

To: Barbara Hale, Michael Campbell
SFPUC CC: Ed Harrington
From: Local Power Inc.
Date: February 18, 2012
RE: CS-920R-B, Task 3, Subtask E, Regulatory and Policy - Interview Analysis

Summary

For Task E, we have identified a set of factors to address in interviews relating to the regulatory process and policy considerations. We have identified 94 interviews that may cover factors applicable to the program. Subject matter areas of interest include: regulations that would be applicable to each specific technology deployment, the regulatory approval process for each, and regulatory and other programs that may provide direct or indirect benefits applicable to the deployment or operations elements of the program. We are continuing to gather information on these areas as we advance our interviews and analytical work. A summary of the related subject matter we have covered in interviews to date, and initial (not exhaustive) analytical points are provided below. The Permitting Report due next month, and the draft Regulatory Report due the month after, will cover full range of subject matter areas we are currently evaluating.

Interviews Conducted

A. Kelly – San Francisco Department of the Environment, Energy Efficiency Programs Manager. Subject matter areas covered included: status of and potential replacements for PGC funding.

A. Mazy – CPUC, Senior Electrical Engineer. Subject matter areas covered included: regulatory structure for micro-grid transactions, tariffs, metering, FERC and CAISO definitions.

B. Hale – SFPUC, AGM Power. Subject matter areas covered included: relationship between Enterprises, regulatory constraints on CCA service and product offering.

B. Polagye – University of Washington, Professor. Subject matter areas covered included: the complications of siting tidal power due to multiple, uncertain jurisdictions.

C. Broomhead – San Francisco Department of the Environment, Municipal Climate Action Plan Coordinator. Subject matter areas covered included: PGC funding, CPUC rulings pertaining to the funding of efficiency programs, strategies to maximize market penetration.

C. Velasquez – CPUC, Energy Division. Subject matter areas covered included: changes to the regulations for Community Choice Aggregators, impacts of SB790, cost recovery mechanisms, positive and adverse regulatory developments for CCA.

D. Murray – San Francisco Department of the Environment, Renewables Program Manager. Subject matter areas covered included: limits to the scope of renewables development within San Francisco.

D. Sider – San Francisco Planning Department, Ombudsman to the Director, Assistant to the Zoning Administrator. Subject matter areas covered included: permitting and zoning within San Francisco, zoning changes since 2009, development process and barriers, review and appeals process.

G. Rodriguez – San Francisco Department of the Environment. San Francisco labor law and policy, green jobs training framework, incentives and cost drivers for local development.

J. Kwong – Permitting processes, jurisdictional issues for rights of way and permitting.

J. Partin - Implementation experience and permitting issues, technological and regulatory barriers.

L. Mitchell – SFPUC. Permitting and development issues and constraints, interconnection, technology studies and timelines.

M. Borak – CPUC, Energy Division, Permitting Analyst. Subject matter areas covered included: process of obtaining permits from the CPUC, CEQA for renewables, common barriers to development, streamlining permitting.

M. Campbell – SFPUC, CCA Program Manager. Subject matter areas covered included: regulatory constraints for CleanPowerSF, observation of policy direction in the City, SFPUC structure.

M. Downey – The Cape Light Compact, Director. Subject matter areas covered included: development risks for public agencies, development strategies for renewables and efficiency measures, relationship to private parties.

M. Tierney-Lloyd – EnerNoc, Western Regional Governmental Affairs. Regulatory development timelines and technology risk factors, FERC and CAISO considerations for demand response development.

M. Zimring – LBNL Markets and Policy. Current CPUC and California financing strategies and timelines, ability to adapt existing financing models and vehicles to CCA paradigm, rate authority.

S. Kiliccote, M. Piette – Lawrence Berkeley National Laboratory. Subject matter areas covered included: current status of OpenADR in CAISO ancillary services markets, results from IRR and

OpenADR Integration pilot, implications for tariff designs, AB1X restrictions, update on national standards process.

T. Vincent – NRG, Engineer. Subject matter areas covered included: barriers to interconnection of generation and end users, current strategies toward development.

San Francisco Labor Policy and Regulations

San Francisco's Local Hiring Ordinance was enacted March 25th 2011. Its essential directive is that all city-funded construction contracts valued over \$400,000 will have to assign 20% of the project hours to San Francisco residents and at least 10% of that to "disadvantaged" workers. This scales up by 5% annually over seven years for project hours assigned to local workers and by 2.5% annually for disadvantaged works; in 2017, 50% of all project hours will be mandatory local hires and 25% of that will go to disadvantage workers. A local worker is defined by the ordinance as someone who has resided in San Francisco for at least seven days prior to the commencement of work. State and federal grants are exempted. When City and State or Federal money is mixed a project, only the City portion must comply. The ordinance is scheduled for review in year three of its seven-year roll out.

The OEWD will work with contractors to help them find workers to satisfy the requirement and also develop the workforce directly through training programs. For the purposes of CleanPowerSF, their programs could be directed to train workers in the skills needed for the in-City deployment. LPI is coordinating with OEWD and SFDOE on these matters.

Permitting

Permitting requirements and timelines vary significantly by technology, installation size, and location, with some (such photovoltaics and most demand-side measures) requiring few or no permits and others (such as wave power) requiring lengthy permitting processes in multiple jurisdictions that will require 5 to 7 years. These permitting timelines define the necessary order of projects that will be implemented.

California Environmental Quality Act (CEQA)

Interviews indicate that SFPUC should prepare a Master Plan encompassing all CleanPowerSF related in-City deployments, to anticipate CEQA requirements. CEQA is not required for demand-side measures, and photovoltaics may obtain a categorical exemption. A key consideration is that the in-City deployment may trigger a 'whole of the action' review, in which impacts to PG&E's distribution system may have to be taken into consideration. Minimizing net metering or distribution wheeling by strategically deploying in-City assets may avoid this, and is part of LPI's deployment analysis. When connecting new projects to the grid, SFPUC must have completed documentation of all CEQA review factors in order to be able to remain on-schedule. It is critical that site documentation processes standardize a maximum detail level for data collection in order to properly prepare the City for successful deployment schedules.

Permitting and Zoning

LPI is researching how permitting and zoning codes have evolved since the Draft Implementation Plan was submitted in 2007. Approximately one-third of the City has been rezoned, and the permitting code has been revised multiple times (27 times in 2011 alone). Provisions related to CEQA, air quality, avian health impacts, and historic districts have been strengthened.

One important distinction for permitting is whether the proposed generating facility is the principal use of a new building, or is an augmentation of a building. The permitting in the latter is considered a mechanical upgrade, and enjoys a relatively simple review process unless the new development expands the envelope of a building, e.g. a pad in a parking lot for a fuel cell or a wind turbine.

Permit applications are generally subject to discretionary review, except for solar photovoltaic projects. Discretionary review hearings will present an element of uncertainty in estimating the timeline associated with developing any particular site. A potential solution under review is to apply for a rule change to the planning code from the Board of Supervisors to streamline or otherwise mitigate this process.

Permitting at the Port of San Francisco

The Port has a unique autonomy in the City around local permitting of projects on its properties, enjoying sovereign permitting authority over its own work independent from the City Planning Department or other departments. The Port still requires, where appropriate, State, regional and Federal permits.

Wave Power

Wave energy conversion technologies appear very promising, but due to permitting factors could not come online until approximately the fourth or fifth year of CleanPowerSF service assuming permit applications are filed before or immediately after Phase I service begins. The City has identified 100 MW of wave power potential in the City-controlled Southwest Ocean Outfall Buffer Zone, approximately seven kilometers out to sea. In February 2009, the City submitted a preliminary permit application to FERC for a 30 MW wave farm, which was dismissed because the City did not have a Minerals Management Service lease. The City recently completed a follow-on whale migration and sedimentation study, and is going forward with another permit attempt.

PG&E Interconnection

PG&E's interconnection procedures are called the Generator Interconnection Procedures (GIP) under the Wholesale Distribution Tariff (WDT), most recently revised in early 2011. Broadly, there are three interconnection procedures that vary in timeline and expense, determined by the size and type of the generating facility as well as its location on the distribution grid. These factors are being researched for incorporation into LPI's siting analysis.

CCA Implementation Plan

The SFPUC has already filed an implementation plan with the CPUC, though there remains a question of whether a new plan would need to be drafted and filed if the program design departs too significantly with the one already proposed.

SB790: Access to Smart Meter Data

Senate Bill 790 (2011, Leno) expanded access to utility end use meter data by CCAs in a very important way for purposes of implementing the In-City Rollout. Whereas AB117 (2002, Ammiano) had already required access to end use historical electrical meter data, meaning data logged in the past, SB790 has expanded¹ the requirement to a category of data specified in Section 8380 of the Public Utilities Code to include, specifically, data associated with “a customer’s electrical or natural gas usage that is made available as part of an advanced metering infrastructure, and includes the name, the account number, or residence of the customer.” This data will be extremely useful for load curve analyses, targeting demand-side measures, and simplifying contractual shared savings arrangements with demand-side product customers.

LPI is also exploring other ramifications of SB790.

CPUC Efficiency Funding

Public Goods Charge Funds

Despite the termination of the PGC funds, SFDOE remains confident of securing funding, pending PG&E approval, for their next EnergyWatch program cycle on the basis of their impressive achievements (of 800%+ over program goals in some cases).

On-Bill Financing

The CPUC is aggressively pursuing the implementation of on-bill financing and on-bill repayment vehicles for the 2014 program cycle² to scale up investment in energy efficiency beyond utility procurement funding. Current IOU pilots offer 0% financing, as they are prohibited by law from earning interest on loans. Since the IOUs are compensated at their allowed rate of return, this is essentially an interest buy-down program, and not seen as the best way to leverage public funds. Alternative program designs include third-party finance. The final ruling should be released next month.

¹ Public Utilities Code 366.2(c)(9). See CPUC letter numbered 431574, signed by the CPUC Energy Division Director and dated February 2, 2012, orders Pacific Gas & Electric Corporation, San Diego Gas & Electric Corporation, and Edison International to file modified Electric Schedule E-CCA-INFO enabling governmental agencies and CCAs – as defined in P.U. Code Section 331.1(a-c)—to receive the “electrical consumption data as defined in Section 8380.”

² CPUC R.09-11-014

CCA Efficiency Financing

Both on-bill and off-bill financing for efficiency technologies are being considered. A variety of financing mechanisms are required to meet customer needs, tailored to customer types and intervention points. Broadly speaking, half of the market has sufficient capital to invest in demand-side assets but largely chooses short payback measures, and the other half lacks access to sufficient capital. Designing a variety of appropriate financing tools will leverage vehicles already developed, and adapted to San Francisco's customer base with market intelligence supplied by SFDOE and program implementers. Differences in the repayment risk, repossession, and collateral profile of different measures within different customer segments make some demand-side measures easily financeable with H bonds, while others require a contract, and some may not be financeable without some form of security such as a property title lien, a voluntary tax or fee, an SFPUC water bill charge,³ or a penalty under municipal taxation authority.

Property Assessed Clean Energy (PACE) Bonds

Residential PACE bonds have been de facto suspended after Fannie Mae and Freddie Mac issued severely discouraging guidelines. San Francisco's PACE program has been redesigned by the SFDOE and implemented for the commercial sector. Since commercial PACE lenders tend to target businesses which enjoy access to capital sufficient to implement demand-side measures regardless, much of the market remains un-served and is in need of alternative financing mechanisms.

SFPUC Efficiency and Renewables Funding Shortfall

The SFPUC budget for efficiency and renewables will be drastically reduced from ~\$10 million a year to \$600-800k a year, which will not even cover current staffing costs. The TransBay Cable funds may help – potentially raising \$2 million a year. City departments may step up funding these projects out of their own budgets, but it remains uncertain. SFPUC estimates that \$94 million worth of cost-effective efficiency projects remain to be completed: of this, \$18 million is at non-City buildings (SFUSD, City College, Treasure Island), \$38 million is at SFO, and the remaining \$38 million is distributed across all other departments.

Hetch Hetchy Power

The SFPUC may supply Hetch Hetchy power to CleanPowerSF, using a "split delivery" mechanism⁴ to structure the transaction in a manner consistent with the Raker Act. The Shell agreement appears in some manner to provide for this kind of transaction.⁵ The volume of power supplied will depend on several factors: hydroelectric generation (dependent on reservoir levels), the status of the contracts to supply power to the Modesto and Turlock

³ Staff believe this would require another public vote on a charter change, presumably to put on the ballot in November 2012. LPI has not yet evaluated this question in any detail, whether it is necessary or advisable.

⁴ CCA Program Report, Local Agency Formation Commission, February 8, 2009, pp. 14-17.

⁵ LPI has requested an interview with Shell North America and Noble Americas to discuss this and related questions.

Irrigation Districts, and the power required for SFPUC customers in Treasure Island and Hunter's Point (where SFPUC intends to provide municipal service).

Microgrids

It appears that under CPUC regulations, so long as a microgrid does not cross a public right-of-way, it is legal for groups of individuals in bilateral agreements with neighbors to contractually arrange a daisy chain of as many units as is technically and economically feasible to develop. LPI continues to research barriers to this basic approach, which may require some specialized metering and contracts to implement, but would be well within CleanPowerSF's power to implement.

Demand Response Regulations

California Independent System Operator & the Federal Energy Regulatory Commission

CAISO's Proxy Demand Response product was created to comply with FERC Order No. 719 and No. 719a,⁶ which instructed ISOs to allow demand response providers to participate directly in wholesale and ancillary service markets and be compensated the same as generators. The proposed energy market has no capacity payment at this time, and compensates demand response aggregators at the locational marginal price minus onsite customer bill savings (LMP-G). Demand response aggregators contend that this is insufficient to sustain their business models. FERC issued Order No. 745 instructing ISOs that demand response providers be compensated at the LMP, and clarified in December 2011 that CAISO was not in compliance. In response, CAISO has appealed to the DC Circuit.

Western Area Coordinating Council (WECC)

WECC includes load curtailment under non-spinning reserves, but there is no comparable definition under spinning reserves. Unlike the East Coast (e.g., in NEISO, NYISO, PJM territories) where spinning reserves currently may be and are being supplied by demand-side assets, CAISO is bound by WECC's definitions and so may not allow demand response to be bid into spinning reserve markets. (There are pilots in California using demand response as spinning reserves however.) LPI is researching when WECC expects to update their definitions to include demand response under spinning reserves.

⁶ *Wholesale Competition in Regions with Organized Electric Markets* (FERC Order 719), issued on October 17, 2008, in Docket Nos. RM07-19 and AD07-7, available at http://elibrary.ferc.gov/idmws/file_list.asp?document_id=13656106.
Wholesale Competition in Regions with Organized Electric Markets (Order 719-A), issued on July 16, 2009 in Docket No. RM07-19, available at <http://www.ferc.gov/whats-new/comm-meet/2009/071609/E-1.pdf>.

California Public Utilities Commission

The CPUC is expected to allow demand response and dispatch assets to be counted towards Resource Adequacy requirements in the near future.⁷

The CPUC has issued rules regarding the relationships and data sharing responsibilities between demand response providers, load serving entities, and distribution utilities anticipating participation in CAISO's Proxy Demand Response market.⁸

Time-of-Use Rates

The CPUC has granted requests from the IOUs to delay the implementation of TOU rates on a default basis for most nonresidential customer classes. Currently TOU rates are default only for 200+ kW customers; the smaller customer classes are due to be defaulted by November of 2013, with peak day pricing being pushed out further.

The Mayor's Task Force on Renewable Energy

LPI is in communication with SFDOE staff regarding the Mayor's Task Force on Renewable Energy, and is planning to fully review and leverage the results of the forthcoming final report.

LPI is anticipating using these financing mechanisms to inform program designs predicated on delivering integrated, 'customer-focused' offerings that finance electric and natural gas efficiency and generation measures as well as EV charging infrastructure.

⁷ See CPUC R.11-10-023

⁸ See CPUC R.07-01-041