PUBLIC REQUEST TO ADDRESS
THE BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES, CALIFORNIA

Correspondence Received

			The following individuals submitted comments on agenda item:	
Agenda #	**Relate To**	**Position**	**Name**	**Comments**
85-D.		**Favor**	David Fink	
			Jonathan Parfrey	
			Joseph Sullivan	
			Martin Barrera	

As of: 4/9/2024 2:24:44 PM

PUBLIC REQUEST TO ADDRESS
THE BOARD OF SUPERVISORS
COUNTY OF LOS ANGELES, CALIFORNIA

Correspondence Received

			The following individuals submitted comments on agenda item:	
Agenda #	**Relate To**	**Position**	**Name**	**Comments**
85-D.		**Favor**	Matt Petersen	April 9, 2024 The Honorable Lindsey Horvath Los Angeles County Board of Supervisors, Third District 500 W. Temple Street, Room 821 Los Angeles, CA 90012 SUBJECT: Support County motion “Accelerating Renewable Energy Development and Promoting Community Resiliency” Dear Supervisor Horvath: The Los Angeles Cleantech Incubator (LACI) is writing today in strong support of your motion “Accelerating Renewable Energy Development and Promoting Community Resiliency” given the critical steps it establishes to support solar and storage project developments across our County. LACI is a nonprofit organization with a mission to create an inclusive green economy for the people of the Los Angeles region. We are unlocking innovation by working with startups to accelerate the commercialization of clean technologies, transforming markets through partnerships with policymakers, innovators, and market leaders in transportation, energy, and sustainable cities, and enhancing communities through workforce development, pilots, and other programs. LACI is proud to partner with the County on a number of strategic initiatives, and we believe that this motion will help accelerate the transition to 100% clean energy across the County, ensuring progress towards the 2030 greenhouse gas reduction targets. This motion also aligns with LACI’s Clean Energy Partnership to accelerate the move to 100% clean energy while ensuring we are meeting the needs of transportation electrification, building decarbonization, and grid resiliency in the Greater Los Angeles Region by the time of the 2028 Olympic and Paralympic Games. The motion will help accelerate meeting our County and Partnership goals by identifying certain areas in the County as renewable energy development zones and promoting greater community resiliency by deploying local clean energy generation. For these reasons, LACI strongly supports the motion to ensure the County is on a path achieving its critical 2030 greenhouse gas reduction targets, while also providing a cleaner and safer environment that the public deserves. LACI respectfully urges the Board to vote “AYE”. Thank you for your consideration. For more information, please feel free to contact Mike Swords, VP Government and International Relations, at mike@laci.org.

As of: 4/9/2024 2:24:44 PM

			The following individuals submitted comments on agenda item:	
Agenda #	**Relate To**	**Position**	**Name**	**Comments**
85-D.		**Favor**	Matt Petersen	
		Oppose	Jacqueline Ayer	
			Jeremiah Owen	
			Jose Centeno	As an Antelope Valley resident I strongly oppose any wind turbines as well as large capacity battery storage systems in rural Los Angeles County. This motion should not be approved as the county should focus on promoting solar systems on residential and more specifically on commercial roofs. Lithium battery storage systems are a risk to our designated high fire rural areas, in addition, our local fire departments are not trained, nor do they have the equipment to put out large capacity battery fires.
			Mario Garcia	As a resident in Pearblossom, in rural Los Angeles County, I do not support this motion. It seems that all too frequently the standard process to approve renewable energy and development projects in general is being 'accelerated' or 'streamlined'. Processes that were put in place to protect public safety, natural environment concerns, and the time for communities to comment on these projects are being removed in the name of progress. In addition, there is no equity or environmental justice in allowing solar energy projects in economic opportunity areas where small rural disadvantaged communities will see no benefit from having energy transported out to urban areas.
			Susan E Zahnter	
		Other	Ruth A Brock	
			Ruth A Brock	Please accept this amended submission of my previous comments. Thank you.
		Item Total	**13**	
Grand Total			**13**	

As of: 4/9/2024 2:24:44 PM

April 6, 2024

Honorable Board of Supervisors,

I wish to comment on Supplemental item 85-D, **Exhilarating, renewable energy development, and promoting community resiliency in Los Angeles County.**

The rural community of Acton is currently battling being in the crosshairs of several developers (3) seeking to build large utility scale battery energy storage systems (BESS) which utilize fire-prone and highly toxic lithium-ion batteries. The residents of Acton have already spoken loud and clear as to how they feel about projects such as these being developed in our area. In September we submitted to County our petitions of protest with 1892 signatures. Our residents have never been so united against anything in the 35 years I have lived in Acton and our sister town of Agua Dulce has stood with us from the beginning against these BESS projects. Our message to County could not be more clear, yet appears to be falling on deaf ears.

While LA County struggles to meet its renewable energy goals, it appears that perhaps "timelines" are surpassing the safety of your residents in order of priority. One example is the hastily approved 400 MW Hecate Humidor BESS which Regional Planning approved with a simple ministerial review, the very same process that would be applied in the review of a fence permit, per DRP Deputy Director David DeGrazia. This shows how little knowledge DRP staff possess about the dangerous Lithium-ion technology utilized by these BESS projects.

In fairness, we cannot expect the DRP nor our Board of Supervisors to be experts in the field of transmission, but what we can expect and DO expect is that our County agencies and representatives will seek guidance from those who do possess this expertise. Item 98-A is being developed by DRP staff who are seeking guidance from the CEC. This is a positive step, yet even as the CEC holds staff workshops (Feb. 23, 2024) for the purpose of educating on BESS safe siting practices, they are not bringing forth experts in transmission to have a fully informed conversation on this very important subject that can then be shared with AHJs. I participated in this workshop and felt it lacked the presence and input from actual experts in the transmission field.

One message did come across from all panel participants (with the exception of one energy industry-focused rep) and that was a message acknowledging the dangers that Lithium-ion batteries present and that the concerns of communities are warranted.

These batteries are known to be fire-prone and the off-gassing during a fire or thermal runaway event is highly toxic and swiftly lethal to those who may be exposed. In 2023, 18 people died in New York from these dangerous gases produced by e-bike and e-scooter lithium-ion battery failure fires. Now think of these risks as applied to a utility scale BESS.

A ministerial review process does not echo those concerns of the CEC panel experts. It also does not show respect for the dangers associated with lithium-ion battery technology.

In response to AB 205, the CEC has developed the fast track Opt-In Program for energy project approvals. Chair Horvath commented in her motion with the following:

"Amendments to the REO that increase the supply of clean energy in our County, create local jobs, and improve the resiliency of our most impacted communities would benefit all residents. The alternative will extend our reliance on fossil fuels, negatively impacting our air quality, do nothing to promote the resiliency of vulnerable communities, and ***risk losing our local land use, environmental review, and permitting authority to the State."***

I wish to point out in reference to Chair Horvath's motion comments that the CEC's Opt-In process includes an environmental review. In fact their review process is quite appropriately rigorous. County did not see the need for such an environmental review with the approval of the Humidor BESS--even though Chair Horvath's motion seems to earnestly seek to protect this important process. Every energy project that is utility scale or utilizes lithium-based technology should be required to go through the environmental review process!

Does County have any idea how many of these lithium-ion batteries will be utilized in a 400 MegaWatt BESS? The 10 MW Dorman BESS in Chandler AZ was reported to have 3,248 lithium-ion batteries in place according to news reports following a battery failure incident at this facility in 2022. If the Humidor BESS is 400 MW, that's 40 times the capacity of the Dorman BESS. So 3,248 X 40 = 129,920 lithium-ion batteries (or capacity equivalent). I hope this puts the percentage of risk in perspective.

The Hecate "Humidor" is only one of 4 potential BESS slated for development in Acton that will total 2,285 MW of concentrated energy storage. This exceeds the capacity of both the San Onofre and the Diablo Canyon Nuclear Power Generating Plants. Hecate has plans for two more in addition to the "Humidor": the "Flea Flicker" and the "Maathai". Avantus has plans to build the 68 acre, mile+ long, 1150 MW "Angeleno". The huge energy project developer NextEra has been contacting residents in this very same area and offering to purchase their property. We are under assault due to the door being opened by the County approval of the "Humidor".

All proposed BESS are to be developed in the same east Acton area in proximity to the Vincent Substation *and to residents*. The properties in this area are comprised of quiet rural homes, sprawling desert ranches, dog kennels and animal rescues, all of which will be put at great risk in the event of a battery failure event at even one of these facilities. There is no operational reason that a BESS need be sited in close proximity to a substation other than a savings to developers in connection related costs.

Was County aware when they ministerially approved the Humidor that the smoke and super-heated gases produced by a potential fire would risk the adjacent 500kV transmission lines short-circuiting due to the insulators potential to flashover? Was County aware that these critical transmission lines were part of the southern terminus of the Pacific AC Intertie and if they arc and flashover, it could jeopardize the power grid serving the entire southern California area and potentially other western states?

If a transmission expert had been consulted, this cautionary information would have been revealed. I have consulted with three transmission experts with a combined 100+ years of experience and expertise in the field and all three confirm this risk to be factual based on the location of the Humidor and other nearby proposed BESS. So great was their concern that they contacted Congressman Mike Garcia with this information.

With the understanding that this news came via credible experts, Rep. Garcia took these concerns to a hearing at the House of Representatives Homeland Security subcommittee of Science, Space and Technology. The February 29th hearing was on “Examining the Dangers of EV Fires for First Responders”. During the hearing Rep. Garcia was able to pivot the conversation to the siting of battery energy storage facilities that utilize the very same lithium-ion batteries as EVs---only on a massive scale. The expert witness giving testimony was San Bernardino County Fire Chief Dan Munsey. During his comments, Rep. Garcia mentioned the Acton and Agua Dulce communities by name and then posed questions for Chief Munsey. ***Rep. Garcia is introduced at time marker 44:55

https://www.youtube.com/live/d8I8AsN5suA?si=pyIVcet8Zb2B8qZq

In closing, my comments are meant to point out that renewable energy goals and timelines should never be prioritized ahead of the safety of communities. Lithium-based technology is currently the preferred choice of BESS developers and these batteries are chosen for their density, performance, lifespan and cost savings. Notice that “safety” was not part of that equation. There are indeed more safe battery technologies currently on the market and more on the horizon. But until the energy industry decides to move on from Lithium-based battery technology, its important that the CEC and LA County fully understand the risks these batteries carry and translate that to responsible and safe siting practices of these projects--away from residents.

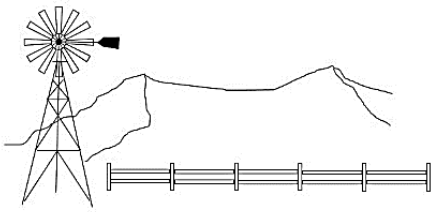
Thank you,
Ruthie Brock
Acton Takes Action Community Task Force
Acton

From: Acton Town Council
To: PublicComments; Acton Town Council
Subject: Acton Town Council comments on Agenda Item 85D
Date: Tuesday, April 9, 2024 6:28:28 AM
Attachments: Final letter to the BOS SIGNED.pdf

Attached please find comments from the Acton Town Council pertaining to Item 85D on the Agenda for the April 9 Board of Supervisors meeting; if you have questions or are not able to open the attached, please email the ATC at atc@actontowncouncil.org.
Sincerely;
Jeremiah Owen, President
The Acton Town Council

From:	Jacqueline Ayer
To:	PublicComments; Jacqueline Ayer
Subject:	Save Our Rural Town Comment on Agenda Item 85-D
Date:	Monday, April 8, 2024 9:30:08 PM
Attachments:	sort letter to board.pdf Attachment 1.pdf

Please accept the attached comments submitted by Save Our Rural Town pursuant to Item 85-D on the Board of Supervisors' agenda for the April 9 meeting. If you are unable to open the attached, please contact SORT at SORTActon@gmail.com.



SAVE OUR RURAL TOWN

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, California 90012
Transmission of six (6) pages to
PublicComments@bos.lacounty.gov
And via https://publiccomment.bos.lacounty.gov/

April 8, 2024

Subject: Motion to "Accelerate Renewable Energy Development and Promoting Community Resiliency in Los Angeles County".

Reference: Supplemental Agenda Item 85-D for the April 9, 2024, Board of Supervisor's meeting.

Dear Supervisors:

Save Our Rural Town ("SORT") respectfully offers the following comments on Item 85D that was added to the Agenda for the April 9, 2024, Board of Supervisor's meeting which introduces a motion to accelerate "Renewable Energy Development" in Los Angeles County (referred to hereafter as "the motion"). SORT appreciates that the motion directs staff to look at all 5 supervisorial districts for developing utility scale renewable energy and we assume that this is intended to make the motion appear "equitable"; however, at its core, it appears that the primary motivation is to concentrate utility scale renewable energy development in the Antelope Valley. This premise that underlies our comments. Additionally, SORT has found a number of material inaccuracies in the motion; these inaccuracies should be considered and addressed before the motion moves forward. To address these concerns, SORT offers the following comments.

- Utility scale renewable generation is *not* more cost effective than rooftop solar; in fact, remote utility scale generation is actually far more expensive than either rooftop solar or other distributed generation resources because remote utility scale generation requires expensive transmission; when transmission costs are factored in, rooftop solar is comparatively cheap. Transmission charges are not always visible to the electrical customer because they are bundled into what Southern California Edison calls "delivery charges"; but, as the Clean Power

Alliance website shows, "delivery charges" are significantly higher than "generation charges" on standard residential electric bills[1]. More importantly, these delivery charges are slated to substantially increase over the next 20 years if utility scale development is the preferred choice rather than rooftop solar because ratepayers will bear the $30+ billion cost that California Independent System Operator ("CAISO" or "CalISO") estimates is needed to accommodate utility scale renewable generation. And, because CAISO estimates are typically understated by at least 30%[2], the actual price will be at least $40 billion; this will cost each metered customers an average of about $5,000. In contrast, a 4 kW rooftop solar system only costs about $11,600[3]; with the federal tax credit, that drops to $8,150. According to EnergySage, the payback period for rooftop solar for a home in Acton that has an average electrical bill of $210 per month is only 5.4 years; furthermore, rooftop solar will become more cost effective over the next decade because electrical costs will continue to skyrocket (whereas the cost of rooftop solar has actually dropped since 2021 and is not likely to rise[4]).

- The motion suggests that the County's existing Renewable Energy Ordinance ("REO") should be revised because otherwise, local land use and permitting processes will be "usurped by the State" through operation of AB 205 which grants the California Energy Commission ("CEC") authority to process energy projects if applicants "opt-in" to the program. Nothing could be further from the truth. SORT has actively participated in the CEC's AB205 program and we note it is particularly robust and equitable; moreover, an energy developer can submit an AB 205 "opt in" application to the CEC at any time and regardless of any changes made to the REO. In other words, modifying or weakening the County's REO will not alter or affect any CEC jurisdictional issues. Furthermore, and frankly, SORT finds the CEC's AB 205 process to be far more efficacious than, and preferable to, the County's permitting process; therefore, nothing about AB 205 or the CEC's "opt in" program warrants revision to the County's REO. The motion is wrong to suggest otherwise.

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[1] https://files.cleanpoweralliance.org/uploads/2024/03/SCE-and-CPA-Joint-Rate-Comparison-January-2024-2018-Vintage.pdf.

[2] Public Advocates Office's Response to The Joint Motion for Adoption of Phase 1 Settlement Agreement. [http://docs.cpuc.ca.gov/SearchRes.aspx?DocFormat=ALL&DocID=520649596 Table 1].

[3] https://www.energysage.com/local-data/solar-panel-cost/ca/.

[4] https://www.cnet.com/home/energy-and-utilities/why-the-cost-of-solar-panels-will-likely-keep-falling/

- A centerpiece of the proposed "Climate Action Plan" that will be heard by the Board on April 16 is a requirement that rooftop solar be installed on all new residential development[5]. However, if the motion is correct and rooftop solar is not particularly cost effective, then it would be entirely irresponsible for the Board to adopt the Climate Action Plan as it is currently drafted because doing so would unnecessarily drive up the cost of new residential development that is so desperately needed in the county. Fortunately, rooftop solar is cost effective (particularly in comparison to utility scale renewable development); the motion is wrong to declare otherwise.

- The motion supposedly "builds on" an action taken by the Board on December 19 which directed staff to develop a new ordinance to address the widescale deployment of battery energy storage systems ("BESS")[6]; however, the motion completely ignores the most critical aspect of the December 19 action: namely, the importance of avoiding an "overconcentration" of energy development within a community. The failure of the motion to address overconcentration is very troubling, particularly since the motion appears to target the 5th Supervisor District in general and the Antelope Valley area in particular[7]; this suggests that the Antelope Valley will become the County's "dumping ground" for utility scale generation projects and the accompanying high voltage transmission lines that are needed to carry Antelope Valley generation to urban Los Angeles County. There is no "equity" in such a program. Moreover, 65,000 acres of open space and habitat in the Antelope Valley have already been replaced with renewable energy projects; thousands of Joshua trees have been destroyed, entire scenic vistas have been eliminated, and hundreds of miles of new, expensive, high voltage transmission lines have been constructed. And this is only the beginning. Decarbonizing Los Angeles County will require more than 750 square miles (or 480,000 acres) of solar panels[8]; this can be achieved efficiently and at a comparatively low cost through expanded rooftop solar coupled with distributed battery storage facilities that are deployed throughout Los Angeles County's urban areas or it can be achieved inefficiently and at significantly higher cost (in both dollars and environmental destruction) by pursuing remote utility scale

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5 "Implementing Action ES3.1" states "Require rooftop solar PV for all new development".

6 Agenda Item 98A.

7 The motion explicitly states that utility scale renewable generation should be permitted in the "Economic Opportunity Areas" of the Antelope Valley.

8 *Assessment of The Land Area Required to Fully Decarbonize Los Angeles County Via Photovoltaic Solar Generation*. March 7, 2022. See Attachment 1.

generation projects and investing many tens of billions of dollars in new transmission facilities. Moreover, utilities and energy developers will accrue significant financial benefits if California's green energy goals are achieved via utility scale remote generation and they will earn little to nothing if California's green energy goals are achieved via rooftop solar and distributed generation and storage. Unfortunately, the motion irresponsibly advocates only for utility scale development and dismisses rooftop solar based on erroneous and inaccurate assumptions. Equally important, requiring the urban areas of Los Angeles County to become entirely dependent on energy that is delivered via a handful of high voltage power lines which are highly susceptible to damage by either terrorists or natural disaster is not a plan; it is a catastrophe waiting to happen.

- The motion directs staff to look at allowing utility scale energy projects in the "Economic Opportunity Areas" of the Antelope Valley; this runs afoul of another centerpiece objective in the Climate Action Plan which is to achieve a "job density" of 300 jobs per acre[9]. The Board is reminded that the Economic Opportunity Areas in the Antelope Valley were intentionally created by the Antelope Valley Area Plan expressly for the purpose of achieving an appropriate jobs/housing balance in rural and suburban Antelope Valley and thereby significantly reduce commuter VMT; this balance cannot be achieved if the Economic Opportunity Areas are reduced in size.

- SORT is particularly concerned that the motion may result in the elimination of "undergrounding" requirement for generation tie lines which connect generation to the transmission grid; if the County allows this, then every one of the hundreds of new individual energy farms that will be spread across hundreds of square miles in the Antelope Valley will be connected by a dedicated high voltage transmission power line. This will result in many hundreds of miles of new and expensive transmission lines cluttering virtually every highway in the Antelope Valley and destroying every scenic viewshed in every direction; it will be incredibly inefficient, incredibly expensive, and completely unnecessary. It is a myth that it is too expensive to underground power lines from renewable generation resources; for example, consider all the enormous wind farms in the Tehachapi area that are all interconnected *with minimal above ground high voltage transmission lines*. With proper planning and strategically located substations placed adjacent to existing Edison transmission facilities, expensive above ground high voltage transmission lines can be avoided.

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9 See measure T2.

- To ameliorate the terrible devastation that will be wrought by this motion when rural protections in the REO are substantially eliminated, the motion proposes to create "energy resiliency" in these communities through the deployment of "community microgrids"; unfortunately, this proposal is misguided. The "energy resiliency" of a community refers to the ability of a community to run in "island mode" and operate independently from the CAISO transmission grid; thus, it is appropriate in remote areas that are served by tenuous or unreliable power generation facilities or transmission line sources. These circumstances do not exist in Los Angeles County because Southern California Edison has created a substantial and robust transmission system that is connected to the CAISO transmission grid at numerous locations. In fact, SORT is not aware of any communities in Los Angeles County that have unreliable transmission service. In contrast, there are *many* communities in Los Angeles County that have unreliable *distribution* service because Southern California Edison has a penchant for cutting power on its distribution network during moderate or high wind events (known as "public safety power shutoffs" or "PSPS" events); however, during PSPS events, "community microgrids" are ***completely useless.*** This is because "community microgrids" rely on the distribution network to deliver power to community residents; when a community's distribution network is shutoff during a PSPS event, power from the "community microgrid" cannot be delivered. In other words, and contrary to what the motion suggests, community microgrids will not augment "resiliency" in rural Los Angeles County communities *especially* during PSPS events. Furthermore, the rural communities that are most likely to be burdened with the new utility scale energy developments and transmission lines which will result from the motion do not experience PSPS events anyway[10]. The motion also offers to develop "property" renewable energy projects and rooftop solar plus battery facilities for "individual buildings"; this is very troubling. How is the County going to decide which lucky properties will be given the gift of free solar plus battery facilities and which properties will be left out in the cold? And how can such decisions ever be "equitable" anyway? Finally, it should be up to the community to decide what types of benefits it should receive as a result of the terrible burdens it will be compelled to endure as a result of this motion; limiting the spectrum of benefits to just a community microgrid or a few select group of residents who receive free rooftop solar and battery systems is simply unconscionable.

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[10] Virtually all the utility scale solar facilities constructed in unincorporated Los Angeles County are located within the flat areas of the Antelope Valley surrounding the rural communities of Antelope Acres, Neenach, Fairmount, Littlerock, Sun Village, Lake Los Angeles, etc; *none* of these communities have ever been subject to PSPS events.

The motion raises a myriad of issues and SORT has a number of other concerns with it; unfortunately, we have been unable to address these concerns here due to the shortness of the comment period. Additionally, the curious stance that the motion takes regarding rooftop solar and its false narrative that utility scale generation costs less than rooftop solar leads SORT to believe that the Board has received skewed and unreliable information from utilities, energy developers, and other special interest groups who all have a financial incentive to advance utility scale renewable generation at the expense of distributed generation. If the Board "buys into" this false narrative, then electric rates will continue to unnecessarily spiral upwards over the next two decades. Therefore, SORT respectfully requests that the County refrain from approving this motion until more thorough assessment has been prepared.

Sincerely;

/S/Jacqueline Ayer
Jacqueline Ayer, Director
Save Our Rural Town

ASSESSMENT OF THE LAND AREA REQUIRED TO FULLY DECARBONIZE LOS ANGELES COUNTY VIA PHOTOVOLTAIC SOLAR GENERATION

March 7, 2022

PREPARED BY

Jacqueline Ayer
Director, Engineering Operations
AIR QUALITY SPECIALISTS

Mailing address:
4533 MacArthur Blvd. #564
Newport Beach, CA 92660

AIR QUALITY SPECIALISTS

WE'VE BUILT OUR NAME AROUND QUALITY

Summary: *Full decarbonization of Los Angeles County will require the development of more than 700 square miles of new solar panels. The environmental impacts that this development will have on pristine deserts and rural communities will be significant and can only be avoided if the County's decarbonization program is founded on the premise that truly reliable and sustainable renewable energy is only achievable through distributed generation.*

The County of Los Angeles has recently released several plans and documents that evince a clear intent to decarbonize the County by transitioning to zero emission energy and transportation systems and attain "Carbon Neutrality" by 2045[1]. Achieving this objective will require a significant expansion of renewable energy resources to eliminate greenhouse gas emissions ("GHG emissions") from the County. A review of the plans and publications issued in support of the County's decarbonization goal reveals that there has been no consideration given to the scope and extent of the renewable generation resources required to achieve carbon neutrality countywide; this is a critical parameter that ought to be factored into County decarbonization plans from inception. Accordingly, Air Quality Specialists ("AQS") has prepared the following estimate of the total area of solar panels that will be required to fully decarbonize Los Angeles County.

GHG sources in the County are extensive and diverse, however major GHG sources include residential and non-residential electrical usage, natural gas usage, and transportation fuel usage (gasoline and diesel). The analysis prepared by AQS (presented in Attachment A) indicates that a minimum solar panel area of 294,000 acres will be required just to decarbonize existing electrical usage, replace existing gasoline and diesel sales with sufficient electricity to support electric powered vehicles, and decarbonize a portion of the natural gas that is currently used within Los Angeles County[2]. Notably, these sources account for less than 75% of the County's actual GHG

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[1] County-wide decarbonization is a foundational element of the County Sustainability Plan adopted in 2019 [https://ourcountyla.lacounty.gov/]. Additionally, The "Los Angeles County Climate Action Plan" intends to decarbonize all unincorporated areas and "Lead by example" to decarbonize the rest of the county [https://planning.lacounty.gov/site/climate/wp-content/uploads/2021/12/NOP_CAP-Initial-Study_Final.pdf].

[2] This analysis was derived based on the following energy data provided by Los Angeles County for 2017: 1) Total electricity usage = 67,569 GWhr; 2) Total natural gas usage (excluding power generation and cogeneration) = 295,601,312 MMBtu; 3) Total gasoline sales = f 3,659,000,000 gallons; 4) Total diesel sales = 301,000,000 gallons. Data obtained from Los Angeles County: https://data.lacounty.gov/dataset/LA-County-Annual-Gasoline-and-Diesel-Fuel-Sold-Mil/3cnn-cvz8.

footprint[3], so full decarbonization of Los Angeles County is estimated to require more than 424,000 acres of solar panels[4] (nearly 700 square miles). This result does not factor in the area required to accommodate ancillary facilities such as transmission and distribution infrastructure needed to deliver this new renewable power to customers or energy storage facilities necessary to support a reliable "clean" grid. And, when transmission losses and population growth are accounted for, the area required to decarbonize Los Angeles County by 2045 increases by another 20 percent[5] to 509,000 acres (or 795 square miles).

This estimate is consistent with renewable energy area projections prepared for other decarbonization programs across the country. For instance, the "Solar Future Study" released in 2021 by the U.S. Department of Energy ("DOE") predicts that nearly 7,000 TWhr of solar generation will be required to largely decarbonize the United States by 2050[6]. Given that Los Angeles County accounts for 3.17% of the U.S. population[7], DOE's estimate indicates that, on a population basis, 222 TWhr (or 222,000 GWhr) of solar generation will be required to largely decarbonize Los Angeles County. This value, when reconciled with data recently published by the Institute of Electrical and Electronics Engineers demonstrating that 2.2 acres of solar panels will produce 1 GWhr/year[8], yields a solar panel area projection of 488,000 acres (or 763 square miles) to largely decarbonize Los Angeles County.

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3 As indicated in Attachment A, these sources account for approximately 73 million metric tons of CO2 ($MMTCO2_e$), but the County's total carbon footprint is 105 $MMTCO2_e$ [see the "Los Angeles County Sustainability Plan" adopted August 6, 2019 at page 106].

4 424,000 acres was derived by linearly scaling up the calculated 294,000 acre value (which accounts for only 72 $MMTCO2_e$ of the County's total GHG Footprint) to derive the area required to decarbonize the County's existing 105 $MMTCO2_e$ footprint.

5 This 20% estimate is actually low; the Southern California Association of Governments projects area population to increase 19% by 2045 (derived from Table 3 of SCAG's SoCal Connect Demographics And Growth Forecast Report [https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579] and the U.S. Energy Administration estimates transmission and distribution losses in California exceeded 5% in 2020 (derived from Data Table 10 of U.S. EAI's State Electricity Profiles at https://www.eia.gov/electricity/state/california/2020).

6 U.S. Department of Energy released its "Solar Futures Study" September 2021. https://www.energy.gov/sites/default/files/2021-09/Solar%20Futures%20Study.pdf at 49.

7 in 2019, the population of Los Angeles County was 10.4 million and the population in the U.S was 328.3 million.

8 IEEE report: 1 GWhr/year requires 2.2 acres of solar panels: "Land Requirements for Utility-Scale PV" found here: https://ieeexplore.ieee.org/document/9676427/metrics#metrics.

Another analysis prepared by The Nature Conservancy ("TNC") projects that the State of California will require 1.6 - 3.1 million acres of wind and solar by 2050 to support the movement toward “electrifying everything"[9]. Given that Los Angeles County comprises 26.3% of the population of California[10], TNC's estimate suggests that, on a population basis, the decarbonization of Los Angeles County will require 420,800 - 815,300 acres of renewable generation resources.

The County's decarbonization objective can be achieved by either directing renewable energy generation and storage to occur locally so that power is reliably and sustainably created where it is used (referred to as "distributed generation" or "in-situ generation") or by directing renewable energy generation and storage to occur remotely in massive solar farms (often located in desert open spaces) which require the conversion of vast areas of pristine desert and agricultural lands to industrial uses and the construction of extensive high voltage transmission lines through Very High Fire Hazard Severity Zones to deliver power to the County's urban "load". Power will be delivered via a handful of open-air, high voltage transmission substations which are themselves vulnerable to outage as a consequence of natural and man-made events. The substation and transmission line vulnerabilities that are presented by the remote generation option introduce substantial reliability concerns which do not exist in the distributed generation model. Though these issues have not been considered by the County in its contemplation of a decarbonization strategy, it is certain that the environmental impacts resulting from a "remote generation" path will be tremendous[11]. Such impacts would also be unnecessary because the County's "developed" area is sufficiently large to accommodate the 700+ square miles of solar panels needed to achieve and maintain carbon neutrality in Los Angeles County by 2045[12] as shown in Attachment B.

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9 https://www.scienceforconservation.org/assets/downloads/PoP_PolicyRecsSumm_2019.pdf

10 In 2019, the population of Los Angeles County population was 10.4 million and the population of California was 39.51 million.

11 These impacts include, but are not limited to, the elimination of extensive biological resources, wildlife corridors and habitat, ambient dust clouds rivaling "dust bowl" conditions, death and injury to wildlife (for example, migrating waterfowl often mistake solar panel farms for large bodies of water- https://www.kcet.org/redefine/water-birds-turning-up-dead-at-solar-projects-in-the-desert) and wildfire ignitions in high fire hazard areas.

12 According to Page 90 of the County's adopted Sustainability Plan, 64.4% of the County is classified as "natural area" which means that 35.6% is developed. Los Angeles County is 4,084 square miles in area; thus, more than 1,400 square miles of Los Angeles County is "developed" (.356 x 4084 = 1454).

The environmental impact of achieving the County's decarbonization goal is not the only issue that the County has heretofore declined to address; a number of social outcomes and human impacts have also been overlooked. For example, as part of its net-zero energy strategy, the County is aggressively pursuing transit-oriented districts and advocating for programs and policies that make driving inconvenient (such as reduced parking requirements in new developments and the elimination of traffic lanes) and expensive (such as supporting gas tax increases, congestion pricing, and moving toward an all-electric vehicle future). A potential equity outcome of these policies is that driving will eventually become a privilege that is only enjoyed by the "well off".

Another impact of the County's decarbonization program that has yet to be addressed relates to the decarbonization of buildings and the energy grid. Specifically, as fossil fuels are eliminated from the County, residents and businesses will become increasingly dependent on electrical generation resources that are not always reliable. To address this, the County is expected to adopt very aggressive (and arguably hypothetical) energy efficiency and "demand management" targets; if these targets are not achieved, residents and business throughout the County will experience substantially more involuntary power shutoffs (brownouts and blackouts). This is no small thing; power shutoffs pose extensive public safety risks[13] and threaten the wellbeing of customers who are dependent on electrical devices and equipment. In rural areas of the County, power shutoffs have become almost routine: Since 2019, rural residents in the County have experienced more than 20 lengthy power shutoffs (many lasting 2 days or more), and the local school district serving the Communities of Acton and Agua Dulce lost nine days of classroom time during both the 2019-2020 school year and the 2020-2021 school year[14]. During a recent snowstorm event in the Antelope Valley, rural residents were without power for nearly a week while temperatures remained near freezing; those residents who relied on propane for heat were more fortunate than those whose homes

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[13] In Decision D.90-90-030, the California Public Utilities Commission assessed the risks caused by power shutoffs; they include increased fire risk from people using generators, candles, lanterns, camp stoves and barbecues, increased traffic accidents due to non-functioning traffic signals and street lights; impaired fire-fighting capabilities due to the loss of water pressure, impaired water and sewage facilities due to pumping loss; schools close; customers with disabilities remain trapped because elevators do not function; loss of cellular phone and internet communication networks, etc.

[14] These events are described in public comments on file with the California Public Utilities Commission in response to power shutoffs initiated in Los Angeles County by Southern California Edison between 2019 and 2021.

were heated with electricity. Presumably, the County will eliminate propane resources as part of its decarbonization strategy; the adverse effect that this will have on residents in rural communities has never been considered or addressed by the County.

The evaluation presented herein addresses only a small portion of the changes and environmental impacts that will result from implementing the County's decarbonization strategy and insofar as AQS can determine, the County has not given them any thought. This is troubling; it is essential that the County develop its decarbonization program responsibly and in a manner which anticipates and mitigates the environmental impacts and social outcomes that it will create. The decarbonization plans and strategy documents that have been issued by the County thus far merely set ambitious goals and provide optimistic descriptions of positive GHG reduction outcomes; the County appears disinclined to do the "hard work" that is necessary to ensure that the potentially significant adverse impacts of decarbonization are adequately addressed and properly mitigated. For example, the Sustainability Plan adopted by the County Board of Supervisors in 2019 presents and discusses County GHG emissions and it establishes a full countywide decarbonization target date of 2045, but it fails to even acknowledge that achieving this target will have environmental consequences. Similarly, the initial study issued recently for the County's Climate Acton Plan ("CAP")[15] echoes the decarbonization objectives established by the Sustainability Plan, but it fails to consider any of the impacts described above. The Initial Study also concludes that most impacts will be "less than significant" because the CAP is simply a "policy document" that merely "supports development already allowed under the General Plan" and will therefore not result in many direct effects[16]. However, this conclusion is flawed; the County General Plan was adopted in 2015 and long before the Sustainability Plan was developed, thus it never anticipated the County's current decarbonization goals and it certainly never contemplated the need to develop 700+ square miles of new renewable energy facilities.

Perhaps this assessment will help spark a meaningful discussion on how the County can develop a decarbonization program which comprehensively considers and mitigates potentially adverse environmental impacts and achieves true resiliency and equity for all County residents.

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[15] CAP Initial Study at pp. 1-2. https://planning.lacounty.gov/site/climate/wp-content/uploads/2021/12/NOP_CAP-Initial-Study_Final.pdf .

[16] Id at 10, 17, 20, 23, 29,32, etc.

ATTACHMENT A

CALCULATED LAND AREA REQUIRED TO ACHIEVE FULL DECARBONIZATION OF LOS ANGELES COUNTY

LAND AREA REQUIRED TO DECARBONIZE LOS ANGELES COUNTY

	Year	Non-res electricity (GWh)	Res electricity (GWh)	TOTAL electricity (GWh)	Total natural gas (MMBTU)	Total NG excl cogen & gen (MMBTU)	Gasoline sales (10^6 gallons)	Diesel sales (10^6 gallons)
	2015	49,130	20,472	69,602	447,565,899	276,113,141	3,465	328
	2016	49,141	20,330	69,471	455,096,480	287,770,711	3,577	309
County data used:	2017	48,100	19,469	67,569	456,679,135	295,601,312	3,659	301

DECARBONIZE ELECTRICAL USAGE

% of electrical energy that contributes to GHG:	45%	(Note 1)
Electrical generation to be decarbonized:	30,406	GWhr

DECARBONIZE NATURAL GAS USAGE
(excluding cogen & electrical generation uses)

Natural gas usage to be decarbonized:	295,601,312	MMBTU
% of Natural gas used for space heating:	40%	(Note 2)
Btu of heating by existing space heating systems:	100,504,446	MMBTU (Note 3)
Heat pump GWhr required for equivalent Btu:	8,375	GWhr (Note 4)
% of Natural gas used for non-space heating:	60%	
GWhr required for equivalent BTU :	51,984	GWhr (Note 5)

DECARBONIZE GASOLINE SALES

Gasoline usage to be decarbonized:	3.659.E+09	gallons
MMBTU of gasoline used:	440,126,474	MMBTU (Note 6)
MMBTU of gasoline to be decarbonized:	110,031,619	MMBTU (Note 7)
Gasoline energy to be decarbonized:	32,250	GWhr equivalent energy
Elecrical energy to operate EV equivalent:	37,941	GWhr (Note 8)

DECARBONIZE DIESEL SALES

Diesel usage to be decarbonized:	3.010.E+08	gallons
MMBTU of diesel used:	41,351,681	MMBTU (Note 9)
MMBTU of diesel to be decarbonized:	14,473,088	MMBTU (Note 10)
Diesel energy to be decarbonized:	4,242	GWhr equivalent energy
Elecrical energy to operate EV equivalent:	4,991	GWhr (Note 8)

County 2017 energy usage to be decarbonized:	**133,698**	**GWhr**
Solar panel area required to generate 1 GWhr/ yr:	2.2	Acres/GWhr·yr (Note 15)
	294,136	**Acres of solar panels**

GHG EMISSIONS CALCULATED FOR THESE SOURCES

Electrical usage:

709	MTCO2 /GWhr (emission factor: c-based electricity-Note 11)
45%	% of electrical generation that is carbon-based (Note 1)
30,406	GWhr of electricity to decarbonize
21,557,967	MTCO2 from electricity generation
21.56	MMTCO2 from electricity generation

Natural gas usage (excluding cogen & electrical generation uses):

0.0053	MTCO2 per therm (emission factor: natural gas - Note 12)
0.0530	MTCO2 per MMBTU of natural gas
15.67	MMTCO2 from natural gas used in LA County

Gasoline sales:

0.008887	MTCO2 per gallon (emission factor: gasoline - Note 13)
32.52	MMTCO2 from gasoline sold in LA County

Diesel sales

0.01018	MTCO2 per gallon (emission factor: diesel -Note 14)
3.064	MMTCO2 from diesel sold in LA County

TOTAL GHG EMISSIONS FROM THESE SOURCES

72.8103 MMTCO2

Note: This analysis considers only four retail sources of GHG emissions in Los Angeles County; it does not account for the County's full GHG footprint (which is actually 105 MMTCO2 - Note 16). The total area of solar panels required to fully decarbonize Los Angeles County is estimated by linearly scaling up these calculated results. The required solar panel area to fully decarbonize Los Angeles County is estimated to be: **424,174 Acres**

NOTES

1 Power content data from the CEC [https://www.energy.ca.gov/programs-and-topics/programs/power-source-disclosure/power-content-label]
41% of power sold by the Los Angeles County Department of Water and Power came from coal + natural gas and 7% is of an "unspecified" origin
20% of power sold by Southern California Edison came from natural gas and 34% is of an "unspecified" origin.
38% of power sold in California came from coal + natural gas and 9% is of an "unspecified unknown" origin.
Reconciling these data: 45% of electricity used in Los Angeles County generates GHG emissions.

2 Assumes space heating is 40% of natural gas usage in buildings (residential + commercial) from NRDC report "Decarbonization of "Heating Energy Use in California Buildings" [https://www.synapse-energy.com/sites/default/files/Decarbonization-Heating-CA-Buildings-17-092-1.pdf]

3 Assumes existing space heaters achieve a moderate efficiency (AFUE): 85% [https://www.energy.gov/energysaver/furnaces-and-boilers]

4 Assumes gas fired space heaters replaced with air source heat pumps with 8.2 Energy Star Rating of 12000 Btu/kWhr [https://www.energystar.gov/products/heating_cooling/heat_pumps_air_source/key_product_criteria]

5 Non space heat sources largely employ direct heat and are thus assigned a 1:1 energy equivalency of: 0.0002931 GWhr per MMBTU

6 U.S. Energy Information Administration: 120,286 BTU/gallon of gasoline [https://www.eia.gov/energyexplained/units-and-calculators/]

7 This assumes a 25% powertrain efficiency for gasoline engines.

8 Total Electric Vehicle efficiency (wall to wheels) is: 85% (from IEEE studyof Level 1/Level 2 chargers [https://ieeexplore.ieee.org/document/7046253])

9 U.S. Energy Information Administration: 137,381 BTU/gallon diesel [https://www.eia.gov/energyexplained/units-and-calculators/]

10 This assumes a 35% powertrain efficiency for diesel engines.

11 EPA Adopted Emission Rate: 0.000709 MTCO2/kWhr [https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references]

12 EPA Adopted Emission Rate: 0.0053 MTCO2/therm [https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references]

13 EPA Adopted Emission Rate: 0.008887 MTCO2/gal gasoline [https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references]

14 EPA Adopted Emission Rate: 0.01018 MTCO2/gal diesel [https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references]

15 IEEE Report on Land Requirements for Utility-Scale Solar PV [https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=9676427]

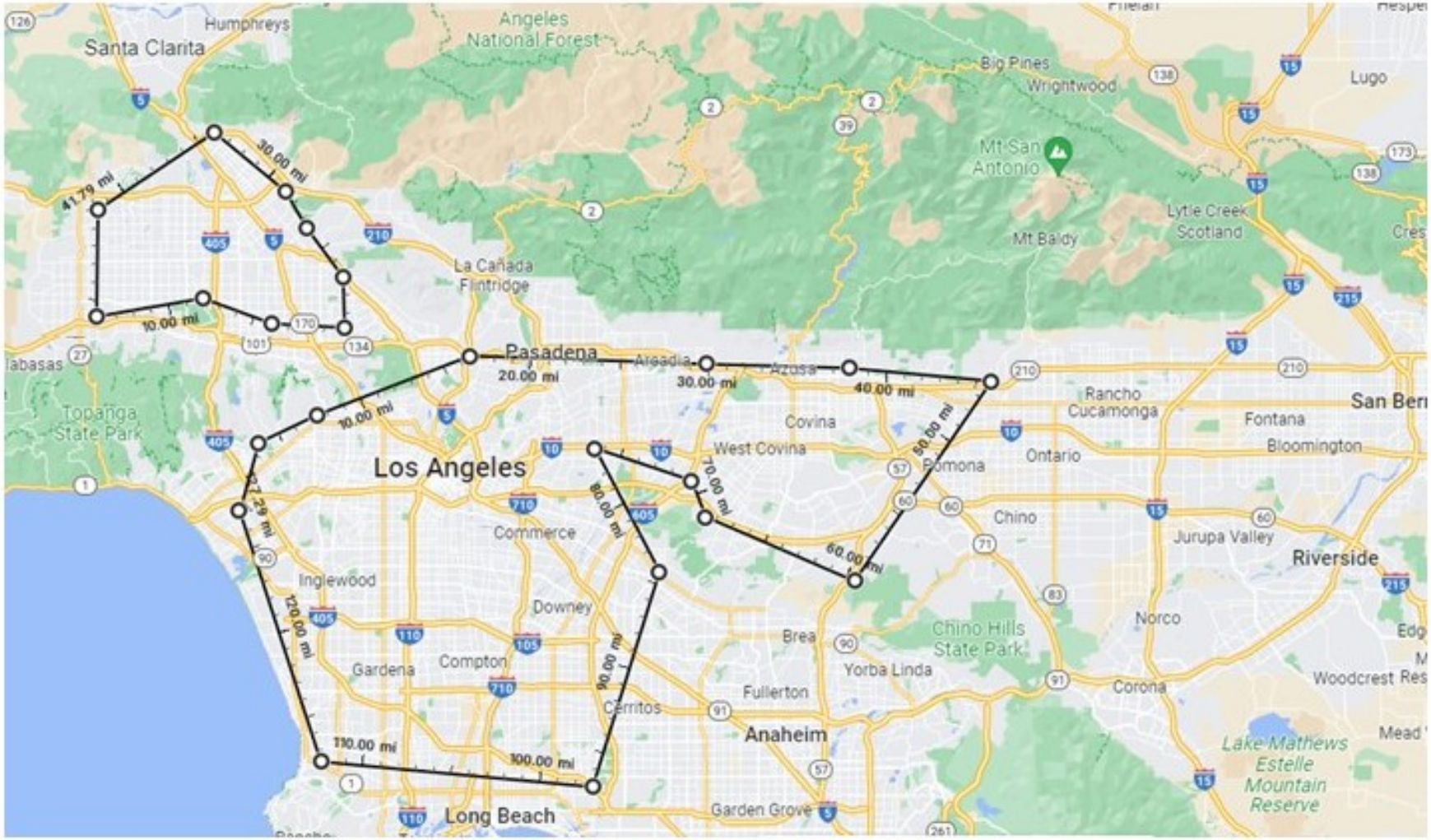
16 According to page 106 of the County Sustainability Plan, Los Angeles County GHG emissions totaled 105 MMTCO2 in 2015

17 U.S. EIA: https://www.eia.gov/tools/faqs/faq.php?id=105&t=3#:~:text=The%20U.S.%20Energy%20Information%20Administration,States%20in%202016%20through%202020.

ATTACHMENT B

MAP OF URBAN PORTIONS OF LOS ANGELES COUNTY DEMONSTRATING THAT 700 SQUARE MILES OF SOLAR PANELS COULD BE ACCOMMODATED WITHIN THE COUNTY'S DEVELOPED FOOTPRINT.

Urban Portions of Los Angeles County are Sufficient to Easily Accommodate 700+ Square Miles of New Solar Panels



(Note: The irregular shapes depicted on the map cover 700 square miles of the County's existing urban area.)