

**Peninsula Advanced Energy Community (PAEC)
Task 12.4: Final Project Fact Sheet**

The Clean Coalition will accelerate the planning, approval, and deployment of energy efficiency, renewable energy, and related projects in San Mateo County.

The Issue

In order to meet California's bold energy and environmental goals, significant improvements are needed in the way the state generates, transmits, and uses electricity. Quite simply, we need to increase the amount of power generated from local renewables and use energy more efficiently. However, enabling the widespread adoption of key technological solutions — such as local renewables, zero net energy buildings, Solar Emergency Microgrids, and electric vehicle (EV) chargers — requires fundamental changes to the way these projects are planned, financed, approved, and deployed. Identifying viable sites, securing project financing, and connecting clean energy projects to the grid all represent significant challenges.

Project Description

The Peninsula Advanced Energy Community (PAEC) Initiative is designed to overcome existing barriers to clean energy projects and to establish a replicable model that can be used by other communities across California and beyond. Supported by numerous local governments and Pacific Gas & Electric (PG&E), the Clean Coalition's PAEC Initiative is designed to accelerate the planning, approval, and deployment of an Advanced Energy Community (AEC) within a diverse region of southern San Mateo County. The core PAEC region encompasses the cities of Atherton, East Palo Alto, Menlo Park, and Redwood City, as well as surrounding unincorporated areas. The core PAEC region, which is largely developed but also experiencing enormous commercial and residential growth pressure, is representative of similar regions throughout California — ensuring that the PAEC's successes can be replicated statewide. During Phase 1, the PAEC team investigated how renewable energy, energy efficiency, electric vehicle charging infrastructure, and energy storage are being utilized within the PAEC region and documented key challenges to the adoption of these advanced energy solutions. This work informed and will continue to inform the Clean Coalition's close work with municipal partners to distill leading policies related to permitting, building codes, ordinances, and utility interconnection. Specific project plans were developed in Phase 1 for Community Microgrids and Solar Emergency Microgrids that strengthen the grid and provide ongoing power to key facilities during an outage; high-performance and zero net energy buildings; and charging infrastructure to support the rapid growth of EVs. The results of the PAEC Initiative will guide future action by policymakers, governmental agencies, utility executives, and other key decision makers.

Anticipated Benefits for California

General benefits:

Phase 1 of the PAEC Initiative has produced methodologies, data, programs, policies, and financing models that accelerate use of distributed energy resources to provide cleaner, more affordable, efficient, and reliable provision of energy services throughout California. By streamlining the processes to identify, permit, finance, build, and connect AEC projects, the PAEC Initiative has shown how to drive down the costs of developing these resources.

Specific benefits

In Phase 1 of the PAEC initiative is projected to save money for California energy consumers by providing the tools for both streamlined development and enhance grid resilience with renewable-based backup power at critical facilities. Specific outcomes include:

- **Reduced costs of clean local energy:** The tools, data, and expected policy adoption resulting from the PAEC Initiative will reduce the time, uncertainty, and other soft costs, associated with siting, financing, permitting, and interconnecting, which will result in roughly 20% lower prices for clean local energy where these practices are employed.
- **Enhanced grid security:** Detailed project plans have been developed for at least one Solar Emergency Microgrid, which will set the stage to provide indefinite, renewables-based backup power to critical facilities in the PAEC region.
- **Accelerated development of local solar generation:** The PAEC Solar Siting Survey, pictured at the end of this document, identified over 65 megawatts (MW) of technical solar PV siting potential in the southern portion of San Mateo County — enough clean local energy to satisfy peak usage of over 65,000 homes. Notably, over 54 MW of the solar potential identified is sited on sections of PG&E's grid where interconnection should be quick and cost-effective.
- **Improved interconnection policies:** The PAEC *Best Practices: Interconnection for Local, Commercial-Scale, Renewable Energy Projects* report offers specific recommendations to improve the predictability, flexibility, and objectivity of the wholesale distributed generation interconnection review process with the goal of improving project success rate. The Clean Coalition's recommendations include transparent application and review processes, predictable and reasonable timelines, enhanced queue management, dispute resolution procedures, and clear cost-certainty measures. These recommendations align with the goals of California Assembly Bill 327, which required utilities to develop grid planning strategies and programs for the deployment of distributed energy resources, including local renewables at locations on the grid that can accommodate new local generation without expensive interconnection costs.

The following 20-year benefits are estimated based on avoided conventional energy generation associated with each 25 MW of new local solar that is built due to the PAEC Initiative's improved tools and policies.

- **Ratepayer savings:** Energy consumers will save \$12 million in PG&E peak capacity costs, \$6 million in avoided transmission losses, and \$9 million in avoided transmission proportional capacity related costs.
- **Economic stimulation:** Investment equal to 25 MW of new solar PV deployment is estimated to generate \$116 million in total added regional economic output and create \$35 million in local wages from construction and installation.
- **Environmental benefits:** Each year, an estimated nearly 40 million pounds of greenhouse gas emissions will be reduced and 7 million gallons of water saved as a result of PAEC.
- **Avoided loss costs from outages, plus improved reliability:** Medium and large commercial facilities, small commercial enterprises, and residential customers (per 100) will be on track to save \$83,600, \$14,160, and \$9,500 in avoided loss costs, respectively.

Project Specifics (Term: June 26, 2016 – March 30, 2018)

Contractor: Clean Coalition

Partners: County of San Mateo, Town of Atherton, DNV-GL, MenloSpark, Sovereign Energy Storage, Sven Thesen & Associates, Stanford University, PG&E, and others

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