BOULEVARD PLANNING GROUP

PO BOX 1272, BOULEVARD, CA 91905

DATE: April 7, 2019

TO: Bronwyn Brown, PDS via Bronwyn.brown@sdcounty.ca.gov

FROM: Donna Tisdale, Chair; and as an individual tisdale.donna@gmail.com; 619-766-4170; PO Box 1275, Boulevard, CA 91905

RE: JVR ENERGY PARK: PDS2018-GPA-18-010, PDS2018-REZ-18-007, PDS2018-MUP-18-022, PDS2018-ER-18-22-001 – NOTICE OF PREPARATION (3-7-19) & CEQA INITIAL STUDY - PRELIMINARY PROJECT COMMENTS

At our regular meeting held on April 4th, after a public discussion with Jacumba and Boulevard residents on the pros and cons of the project, our Group voted to authorize the Chair to submit comments in opposition to JVR Energy Park. The vote passed with 5 yes, 0 no, 1 abstention (Keane) and 1 absent (Excused-Goodnight).

Ironically, the April 8 comment deadline is just one of two 8 + hour days that SDG&E has informed locals that power will be shut off this week starting at 7:30 or 8:30 AM. This seems to happen to backcountry communities far too often, while energy from these massive projects continues to flow to distant customers—even when we our power is shut-off!

A reminder that PDS's Mission Statement applies to all communities, including Jacumba Hot Springs and they should step up to protect and defend residents the way San Bernardino and Los Angeles County has—instead of overriding significant and cumulatively significant impacts:

- **Planning & Development Services: Our Mission**[1]
  Through operational excellence and attention to customer service, we strive to balance community, economic, and environmental interests to ensure the highest quality of life for the public of San Diego County.

First and foremost, San Bernardino County Board of Supervisors recently banned industrial scale solar on private land. Staff should recommend that San Diego County Board of Supervisors should do the same in order to prevent further damage and harm to predominantly low-income environmental justice communities that are already bearing an undue and disproportionate burden of these massive and incompatible energy projects that serve distant consumers.

- **Los Angeles Times:** On February 28, 2019, the Supervisors for California's largest county voted 4-1 to ban the construction of large solar and wind farms on more than 1 million acres of private land, responding to residents who say they don't want renewable energy projects industrializing their rural desert communities northeast of Los Angeles[2].

[1] https://www.sandiegocounty.gov/content/sdc/pds.html
[2] https://www.latimes.com/business/la-fi-san-bernardino-solar-renewable-energy-20190228-story.html

- **PV-Magazine:** "More than one million acres (~1,600 square miles) of this will be closed off to large-scale solar and wind development. The San Bernardino County Board of Supervisors voted 4-1 to ban "utility-oriented renewable energy" in fourteen communities and in "rural living zoning districts" throughout the county. What the board has designated as "community-oriented renewable energy" (CORE), will be allowed. This includes rooftop or on-site solar projects, as well as "shared energy generation to be used primarily by local users", a designation which could include community solar projects. The primary distinction appears to be whom it serves. According to county documents, if more than 50% of a project's output is sold "to the energy grid", then it is not CORE and will not be allowed".[3]
- **In 2015, *The Los Angeles County Board of Supervisors unanimously approved a motion by Mayor Michael D. Antonovich to ban utility-scale wind turbines in the unincorporated areas of Los Angeles County*[4] *"**…The motion also directed the Department of Public Health to report back in 60 days on a protocol for requiring soil tests to detect Valley Fever when developing renewable energy projects in the Antelope Valley…'Wind turbines create visual blight on the desert landscape, generate noise, impact wildlife and contradict the county's [ordinance from the Dark-Sky Association] in the Antelope Valley,' says Antonovich. 'Our residents have consistently opposed wind turbine development that would create an industrial backdrop similar to what Kern County has allowed in the Tehachapis.'"*

The Project application is incomplete per the County's requirements, and for purposes of the Permit Streamlining Act (Government Code § 65920 et seq.). To date, we have not received any grading plans or documentation disclosing how much grading will be required; or if valuable top soil will be sold or removed off-site as has reportedly happened to unsuspecting farm owners in Imperial County who saw their top soil being hauled away. Along with other deficiencies, Greenhouse Gas Emissions must be fully analyzed in DEIR, including life-cycle analysis and long-haul transportation of project components, off-gassing from electrical and energy storage components, loss of carbon sequestration through soil disruption and grading, and potential toxic fumes generated by project fires.

Basic objections: The project is not needed; there are better alternatives closer to consumers; it is too large, too close, and potentially too dangerous for the community. Direct, indirect and cumulatively significant impacts outweigh any alleged benefits. There is no proposed open space or trails. The project would destroy tourism-based businesses like the Jacumba Hot Springs Spa (that already reportedly suffered a loss of sale due to Project and related impacts). It would also destroy existing farmland , potential much-needed housing options, historic Ketchum Ranch buildings and related open space; and replace them with visually intrusive, habitat destroying, high density sea of solar and electrical infrastructure including large inverter/battery storage units that will generate noise and electrical emissions in a currently quiet location. It will further industrialize and add cumulatively significant insult to injury for the backcountry; and much more.

[3] https://pv-magazine-usa.com/2019/03/01/san-bernardino-county-bans-large-scale-solar-wind-in-some-areas/
[4]

BETTER ALTERNATIVES ARE AVAILABLE THAT DON'T DOMINATE AND DESTROY RURAL COMMUNITIES, PUBLIC HEALTH AND SAFETY, QUALITY OF LIFE & RURAL PROPERTY VALUES:

- According to a recent **Voice of San Diego article(3-26-19)**[5] by local renewable energy expert, Bill Powers of Powers Engineering, and Jay Powel, a member of the City's Sustainable Energy Advisory Board, the potential for solar siting just in the City of San Diego exceeds 4,000 megawatts[6], or enough to largely satisfy the city's electricity needs.

- **San Diego Union Tribune article (1-15-19) on another solar siting survey[7]: There's a lot more solar San Diego can tap, siting survey says[8]:**
    - *"Survey identifies best sites for solar.The Solar Siting Survey identified approximately 500 megawatts of solar opportunities for large scale deployments within San Diego. More than 75 percent of the sites were found on parking lots and structures"*.
    - *The 500 MW potential noted above just looks at sites 1 MW and above.*
    - *The Clean Coalition says if smaller solar projects are considered, far greater opportunity exists. The total becomes 1 GW if the minimum project size is 500 kW. The potential doubles again if the minimum is dropped to 100 kW, for a total 2 GW solar potential in the city.*
- Please take notice that both solar siting surveys referenced in the two bullet points above, only cover the City of San Diego *and not San Diego County's much larger area of opportunity*.
- **The Coalition for Clean Energy's Wholesale Distributed Generation[9] and North Bay Resiliency Initiative**[10] proposals can serve as a guide for San Diego area Community Choice Energy entities that will reduce reliance on distant and destructive industrial scale energy sources (like JVR) and fire prone transmission lines like Sunrise Powerlink and Southwest Powerlink.
    - Wholesale distributed generation (WDG) refers to distributed energy generation, often commercial-scale solar that interconnects to the distribution grid and serves local loads while avoiding any use of the transmission grid. Rather than serving one customer, these systems can serve an entire community, while avoiding the expensive, inefficient transmission lines required by remote power generation.

[5] https://www.voiceofsandiego.org/topics/opinion/san-diego-should-make-the-most-of-once-in-a-generation-shot-to-re-examine-sdge-deal/

[6] https://www.google.com/get/sunroof/data-explorer/place/ChIJSx6SrQ9T2YARed8V_f0hOg0/

[7] https://www.sandiegouniontribune.com/business/energy-green/sd-fi-solar-siting-survey-20190115-story.html

[8] https://clean-coalition.org/solar-siting-survey-san-diego/

[9] https://clean-coalition.org/wholesale-distributed-generation/

[10] https://clean-coalition.org/wp-content/uploads/2019/03/North-Bay-Community-Resilience-Initiative-Master-Webinar-15_rf-4-Apr-2019.pdf

- Total Ratepayer Cost of Solar[11]

	Distribution Grid					T-Grid
PV Project size and type	100 kW roof	500 kW roof	1 MW roof	1 MW ground	5 MW ground	50 MW ground
Required PPA Rate	12-15¢	9-12¢	8-10¢	6-8¢	4-7¢	3-6¢
T&D costs	0¢	0¢	0¢	0¢	0¢	2-4¢
Ratepayer cost per kWh	12-15¢	9-12¢	8-10¢	6-8¢	4-7¢	5-10¢

- There is absolutely no need to dominate and destroy already overburdened and disproportionately impacted and predominantly low-income rural communities like Jacumba Hot Springs and Boulevard.
- Regarding California's path towards 100% renewables, California Public Utilities Commission President Michael Picker suggested recently that we could soon return "the kind of crisis we faced in 2000 and 2001." The rapid abandonment of existing reliable energy sources makes the state, in the estimate of the Institute for Energy Research, "vulnerable to rolling blackouts."[12]

ENVIRONMENTAL JUSTICE APPLIES TO THE JACUMBA COMMUNITY THAT IS PREDOMINANTLY LOW-INCOME WITH MANY RESIDENTS LIVING/ SURVIVING ON SERIOUSLY LIMITED INCOMES:

- The JVR solar project footprint dwarfs the size of the Jacumba Hot Springs, a designated border Colonia, where many residents are elderly with pre-existing health issues and severely limited incomes. They do not have many, if any, affordable options; especially for those who live in older trailers in the trailer park immediately west of the JVR project boundaries.
- CEQA, at its heart simply demands that a government agency fully contemplate and disclose the foreseeable consequences of its actions and avoid unnecessary environmental risks.
- California Office of Attorney General Office Health In all Policies Task Force has the following Goals created in 2010 by Executive Order S-04-10, the Health in All Policies Task Force[13]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."
- The Attorney General sits on the Task Force, along with officers of 18 other California state agencies, departments, and offices. Their identified goals include the following: o
    - All California residents live in safe, healthy, and affordable housing.
    - California's decision makers are informed about the health consequences of various policy options during the policy development process.
    - Environmental Justice & Healthy Communities[14]

[11] https://clean-coalition.org/wholesale-distributed-generation/
[12] http://capitolweekly.net/amid-renewable-energy-california-shortage-looms/#disqus_thread
[13] https://oag.ca.gov/environment/communities/policies
[14] https://oag.ca.gov/environment/communities

- "Environmental Justice" is defined in California law 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. (Cal. Gov. Code, § 65040.12, subd. (e).)

PROBABLE ENVIRONMENTAL EFFECTS @ PAGE 1: GREEN HOUSE GAS EMISSIONS, POPULATION & HOUSING AND RECREATION SHOULD ALL BE ADDED TO THE ISSUES INCLUDED IN THE EIR/MUP.

- Project effects on human health, social and economics, are part of the environment and must be fully analyzed, including potentially significant effects on health and safety, quality of life, use and enjoyment of property, property values, potential loss of life-time investments, increased fire insurance costs or loss of insurance due to potential approval of the 90 MW JVR Energy Park solar project and related infrastructure, all of which represent individually and cumulatively significant increase in wild fire ignition sources and fire fighting impediments/hazards.
- Fire fighters will need to wait for a fire to burn out of the project area to avoid potential electrical /toxic fumes hazards, thereby allowing a fire to potentially increase in size of blow out of control.
- BayWa r.e advertises that they are part of the €16 billion BayWa Group.[15]
- Corporate gain often results from externalizing many Project related costs to the impacted community and the environment. By doing so, many true costs become lost in analysis because the true cost is non-quantifiable and neither the community nor the environment have effective advocates to recoup the true damages.
- We are requesting that BayWa and any other related property owners be required to offer PROPERTY VALUE PROTECTION AGREEMENTS to willing community members to help mitigate the very real overall negative impacts their project represents to a rural community and residents who have invested in Jacumba to enjoy a quiet and affordable rural lifestyle.
- Some form of similar protection agreements should be provided for low-income renters who have few if any viable or affordable alternatives for moving if the project becomes unbearable.
- **Green House Gas Emissions**: The EIR must analyze not only the greenhouse gas emissions from Project construction and operation, but also its lifecycle emissions, including those associated with both the manufacturing and the transporting of the Project components. Currently, the Initial Study indicates that related impacts are less than significant.
    - **IEEE Spectrum article (11-14-2014) by Dustin Mulvaney: Solar Energy Isn't Always as Green as You Think**[16]:
        - This article reviews some of the problems and struggles to keep photovoltaics green including life-cycle issues of mining, production, green house gas emissions, hazardous chemicals and byproducts, disposal and more.

[15] https://us.baywa-re.com/en/about-us/baywa-re/company-information/

[16] https://spectrum.ieee.org/green-tech/solar/solar-energy-isnt-always-as-green-as-you-think

- **Population & Housing:** The project is far too close to existing residences and may cause some homes to become toxic and unlivable due to project generated noise, vibrations, electrical pollution and more. There are limited affordable alternatives for those impacted.
- **Recreation:** The 20-acre Jacumba Park and community center will be intruded upon and the use and enjoyment of the park will be significantly degraded by this project. Visits to the park will not be as relaxing or enjoyable with a visually intrusive electronically buzzing solar project and industrial chain link fence topped with barbed wire right next door.
    - The project is divided by Old Hwy 80 that is frequently used by locals and visitors as a walking and bicycle route for pleasure and exercise.
    - The Active Transportation Plan (ATP) for Jacumba shows Proposed Bicycle Facilities all along Old Hwy 80 and along Carrizo Gorge Road that will be negatively impacted.[17]
    - Local recreation on public and private land, including Anza Borrego Desert State Park and BLM recreation areas at higher elevations, with views of this project, will be negatively impacted by this massive industrial conversion of former dairy and organic farmland and all the visual, acoustic, and overall disruptive impacts that go with it.
    - Round Mountain is adjacent to the project and is located mostly within Anza Borrego Desert State Park and, according to Dudek's Figure 1-3 Project Environmental Setting graphic at page 29 in the JVR Energy Park Project Description dated November 2018.
    - The Jacumba Airport is used mostly for recreational glider flights. Flying over glaring solar project components will not be as enjoyable as current views, or as safe.
    - Updrafts of super-heated air from the solar project may be very problematic and potentially dangerous for aircraft using the airport.

REGIONAL MAP @ PAGE 2:

- The regional map used in the NOP should have included the proposed locations and proximity of all the solar project components, similar to the Kimley-Horn preliminary plot plans for the JVR Energy Park issued 1/22/19.
- The project footprint dwarfs the predominantly low-income rural community of Jacumba Hot Springs.
- The project is far too large and crowds the town. It should be denied outright or, at a minimum, vastly reduced with significantly increased setbacks from town boundaries and other existing residences, the park, Old Hwy 80, flood channels, and Round Mountain/Anza Borrego Desert State Park (ABDSP), and the airport.

CEQA INITIAL STUDY:

- **# 5 PAGE 1:** The project description is not compatible with findings of the Mountain Empire Subregional Plan[18] or Jacumba's Vision statement included in their Jacumba Subregional Group Area[19] adopted 8-3-2011

[17] https://www.sandiegocounty.gov/content/dam/sdc/pds/advance/activetransportationplan/ATPcommunityJacumba.pdf

[18] https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/MTN_Empire_CP.pdf

[19] https://www.sandiegocounty.gov/content/dam/sdc/pds/docs/CP/Jacumba_CP.pdf

- **Vision Statement for Jacumba**: Jacumba is a diverse community. The ratio of young to older citizens is about even, which makes the vision diverse as well. We want schools for the young, as well as much needed services, like fire protection, police, and medical care, and still not lose the wonderful feeling that is Jacumba. Clean air, beautiful scenery, superb climate, and no congestion or traffic. The community supports new development that is compatible with, and preserves the natural and historical environment, including water resources, and protects existing neighborhoods, manages growth to reinforce the rural small town character of the area, which includes agriculture, open space, and trails as important elements of the community. The community supports the provision of adequate public services by new development without compromising existing levels of service or burdening existing residents with the costs of growth. We hope someday to become the jewel of the backcountry
- **Mountain Empire Subregional Plan # 2 Land Use Element @ page 6: (excerpt)**
  - All residents of the Mountain Empire Subregion are aware of the importance that must be given to protecting the unique quality of the area's natural resources. Existing trees, rock outcroppings, hillsides, and meadows are significant resources that contribute to the character and beauty of the Subregion.
  - **Residential Goal @ page 7**:
    - The Mountain Empire Subregion is generally characterized by single family residential development on large lots outside the Rural Villages, and generally undeveloped meadows, open spaces, and hillsides. The ability to experience large open spaces and views to distant hills is essential to preserving the Subregion's present quality of life.
  - **KETCHUM RANCH SPECIFIC PLAN AREA @ page 13:**
    - The Ketchum Ranch Specific Plan proposes a multi-use concept, a residential community with recreational and visitor oriented commercial uses on approximately 1,300 acres next to Jacumba. The Ketchum Ranch Specific Plan proposal shall create a community in harmony with the existing town of Jacumba and provide services to the existing residents of Jacumba. It will also be sensitive in its design to the natural and historical resources of the Jacumba area. Adequate provisions shall be made to prevent periodic flooding originating at the Mexican border.
  - **SCENIC HIGHWAYS GOAL #8 at page 27: (emphasis added)**: ESTABLISH A NETWORK OF SCENIC HIGHWAY CORRIDORS WITHIN WHICH SCENIC, HISTORICAL AND RECREATIONAL RESOURCES ARE PROTECTED AND ENHANCED. FINDINGS There are five scenic corridors identified on the Scenic Highways Figure C-5 in the County General Plan Conservation and Open Space Element that pass through the Mountain Empire Subregional Plan Area. 1. Tecate Road (State Route 188), from the Mexican border north to State Route 94; 2. Potrero Valley Road, from State Route 94 to Potrero County Park; 3. *Interstate 8, from State Route 79 east to the Imperial County Line*; 4. State Route 94, through

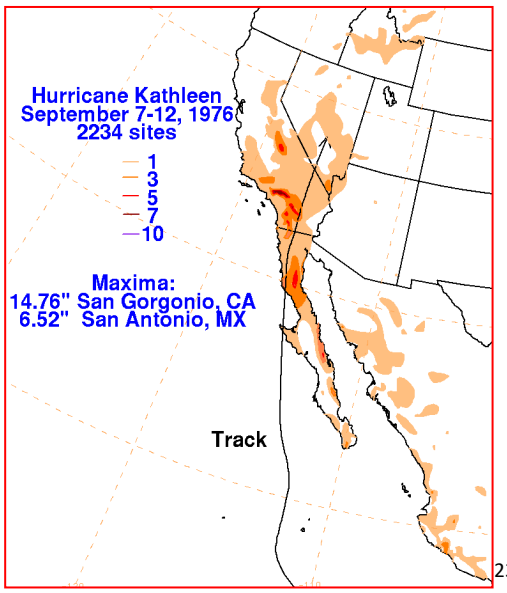
Tecate, Potrero, Boulevard, and Jacumba; 5. *Old Highway 80 through Boulevard and Jacumba*.

- **Appendix A: Resource Conservation Areas:**
  - **Figure 2@ page A-3:** Please note that while other community planning areas include Resource Conservation Areas there are zero RCA's in Jacumba or Boulevard Planning Areas, where scenic and unique transitional areas and resources between the mountains and the desert are located and disproportionately impacted.

- **2003 designation of Jacumba as a Colonia**[20], was intended to help the JCSD qualify for grants to upgrade and improve its water system *to serve the existing community. NOT to serve commercial industrial utility projects owned by wealthy developer residing in distant areas.*
- Will any JCSD wells, as potentially indicated by wells being located within the project boundaries, be used for this project; and how does this comply with the Colonia designation and related JCSD grants when it will not be serving the existing community?

FLOODING:

- Jacumba is not immune to flooding, including flooding from Hurricane Kathleen in 1976[21] that washed out parts of I-8 and did about $1.25 million in damage to 25 miles of San Diego and Arizona Eastern railroad tracks between Jacumba and Ocotillo[22].



[23]

- The photos below (by Danielle Thomas) are included in an East County Magazine article of a flash flood in Jacumba[24], including the project site south of Old 80 (left) and north of Old 80 with Round Mountain in the background (right).

[20] http://bosagenda.sdcounty.ca.gov/agendadocs/doc?id=0901127e8008686c
[21] https://en.wikipedia.org/wiki/Hurricane_Kathleen_(1976)
[22] http://original.trainlife.com/magazines/pages/773/50488/october-1976-page-4
[23] https://www.wpc.ncep.noaa.gov/tropical/rain/kathleen1976.html

[24] https://www.eastcountymagazine.org/flash-flood-jacumba-hot-springs

PROJECT DESCRIPTION # 8 @ PAGE 2:

- **PV Modules**
  - How many square feet of surface are represented by approximately 300,000 PV modules?
  - The PV module selection should be disclosed during public comment so the public has the opportunity to research and comment on any potential issues and concerns related to that specific module and any project using that module can be made.
  - Again, the guaranteed useful life is module specific.
  - Pile driving of each beam 10-15 feet into the ground should be analyzed for noise and vibrations.
- **Electrical Collection System**
  - This system should be buried.
- **Inverters, Transformers & Associated Equipment**
  - The photo below was taken by Donna Tisdale in September 2013 at one of the industrial solar projects built on productive farm land in Western Imperial County, south of I-8.

- This section should disclose that the project includes at least 25 inverter/transformer units, how large each unit is, and how loud each unit will be.
- The actual type of inverters/transformers should be disclosed during public comment—not after-the-fact.

- **Electromagnetic fields (EMF) electromagnetic interference (EMI) and electrical pollution in general.**
  - **Electrical Magnetic Interference (EMI) and Radio Frequency Interference (RFI) are common electrical pollution problems that must be addressed**[25], especially when the project is proposed so close to non-participating residents.
  - Wind and solar projects dump energy into the ground when they are curtailed and when harmonics pose a threat to their own equipment. That transient/stray voltage moves off-site and into homes and businesses through plumbing and other grounded equipment. Energy can also be radiated through the air and inducted into occupied structures through utility lines.
  - **French farmers say wind turbines and solar panels have killed hundreds of their cows**[26]
    - Cows are being killed by electricity travelling through the ground, farmers claim
    - French farmer says hundreds of cows being killed by solar panels and turbines
    - Cattle in Brittany began losing weight and eventually died so land was tested
    - Electrical current was said to be found coming thought the earth and the water
  - **Majid Bagheri Hosseinabadi, Narges Khanjani, Mohammad Hossein Ebrahimi, Bahman Haji & Mazaher Abdolahfard (2019) The effect of chronic exposure to extremely low-frequency electromagnetic fields on sleep quality, stress, depression and anxiety, Electromagnetic Biology and Medicine, 38:1, 96101, DOI: 10.1080/15368378.2018.1545665**
    - Abstract: (emphasis added): "*Exposure to extremely low-frequency electromagnetic fields (ELF-EMF) is inevitable in some industries. There are concerns about the possible effects of this exposure. The present study aimed to investigate the effect of chronic exposure to extremely low-frequency electromagnetic fields on sleep quality, stress, depression and anxiety among power plant workers.*
    - *In this cross-sectional study, 132 power plant workers were included as the exposed group and 143 other workers were included as the unexposed group. The intensity of ELF-EMF at work stations was measured by using the IEEE Std C95.3.1 standard and then the time weighted average was calculated. Sleep quality, stress, depression and anxiety were measured by using the Pittsburgh Sleep Quality Index Questionnaire; and the Depression, Anxiety and Stress Scale.*
    - *The workers in the exposed group experienced significantly poorer sleep quality than the unexposed group. Depression was also more severe in the exposed group than the unexposed group (P = 0.039). Increased exposure to ELF-EMF had*

[25] https://www.solar-electric.com/reducing-electromagnetic-interference-pv-systems.html
[26] https://www.dailymail.co.uk/news/article-6855801/French-farmers-say-wind-turbines-solar-panels-killed-hundreds-cows.html

a direct and significant relation with increased stress, depression, and anxiety. Sleep quality in technicians with the highest exposure was significantly lower than the other groups.

- *This study suggests that long-term occupational exposure to ELF-EMF may lead to depression, stress, anxiety and poor sleep quality.*"

- **Electromagnetic field (ELF-EMF) on cytokines of innate and adaptive immunity, Electromagnetic Biology and Medicine, 38:1, 8495, DOI: 10.1080/15368378.2018.1545668**[27]
  - Abstract: (emphasis added) *"Extremely low frequency electromagnetic field (ELF-EMF) is produced extensively in modern technologies. Numerous in vitro and in vivo studies have shown that ELF-EMF has both stimulatory and inhibitory effects on the immune system response. This review was conducted on effects of ELF-EMF on cytokines of innate and adaptive immunity. Mechanisms of ELF-EMF, which may modulate immune cell responses, were also studied. Physical and biological parameters of ELF-EMF can interact with each other to create beneficial or harmful effect on the immune cell responses by interfering with the inflammatory or anti-inflammatory cytokines. According to the studies, it is supposed that short-term (2-24 h/d up to a week) exposure of ELFEMF with strong density may increase innate immune response due to an increase of innate immunity cytokines. Furthermore, long-term (224 h/d up to 8 years) exposure to low-density ELF-EMF may cause a decrease in adaptive immune response, especially in Th1 subset*."
- **EUROPAEM EMF Guideline 2016 for the prevention, diagnosis and treatment of EMF-related health problems and illnesses**[28]**:**Igor Belyae, Amy, Horst Eger, Gerhard Hubmann, Reinhold Jandrisovits, Markus Kern, Michael Kundi, Hanns Moshammer, Piero Lercher, Kurt Müller, Gerd Oberfeld, Peter Ohnsorge, Peter Pelzmann, Claus Scheingraber, Roby Thill: Published Online: 2016-07-25 | DOI: https://doi.org/10.1515/reveh2016-0011:
  - Abstract (emphasis added):
  - *"Chronic diseases and illnesses associated with non-specific symptoms are on the rise. In addition to chronic stress in social and work environments, physical and chemical exposures at home, at work, and during leisure activities are causal or contributing environmental stressors that deserve attention by the general practitioner as well as by all other members of the health care community. It seems necessary now to take "new exposures" like electromagnetic fields (EMF) into account. Physicians are increasingly confronted with health problems from unidentified causes. Studies, empirical observations, and patient reports clearly indicate interactions between EMF exposure and health problems. Individual susceptibility and environmental factors are frequently neglected. New wireless technologies and applications have been introduced without any certainty about their health effects, raising new challenges for medicine and society. For instance, the issue of so-called non-thermal effects and potential long-term effects of low-dose exposure were scarcely investigated prior to the introduction of these technologies. Common electromagnetic field or EMF sources: Radio-frequency radiation (RF) (3 MHz to 300 GHz) is emitted from radio and TV broadcast antennas, WiFi access*

[27] https://www.researchgate.net/publication/329451963_A_review_on_the_effects_of_extremely_low_frequency_electromagnetic_field_ELF-EMF_on_cytokines_of_innate_and_adaptive_immunity

[28] https://www.degruyter.com/view/j/reveh.2016.31.issue-3/reveh-2016-0011/reveh-2016-0011.xml

points, routers, and clients (e.g. smartphones, tablets), cordless and mobile phones including their base stations, and Bluetooth devices. Extremely low frequency electric (ELF EF) and magnetic fields (ELF MF) (3 Hz to 3 kHz) are emitted from electrical wiring, lamps, and appliances. Very low frequency electric (VLF EF) and magnetic fields (VLF MF) (3 kHz to 3 MHz) are emitted, due to harmonic voltage and current distortions, from electrical wiring, lamps (e.g. compact fluorescent lamps), and electronic devices. On the one hand, there is strong evidence that longterm exposure to certain EMFs is a risk factor for diseases such as certain cancers, Alzheimer's disease, and male infertility. On the other hand, the emerging electromagnetic hypersensitivity (EHS) is more and more recognized by health authorities, disability administrators and case workers, politicians, as well as courts of law. We recommend treating EHS clinically as part of the group of chronic multisystem illnesses (CMI), but still recognizing that the underlying cause remains the environment. In the beginning, EHS symptoms occur only occasionally, but over time they may increase in frequency and severity. Common EHS symptoms include headaches, concentration difficulties, sleep problems, depression, a lack of energy, fatigue, and flu-like symptoms. A comprehensive medical history, which should include all symptoms and their occurrences in spatial and temporal terms and in the context of EMF exposures, is the key to making the diagnosis. The EMF exposure is usually assessed by EMF measurements at home and at work. Certain types of EMF exposure can be assessed by asking about common EMF sources. It is very important to take the individual susceptibility into account. The primary method of treatment should mainly focus on the prevention or reduction of EMF exposure, that is, reducing or eliminating all sources of high EMF exposure at home and at the workplace. The reduction of EMF exposure should also be extended to public spaces such as schools, hospitals, public transport, and libraries to enable persons with EHS an unhindered use (accessibility measure). If a detrimental EMF exposure is reduced sufficiently, the body has a chance to recover and EHS symptoms will be reduced or even disappear. Many examples have shown that such measures can prove effective. To increase the effectiveness of the treatment, the broad range of other environmental factors that contribute to the total body burden should also be addressed. Anything that supports homeostasis will increase a person's resilience against disease and thus against the adverse effects of EMF exposure. There is increasing evidence that EMF exposure has a major impact on the oxidative and nitrosative regulation capacity in affected individuals. This concept also may explain why the level of susceptibility to EMF can change and why the range of symptoms reported in the context of EMF exposures is so large. Based on our current understanding, a treatment approach that minimizes the adverse effects of peroxynitrite – as has been increasingly used in the treatment of multisystem illnesses – works best. This EMF Guideline gives an overview of the current knowledge regarding EMF-related health risks and provides recommendations for the diagnosis, treatment and accessibility measures of EHS to improve and restore individual health outcomes as well as for the development of strategies for prevention."

- **Effects of Exposure to Electromagnetic Fields: 833 Studies[29];Posted February 1, 2018 on Electromagnetic Radiation Safety by Joel M. Moskowitz, Ph.D. Director Center for Family and Community Health, School of Public Health University of California, Berkeley** :
    - Government and industry-linked scientists often claim that the research on the effects of exposure to electromagnetic fields (EMF) is inconsistent, and that more research is needed before precautionary warnings are issued or regulatory guidelines are strengthened.
    - Although most of the research on cell phones has focused on radio frequency radiation (RFR), these wireless devices also produce extremely low frequency electromagnetic fields (ELF EMF). The International Agency for Research on Cancer of the World Health Organization classified ELF EMF "possibly carcinogenic to humans" (Group 2B) a decade earlier than RFR.
    - Dr. Henry Lai, Professor Emeritus at the University of Washington and Co-Editor-in-Chief of the journal Electromagnetic Biology and Medicine, has compiled summaries of several areas of the research on the biologic and health effects of exposure to RFR and ELF EMF. His sets of abstracts which cover the period from 1990 to 2017 constitute a comprehensive collection of this research.
    - Dr. Lai finds that the preponderance of the research has found that exposure to RFR or ELF EMF produces oxidative stress or free radicals, and damages DNA. Moreover the preponderance of RFR studies that examined neurological outcomes has found significant effects.
    - The evidence for DNA damage has been found more consistently in animal and human (in vivo) studies than in studies of cell samples (in vitro).
    - The abstracts can be downloaded from the BioInitiative web site[30].
    - Top Line Results Radiofrequency radiation:
        - 90% (n=180) of 200 oxidative stress (or free radical) studies report significant effects.
        - 64% (n=49) of 76 DNA comet assay studies report significant effects.
        - 54% (n=25) of 46 in vitro studies report significant effects. 80% (n=24) of 30 in vivo studies report significant effects.
        - 72% (n=235) of 325 neurological studies report significant effects.
    - Extremely low frequency electromagnetic fields:
        - 87% (n=162) of 186 oxidative stress (or free radical) studies report significant effects.
        - 74% (n=34) of 46 DNA comet assay studies report significant effects.
        - 68% (n=21) of 31 in vitro studies report significant effects.
        - 87% (n=13) of 15 in vivo studies report significant effects

    - **Sample Noise Emission Values of a three phase commercial solar inverter**
        - The table below is from the NOISE REPORT ODOT Solar Highway Project: West Linn Site Clackamas County, it shows the dBA noise level of commercial

[29] https://www.saferemr.com/2018/02/effects-of-exposure-to-electromagnetic.html

[30] http://bioinitiative.org/research-summaries/

inverters at the Clackamas solar project. Understanding the dBA noise from a commercial inverter is an important component in siting an inverter at solar project.[31]

Table 3. Inverter Noise Levels at Various Distances with Four Inverters at IM7

Location of Source (number of inverters)	Noise Level at 50 Feet	Receiver Location	Distance from Source to Receiver	Noise Level from Inverters at Receiver
	dBA		(feet)	Leq/dBA
I10 (3)	64	RM6	800	40
IM5 (3)	64		360	47
IM7 (4)	65		2040	33
I10 (3)	64	RM8	1280	36
IM5 (3)	64		1800	33
IM7 (4)	65		216	52
I10 (3)	64	R11	224	51
IM5 (3)	64		544	43
IM7 (4)	65		1336	36

Note: Locations of inverter pads can be see on Figure 3.

- **Collector Substation**
  - Industry is well aware that along with the potential for electrical pollution to move off-site through the air and ground from solar project and substations, there is also the potential for substation noise to leave the site through air and ground pressure waves that can be perceived at distance.
  - **Cautions and recommendations from the Electrical Engineering Portal[32] include the following:**
    - Substation Noise Sources to take into consideration:
    - Continuous audible sources Continuous radio frequency (RF) sources
    - Impulse sources
    - Equipment noise levels
    - Attenuation of noise with distance
  - **Noise Abatement Methods to take into consideration**:
    - Reduced transformer sound levels
    - Low-impulse noise equipment RF noise and corona-induced audible noise control
    - Site location
    - Larger yard area
    - Equipment placement Barriers or walls
    - Active noise cancellation techniques
- **Switchyard**
  - Switching gear would be a total of 60 feet tall and should require a height limit waiver.
  - Remotely controlled SCADA system (no local employee) also creates Radio Frequency Electromagnetic Radiation and potentially other emissions if the system is wireless.
- **Photos below were taken by Donna Tisdale (September 2013)** of solar project components located in western Imperial County, south of I-8 and Hwy 98. They give an idea of actual visual

[31] https://electrical-engineering-portal.com/audible-substation-noise
[32] https://www.civicsolar.com/support/installer/articles/electrical-noise-emissions-solar-pv-inverter-charger

conversion from previously productive farmland/open space into industrial scale solar clutter/sprawl.

- **Energy Storage System = Fire hazard**
  - Is this Energy Storage system (ESS) needed or necessary?
  - 26 enclosures/containers 45' long x 9' high x 8' wide will stand out visually from the sea of 300,000 approximately 7' tall PV modules.
  - Each of the 26 containers = 16 air conditioning units that will consume lots of energy and make lots of noise / vibrations that will carry in the generally quiet rural area.
  - SDG&E has reportedly already met CPUC mandated 165 MW of energy storage procurement with 30 MW Escondido ESS (400,000 batteries), and five other systems that all use lithium-ion battery technology.[33].
  - Photo below shows battery containers at SDG&E's Escondido Energy Storage facility as published and described below in a Utility Dive article (12-6-16)[34] as an example of what the proposed 25 units may look like.

[33] https://www.sandiegouniontribune.com/business/energy-green/sd-sdge-energystorage-20170421-story.html
[34] Utility Dive 12-6-16: https://www.utilitydive.com/news/inside-construction-of-the-worlds-largest-lithium-ion-battery-storage-faci/431765/

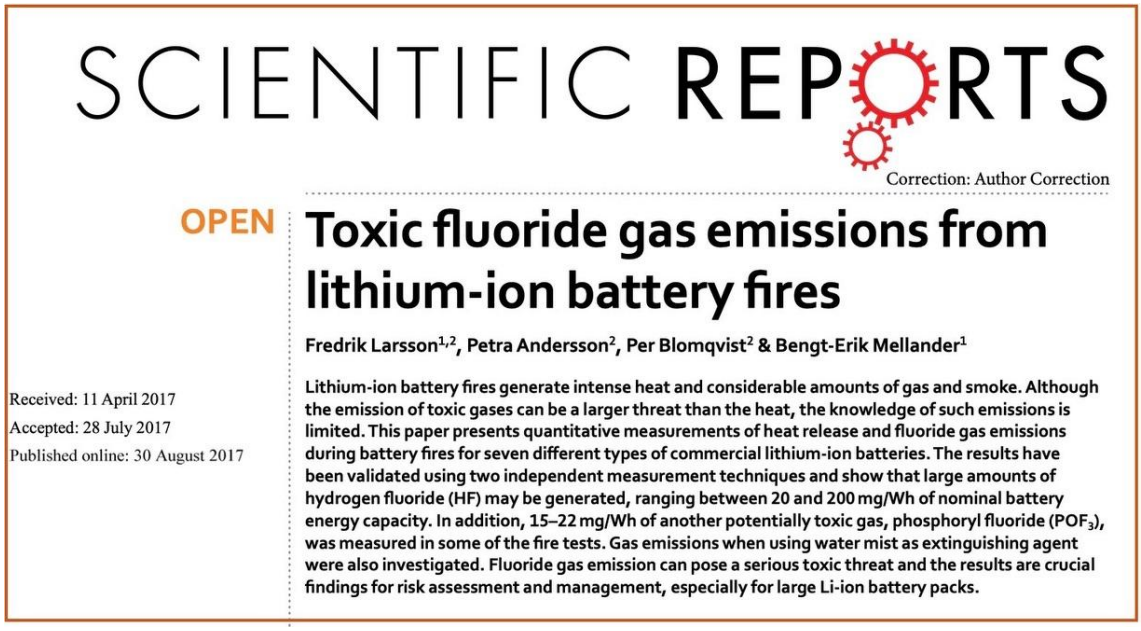
- Using a battery to meet demand peaks means it will likely be fully charged and discharged nearly every day. That puts a lot of strain on lithium batteries, which degrade as they get older and are cycled more often.
- Under SDG&E's contract, AES must maintain the batteries' nameplate capacity and performance for 10 years, after which the utility takes responsibility for the project. Typically this is done two ways — by oversizing a battery project upfront or by adding new cells during operation to support capacity.

- The statement above, indicates that more batteries will be added as old batteries degrade. Degraded batteries are reportedly less stable.
- In addition, Invenergy has already proposed a 100 MW Energy Storage System next to SDG&E's rebuilt Boulevard Substation (**PDS 2017-ZAP-17-006)**.
- **Some ESS systems include coolant pumps, fans, exhaust manifolds, and radiators that use ethylene glycol**.[35]
  - Ethylene glycol ($HOCH_2CH_2OH$)[36] is a colorless, syrupy liquid. It can harm the eyes, skin, kidneys, and respiratory system. Ethylene glycol can cause death if swallowed. Workers may be harmed from exposure to ethylene glycol. The level of exposure depends upon the dose, duration, and work being done.
- **2018 IFC Battery Room Protection Automatic smoke detection system per Section 907.2. Signage on or near battery room doors**[37]: Cautionary markings to identify hazards with specific batteries (corrosives, water reactive, hydrogen gas, Li-ion batteries, etc.)
- Do the batteries release toxic/highly toxic gases during charging, discharging, and normal use?
  - **2018 IFC Battery Specific Protection Systems that release toxic/highly toxic gases during charging, discharging and normal use must comply with Chapter**

[35] At page 29: https://www.nfpa.org/-/media/Files/News-and-Research/Resources/Research-Foundation/Symposia/2016-SUPDET/2016-Papers/SUPDET2016BlumLong.ashx?la=en
[36] https://www.cdc.gov/niosh/topics/ethylene-glycol/default.html
[37] At page 21: https://www.iccsafe.org/wp-content/uploads/Energy-Storage-Systems-Fire-Safety-Concepts-in-the-2018-IFC-and-IRC.pdf

60[38] Exhaust ventilation is required for system that produce combustible gases during normal use Spill control and neutralization required for systems with liquid electrolytes.

- **Gas Safety risks in Li-Ion battery charging rooms**[39]**:**
  - Li-Ion batteries when overcharged or short circuited are overheated and catch fires
  - Li-Ion battery fires have caused great concern because of risks due to spontaneous fires and intense heat generated by such fires
  - As a result of the above-said a lethal amount of toxic Hydrogen Fluoride Gas, HF is generated.
  - HF from Li-Ion battery fires can pose severe gas safety risks in confined spaces like battery charging rooms, renewable energy storage plants in solar or wind power plants
  - The electrolyte in Li-Ion battery is flammable and generally contains Lithium Hexa- fluoro -phosphate (LiPF6)
  - In the event of overheating due to overcharging or short circuiting and backed by high temperature, the electrolyte in Li-Ion batteries will vaporise liberating toxic gases like CO, CO2, HF (hydrogen fluoride)
  - The moisture and humidity will further exacerbate the situation generating more HF (reaction of LiPF6 with water or humidity)
  - Typical HF concentration expected can be as high as 20-200 ppm of HF (NIOSH/USA Safety limit , TWA:3 ppm HF, STEL: 6 ppm HF)



SCIENTIFIC REPORTS

Correction: Author Correction

OPEN

Toxic fluoride gas emissions from lithium-ion battery fires

Fredrik Larsson[1,2], Petra Andersson[2], Per Blomqvist[2] & Bengt-Erik Mellander[1]

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Lithium-ion battery fires generate intense heat and considerable amounts of gas and smoke. Although the emission of toxic gases can be a larger threat than the heat, the knowledge of such emissions is limited. This paper presents quantitative measurements of heat release and fluoride gas emissions during battery fires for seven different types of commercial lithium-ion batteries. The results have been validated using two independent measurement techniques and show that large amounts of hydrogen fluoride (HF) may be generated, ranging between 20 and 200 mg/Wh of nominal battery energy capacity. In addition, 15–22 mg/Wh of another potentially toxic gas, phosphoryl fluoride (POF_3), was measured in some of the fire tests. Gas emissions when using water mist as extinguishing agent were also investigated. Fluoride gas emission can pose a serious toxic threat and the results are crucial findings for risk assessment and management, especially for large Li-ion battery packs.

[40]

[38] At page 21: https://www.iccsafe.org/wp-content/uploads/Energy-Storage-Systems-Fire-Safety-Concepts-in-the-2018-IFC-and-IRC.pdf

[39] http://www.alviautomation.com/lithium-ion-battery-fires-hydrogen-fluoride-detector/

[40] https://www.researchgate.net/publication/319368068_Toxic_fluoride_gas_emissions_from_lithium-ion_battery_fires

Main Risks and Target Organs

Hydrogen fluoride is highly corrosive to all tissues.

Skin: Burns, necrosis; underlying bone may be decalcified.

Eyes: Burns.

Gastrointestinal: After ingestion, the oropharynx and the oesophagus are the primary sites of injury.

Heart: Systemic absorption occurs following skin exposure or ingestion; severe and rapid hypocalcaemia may ensue with cardiac dysrhythmia and arrest.

Lungs: After inhalation, severe pulmonary injury may occur with pulmonary oedema and bronchopneumonia.

Neuromuscular: Tetany may occur due to hypocalcaemia after systemic absorption.

- **Hydrogen Fluoride (Hydrofluoric Acid) 7664-39-3 Hazard Summary**:Hydrogen fluoride is used in the production of aluminum and chlorofluorocarbons, and in the glass etching and chemical industries. Acute (short-term) inhalation exposure to gaseous hydrogen fluoride can cause severe respiratory damage in humans, including severe irritation and lung edema. Severe eye irritation and skin burns may occur following eye or skin exposure in humans. Chronic (long-term) exposure in workers has resulted in skeletal fluorosis, a bone disease. Animal studies have reported effects on the lungs, liver, and kidneys from acute and chronic inhalation exposure to hydrogen fluoride. Studies investigating the carcinogenic potential of hydrogen fluoride are inconclusive. EPA has not classified hydrogen fluoride for carcinogenicity.[41]

- **Connector Line**
  - Will the 1,500' long gen-tie be placed underground? It should be similar to Tule Wind's requirement to place their gen-tie line underground south of I-8.

[41] https://www.epa.gov/sites/production/files/2016-10/documents/hydrogen-fluoride.pdf

- **Control System**
  - SCADA also creates Radio Frequency Electromagnetic Radiation and potentially other emissions if the system is wireless that can have adverse impacts on people, wildlife, and through Electromagnetic Interference (EMI).
- **Roads**
  - The Project access road off of Carrizo Gorge Road should be made the main project entrance in order to help reduce traffic related impacts on the majority of Jucumba area residents.
  - Table 2: Other Public Agency Permits/Actions Required includes transportation permits for the movement of vehicles or loads exceeding the limitations on the size and weight contained in Division 15, Chapter5, Article 1, Section 355551,of the California Vehicle Code (1983)
  - The CalTrans permit for the vehicles / loads exceeding the size and weight limits indicate the real potential for road damage.
  - The project should be required to fully and timely repair any damaged roads to the satisfaction of the community.
- **Security Fencing**
  - A 7' high chain link fence with 3 strands of barbed wire on to, similar to the photo below taken at an Imperial County solar project, is more compatible with a prison than a massive energy project plopped right next to Jacumba residents.

  - In comparison, the California Department of Correction's McCain Valley Conservation Camp on McCain Valley Road in Boulevard, has a simple 3 strand barbed wire fence around their facility similar to most rural livestock fencing.
  - The Project's chain link fencing will reportedly include slating. The slating may create an additional major noise issue by clattering during high wind events.
  - Debris will tend to pile up next to fencing during wind events and must be kept clean.
- **Lighting**
  - Promises to keep the lights shielded and pointed downward are often forgotten and ignored.
  - Dark skies are an important resource to residents and visitors alike and must be protected.

- Lighting installed at the adjacent gas stations at I-8 represents a perfect example of what not to do and where the County has failed to enforce protections. It sets a bad precedent.

- **Construction**
  - 36.5 million gallons of water (112 acre ft) for construction and 3.25 million annually for operation is a lot of water that will no longer move through the eco system and down into Anza Borrego Desert State Park through the Carrizo Gorge to feed springs and habitat that local wildlife is dependent upon.
  - These projects are also sold to County decision makers as job creation but the jobs don't benefit backcountry communities that bear the disproportionate project related health, environmental, and financial burdens.
  - If the project gets to the construction phase, the County should mandate a certain percentage of local workers be hired from impacted Backcountry communities, not from San Diego County at large.
  - To date, these massive local wind, solar, and transmission projects have hired out-of-state contractors who bring in their own crews, with maybe one or two token locals.
- **Operation and Maintenance**
  - The project would be an "unmanned facility that would be monitored remotely".
  - Again, no local jobs.
  - A dedicated Project hotline must be provided for emergencies and complaints.
- **Facility Decommissioning**
  - Apparently, there is no Power Purchase Agreement, based on the lack of firm details.
  - No end date for this project translates into a permanent and irreversible impact and potentially larger future impact if the project is increased in size or energy at a later date, instead of being decommissioned.
  - Currently, recycling of solar panels is problematic.
  - PV modules are not classified as hazardous waste, but they contain hazardous materials.
  - **If Solar Panels Are So Clean, Why Do They Produce So Much Toxic Waste? Forbes article (5-28-18) included the following excerpts**[42]:

    - The International Renewable Energy Agency (IRENA) in 2016 estimated there was about 250,000 metric tonnes of solar panel waste in the world at the end of that year. IRENA projected that this amount could reach 78 *million* metric tonnes by 2050.
    - Solar panels often contain lead, cadmium, and other toxic chemicals that cannot be removed without breaking apart the entire panel. "Approximately 90% of most PV modules are made up of glass," notes San Jose State environmental studies professor Dustin Mulvaney. "However, this glass often cannot be recycled as float glass due to impurities. Common problematic impurities in glass include plastics, lead, cadmium and antimony."
    - Researchers with the Electric Power Research Institute (EPRI) undertook a study for U.S. solar-owning utilities to plan for end-of-life and concluded that

[42] https://www.forbes.com/sites/michaelshellenberger/2018/05/23/if-solar-panels-are-so-clean-why-do-they-produce-so-much-toxic-waste/#5c735d50121c

solar panel "disposal in "regular landfills [is] not recommended in case modules break and toxic materials leach into the soil" and so "disposal is potentially a major issue."

- California is in the process of determining how to divert solar panels from landfills, which is where they currently go, at the end of their life.

- **Department of Toxic Substance Control : Informational Seminar for Proposed Photovoltaic Modules Regulations: 3-25-19 presentation (@ pages 13 & 18) (excerpts)[43]:**
  - How are PV Modules Hazardous? • Heavy metals (Example: cadmium, lead, arsenic) • Published literature test results RCRA and non-RCRA Metals above toxicity threshold concentrations
  - Not all PV modules wastes are tested hazardous • Generators are responsible for the hazardous waste determination • Universal waste rule applies to wastes that are hazardous • Categorizing PV modules allows generators to manage the waste as universal waste without testing
  - PV Modules Draft proposed regulations § 66261.9 Requirements for Universal Waste • Describes what hazardous wastes are • Exempts PV modules from fully regulated hazardous waste requirements • Allows PV modules to be managed as universal waste under chapter 23.
  - **There will be tons of materials that will need to be disposed as electronic waste.**

- **Surrounding Land Uses and Setting**
  - Please deny the GENERAL PLAN AMENDMENT; REZONE; AND WAIVER OF Land Use Policy I-111 for Discretionary Permits Adjacent to the International Border
  - This project is not just a matter of increase in degree, but a major order of magnitude impact to visual and other important resources.
  - The photo below shows the Sunrise Powerlink construction yard located on the proposed JVR project site. Dust is from a helicopter landing, but most other construction activities also generate dust. The photo was sourced from Basin and Range Watch website. Their caption says this site "used to be Saltbush (Atriplex canescens)-filled valley almost to the border of Mexico"[44].

[43] https://www.dtsc.ca.gov/HazardousWaste/upload/201903-Informational-Seminar-PVM-Final.pdf
[44] https://basinandrangewatch.org/SunrisePowerlink-Construction.html

- There are also two existing gravel pits located on or near the project site near the area shown in the photo above.

ENVIORNMENTAL FACTORS POTENTAILLY AFFECTED STARTING AT PAGE 10

- We agree with the determination that a full Environmental Impact Report (EIR) is required and with the determination of Potentially Significant Impact for the following factors, although potentially for additional or alternate reasons:
    - Aesthetics; Agriculture; Air Quality; Biological; Cultural; Energy; Geology & Soils;
- See additional comments regarding need to include Recreation, Green House Gas Emissions, and Population & Housing in the EIR.

VII. GREEN HOUSE GAS EMISSIONS:

- This section must address the increased Particulate Matter from grading and Green House Gas emissions from the use of diesel equipment, and potential to use less polluting options like natural gas, and other project GHG sources noted in these comments.
- The gen-tie line and project components will generate off-gassing and electrical pollution that radiates through the air and through increased ground currents.
- Sulfur hexafluoride (SF6)[45] , an extremely potent Green House Gas used in electrical equipment. What are the impacts and proposed alternatives and mitigation?
- Installation, maintenance, and decommissioning and leakage from SF6 containing GIE.11 Closed-pressure equipment is the category of GIE that is the most susceptible to SF6 emissions. Emissions associated with sealed-pressure equipment mostly occur during the manufacturing process and at disposal. Below is an overview of potential sources of SF6 in transmission and distribution equipment, focusing on closed-pressure equipment. At the disposal stage, all equipment can release SF6. Therefore, proper handling, storage, and disposal procedures are critical to reduce emissions of SF6 into the atmosphere."
- According to the **EPA's Overview of SF6 Emissions Sources and Reduction Options in Electric Power Systems (2018)[46],** "*Potential sources of SF6 emissions occur from 1) losses through poor gas handling practices during equipment installation, maintenance, and decommissioning and 2) leakage from SF6 -containing GIE."*
- See comments on ESS system (pages 15-18) and potential GHG emission sources.

XIII. NOISE:

- Power conversion equipment, inverters (DC to AC), transformers, switchgears, PV module tracking motors, HVAC units and battery energy storage systems, and power lines, all make noise; complicated noise.
- **Solar Panels Create Noise Nuisance in Edgartown, Vineyard Gazette, by Olivia Hull (9-25-14)[47]**

[45] http://climate.columbia.edu/files/2012/04/GNCS-SF6-Factsheet.pdf

[46] https://www.epa.gov/sites/production/files/2018-08/documents/12183_sf6_partnership_overview_v20_release_508.pdf

[47] https://vineyardgazette.com/news/2014/09/25/solar-panels-create-noise-nuisance-edgartown

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    - **Excerpts:**
    - Smith Hollow is a quiet neighborhood in Edgartown where the ambient sounds include distant traffic and breeze moving through the trees.
    - But this past summer, the installation of a new municipal solar array added a new sound to the mix: incessant humming that all but drowns out the other sounds at some Smith Hollow residences.
    - As soon as the solar project went live, inverters, the part of the system that converts direct current from the sun to alternating current, began emitting noise on sunny days. Neighbors complained, and the town hired an expert to investigate.
    - The inspection revealed that the sound coming from the inverters exceeds ambient sounds in all eight octaves by a significant margin, according to a report discussed by the town selectmen Monday.
    - "The sound from the inverters is clearly in violation of the Mass. DEP Noise Policy, and also constitutes a noise nuisance, in my opinion, based on the sound level measurements reported here," wrote Lawrence G. Copley, a sound engineer, in the noise assessment he presented to the town.
- Upon reading another paper**, Harmonics and Noise in Photovoltaics: PV Inverter and the Mitigation Strategies**[48], even a layman realizes that inverters generate high frequency noise of various sorts and complexities, often with weird harmonics.
- In another article the German inverter manufacturer SMA Solar Technology describes its experience sleuthing out persistent inverter noise emissions, analyzing[49]:
    - structure-borne noise transfer paths
    - transfer of airborne noise and its effects
    - noise caused by vibrations
    - Resonance frequency testing
- Project components will also be subject to wind generated noise that results in potentially significant rattling of P V Modules, slatted chain link fencing and more.

XIV. POPULATION & HOUSING:

[48] https://docplayer.net/17995775-Harmonics-and-noise-in-photovoltaic-pv-inverter-and-the-mitigation-strategies.html

[49] https://www.sma.de/en/partners/knowledgebase/reducing-noise-in-pv-power-plants.html

- This section fails to address the loss of future housing potential on the almost 700 acres being converted to industrial solar.
- It also fails to address the potential abandonment of homes and loss of population due to the industrial conversion and project generated noise, low-frequency noise, electrical and visual pollution that could make homes unappealing, unsafe and/or unlivable.
- When the solar energy is not needed, and the sun is still shining, that energy is dumped into the ground and migrates offsite and can enter homes through plumbing and other grounded devices or equipment.
- This section contradicts the project Plot Plans that do show water supply line extensions through the project, with no real explanation of what they are for, what the source of water is or what the intended end use is.

XIX. UTILITIES AND SERVICE SYSTEMS:

- Excessive use of local groundwater resources can also impact supplies to the west into the Boulevard Planning Area where the vast majority of the Boundary Creek watershed and fresh water is located up gradient from Jacumba.
- Wells and springs on the west side of Jacumba, up through Bankhead Springs should be monitored prior to, during, and after this massive project is built and operating.
- During the last major construction project, using JCSD wells, several residents west of Jacumba reported significantly increased depth to water in their wells.
- The amount of energy this project will consume for all of the projects electronic components including HVAC units must be disclosed.

XX WILDFIRE

- The JVR project has the potential to ignite wildfires through attraction of lightning strikes and/or through electrical faults or other malfunctions in project components resulting in potentially hazardous fumes and waste.
- Battery storage represents additional sources of wildfire ignition and hazardous / toxic fumes generated by burning lithium ion batteries and thermal runaway events.
- **Energy Storage Systems Fire Safety Concepts in 2018 IFC and IRC: Hazard Mitigation Analysis:**[50]
    - The HMA will evaluate the consequences of failure modes • Thermal runaway in a single battery array • Failure of the energy management system • Failure of ventilation system • Voltage surges on the primary • Short circuits on the load side of the batteries • Failure of the smoke or gas detection, fire suppression The fire code official is authorized to approve the hazardous mitigation analysis based on the HMA. The HMA is a tool to address unknowns with new technologies
- Specialty firefighting equipment and specially trained firefighters are needed and should be funded by this Project and housed within the community of Jacumba Hot Springs and not later transferred to other communities outside the project impact zone, as happened previously with

[50] https://www.iccsafe.org/wp-content/uploads/Energy-Storage-Systems-Fire-Safety-Concepts-in-the-2018-IFC-and-IRC.pdf

specialty foam firefighting equipment provided as mitigation for ECO Substation being transferred to Lake Morena.

- What good are the 10,000 gallon tanks when water cannot be used to fight electrical fires?

XXI. MANDATORY FINDINGS OF SIGNIFICANCE

- We strongly agree with and appreciate the FINDING OF POTENTIALLY SIGNIFICANT IMPACT that the project has the potential to result in adverse effects on human beings directly and indirectly and that this topic will be addressed in the DEIR.

PRELIMINARY PLOT PLANS DATED 11-1-18: THESE PLANS SHOULD HAVE BEEN POSTED ON THE COUNTY'S PROJECT REVIEW SITE FOR PUBLIC COMMENT:

- **2.3' setback from property lines to ground-mounted PV solar is ridiculous and must be extended for the sake of existing residents who will be exposed to potential hazards.**
- Drawing #100:
    - Shows 7 wells and 9 monitoring wells.
    - How many of the 7 existing wells will be used; and how much water will be allowed for project use?
    - Are any other local wells proposed for project use?
    - Mesquite Bosque is mapped. Bosque means woodland and woodland is a type of forest.
- **Drawing # 101**
    - The project is located far too close to the Jacumba Shell and Chevron gas stations, especially on the west side. The potential for fire or explosions jumping from on-site to off-site and vice-versa is significantly increased due to proximity. Setbacks must be increased.
    - This portion of the project is also far too close to Round Mountain that is partially located in Anza Borrego Desert State Park.
    - Shows location where a "tree will be removed" but does not disclose the type or size of the tree.
    - 10' Potential Future Water Easement passes near Monitoring Well P-5. What is this for?
- **Drawing #102:**
    - Shows a "structure to be demolished" but fails to disclose what type of structure it is.
    - Shows an extension of the 10' Potential Future Water Easement that appears to end on or near the non-participating APN 661-010-28 owned by Reagan A. Shallal.
    - What is the purpose of this 10' Potential Future Water Easement; what is the source of the water; and what is the intended end use of the water?
- **Drawing # 103**
    - Shows another 10' Potential Future Water Easement that appears to connect to the Ketchum Ranch Water Company Well located north of Seeley Avenue and just south of the San Diego & Arizona Eastern Railroad tracks.
    - The plans fail to identify the fact that the Jacumba Park is located immediately adjacent to the project.
    - The plans also fail to clearly identify the existing residences west of Laguna Street and north of Seeley Avenue that are far too close to project boundaries.

- Setbacks must be significantly increased along the residential neighborhoods to help protect public health and safety and reduce the nuisance effects of noise and electrical pollution.

- **Drawing #104:**
  - Demo of the historic Ketchum Ranch dairy buildings should be identified as such instead of just saying 'demolish existing farm'.
  - The historic buildings should be preserved instead of demoed.
  - The farm buildings are located on a hill that is now proposed for PV modules.
  - How will these elevated project components be shielded with a 7 ' tall slatted chain link fence with 3 strands of barbed wire, or will the existing hill be graded flat? That would be a lot of dirt and rock to move.
  - How will the hillside installation impact any glare studies?
  - Several 10' Potential Future Water Easements are shown on this drawing. Again, what is the purpose of these future water lines; what is the source and what is the end use?
  - Two private parcels (APN 660-150-06 – Jesus Barriga & APN 660-150-05 –Teodora Cesena et al) are located far too close the project boundaries.
  - Setbacks must be significantly increased for these properties or they should be offered buyouts if they are willing.
  - In addition, 3 existing wells are located in close proximity to these two non-participating parcels.
  - Do they have private wells that could be impacted? If so, those wells must be monitored as well.
  - To purposely surround private homes so closely with such high voltage equipment is unnecessary and blatantly asking for trouble.
  - The project setback should be increased for the Jacumba Airport as well.
- **Drawing #201:**
  - Drawing is hard to read.
  - It looks like a chain link gate that looks like the entrance to a prison.

INSURANCE RATES FOR RENEWABLES ARE RISING DUE TO INCREASED RISK. THIS NEW ISSUE SHOULD BE CONSIDERED BECAUSE IT RELATES TO POTENTIAL PUBLIC HEALTH & SAFETY.

- **April 4, 2019: Why Insurance Claims in Renewable Energy Industry Are Rising: Insurance Journal [51] (excerpts)**
  - The frequency and severity of insurance claims in the U.S. renewable energy market have significantly increased over the last five years, meaning insurers and asset owners must reset their benchmark for renewable energy risks, according to an insurer that specializes in the renewable energy market.
  - According to California-based GCube Insurance, the claims burst can be attributed to component vulnerability, defective designs and changing original equipment manufacturer (OEM) warranties, along with extreme weather damage.
  - In particular, accelerated build times have caused an unusual amount of material damage during construction. As construction firms have come under pressure to build projects more efficiently and in shorter timeframes, less experienced personnel are being used to handle

[51] https://www.insurancejournal.com/news/national/2019/04/04/522873.htm

increasingly complex equipment, resulting in a higher frequency and severity of claims, attendees were told.

- At the same time, component failure has meant higher costs. The increased complexity of components makes them harder to replace in isolation. In wind energy, with newer blades, any component damage may mean replacing the entire blade, which raises operation and maintenance costs, according to the insurer.

MITIGATION

- If this project manages to get approval over community opposition and any potential legal challenges, mitigation must be community-based and NOT fashioned to benefit other out of area human and natural communities or subregions
- If the project is phased in, then the components furthest from Jacumba's residential areas should be installed first.
- The project footprint should be significantly reduced. Significant reduction of the project footprint should move components much further away from existing residents and residential areas, the community park, community center, the airport, and Old Hwy 80, including removal of all the project components currently identified on Drawing # 103 of the Plot Plans dated 11-1-18.
- Free energy should be provided for the life of project for all residents and business owners in the Jacumba Planning Area, including those who may be out of the planning area but whose views and quality of life are impacted.
- Property Value Protection Agreements and reimbursement for increased insurance rates or cancellation of insurance policies due to increased fire / hazard risk related to the Project.
- Permanent Open Space should be designated including all project land west of the existing rail line, including all of Round Mountain, at least 100 feet or so along the western perimeter that abuts residential areas, and south of Old Hwy 80.
- A trail system should be designed and built at Project's expense that will make it easier for residents and visitors to access the Anza Desert State Park and Anza Borrego Foundation-managed areas south of I-8, including Round Mountain.
- Regardless, no amount of mitigation can or will off-set what will be permanently and irretrievable lost as a result of all or part of the Project being approved.

There is absolutely no valid reason to approve the 90 MW JVR Energy Park solar project beyond perceived corporate greed and government short-sightedness.

- There are far better alternatives located within the City of San Diego and urban/suburban boundaries of San Diego County that don't require conversion of green field sites.
- The direct, indirect, and cumulatively significant impacts place an undue burden on the predominantly low-income and designated Colonia, Jacumba Hot Springs.
- BayWa's JVR solar project unnecessarily and unethically places some of our most physically and financially vulnerable residents at risk.

Thank you for consideration of these comments…