



Notes regarding submitting comments on this Draft Work Product:

Comments are Due April 20, 2018.

Comments shall be no longer than 5 pages.

Comments should be submitted to LDBPcomments@ebce.org

Integrating Local Development Business Plan Outcomes with Integrated Resource Planning

for

East Bay Community Energy

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Introduction: Aligning Local Development with Integrated Resource Planning

Throughout the East Bay Community Energy (EBCE) Local Development Business Plan (LDBP) development process community stakeholders have been engaged through focus groups, public meetings, workshops, and open public comment periods in an effort to identify and better integrate community goals with of EBCE's pre-launch planning and ongoing operational processes. Through this extensive engagement process it has become increasingly evident that EBCE operates within the context of existing county and municipal planning processes, and that each of these entities has their own unique, preexisting energy planning goals and local development priorities. The process of integration of the LDBP with EBCE's Integrated Resource Plan (IRP) must therefore take into consideration the existing plans and initiatives that predate the formation of EBCE.

As EBCE begins to provide service to its customer base, understanding the socio-economic makeup of its service area is another important aspect of this work, and the LDBP Team has reviewed and considered a range of existing resources that detail Alameda County's unique and diverse community. By offering a default power product that is developed over time, with the careful consideration of local workforce and economic development, environmental justice, long-term financial viability, and the critical importance of providing stable and affordable retail rates to all customers, EBCE can improve its fiscal and operational performance. In addition, EBCE can further local economic development outcomes and stabilize its competitive retail rate structures through a combination of local procurement practices, strong workforce policies, innovative local energy programing and business choices that look to integrate LDBP and IRP goals.

Local Development Business Plan Goals

While not a comprehensive list, stakeholder engagement facilitated by the LDBP planning process has looked to identify stakeholder input and the progress of ongoing planning activities, and has identified strong stakeholder support for the following goals and outcomes of the LDBP process.

- Selection of energy resources that result in economic development and local jobs
- Reduction of the carbon intensity of residential, commercial and industrial energy use, including the integration of demand-side management (DSM) programs that reduce peak energy use
- Meeting or exceeding California's aggressive climate protection and Renewable Portfolio Standard (RPS) goals
- Prevention of economic leakage¹ from EBCE operations and procurement
- Engagement and involvement of community stakeholders, including labor and workforce organizations, community groups, government agencies, and disadvantaged community members in local program design and implementation
- Identification of opportunities to meet Resource Adequacy (RA) requirements from sources beyond the wholesale market and from within the EBCE service territory

¹ For EBCE economic leakage is defined as money that flows outside the service area, rather than money that is retained within the local community.

- Protection or reduction of rates, including through the rapid deployment and aggregation of clean, smart, and dispatchable distributed energy resources (DER's)
- Clear and transparent reporting procedures that convey the benefits and outcomes of EBCE's LDBP programs

Integrated Resource Plan Goals

An Integrated Resource Plan lays the rules and protocols for utilities to meet forecasted annual peak and energy demand while leaving room for a reserve margin to cover unexpected variation in energy demand. IRPs normally define where and at what price energy resources are sourced to align energy supply with energy demand. Often legislation, such as SB350 in California, or California Public Utility Commission IRP proceedings govern the contents and requirements of an IRP.

Similar to the LDBP, the IRP has a range of stated or assumed goals and outcomes that are desired as part of the IRP planning and facilitation process. It is notable that, in many ways, IRP goals align with the overarching intent of EBCE's LDBP initiative, and adds additional emphasis on the LDBP goal of protecting the long-term stability and reliability of EBCE operations. The following is a list of typical IRP goals.

- Develop a detailed understanding of energy demand patterns, and a reliable forecast of future energy needs
- Balance short and long term energy supply and demand through a mix of short and long term power supply and RA contracts
- Identification, management, and mitigation of energy market risk exposures (volumetric, regulatory, financial, counter-party, reputation etc.)
- Avoid wholesale procurement price volatility, and peak purchase price
- Protection or reduction of rates
- Adherence to all relevant state and federal legislative and regulatory requirements

A side by side comparisons of the stated IRP and LDBP goals above highlights the fact that integration of these two distinct planning processes is dependent upon weaving together integrated data analytics, procurement practices, local development program design features, and the establishment of organizational priorities and policies in a way that balances stable financial operations, and the ability to meet or exceed regulatory requirements for environmental standards, Resource Adequacy requirements, and socio-economic development opportunities.

Throughout the process of developing the LDBP, EBCE's consulting team has recommended several strategies, thematic program design elements, and internal operational practices designed to contribute to achievement of these intrinsically related goals. The integration of the LDBP with the IRP is possible through the analysis and phase in of local resource options that also meet or exceed the standards codified in the IRP for cost effectiveness and regulatory compliance. In other words, to be truly viable in the highly competitive CCA environment, local clean energy projects must present a realistic business case able to demonstrate sufficient value to warrant any additional expense to the organization, while still meeting or exceeding the flexibility provided by traditional wholesale market power contracts.

LDBP and IRP Alignment Strategies

Incentives through Adders

Incentives for local development and energy outcomes have been recommended in the form of adders for local DERs such as solar and storage, that provide additional community, workforce, or supply shift benefits. The form that these incentive structures can take vary across recommended programs, but in general create an economic “adder” designed to improve the underlying business model, payback period, and profitability of community or commercially driven DER asset deployment. They can also be offered as bid point adders on EBCE solicitations for technologies and services the organization needs, providing a competitive edge for vendors and projects who deliver enhanced value and community benefit. Adders can also be an effective way for EBCE to address market failures that have created barriers that limit the private sector’s ability to serve disadvantaged or overlooked markets (i.e., low-income customers, multi-family residential buildings, or municipal facilities); positively shifting the underlying business case for DER deployment in a way that inspires or drives market response and project development in hard-to-reach market segments. Adders have been integrated into various elements of the LDBP, including both NEM and FIT design recommendations, and while more information can be found in the published LDBP documents on each topic, their features in the context of aligning LDBP and IRP goals are summarized below.

Net Energy Metering

Net Energy Metering is recommended as a near term program designed to incentivize the development of new local generation, and prevent opt out risk and retain customers with existing behind-the-meter (BTM) rooftop solar systems in EBCE’s service territory. NEM has been used to stimulate growth in renewable energy development in California² and under the NEM program, investor-owned utilities in California are required to compensate NEM customers at the “full retail price” for energy produced by installed and interconnected BTM solar photovoltaic (PV) systems.³

This full retail price means that energy produced and used on-site fully offsets pricing for energy that would have otherwise been supplied by the utility. Additionally, excess energy produced and exported to the utility grid is credited at the same price the utility would charge for energy use at the same time from the wholesale market. With NEM, the grid effectively serves as a financial battery and as excess generation is exported to the grid, bill credits are accrued, and customers can use those bill credits at times when their solar systems are not producing energy.

While detailed information on the program can be found in the *NEM Strategy Recommendations* section of the LDBP, the components of the program that are designed to link IRP and LDBP goals include:

- Baseline Export Adder, to prevent opt out and incent new DER asset deployment
- Community Benefit Adder, including income qualified incentives
- Workforce Adder, for projects installed using labor paid at union-scale/prevaling wages
- Non-Profit or Government institution adder

² See website: http://www.leginfo.ca.gov/pub/95-96/bill/sen/sb_0651-0700/sb_656_bill_950804_chaptered.html

³ See website: <http://www.cpuc.ca.gov/General.aspx?id=3800>

- Supply Shift Adder, including west facing solar, small wind, or energy storage
- Mechanisms for retaining EBCE control of DERs incented by NEM program

It is anticipated that an EBCE NEM program can incent the installation of more than 200 MW of new solar, wind, and energy storage facilities. As a result, the local economy would see more than \$600 million of project development in the region. Some of that investment would filter through to local support services (e.g., restaurants, gas stations, logistics companies), and would also result, directly and indirectly, in approximately 480 new local jobs per year, according to a generalized analysis with the Jobs and Economic Development Impact (JEDI) Model created by the National Renewable Energy Laboratory (NREL). With an estimated 20-60% of all NEM projects incented to use prevailing or union-scale wages through the recommended workforce adder, many of these new and existing positions would have a high-likelihood of being career placements paying a livable wage.

Feed-in Tariff

The LDBP recommends that East Bay Community Energy utilize a fixed, non-escalating FIT PPA price initially set at 9¢/kWh for a term of 20 years — recognizing that this will primarily be viable pricing to support commercial-scale, ground-mounted projects. Projects sited in eastern Alameda County are likely to be more cost-effective, as there is a slightly higher solar resource, larger PV siting opportunities, and a lower cost of land compared to western Alameda County.

A 50 MW Feed-in Tariff (FIT) goal by year-end 2021 is recommended to support local energy generation, and incentivize project development in harder to reach market segments. A 50 MW FIT program would supply roughly 1.29% of East Bay Community Energy’s total annual energy sales from local renewable energy sources.

Four pricing adders are also recommended for the FIT program, similar to the structure of NEM adders:

- Built Environment Adder to guide FIT projects to be sited on rooftops, parking lots, parking structures, and other built environments
- Small Project Adder to support a greater diversity of FIT projects
- Community Benefit Adder to guide siting of FIT projects in disadvantaged communities and on tax-exempt built environment
- Dispatchability Adder to support the development of storage projects paired with FIT projects

These pricing recommendations are based upon recent solar pricing data, solar insolation for Alameda County, relevant FIT program pricing design, and relevant site lease costs data. The inclusion of a FIT program will determine the economic incentive needed to establish cost-effective local energy generation. When the FIT baseline is combined with additional adders that target disadvantaged communities, EBCE can promote economic development in the regions of the county that stand the most to gain through the creation of a reliable, resilient, and local grid. When the FIT is expanded to promote the creation of DERs that link with storage capacity, dispatchable energy opportunities can be created that promote off-peak energy generation; resulting in lower costs offsetting wholesale procurement costs.

By phasing short-term/long-term power contracts with the rollout of the recommended EBCE FIT, local energy generation and energy efficiency programs can begin to fill local IRP requirements and utilize a local workforce needed to construct and maintain the new energy production facilities. Establishing a preference for local long-term projects will also help meet SB350 regulatory requirements for long-term renewable energy resource contract durations. SB350 States:

“In Section 399.13(a)(6), SB 350 continues the requirement that: In soliciting and procuring eligible renewable energy resources, each electrical corporation shall offer contracts of no less than 10 years duration, unless the commission approves of a contract of shorter duration.”⁴

Load and Resource Adequacy Management

During launch it is expected that EBCE will solicit a majority portion of its resource adequacy needs from the wholesale CAISO market. A practice that when paired with an established Energy Risk Management (ERM) Policy has the potential to reduce EBCE exposure to price, volumetric, and supply risks. In addition to an ERM, mitigation of risks can in part be achieved through the implementation of a series of local energy programs designed to reduce wholesale procurement costs, meet a portion of RA requirements with new local projects, and engage the service area’s local workforce and community members.

As valuable local resources, Energy Efficiency, Demand Response, distributed solar generation, and energy storage all have the potential to be scaled to provide for RA needs to EBCE. Over time the phase in of DER assets can offset wholesale procurement and simultaneously create local economic development outcomes.

Energy Efficiency

The LDBP team has identified several opportunities for using an energy efficiency (EE) contracting strategy designed to target expensive load among EBCE’s customer base. Large opportunities for customer savings have been identified in the commercial and industrial sectors, that if serviced through an EE strategy can result in reduced peak procurement costs for EBCE from the CAISO market.

It is notable that as a resource building activity EE must be balanced within the non-decoupled nature of the CCA business model, and consider that load reduced through EE also reduces revenues. As such, strong data management practices backed by an internal integrated data platform are essential to identifying the load most likely to supplement EBCE’s goal of reducing wholesale procurement cost and risk, while simultaneously supporting a business model based on the sale of kWhs.

During launch we recommend an EE strategy that builds off the large network of existing EE program and service providers currently serving Alameda County. Education and outreach is likely to be a major part of EBCE’s early EE strategy and can create energy saving opportunities without large capital investment, or the need for a credit rating necessary to directly deploy more capital-intensive energy saving programs such as a direct install or deemed incentive program. Collaborations with existing organizations such as East Bay Energy Watch (EBEW), BayREN, StopWaste and other local government coalitions provides an opportunity to connect EBCE customers with existing EE programs, bringing local development and cost saving outcomes to the community.

At 2-3 years after launch the consulting team recommends the deployment of a pay for performance contracting strategy that is designed to attract energy service companies (ESCOs) to target the load reductions that are most beneficial to the long-term operations of EBCE. Under a pay for performance model EBCE can build into RFPs services for targeting the load of at risk community members such as CARE

⁴ <http://docs.cpuc.ca.gov/PublishedDocs/Efile/G000/M188/K345/188345782.PDF> Page 10-11

customers, and subsequently identify EE service partners motivated to create both rate savings, and social/environmental returns for disadvantaged community members. EBCE can also use a pay-for-performance contracting strategy to catalyze environmental health outcomes through targeting of commercial and industrial emitters responsible for effluent from diesel generators, or other point source emissions and combustion. Electrification and fuel switching in the natural gas and transportation sectors can play a role in targeting energy use currently associated with the creation of air pollutants, and enhance EBCE revenue through strategic load growth.

While detailed overview can be found in the Energy Efficiency Section of this report, the key components for using EE to integrate the IRP and LDBP include:

- Partnership and collaboration with existing EE programs
- Deploying an internal integrated data manager to identify and target expensive to serve customer load
- Cost-causation based program development and lead generation
- Use of pay-for-performance contracts to service customer load and target customer segments in need of bill savings, such as for CARE customers
- Use of EE to target point source emissions and improve environmental outcomes

Demand Response

Demand response (DR) programs can play a foundational role of the energy policy of EBCE by managing market price risks, reducing operating costs, providing important local resources for reliability, helping to defer upgrades to generation, transmission and distribution systems, and delivering economic benefits both to customers and to the CCA

Fundamentally, demand response is needed due to mismatches in the supply and demand for electricity. Demand response is an attempt to either smooth out aggregate demand or shift aggregate demand to correspond with periods of high supply. As Alameda County has aggregate demand levels that range from under 600 MW to over 1600 MW, and an aggregate demand that peaks around 8pm, large opportunities exist for using DR to meet resource needs.

While detailed overview can be found in the Demand Response section of this report, the key components for using DR to integrate the IRP and LDBP include:

- Programs to either “shed” or “shift” load including, Industrial load, Commercial HVAC, and Residential behind-the-meter energy storage
- Collaboration and deployment of DR for industrial facilities, small colleges, and municipal facilities
- TOU rate deployment to “reshape” customer load
- Use of DR to offset RA requirements
- Electric Vehicle charging pilots

New Generation

New generation sourced from local DERs stands as one of the main mechanisms for coupling IRP and LDBP goals. New wind, solar, and energy storage projects have the capability to simultaneously provide local workforce and economic activity, as well as meeting energy supply and resource adequacy requirements. In the near term EBCE can incent the development of DER assets through the implementation of a Net

Energy Metering program, Agency as Developer strategies (i.e., collaborative procurement models), innovative TOU rate pilots, and a FIT designed to incent new local generation.

Aligning new generation with internal resource needs can in part be accomplished through sound contracting and partnership terms found within Power Purchase Agreement Contracts or collaborative procurement models. Detailed overview of these programs can be found in the New Generation Section of the LDBP.

While detailed overview can be found in the New Generation section of this report, the key components for using new generation to integrate the IRP and LDBP include:

- NEM baseline, workforce, community benefit, and non-profit/government adders
- Time of Use (TOU) and Value of Renewable Energy Pricing (VREP) rate pilots
- Collaborative procurement and credit enhancement deployment with local university, government agency, and commercial partners.
- Inclusion of EBCE control or ownership transfer clauses within the contract language of any new PPA established between EBCE and an energy generation or storage project.

Energy Storage

Energy Storage (ES) has the ability to directly link local development goals and resource adequacy outcomes by creating a value stack that improves the long-term flexibility and financial performance of EBCE's energy procurement. Frequency and voltage regulation, peak limiting, load shift, and load shaping are all possible through energy storage and described in greater detail in the Energy Storage Contracting strategy section

The LDBP consulting team recommends that once a credit rating has been established, and cash reserves have been compiled, EBCE pursue a DER aggregation process to create a Virtual Power Plant (VPP) comprised of a network of dispatchable local energy resources. Once built, a VPP backed by a sound portfolio manager and Energy Risk Management platform can be used to respond to market procurement needs on the day ahead or real time CAISO market; allowing EBCE to source a larger percentage resource adequacy requirement from local assets, effectively enabling the organization to undercut the CAISO market.

While more detailed information on the following can be found in the LDBP *Energy Storage Contracting Strategy* section, the key components of the strategy that relate to linking the IRP and LDBP include:

- AB2514 Skinner Mandate Compliance
- FIT dispatchability adders to incent ES
- Residential and Commercial NEM pricing adders to incent ES
- Residential and Commercial TOU and VREP rate pilots
- CARE customer small scale ES handout program
- Collaborative procurement and non-profit partnership and deployment grant financing
- Virtual Power Plant (VPP) Aggregation to create network of dispatchable local energy assets

Procurement Practices

First Source Program

In addition to the use of financial incentives, adders, and/or solicitation bid point adders that award additional points to local contractors, vendors, service providers that use local and/or union labor can create local economic development outcomes and promote the retention of EBCE budget within the service area. As a result, it is recommended that bid point adders are included in the scoring methodology for RFPs/RFOs and EBCE’s other purchasing practices.

First source hiring practices prioritize local vendors, or alternatively award additional points to a selection process to promote local workforce development that will subsequently keep funding and economic activity within the boundaries of Alameda County.

Alameda County currently has a First Source Program designed to provide services to local businesses that work with city and county projects, and help match them with qualified local employees. According to acgov.org:

The First Source Program:

- Assists County suppliers in fulfilling staffing needs
- Places County residents in sustainable, local jobs
- Provides workforce education and training
- During the term of the supplier's contract, as employment opportunities arise within their firm, the supplier will provide the County with a list of qualifications and requirements for candidate search.
- Supplier provides the County with 10 working days to refer pre-screened, qualified potential candidates to the supplier.
- Supplier considers potential candidates to fill any new or vacant positions that are necessary to fulfill their contractual obligations to the County, that the supplier has available during the contract term before advertising to the general public.
- Supplier agrees to use their best efforts to fill their employment vacancies with candidates referred by County, but the final decision of whether or not to offer employment, and the terms and conditions thereof, rest solely within the discretion of the supplier.”⁵

Tapping this resource and linking the roll-out of EBCE’s operations with established county programs will accelerate the efficient matching of internal organization needs with a local workforce equipped with aligned skills needed to implement the projects and programs integral to achieving EBCE’s mission. Opportunities for local sourcing exist at all phases of EBCE’s development. During the planning phase local consultancies, fellowship programs, and hiring practices can be utilized to fill human capacity needs and tap existing networks and professional communities.

As EBCE begins to deploy local DER and DSM programs, engaging trade groups, unions, workforce training organizations, and other community stakeholders in the design and implementation of EBCE’s programs

⁵ <https://www.acgov.org/auditor/sleb/sourceprogram.htm>

will identify opportunities for matching the knowledge, skills, and abilities needed to implement successful programs. Groups like the International Brotherhood of Electrical Workers (IBEW),⁶ Alameda County Labor Council (ACLC), Rising Sun Energy Center, and Cypress Mandela Training Center can be tapped to help align EBCE’s project development and program implementation with local workforce procurement. As active and vocal local advocates for renewable generation these groups will be invaluable to the planning process given their strong ties to the local community.

Local procurement can also apply to EBCE information technology management platforms that will become increasingly important as smart systems and demand response (DR) opportunities mature. Virtual Power Plant management will need to be supported by advanced data platforms and transactive energy market technologies that give an increasing number of local DER providers access to the energy market. Creation, maintenance, and the consistent performance of these programs will require technical skills that can in part or whole sourced from the local community through an outsourcing platform that is designed to incentivize local service providers.

Local Capital and Financing

EBCE can also leverage local capital during all phases of its operation to promote local financial services such as banking and debt services needed to procure equipment for retrofit, or develop new generation. As contractors and outsourced service providers are selected to perform energy efficiency programing, EBCE should look to select local businesses that have a proven track record of realizing cost savings and offer financing packages that are developed in partnership with local capital sources. For example, “pay for performance” models that securitize future avoided costs of energy use or generation and offer no up-front costs to EBCE are becoming increasingly viable. Models of program implementation that reward entrepreneurs willing to tie their returns on investments to the savings they create will motivate work that allows for EBCE to go further with its program budget, fund revolving development funds, and build a portfolio of programs that are capable of both generating new long-term local procurement contracts, and DSM programs that create savings for ratepayers and EBCE alike.

Portfolio Management and Local DER Capacity

EBCE’s recently selected portfolio manager—Northern California Power Agency (NCPA)—will be leading the power procurement and contracting process, as well as scheduling coordination services for the CCA. NCPA will be assuming responsibility for balancing short and long-term power purchases, soliciting PPAs and other energy procurement mechanisms needed to meet local RA requirements to provide an energy mix that conforms with EBCE’s recent commitment to provide the default energy product (called Bright Choice) power mix at 38% RPS and 47% GHG free.⁷ While it is expected that this power resource will come from wholesale procurement, establishing lines of communication between EBCE’s portfolio manager and local DER asset owners and/or aggregators is essential to creating accurate energy use forecasts that can be used to inform upstream wholesale procurement activities.

⁶ <http://www.ibew.org/>

⁷ EBCE. Feb 21, 2018. Board of Directors Meeting.

The following tasks are needed to enable portfolio managers to balance wholesale procurement activities with an increasing supply of local DER capacity:

- Creation of Standard Operating Practices (SOPs) for quantifying the amount of DER capacity qualified through aggregation for RA requirements that can provide a flexible resource able to offset the need for peak energy procurement.
- Quantification and time series definition of solicited or incented load shaping or shifting activities and their ability to underprice short term wholesale contracts on the day ahead market
- Assignment of a liaison between DER asset owners and portfolio managers and integrated data platform communication flows
- Robust Energy Risk Management policies, including the management of curtailment risk for local energy producers
- Preparation to take on DER aggregation dispatch responsibilities, or to act as the conduit through which private sector VPP providers can provide RA or access the wholesale market

Program Evaluation

Once projects and programming are implemented, program Evaluation Measurement and Validation (EM&V) can be deployed to quantify the real-world impact of EBCE's efforts on the local community, as well as identify opportunities for improvement. EM&V best practices can be aligned with LDBP goals by establishing key performance indicators (KPI) that track the organization's outcomes. When combined with an in-house and integrated energy data platform, quantitative analysis can be conducted to track and report EBCE's progress towards its mission and contribution towards larger community goals.

Sample KPIs include:

- LCOE analysis including NPV, ROI, and payback on developed or implemented projects and programs.
- Greenhouse Gas emissions as determined by both the organizations Scope 1, 2 or 3 emissions
- Full Time Employment (FTE) creation metrics
- Peak load and kWh reductions achieved by EBCE's DSM programs
- Customer and EBCE cost savings achieved by EBCE's local program offerings
- Local money multiplier effects of investment, and utilized budget
- Network engagement and stakeholder engagement frequency

Tracking and measuring KPIs not only will highlight the trends and successes of past performance but also begin to shape narratives about future programming options that can be used to inform management decisions about how to best deploy organization and community resources to meet shared planning goals. In sum, a strong program evaluation process can close the loop on the integrated resource planning process and highlight opportunities for improvement, cost savings, and more efficient deployment of limited public resources. The resulting quantitative analysis of a robust program evaluation process can also stand as the evidence of EBCE's successes with LDBP implementation— a valuable resource for public meetings, marketing teams, and finance teams looking to bolster the social impact and business case for funding or regulatory compliance during CPUC proceeding application for Grant funding.

Appendix: Local Case Studies

Local energy development has a long history in Alameda County and several projects and organizations are already hard at work to innovate and scale local energy solutions. Two representative case studies follow.

San Leandro Zero Net Energy Center: IBEW

Local training programs, centers and workforce services are very active within Alameda County. The Zero Net Energy Center⁸ in San Leandro is owned and operated by IBEW Local Union 595 as a training and demonstration center for apprentice and journey-level electricians. The space boasts sustainable building and energy systems such as LED lighting, occupancy sensors, Variable Refrigerant Flow (VRF) systems, and other smart features designed to demonstrate efficient energy production and use technology. As a learning center the building is one of the largest Zero Net Energy buildings in California and acts as a template for the future as it meets the California Energy Commission’s 2030 Net Zero Energy challenge 17 years ahead of schedule.



IBEW's Zero Net Energy Center acting as a training facility for local workforce⁹

By working with local training centers like ZNEC, EBCE can help inform curriculum and skill requirements needed to prepare job seekers for the clean energy workforce – a benefit that will not only support EBCE’s own staffing requirements but also raise the standard and quality of efforts within the entire Alameda County Service Area.

⁸ <http://znecenter.org/about-the-znec/>

⁹ <https://www.znecenter.org/gallery?lightbox=dataptem-j99295p28>



Front view of the ZNE center

Fremont Fire Station 11 Microgrid: Grid Scope

Under a \$2.5 Million CEC grant Gridscope Solutions,¹⁰ a Fremont-based company has recently completed the installation of a microgrid at Fremont Fire Station 11. The project boasts a 25-55KW Solar Canopy System, 95-100kWhr Energy Storage System, and Gridscope Solution’s Cloud-based Predictive Energy Management Software. The two-year demonstration is proving a commercial deployment of a solar plus storage application able to provide critical services to the facility, deliver energy savings, offset the use of an existing diesel generator, and is able to operate autonomously in island mode.



Fremont Fire Station 11 Microgrid, a model for emergency services microgrids developed by Gridscope Solutions

¹⁰ <http://grid-scape.com>

Gridscape Solutions is also working to define the standards of smart networks and controls for the EV and ES storage market, and has EV charging and payment kiosk products in addition to microgrid research and development.



Frank Bishop of Gridscape Solutions demonstrates the internal batteries and controls of the Fremont Fire Station Microgrid

Case Study Summary

Both the Zero Net Energy Center and the Grid Scape Fremont Fire Station Microgrid stand as evidence that local economic benefit and energy outcomes can go hand in hand. The tools, talent, and services needed meet EBCE’s IRP and LDBP goals already exist within the CCA’s service territory. If these resources are leveraged strategically they have the potential to create innovations that will improve both economic and energy outcomes for EBCE and the larger community.

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