



COUNTY OF SAN DIEGO

AGENDA ITEM

BOARD OF SUPERVISORS

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DATE: March 25, 2026

03

TO: Board of Supervisors

SUBJECT

**UPDATE ON THE ENERGY SUPPLY STUDY AND RELATED CEQA EXEMPTION
(DISTRICTS: ALL)**

OVERVIEW

On May 24, 2023 (09), the San Diego County Board of Supervisors (Board) directed an energy supply study, hereinafter referred to as the Energy Access, Resilience, and Capacity Study (Energy ARC), to research and provide recommendations for renewable energy generation, transmission, distribution, and storage capacity in the San Diego region that considers resiliency from power outages, economic benefits and costs, and local community context. Energy ARC will inform next steps the County and other regional partners can take to optimize the development of renewable energy systems that meet both future energy demands and climate action goals. On April 10, 2024 (10), the Board approved the award of a contract with the Alliance for Sustainable Energy LLC, the contracting authority for the National Laboratory of the Rockies (NLR), previously known as the National Renewable Energy Laboratory (NREL), a national laboratory of the U.S. Department of Energy, to procure services for this study led by the Office of Sustainability and Environmental Justice (OSEJ) and to return to the Board to approve continuation of this work each year. The contract was executed on April 28, 2025, for a performance period of 24 months.

NLR is leading the analysis of current and future energy generation, transmission, distribution, and storage capacity in the San Diego region using advanced proprietary and open source modeling software. NLR's work for the County on this project consists of three research tasks: 1) research and baseline analysis; 2) capacity analysis; and 3) barriers and impact analysis. All research tasks, along with feedback and community-led recommendations gathered throughout the process, will be incorporated into a full report that is anticipated to be completed by April 2027. Based on the initial findings of the capacity analysis, which will be completed in May 2026, less than one-third of the region's potential for infill solar has been installed.

OSEJ is complementing NLR's work by leading regional engagement and collaboration to understand the unique perspectives of diverse communities throughout the region and co-create possible paths forward for appropriately-scaled energy generation and storage. This engagement is balancing current and future regional energy demands with community priorities. Interviews, focus groups, meetings and workshops, listening sessions, and an online Engage page are structured to form meaningful connections and learn alongside four key interest-holder groups: 1)

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regional energy providers; 2) local and Tribal governments, and regional agencies; 3) subject matter experts and technical practitioners; and 4) community-based organizations and the general public. Based on outreach and engagement to-date, preliminary considerations have been identified to reflect the role key interest-holder groups play in the regional energy system, successes shared in advancing equitable and clean renewable energy projects, and opportunities shared for collective action.

While staff has already identified several preliminary findings from outreach and engagement, key considerations that are shaping the final report findings and continued coordination with interest-holder groups include:

- Identifying data sharing opportunities between regional energy providers and with local and regional governments to support greater communication of transmission capacity, and building and understanding of where local generation and storage could defer potential infrastructure upgrade costs.
- Developing shared language for local and regional governments to evolve climate action or sustainability goals to achieve 100 percent renewable energy to align with regional energy provider priorities to purchase locally generated clean, renewable energy.
- Involving Tribal governments in all energy conversations at the regional scale to continue showcasing best practice microgrid and other clean, renewable energy technologies currently developed on Tribal lands. Renewable energy generation and storage can also create additional economic benefits for tribes that advance Tribal sovereignty.
- Including impacts of no project options when developing and sharing renewable energy generation and storage projects at neighborhood or community scales to understand how projects could support or strain the existing infrastructure and grid.
- Creating consistent policies, permitting practices, and development requirements for renewable energy generation and storage systems across the region.

Today's actions are for the San Diego County Board of Supervisors (Board) to receive an update on the energy supply study and direct continuation of this work through April 2027, the contracted Estimated Performance Period. With Board approval to continue the Energy ARC study, key activities planned for the second year of work include: completion of NLR's analysis and reporting; additional engagement with and outreach to key interest-holder groups and a return back to the Board in late Spring 2027.

RECOMMENDATION(S)

CHIEF ADMINISTRATIVE OFFICER

1. Find that the proposed actions are not a project pursuant to the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15378(b)(5).
2. Receive an update on the Energy Access, Resilience, and Capacity Study.
3. Direct the Chief Administrative Officer (CAO) to continue development of the Energy Access, Resilience, and Capacity Study under the existing contract with Alliance for Sustainable Energy, LLC through April 2027, the contracted Estimated Performance Period.

EQUITY IMPACT STATEMENT

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As the County continues its decarbonization efforts, it is imperative to ensure that actions are equitable. The Energy Access, Resilience, and Capacity Study analyzes how rooftop and infill clean renewable energy options might impact factors such as ratepayer costs, grid reliability, resiliency, equity, and the environment. The study assesses access to rooftop and infill solar and battery storage for low income, vulnerable, and environmental justice communities impacted disproportionately by climate change. It also evaluates the trade-offs of such infill installations on homeowners and businesses.

SUSTAINABILITY IMPACT STATEMENT

This action supports the County of San Diego Sustainability Goal #3, to transition to a green, emissions-free economy, reduce greenhouse gas emissions, support green job creation and workforce development, and prepare for impacts of a changing climate; and Sustainability Goal #4, to protect the health and wellbeing of everyone in the region, with a focus on collaborating with community partners and advocating for environmental justice for communities that have been disproportionately impacted. This study builds on the research of the Regional Decarbonization Framework Technical Report to analyze the local conditions relating to residential, commercial, and other infill clean renewable energy generation.

FISCAL IMPACT

There is no fiscal impact associated with today’s recommendations. Funds for the 24-month contract costs and revenue of \$500,000 is included in Fiscal Year (FY) 2025-26 Operational Plan for the Land Use and Environmental Group Executive Office (LUEG EXO). The funding source is one-time General Purpose Revenue allocated to LUEG EXO for the Regional Decarbonization Framework. To date, approximately 30 percent of the contract amount has been invoiced. If the project continues into its second year, it will be supported by the remaining funds included in the budget. There may be potential fiscal impacts related to future recommendations which staff will return to the Board for consideration and approval. But at this time, there will be no change in net General Fund costs and no additional staff years.

BUSINESS IMPACT STATEMENT

N/A

ADVISORY BOARD STATEMENT

N/A

BACKGROUND

On May 23, 2023 (9), the Board directed an energy supply study, Energy ARC, to provide research and recommendations for renewable energy generation, transmission, distribution, and storage capacity in the San Diego region that considers resiliency from power outages, economic benefits and costs, and local community context. Electricity demand in the San Diego region is going to double in the next quarter century, while at the same time we are increasing our demand for that energy to come from clean, renewable sources. This transition offers an opportunity to work collaboratively as a region to create a clean and just energy future. However, to do so also requires balancing this demand with the day-to-day energy-related challenges we face including costs of electricity and safety of new technologies. Energy ARC details these demands and challenges to

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identify the scales of clean, renewable energy generation and storage available and understand how we could optimize these scales to meet future demands and address current challenges.

On April 10, 2024 (10), the Board approved the award of a single source contract with the Alliance for Sustainable Energy LLC, the contracting authority for the National Laboratory of the Rockies (NLR), the U.S. Department of Energy's primary national laboratory for energy systems, to procure services for this study led by the Office of Sustainability & Environmental Justice (OSEJ). The contract was executed on April 28, 2025 for a performance period of 24 months. OSEJ, in contract with NLR, is conducting the Energy ARC study over a two-year period (May 2025 to April 2027), and will assess the impacts of optimized options on factors such as energy costs and grid resilience. In coordination, the Energy ARC study will include two components: analyses led by NLR and regional collaboration and engagement led by OSEJ.

The purpose of today's item is to: update the Board on the Energy ARC study; outline planned efforts for the second year of the study; and request approval for continued development of the study and contractual coordination with NLR, as requested in the April 10, 2024 (10) Board direction to return to the Board for approval of each additional option period. Because the Estimated Performance Period for this work is 24 months, today's return serves as the single request for study continuation to complete.

Advancing the Regional Decarbonization Framework

The Energy ARC study advances the County's Regional Decarbonization Framework (RDF), directed by the Board January 27, 2021 (3). Founded on science-based research and communities' voiced priorities, the RDF promotes public, private, and civic interests working together to reach zero carbon emissions across the San Diego region by 2045. Through the RDF lens, the Energy ARC study is compiling learnings from other jurisdictions and agencies, Tribal nations, community-based organizations, businesses, and residents who face the direct impacts of energy-related challenges; and developing cross-sector partnerships with these interest-holders, as well as energy service providers and subject matter experts, to accelerate lasting change through energy and climate action.

Efforts underway expand and add additional local context to the analysis that began with the 2021 RDF Technical Report. The process includes defining and putting into practice regional collaborations and partnerships to envision an energy system with the greatest energy resiliency, safety, and cost benefit to end users. The Energy ARC study will provide a more nuanced baseline understanding of existing renewable energy and battery storage in the San Diego region and identify regional potential for and co-impacts of optimizing infill energy generation, battery storage, and infrastructure. It is analyzing how infill energy options might impact factors such as ratepayer costs, grid reliability, resiliency, affordability, and the environment. It is also assessing opportunities and challenges of the installation and maintenance of rooftop and infill solar and battery storage for diverse communities across the region that include mountain, desert, and coastal ecosystems with communities of varying population densities throughout.

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Technical Analysis

NLR is leading the analysis of current and future energy generation, transmission, distribution, and storage capacity in the San Diego region using advanced proprietary and open source modeling software, including Distributed Generation Market Demand (dGEN), which forecasts the adoption of distributed renewable energy generation and storage (e.g., infill solar and storage), and Renewable Energy Potential modeling assessment tool (reV), which estimates the potential for renewable energy system development accounting for geographical, built environment, natural environment, and regulatory factors. NLR's analysis consists of three research tasks: 1) research and baseline analysis; 2) capacity analysis; and 3) barriers and impact analysis. As research tasks are developed and completed, materials and analyses will be shared through OSEJ-led regional engagement and focused collaboration activities for feedback and review (see Regional Engagement and Focused Collaboration section below). All research tasks, along with feedback and community-led recommendations gathered throughout the process, will be incorporated into a full report that is anticipated to be completed by April 2027.

Research and Baseline Analysis

OSEJ and NLR have had ongoing coordination with regional energy service providers including San Diego Gas & Electric (SDG&E), and the region's two Community Choice Aggregators (CCA), San Diego Community Power (SDCP) and Clean Energy Alliance (CEA), to gather local data to supplement existing NLR data sources and support data and modeling validation to ensure analyses most accurately reflect local conditions. NLR has completed historical data gathering and validation of modeling, confirming near 100 percent consistency between local data sources and projections and information built into their models. This validation allows NLR models to confidently model baseline and future conditions that align with local trends and information.

Capacity Analysis

The capacity analysis will assess potential for infill (i.e., developable within or on existing buildings or developed sites) energy generation (with a focus on solar energy generation) and storage, including available rooftop, parking lot, and infill renewable opportunities. The analysis will support the regional understanding of how infill energy generation and storage could be optimized to meet future regional energy need. The full capacity analysis is expected to be completed in May 2026; however, an initial, high-level summary of analysis trends and anticipated findings are included in Attachment A. These initial findings indicate that there is still significant potential for infill renewable energy generation systems in the San Diego region. To date, the region has installed approximately two gigawatts (GW) of rooftop solar, primarily from installations on residences. These existing installations are less than one-third of the potential rooftop solar capacity for the region. NLR will continue refining these estimates and projections.

Barriers and Impact Analysis

This summer, NLR will also begin developing the barriers and impact analysis, which will summarize barriers to energy generation and storage adoption and positive and negative potential impacts of these systems on local communities. This will include analyzing feedback from interest-holder groups gathered through ongoing outreach and engagement with economic and market potential data and socioeconomic factors.

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The final report will outline options for the Board’s consideration to advance actions the County could take to support infill energy resource development. County-led actions could include further analyses or review to support renewable energy development on County facilities, amend County policies or codes related to development on private property in unincorporated communities, or identify pathways for legislative advocacy at regional and state levels. This final report will be available in late Spring 2027, at which point the Board will be presented with options for consideration to advance findings.

Regional Engagement and Focused Collaboration

OSEJ is leading regional engagement and focused collaboration to complement NRL analysis findings, understand the unique perspectives of diverse communities throughout the region, and co-create possible paths forward for appropriately-scaled energy generation and storage that balance current and future regional energy demands with community priorities. Interviews, focus groups, meetings and workshops, listening sessions, and an online [Engage page](#) are structured to form meaningful connections and learn alongside four key interest-holder groups, noted below. Based on initial outreach and conversations, preliminary findings for each key interest-holder are noted below that will be further refined and incorporated into the Energy ARC report. These preliminary findings reflect the role key interest-holder groups play in the regional energy system, successes shared in advancing equitable renewable energy projects, and opportunities for collective action.

Regional Energy Providers

Regional energy providers include agencies that operate in the San Diego region to procure and transmit energy, including SDG&E and the regions two CCAs, SDCP and CEA. OSEJ coordinates regularly with SDCP and CEA through a monthly Energy ARC coordination meeting to share progress on the NLR analyses, receive feedback on draft materials, and guide methods for outreach and engagement. OSEJ and SDG&E have also had initial coordination meetings to share project scope and intent, and build relationships to encourage data-sharing and future collaboration.

Preliminary Findings

- Regional energy providers are an essential partner in energy-related efforts due to their access to customer information and data, ability to fund or develop energy infrastructure, and responsibility for providing energy to customers.
- Data on transmission and distribution capacity is essential for systemwide energy infrastructure and generation/storage resource planning. Data accessibility could be improved for regional energy providers and key partners in development and planning (e.g., local government agencies). Involvement of the regional energy providers is essential for the Energy ARC study to support analysis validation and ground-truthing.
- Infill generation and storage could reduce costs associated with upgrading local grid infrastructure (e.g., converters or distributors that manage electricity flow in/out of a neighborhood) by reducing the need to transmit electricity from the larger grid into neighborhoods/communities generating enough renewable energy for their local needs.
- Many programs offered by regional energy providers have similar names, intentions, or focus groups, with nuanced differences in how they are administered or who is eligible to participate.

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Creating new processes to communicate between regional energy providers and program administrators could reduce the need for customers themselves to distinguish differences.

- Due to the regional representation of the County's Board and alignment of County energy initiatives with regional and State goals to achieve zero carbon emissions by 2045, the County can play a unique role as a central coordination point between the three regional energy providers, as well as a connector for them to other local and regional government agencies.
- Statewide commitments and local initiatives to achieve 100 percent renewable energy by 2045 create a significant need for more local renewable energy generation and storage. Infill energy resources could significantly reduce the strain on the transmission grid to provide this electricity to buildings throughout the region, but would also require significant policy changes and local buy-in for development. Regional energy providers have an interest in supporting local renewable energy generation and storage that they can also use to demonstrate achievement of their State procurement requirements.

Local and Tribal governments, and regional agencies

Local and Tribal governments, and regional agencies include sustainability, environmental, and emergency service staff from local governments (e.g., incorporated cities, and other County department staff), Tribal governments, and regional agencies (e.g., Port of San Diego, San Diego Airport Authority, San Diego Association of Governments). Interviews with these groups focused on project updates, receiving feedback and ideas, and understanding how the Energy ARC study can support regionwide governmental and agency efforts.

Preliminary Findings

- Land use authority is the primary way that local governments influence energy supply system development. Permitting requirements can impact developer costs and timelines, and zoning and land use overlays can influence the allowable locations and scales of energy supply system development. These regulatory powers can also influence how regional energy providers develop or fund energy generation and storage projects/programs. More uniform permitting requirements and land use policies across local government agencies could streamline activities for infill renewable energy generation and storage system development across the region.
- Local governments that own and operate their own facilities have greater potential and flexibility to use these facilities as examples of infill energy resources and potentially to provide more local access to renewable energy and storage. Renewable energy projects, in coordination with regional energy providers, can provide cost savings and potentially provide new income streams for local governments.
- Local government control in regulating renewable energy generation and storage systems is limited due to State rules and policies for both building- and grid-scale systems, requiring additional coordination between local governments and regional energy providers to plan for and inform communities about various system developments.
- Coordination between Tribal, State, and local governments could be improved for grant opportunities for developing renewable energy systems, electrifying buildings and neighborhoods, or providing energy efficiency upgrades to buildings. Only a few local and regional agencies have government relations staff dedicated to Tribal government coordination.

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- Tribal governments have additional flexibility in developing renewable energy generation and storage on Tribal lands. When developed as microgrids, these energy supply systems can often sidestep challenges faced with interconnecting homes and other buildings on Tribal lands to the regional grid, which in-turn may support new or expanded income streams for tribes.
- Many local governments and agencies recognize the additional benefit of clean renewable energy generation and storage to reduce air pollution. Clean renewable energy solutions create opportunities to replace equipment or vehicles that emit air pollutants during operation.

Subject matter experts and technical practitioners

Subject matter experts and technical practitioners include energy-focused nonprofits, industry groups, labor organizations, and academic/research institutions and groups. Through 10 interviews thus far, conversations have centered around how the workforce is shifting or adapting to new energy technologies and greater demand, advocacy positions these organizations are taking to encourage policy shifts, and understanding how these organizations are projecting energy-system development and needs over the next 20 years.

Preliminary Findings

- Renewable energy system retailers and installers often have the most direct interaction with individuals, businesses, or organizations about renewable energy. This includes serving as the first, and sometimes only, voice informing consumer decisions on installing renewable energy systems or purchasing electric equipment. Transitioning to more renewable energy generation and storage needs to occur in parallel to transitioning to electric equipment in buildings. As such, retailers and installers must have correct up-to-date resources and information to provide informed advice to customers.
- It is anticipated that the future energy system will need to rely on a range of renewable energy generation and storage scales to meet future demand and address current challenges. Nonprofits and energy-focused groups advocate for a variety of these scales to achieve 100 percent clean renewable energy generation, and more collaboration between existing groups could support additional momentum for these combined solutions in the San Diego region.

Community-based organizations and the general public

The San Diego region has many nonprofit or volunteer organizations that exist to address community-specific needs like health, education, or housing. Energy-related needs are becoming a higher priority for these community-based organizations due to high energy costs, and health and safety concerns associated with energy system malfunctions, outages, or hazards.

Preliminary Findings

- Community-based organizations are trusted messengers in communities and greater emphasis could be put on collaboration with and compensation of these organizations to share localized information on their communities' lived experience and understanding of renewable energy generation or storage development, funding sources, or other programs that can support related community concerns (e.g., affordability, clean air).
- General awareness of storage systems stems from recent fires at large battery energy storage systems (BESS) in the region and state. These perceptions result in increased community turnout, often in opposition, to conversations about proposed BESS facilities throughout the

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region. Coordination between regional energy providers, local and regional government agencies, and community-based organizations could be improved to communicate concerns and understand programmatic activities that can be paired with these developments to address issues. Best practices from local governments demonstrate the need to ensure a range of agencies/departments are present to effectively discuss community concerns and priorities (e.g., having fire and emergency response professionals present to discuss safety and response for proposed BESS facilities).

- Regardless of socioeconomic status, many communities are interested in how community-owned could be developed to support local control and access to clean renewable energy. Focus of interest ranges across environmental/sustainability, affordability, and energy independence values.
- Some community members feel that they will not receive the benefits of renewable energy generation and storage unless they install it on a building that they own. Similarly, building owners that require occupants/renters to pay energy bills lack incentive to install these systems. Significant opportunities exist to identify and implement incentive programs that demonstrate clear benefits for non-owners.
- Highlighting potential impact of project versus no project on factors like individual energy costs are important to include in discussion of neighborhood- or community-scale projects.

Regional engagement activities are being hosted in coordination with other County departments and partner agencies and organizations leading related initiatives. A detailed summary of engagement, collaboration, and feedback received to date is included in Attachment B.

Moving forward, and with the Board's approval to continue the Energy ARC study, engagement and collaboration with all four key interest-holder groups and will integrate data from NLR's infill renewable energy generation and storage capacity draft analysis. The draft analysis will provide a more detailed landscape to map community perspectives for a just energy future and alignment with local and Tribal governments' and regional agencies' renewable energy generation and storage goals.

Once the final draft of the NLR report is complete, the report will be shared with interest-holders to review and offer feedback that will be addressed prior to publication. OSEJ will continue broad engagement and collaboration, including a return to the Environmental Justice Workgroup, which is an OSEJ-facilitated County advisory group supporting County departments and other local jurisdictions and regional agencies to advance sustainability and environmental justice solutions.

Next Steps

Key activities planned for the second year of work include:

- Continued development and completion of NLR's analysis and reporting including preparation of options for the Board to consider in late Spring 2027 for County actions or other collaborative opportunities to advance regional renewable energy generation and storage development.
- Additional engagement with and outreach to key interest-holder groups including: interviews with subject matter experts, technical practitioners, and community-based organizations; in-person conversations and listening sessions in communities facing

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significant energy-related challenges; established feedback loops and conversations with regional agencies, local and Tribal governments, and regional energy providers; and regionwide informational campaigns.

- Return back to the Board in late Spring 2027 with the final Energy ARC report and key opportunities for continued advancement.

ENVIRONMENTAL STATEMENT

Section 15378(b)(5) of the State CEQA Guidelines exempts from CEQA review activities that can be seen with certainty to have no impact on the environment. The project consists of the approval of action to receive an update on the Energy ARC; and to direct the CAO to continue development of the Energy ARC Study. Therefore, the proposed action is categorically exempt from CEQA review pursuant to Section 15378(b)(5) of the State CEQA Guidelines.

LINKAGE TO THE COUNTY OF SAN DIEGO STRATEGIC PLAN

This proposed action to receive an update on the Energy Access, Resilience, and Capacity Study and direct the CAO to continue with this effort supports the Sustainability Initiative in the County of San Diego’s 2026-2031 Strategic Plan, through cultivating Resiliency in communities through local energy systems; Community by increasing energy access that improves residents’ Quality of Life; and Environmental Justice by supporting equal access to energy-related decision-making processes through intentional engagement.

Respectfully submitted,



DAHVIA LYNCH

Deputy Chief Administrative Officer

ATTACHMENT(S)

ATTACHMENT A – MID-PROJECT TECHNICAL PROGRESS REPORT MEMO

ATTACHMENT B – REGIONAL COLLABORATION AND COMMUNITY ENGAGEMENT SUMMARY TO-DATE