voltage" is merely another name for electrical ground current.
- Electrical ground current is electrical current returning to the substation through the earth.
- Electrical ground currents occur when the utility's wire is no longer the path of least resistance back to the substation.
- Electricity always follows the path of least resistance.
- Once it is off the wire, that path often includes plumbing, people, and animals, in addition to the earth.
- Calling the returning electrical ground currents "stray voltage" trivializes the problem and suggests unknown and unknowable origin, which is generally not true at all.

Dear Board of Supervisors,

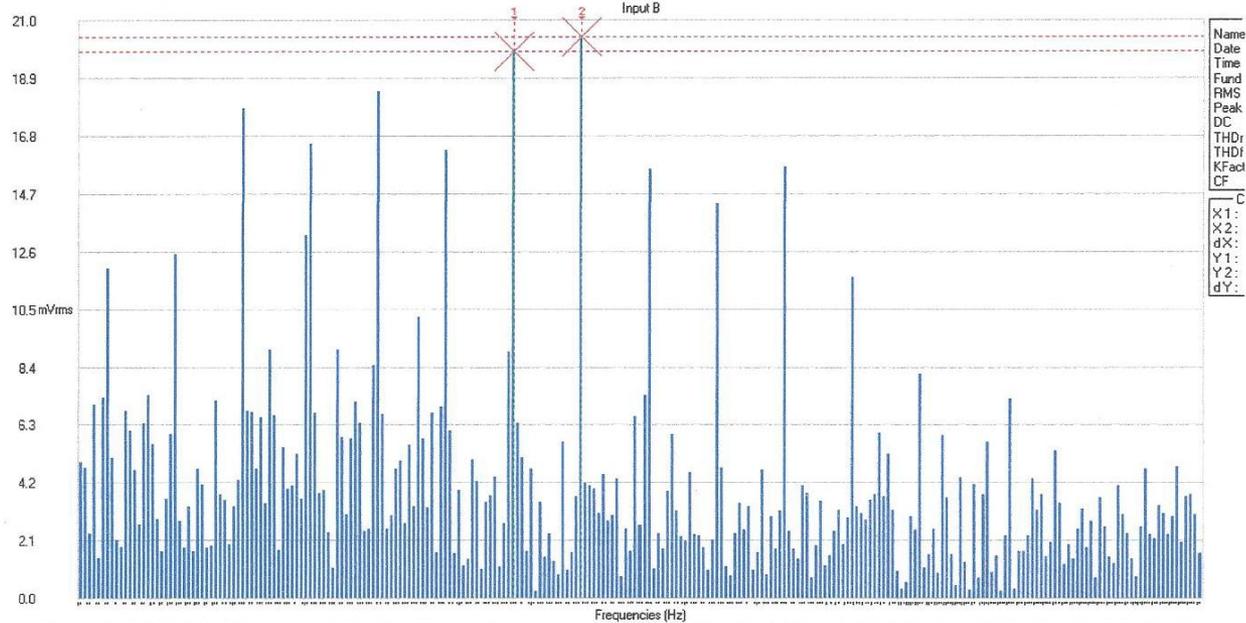
My name is Samuel Milham. I am a semi-retired physician epidemiologist with 30 years experience in studying the health effects of electromagnetic fields. I'd like to make you aware of the serious health problems caused by wind turbines. I have recently studied the electrical pollution caused by wind turbines in the Palm Springs CA and Boulevard CA areas. Wave forms and harmonics from Palm Springs are shown in a paper by my colleagues Magda Havas and David Collings (att) on page 7.

Here are some spectra captured last month on the Manzanita Reservation near Boulevard CA. The spectra prove that the Campo wind farm and the utility is the source of this electrical pollution since the sine waves are at 60 Hz. The spectra should only have a bar at 60 Hz. The other bars are harmonics with shouldn't be there. At the Tribal Headquarters the ground voltage is 7.3 volts (3.6 +3.7) in the red data block.



# High Frequency voltage transients measured at solar site near Niland

The harmonics spectrum in air near an inverter shows massive harmonic distortion with repeating peaks 900 Hz apart:



Solar inverter in air Niland solar array

The air, ground and wires connected to this grid will all be contaminated with high frequency voltage transients. The people who live near these facilities, live near them or receive the electricity they generate will all be at an increased risk of morbidity and mortality. Until clean inverters can be made, these projects should be rejected. The inverter industry recognizes the problem ( See att. ), but to my knowledge grid intertie inverters generate electrical pollution.

Respectfully, Samuel Milham MD, MPH

# Acoustics (Noise) & Environmental Justice Impacts

from Dept of Interior's TEEIC website

<http://teeic.anl.gov/er/wind/impact/op/index.cfm>

- Sources of noise during operations would be mechanical and aerodynamic noise from wind turbines;
- [transformer](#) and switchgear noise from [substations](#); [corona noise](#) from [transmission lines](#);
- vehicular traffic noise; and maintenance facility noise.
- Possible [environmental justice](#) impacts during operation include the alteration of scenic quality in areas of traditional or cultural significance to minority or low-income populations.
- *Noise impacts and health and safety impacts are also possible sources of disproportionate effects.*

# Permitting Issues & admissions from Calif. Energy Commission website:

source: <http://www.energy.ca.gov/wind/overview.html>

- Some of the potential issues associated with windfarm development include:
- Use of large tracts of land.
- Erosion in desert areas.
- Changes in visual quality (since windfarms tend to be located at or just below ridge lines).
- Disturbances to wildlife habitats.
- Avian mortality due to collisions with wind turbines and associated wires (research is on-going to reduce bird deaths).
- Noise (wind turbines generate both audible and low frequency [deep base vibration] sound waves).
- Grass or brush fires caused by shorts in the electrical cables in the unlikely event that they become stretched or twisted when the turbines turn to catch the wind.

I snapped this photo in Ontario Canada in October 2010, where I met a lot of wind turbine victims, and people trying to help them. These homeowners were desperate to get relief from the turbines



I took this photo in late 2011 from the front porch of a disabled senior in the Painted Hills area near Palm Springs. I witnessed stray voltage testing that registered in the 5 digits—50 and under is considered safe. I could feel the energy in the ground just by standing there.



# I took these photos last week at Pattern Energy's fast-tracked Ocotillo Wind

that surrounds the tiny low income community of Ocotillo in Imperial Valley

Many NEPA / CEQA violations & waivers.

Note the limp air sock at this impacted home and the substation that was built in a major drainage with burrowing owl nests and cultural resources



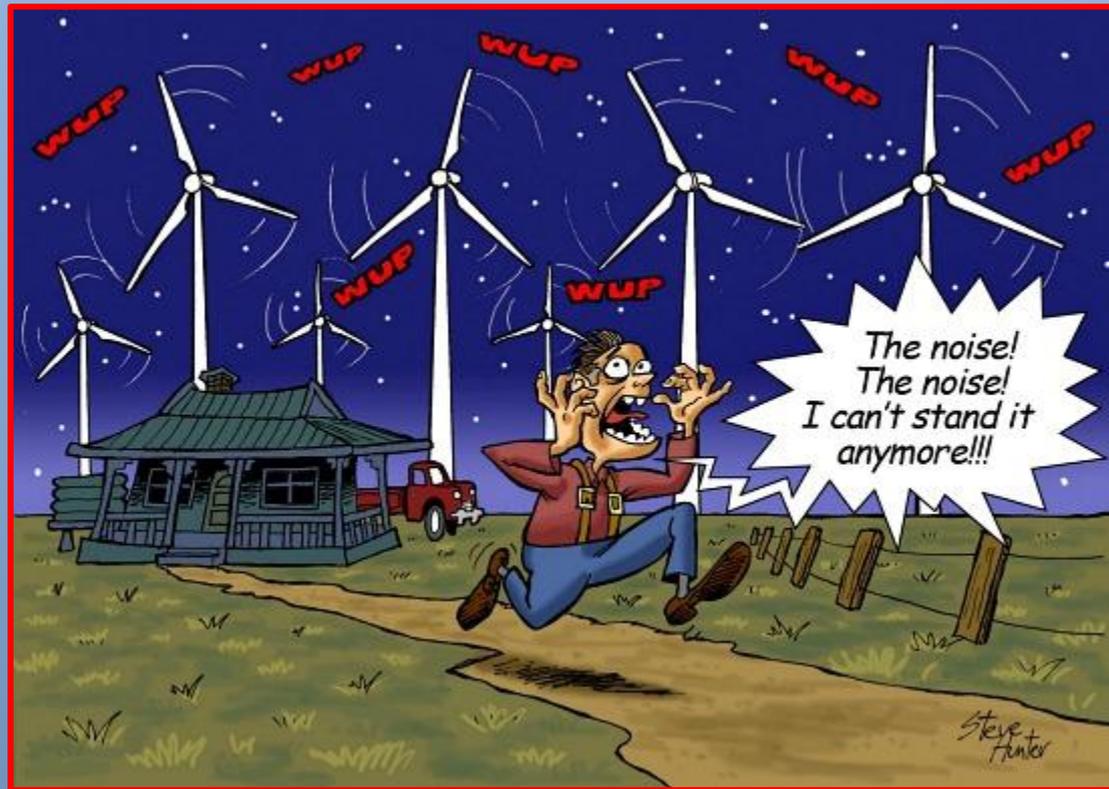
Turbine wake turbulence  
increases noise and infrasound pollution.  
More turbines result in more turbulence...



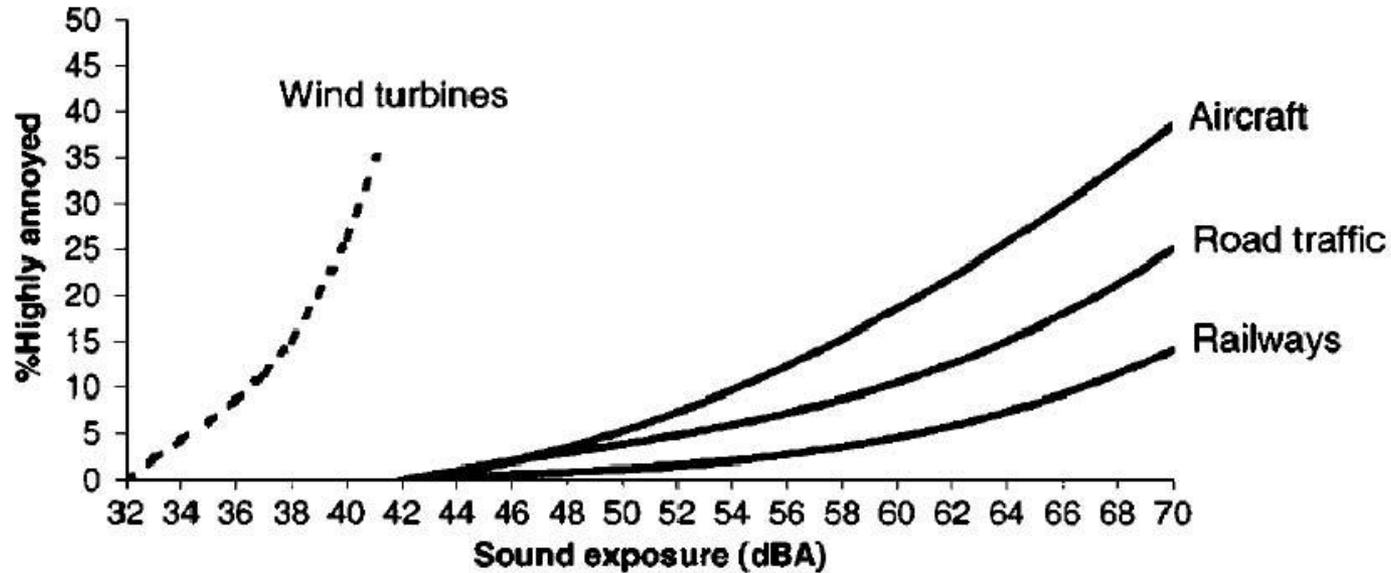
Note the distance of each turbine from the home in the photo. I have been in contact with the family that lives there....and others like them. Industry and government agencies generally say 1,000-1,500 feet is a safe setback. It is not safe! Would you want this for your friends and family?



The noise, vibrations and electrical pollution  
can harm wildlife and livestock  
and drive people to abandon their homes and farms



# Wind turbine noise /impacts are different



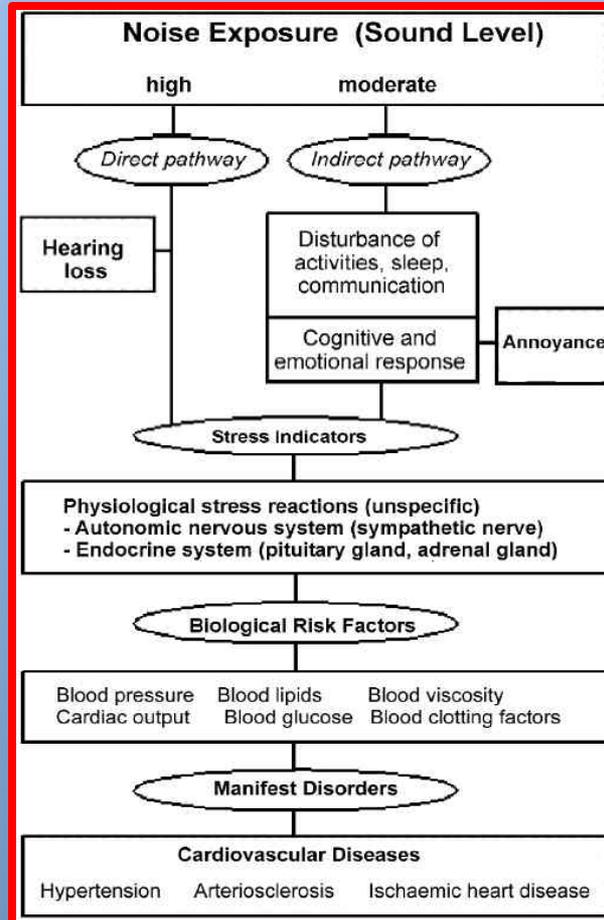
Sound exposure is for wind turbines calculated A-weighted  $L_{eq}$  for a hypothetical time period and for transportation DNL.

Figure 2. Percent of respondents reported high annoyance attitude as a function of sound level (Day-night average sound level for aircraft, road traffic, and railways;  $L_{eq}$  for wind turbines).

Source: Pedersen and Person Waye (2004), Figure 3.

**World Health Organization Peer-reviewed 2009 Noise impact chart.**

**It shows that too much of the wrong kind of noise can result in physical and emotional stress that can lead to significant health and reproductive problems. Noise levels effect all living things.**



# A NASA technical paper on wind turbine noise\* states :

- “People who are exposed to wind turbine noise inside buildings experience a much different acoustic environment than do those outside....
- They may actually be more disturbed by the noise inside their homes than they would be outside....
- One of the common ways that a person might sense the noise-induced excitation of a house is through structural vibrations. This mode of observation is particularly significant at low frequencies, below the threshold of normal hearing”

\* Hubbard H. H., Sheppard K. P., (1990), Wind Turbine Acoustics, NASA Technical Paper 3057 DOE/ NASA/20320-77

Geoff Leventhall\*, a coauthor of the wind energy association sponsored / biased “Wind Turbine Sound and Health Effects” admits to the following:

- “The symptoms of... Wind Turbine Syndrome...sleep disturbance, headache, tinnitus, ear pressure, dizziness, vertigo, nausea, visual blurring, tachycardia, irritability, problems with concentration and memory, and panic attack episodes associated with sensations of internal pulsation or quivering when awake or asleep...***I am happy to accept these symptoms, as they have been known to me for many years as the symptoms of extreme psychological stress from environmental noise, particularly low frequency noise.***” (emphasis added)

\* Testimony before the Public Service Commission of Wisconsin, PSC Ref#121877 20 October 2009

# “Overwhelming evidence that wind turbines cause serious health problems in nearby residents”

source: Carl V. Phillips *Populi Health Institute, Wayne, PA, USA*, [cvphilo@gmail.com](mailto:cvphilo@gmail.com)  
<http://bst.sagepub.com/content/31/4/303>

- **There is overwhelming evidence that wind turbines cause serious health problems in nearby residents, usually stress-disorder-type diseases, at a nontrivial rate.**
- **Proponents of turbines have sought to deny these problems by making a collection of contradictory claims including that the evidence does not “count,” the outcomes are not “real” diseases, the outcomes are the victims’ own fault, and that acoustical models cannot explain why there are health problems so the problems must not exist.**
- Moreover, though the failure of models to explain the observed problems does not deny the problems, it does mean that we do not know what, other than kilometers of distance, could sufficiently mitigate the effects.
- There has been no policy analysis that justifies imposing these effects on local residents.
- **The attempts to deny the evidence cannot be seen as honest scientific disagreement and represent either gross incompetence or intentional bias.**

# Livestock impacts

**May 19, 2011:** Recharge (news ): [Christiana Sciaudone, Rio de Janeiro](#) reported that Protesters blocked work at Iberdrola Renovables' La Venta Oaxaca wind project and that **The company declined to comment on the accusations, which have also included claims of deforestation, dead cattle and damaged crops:** source: <http://www.rechargenews.com/hardcopy/article237638.ece> ; <http://www.rechargenews.com/energy/wind/article257059.ece>

Livestock operations have been damaged or abandoned due to stray voltage and other adverse conditions and impacts like the one in photograph from Canada below. Similar reports have come from goat, dairy, beef cattle, alpaca, and crop farmers. ***Some residents have also reported damaging surges and brownouts from fluctuating power that destroyed sensitive equipment.***



**Iberdrola's Klondike II tower collapse resulted in one fatality:  
*turbine had been in operation for 500 hours***

source: <http://www.komonews.com/news/local/9383316.html>



**Iberdrola's Rugby Wind Farm:  
Failed rotor assembly  
crashed, with all 3 giant blades still  
attached, just five months after  
installation**

**Each blade weighs about 7 tons**  
<http://www.windaction.org/news/31645>



# Blinking night lighting can disrupt circadian rhythms & turbines malfunction



Turbines attract lightning. Fires are left to burn themselves out...



# December 2011 Turbine fire in Androssan Scotland during gale force winds



**4 Soitec Solar's 4 Boulevard CPV projects = 168 MW  
with 7,290 modules (each 48' x 25')**

planned for 1,453 acres (2.3 miles) in our community—next to homes.

***Totaling 8,748,000 square feet = 47.28 Walmart Supercenters***

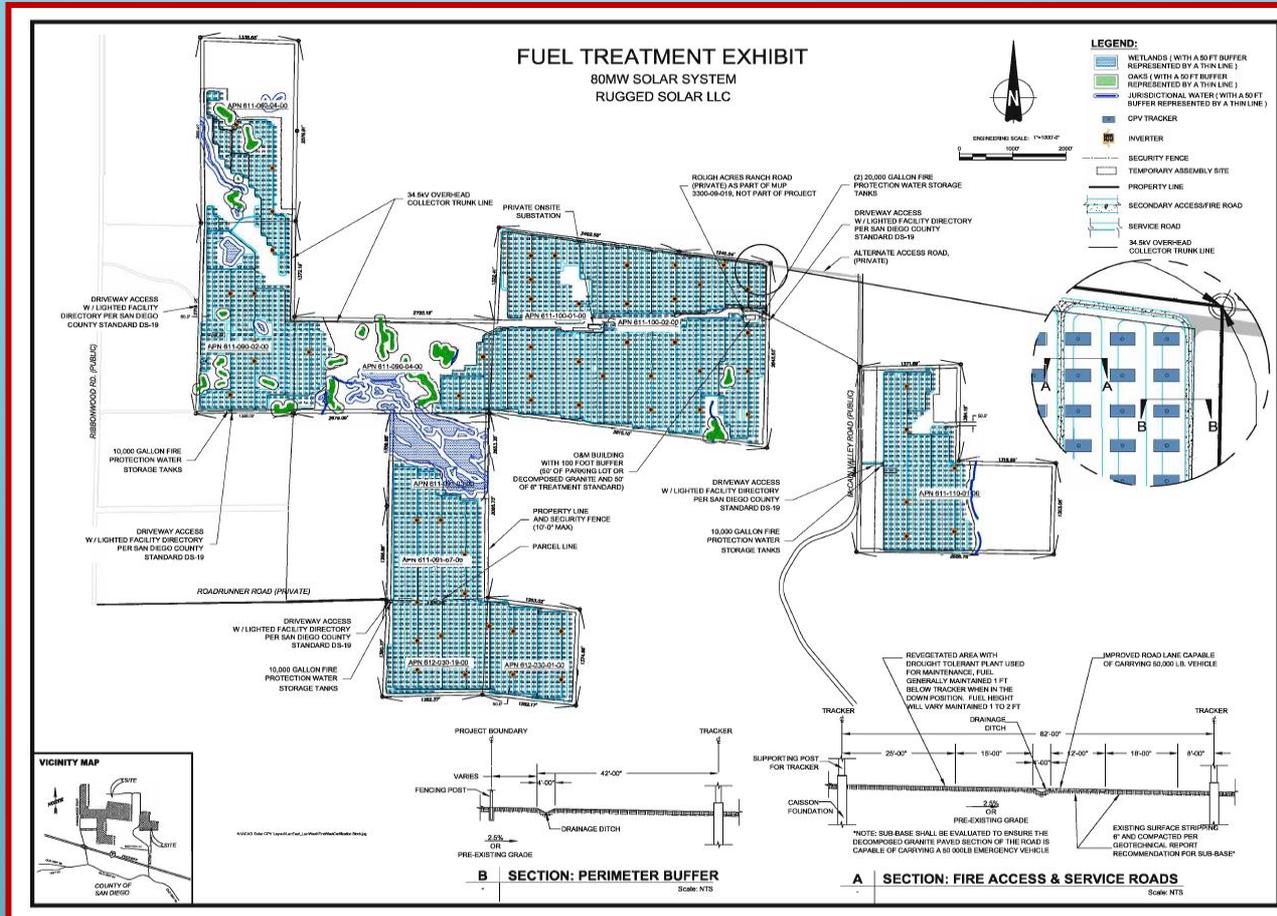
**Soitec CPV demo at UCSD La Jolla**



**Documented glare from Soitec module**

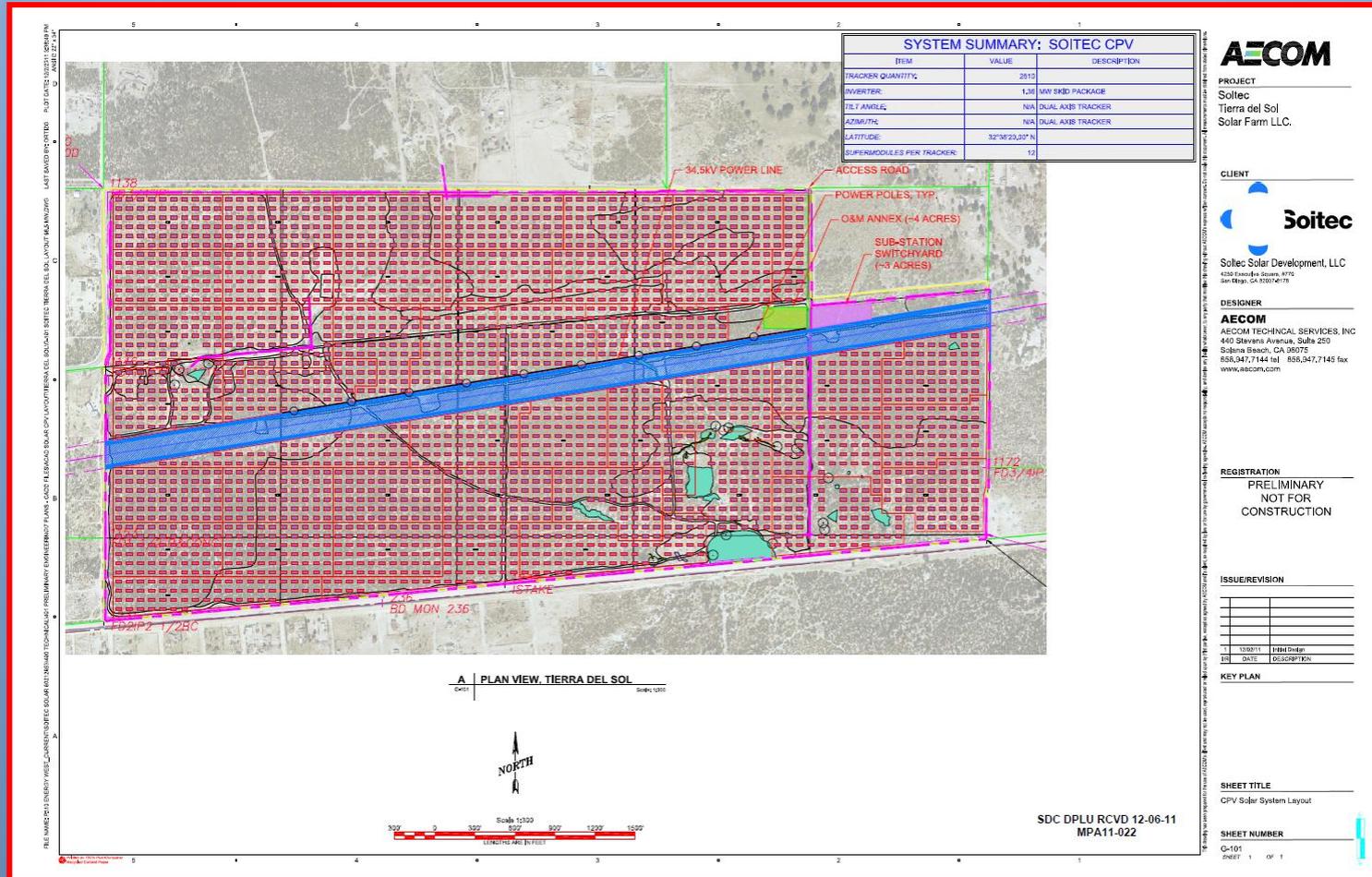


**Soitec's Rugged Solar with over 3,500 CPV modules,**  
 spans about 5.3 miles east to west in VERY HIGH FIRE SEVERITY ZONE with only 50' setbacks  
 from adjacent residences with livestock, oaks, wetlands, Tule Creek 100 year flood plain,  
 McCain Valley Conservation & Recreation Area, Golden Eagles, mountain lions,  
 & Bighorn sheep in adjacent ACEC



# Soitec's Tierra Del Sol Solar on the border in Boulevard.

Over 2,000 CPV modules abutting homes and small livestock operations on both sides of border—reliant on groundwater



# Industrial scale rural projects require lots of transmission / transformation

Turbine power lines in Michigan



Suncrest Substation in Alpine



# SDG&E 2-day transformer fire in Escondido

December 22, 2010

[http://www.energy.ca.gov/sitingcases/palomar/compliance/news/2011-08-04\\_Palomar\\_Fire\\_Report.pdf](http://www.energy.ca.gov/sitingcases/palomar/compliance/news/2011-08-04_Palomar_Fire_Report.pdf)

SDG&E's new ECO Substation for Boulevard area energy projects has a maximum capacity of over 500,000 gallons of transformer oil

*(ECO Substation PTC permit application)*

Day 1...



Day 2...



# We can't afford more fire ignition sources in our underserved rural areas

Just before the 2,556 acre Shockey Fire arrived at our ranch, burned 14 houses, and killed one neighbor

After...old growth chaparral fried along with its ability to sequester carbon, shelter wildlife, prevent erosion



# CEQA and General Planning

ignored for industrial scale renewables and cumulative impacts

<http://oag.ca.gov/environment/ceqa/planning>

- Unlike project-by-project permitting, CEQA review for the general plan looks at the “big picture,” allowing a community to align its long-term vision with important objectives, such as reducing greenhouse gas emissions and advancing environmental justice by avoiding additional impacts to communities already affected by pollution.

# General Plan Update & Boulevard Community Plan approved Aug 3, 2011—being amended for industry

source: [http://www.sdcounty.ca.gov/pds/press/Supervisors\\_Approve\\_GPUUpdate\\_8-3-2011.html](http://www.sdcounty.ca.gov/pds/press/Supervisors_Approve_GPUUpdate_8-3-2011.html)

- **General plans guide community development. Generally, they set the philosophy and policies that determine what gets built where.**
- The General Plan Update accomplishes that in part by shifting an estimated 20 percent of the development expected to occur in the future to western unincorporated communities with established infrastructure such as roads, fire protection and sewer services.
- **Reducing wildfire threats by locating more growth closer to existing fire stations.**
- **Reducing potential direct effects of development on biological habitat.**
- The General Plan Update was developed with broad public input from developers, business owners, environmentalists, farmers, homeowners, landowners and renters. To see the plan, go to [www.sdcounty.ca.gov/dplu/gpupdate](http://www.sdcounty.ca.gov/dplu/gpupdate).

# Standards ignored ...

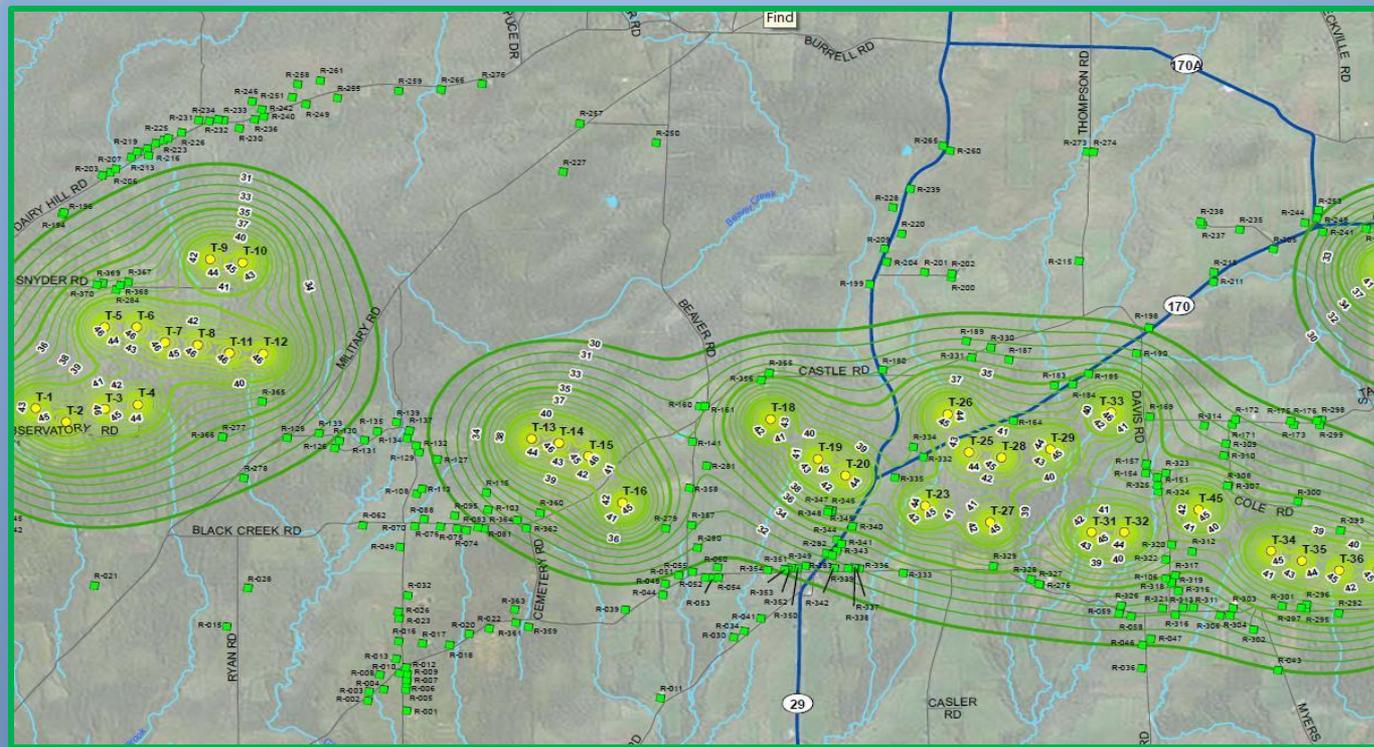
- **General Welfare Standard:** *"the establishment, maintenance or conducting of the use for which a use permit is sought will not, under the particular case, be detrimental to the public welfare, or injurious to property or improvements in the neighborhood (Hawkins v County of Marin (1976) 54 CalApp.3d.586)"*
- **Nuisance Standard:** "Any use found to be objectionable or incompatible with the character of the city and the environs due to dust, noise, odors, or other undesirable characteristics may be prohibited" (Snow v City of Garden Grove (1961) Cal.App.2d496)"
- **Zoning Consistency Standard:** "To obtain a permit, the applicant must generally show that the contemplated use is compatible with the policies in terms of the zoning ordinances, and that such use would be essential or desirable to the public convenience or welfare, and will not impair the integrity and character of the zoned district or be detrimental to the public health safety, morals, or welfare (O'Hagen v Board of Zoning Adjustment (1971) 19 Cal. App3d 151)."

# Iberdrola being sued by 60 Hardscrabble Wind neighbors, including professional negligence

<http://www.scribd.com/doc/114674283/Hardscrabble-Wind-lawsuit>

***The use of the CADNA/A noise model, and the ISO 9613-2 standard, understates real-world operational sound levels and is likely the root cause of the noise violations at the Iberdrola Hardscrabble Wind facility--the model was never validated for wind turbine noise***

Source: <http://www.windaction.org/fags/33327>



# The Wind Industry actions meet the definitions of Deceit, Constructive Fraud and Fraud

in my humble opinion

**Deceit:** One who willfully deceives another with intent to induce the other to alter his or her position to his or her injury or risk is liable for any damage suffered as a result of the deceit. [Civ. Code §1709]

**constructive fraud n.** when the circumstances show that someone's actions gives him/her an unfair advantage over another by unfair means (lying or not telling a buyer about defects in a product, for example), the court may decide from the methods used and the result that it should treat the situation as if there was actual fraud even if all the technical elements of fraud have not been proven.

# Actual Fraud

Do wind industry misrepresentations about noise and electrical pollution, product safety, reliability, and GHG reductions, meet the Definition of Fraud?

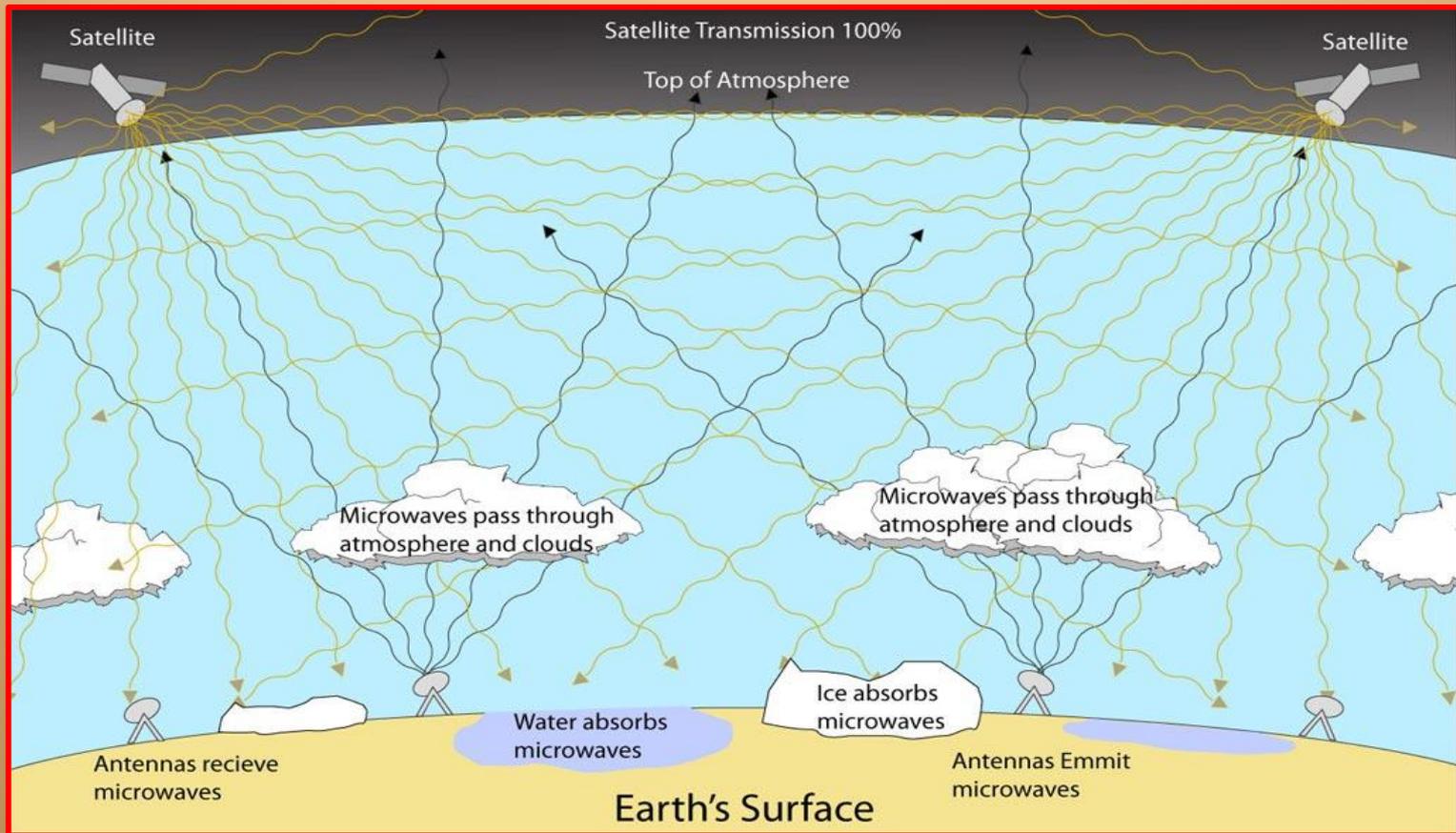
*In my opinion, YES.*

**Actual Fraud** consists of any of the following acts, committed by or with the connivance of a party to a contract with intent to deceive another party to the contract, or to induce the other party to enter into the contract [Civ. Code §1572]:

1. the suggestion, as a fact, of that which is not true, by one who does not believe it to be true;
2. the positive assertion, in any manner not warranted by the information of the person making it, of that which is not true, though the person making the assertion believes it to be true;
3. the suppression of that which is true, by one having knowledge or belief of the fact;
4. a promise made without any intention of performing it; and
5. any other act fitted to deceive.

Some scientists believe that increasing electromagnetic microwave pollution is the real global warming culprit that is destroying our atmosphere. *What if they are right?*

<http://globalmicrowave.org/microwaves.php>



# Electromagnetic Interference (EMI)

- Electromagnetic interference (EMI) is any natural or man-made electrical or electromagnetic energy that results in unintentional and undesirable equipment responses.
- Electromagnetic energy travels in the form of emissions, either conducted or radiated.
- Conducted emissions are generated inside electrical or electronic equipment and may be transmitted outward through the equipment's data input or output lines, its control leads, or its power conductors.
- Conducted emissions may cause an EMI problem between equipment that generates useful emissions and other equipment with low immunity to those same emissions.
- Radiated emissions are radio-frequency electromagnetic energy that travels through the air.
- Radiated emissions are also generated by electrical or electronic equipment and may be emitted from poorly shielded or unshielded power and data cables, leaky equipment apertures, inadequately shielded equipment housings, or normally operating equipment antennae.
- Whether conducted or radiated, emissions include three properties: amplitude, frequency, and waveform.
- EMI can occur in equipment with low immunity to emissions when any or all of these properties vary from normal—for example, emissions that are too high in amplitude, too low or too high in frequency, or whose waveforms are distorted. EMI can also occur when these properties are within normal operating parameters, usually resulting from an equipment's low immunity to emissions.  
[http://www.energy.ca.gov/process/pubs/power\\_quality.pdf](http://www.energy.ca.gov/process/pubs/power_quality.pdf)

# Dr. Neil Cherry:

excerpts

Setting Prudent Public Health Policy for Electromagnetic Field Exposures ; Evidence that Electromagnetic fields from high voltage powerlines and in buildings, are hazardous to human health,especially to young children ; <http://www.electric-fields.bris.ac.uk/>

- “There are over 70 studies showing that EMR across the spectrum increases the incidence of brain tumor 48 showing significant increases and 16 showing dose-response increases
- This gives overwhelmingly strong evidence that EMR/EMF induces brain and CNS cancer in children and adults in a causal manner.
- *This further reinforces the conclusion that electromagnetic fields and radiation are carcinogenic”*



## **Disturbance of the immune system by electromagnetic fields—A potentially underlying cause for cellular damage and tissue repair reduction which could lead to disease and impairment**

Olle Johansson \*

*The Experimental Dermatology Unit, Department of Neuroscience, Karolinska Institute, Stockholm, Sweden*

Received 23 August 2008; accepted 30 January 2009

- **EMFs disturb immune function through stimulation of various allergic and inflammatory responses, as well as effects on tissue repair processes. Such disturbances increase the risks for various diseases, including cancer.**
- These and the EMF effects on other biological processes (e.g. DNA damage, neurological effects, etc.) are now widely reported to occur at exposure levels significantly below most current national and international safety limits. Obviously, **biologically based exposure standards are needed to prevent disruption of normal body processes and potential adverse health effects of chronic exposure.**
- Based on this review, as well as the reviews in the recent Bioinitiative Report [<http://www.bioinitiative.org/>] [C.F. Blackman, M. Blank, M. Kundi, C. Sage, D.O. Carpenter, Z. Davanipour, D. Gee, L. Hardell, O. Johansson, H. Lai, K.H. Mild, A. Sage, E.L. Sobel, Z. Xu, G. Chen, The Bioinitiative Report—A Rationale for a Biologically-based Public Exposure Standard for Electromagnetic Fields (ELF and RF), 2007)], **it must be concluded that the existing public safety limits are inadequate to protect public health, and that new public safety limits, as well as limits on further deployment of untested technologies, are warranted.**

REVIEWS ON ENVIRONMENTAL HEALTH VOLUME 23, NO. 2, 2008  
**Setting Prudent Public Health Policy for Electromagnetic Field Exposures**

(excerpts)

<http://cetf.us/wp-content/uploads/2009/03/carpenterreh-emf.pdf>

<http://www.safespaceprotection.com/electrostress-from-power-lines.aspx>

- Low frequency electromagnetic fields, whose frequencies, harmonics and sub-harmonics coincide with the range of frequencies used by our brains, hearts and cells. Subtly and at extremely low intensities, they strongly interact, through resonant absorption, with primary functions of our bodies with significant elevations in depression, sickness and death.
- Cells use oscillating electromagnetic fields for many vital functions. Signals and substances that interfere with vital functions are hazardous and toxic.
- *Current standards do not protect people from many consistent and well established biological and health effects.* The international guideline (International Commission for Non-Ionizing Radiation Protection, ICNIRP (1998)) for public exposure to 50 Hz fields is 1000 mG and for 60 Hz is 833.3mG. These are set to avoid electric shock.

# Reducing Environmental Exposure

For AEHF's International Symposium 2007

EMF and RF Emission: Products, Devices and Their Intensities

By: Robin Ashton, Tang Lee PhD, Karen Taylor

March 23, 2007; Calgary, Alberta, Canada

- Stringent industry regulations are necessary to reduce the emissions from all sources of industry, including telecommunications
- Environmental protection measures must be initiated and implemented for our personal and corporate safety.
- *Standards and guidelines greatly reducing manmade electromagnetic pollution, which inadvertently contributes to global warming through heat generation, must be established.*
- All industries must become inherently interested in the safe construction of all electrical equipment, residential appliances, and their applications and usage.
- Safety driving standards and guidelines must be on an International scale.

# CEQA's Purposes: Empty words?

- “[M]ajor consideration [must be] given to preventing environmental damage, while providing a decent home and satisfying living environment for every Californian.” (*Id. at subd. (g).*) We must “[t]ake all action necessary to provide the people of this state with clean air and water, enjoyment of aesthetic, natural, scenic, and historic environmental qualities, and freedom from excessive noise.” (Pub. Res. Code, § 21001, subd. (b).)
- Specific provisions of CEQA and its Guidelines require that local lead agencies consider how the environmental and public health burdens of a project might specially affect certain communities.

## Attorney General's Report Interprets CEQA to Require Consideration of Environmental Justice Issues at the Local and Regional Levels

[http://oag.ca.gov/sites/all/files/pdfs/environment/ej\\_fact\\_sheet\\_final\\_050712.pdf](http://oag.ca.gov/sites/all/files/pdfs/environment/ej_fact_sheet_final_050712.pdf); <http://thomaslaw.com/attorney-general-releases-report-interpreting-ceqa-to-require-consideration-of-environmental-justice-issues-at-the-local-and-regional-levels/>

- **May 8, 2012**, the California Attorney General's office released a report entitled "Environmental Justice at the Local and Regional Level – Legal Background" (Report) which interprets existing law to impose environmental justice obligations that local governments must consider when approving specific projects and planning for future development.
- The Report interprets the California Environmental Quality Act (CEQA) and its implementing Guidelines to require lead agencies to consider the public health burdens of a project as they relate to environmental justice for certain communities. While the Report acknowledges that there is no mention of "environmental justice" within CEQA, the Report notes that CEQA's main purpose is to evaluate whether a project may have a significant effect on the physical environment, and asserts that "human beings are an integral part of the environment."

## Health in All Policies—

does not apply to industrial scale wind and solar power plants and web of related infrastructure

<http://oag.ca.gov/environment/communities/policies>

- Created in 2010 by [Executive Order S-04-10](#),
- The [Health in All Policies Task Force](#) is charged with identifying “priority programs, policies, and strategies to improve the health of Californians
- While advancing the goals of improving air and water quality, protecting natural resources and agricultural lands,
- Increasing the availability of affordable housing, improving infrastructure systems, promoting public health, planning sustainable communities,
- And meeting the climate change goals.”

# Environment & Public Health

Climate Change's Unequal Impacts / from Dept of Justice State Attorney General

<http://oag.ca.gov/environment/climate-change/unequal-impacts>

- The Office of Environmental Health Hazard Assessment stated in its 2010 [report](#), the adverse impacts of climate change are expected disproportionately to affect those who are socially and economically disadvantaged, including the urban poor, the elderly, children, traditional societies, agricultural workers and rural populations.
- *Disproportionate impacts can occur where certain groups lack the social and economic resources necessary to relocate to avoid impacts, or to purchase the technology necessary to adapt to our changing climate.*
- According to a 2009 [report](#) by California's Climate Change Center, “[w]ithout proactive policies to address these equity concerns, *climate change will likely reinforce and amplify current as well as future socioeconomic disparities, leaving low-income, minority, and politically marginalized groups with fewer economic opportunities and more environmental and health burdens.*”

# California Constitution:

## Where is the Equal Protection?

ARTICLE 1 DECLARATION OF RIGHTS SECTION 1.

source: [http://www.leginfo.ca.gov/.const/.article\\_1](http://www.leginfo.ca.gov/.const/.article_1)

- All people are by nature free and independent and have inalienable rights. **Among these are enjoying and defending life and liberty, acquiring, possessing, and protecting property, and pursuing and obtaining safety, happiness, and privacy.**
- Nothing in this subdivision supersedes or modifies any provision of this Constitution, **including the guarantees that a person may not be deprived of life, liberty, or property without due process of law, or denied equal protection of the laws, as provided in Section 7.**
- **A citizen or class of citizens may not be granted privileges or immunities not granted on the same terms to all citizens.**
- SEC. 19. (a) Private property may be taken or damaged for a public use and only when just compensation, ascertained by a jury unless waived, has first been paid to, or into court for, the owner....

# What you can do to strengthen CEQA and Health in All Policies:

- Help disproportionately impacted communities secure independent, multidisciplinary, scientifically valid, and peer reviewed field testing and documentation—to defend themselves.
- New Biologically based standards are needed to protect public health and safety for electrical, noise, and low-frequency noise pollution.
- Help convince the CPUC it is past time to review EMF guidelines to address new and emerging science and health information and significant new sources such as massive new wind and solar generation facilities.
- Ensure equal protection and ‘health in all policies’—including Health Impact Assessments for renewable energy projects.
- Please educate yourself and help get the word out

We will be watching...please help if you can  
Thank you!

