

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

Summary

For Task D, we have identified 96 interviews that may cover factors relevant to deployment program risk. Our interview work is ongoing, our Risk Report will provide final risk related interview results. To date, we have developed a framework of over 50 risk elements across the technology areas, the site selection and preparation processes, permitting and financing, construction and operations phases, capital and operations cost control, interconnect issues, regulatory compliance and working in areas where regulatory structures are in flux, and factors relevant to the timing and volumes of power to be procured under the Shell Contract.

Subject matter areas of interest include: technology sourcing and deployment risks, product development and manufacturer market readiness, functionality, durability and performance risks, technology integration risks, site ownership and access issues, asset ownership factors, insurance requirements, risk factors that participants in the financing process will evaluate, the effects of power market and commodity pricing, other factors that may affect rates, factors that will affect customer participation in the CCA, and regulatory process variables and risks. We are continuing to gather information on these areas as we advance our interviews and analytical work. A summary of the risk related subject matter we have covered in interviews to date, and initial analytical points (not exhaustive) are provided below. Our draft Risk Report due in April will cover the full range of risk subject matter areas we are currently evaluating.

Interviews Conducted To Date

A. Kelly – San Francisco Department of the Environment, Energy Efficiency Programs Manager. Subject matter areas covered included: maintaining project funding, optimizing program design.

A. Mazy – CPUC, Senior Electrical Engineer. Subject matter areas covered included: technical feasibility of micro-grid development, cost factors and technical constraints of micro-grids, ideal candidates for micro-grids.

B. Hale – SFPUC, AGM Power. Subject matter areas covered included: CleanPowerSF and power contract timelines, anticipated opt-out rate, barriers to implementation, policy direction.

B. Polagye – University of Washington, Professor. Subject matter areas covered included: risk factors for tidal power development in Europe and the United States, characterizing leading developers, ideal conditions for tidal development.

C. Broomhead – San Francisco Department of the Environment, Municipal Climate Action Plan Coordinator. Subject matter areas covered included: barriers to efficiency measure adoption, lighting retrofit barriers.

J. Doyle - SF PUC Solar Program. Risk Related subject matter included discussion of contracting risk and approaches to insurance used for construction phase coverage on SF PUC solar projects.

D. Murray – San Francisco Department of the Environment, Renewables Program Manager. Subject matter areas covered included: partnership risks, Power Procurement Agreements, third party developers, interconnection issues, financing renewables.

D. Sider – San Francisco Planning Department, Ombudsman to the Director, Assistant to the Zoning Administrator. Subject matter areas covered included: timelines for permitting, review and appeals process, effect of new zoning and planning statutes.

D. Brown – Clean Fund. Risk related subject matter included PACE financing processes, success factors for financing evaluation, state of the market for clean energy project finance bonds.

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

J. Doyle – SFDOE. Subject matter areas covered included: labor considerations, legal framework for in-City development, cost drivers for renewables and technological constraints

L. Coquilla – State Farm Agent, AAA Insurance Agent. Subject matter areas covered included: approaches used by insurance companies relative to insuring completed solar installations for loss, and whether there were any recent developments or changes that might affect homeowners and business building owners that may consider adding a solar installation.

M. Campbell – SFPUC, CCA Program Manager. Subject matter areas covered included: Phase-in strategy and substitution clause language, previous SFPUC market research.

M. Leao – California Energy Commission, Smart Appliances. Subject matter areas covered included: process of creating efficiency standards, state of the market for smart appliances.

S. Kiliccote, M. Piette – Lawrence Berkeley National Laboratory. Subject matter areas covered included: state market readiness, competition, alternative technical standards and versions therein, technological integration, appliance manufacturer offerings, outreach to manufacturers and vendors.

T. Rydstrom – SFPUC, CFO. Subject matter areas covered included: program financial planning and factors relevant to revenue bond issue from the market risk perspectives, SFPUC energy credit rating process, state and federal programs applicable to the CCA.

T. Vincent – NRG, Engineer. Subject matter areas covered included: NRG thermal plant in San Francisco, CHP development within the City, barriers to interconnection of generation and end users, current strategies toward cogen development.

M. Tierney-Lloyd – Enernoc. Subject matter areas covered included: risk related subject matter included open regulatory processes applicable to ISO policies relating to Demand Response.

M. Zimring – LBNL Markets and Policy. Subject matter areas covered included: practical considerations to designing and implementing comprehensive financing solutions for efficiency, ‘moving the market’ timeline risks.

N. Smadi - Southern States Commercial Insurance Agent. Subject matter areas covered included: approaches used by insurance companies relative to insuring completed solar installations on commercial facilities for loss, and whether there were any recent developments or changes that might affect business building owners that may consider adding a solar installation.

CEQA and Permitting Process Risks

For in-city wind, fuel cells and any technology with combustion emissions, the permitting process in San Francisco should be expected to take a number of months. For any structural technology applications on historic buildings (over 50 years old), the Historic Building Commission review adds a layer of permit approval. Bird safety is also an issue relative to any in-city wind installations.

The manner in which the program anticipates CEQA requirements is critical; site documentation processes should be prepared that standardize and collect a maximum level of detail for data collection in order to properly prepare the City for successful deployment schedules.

PG&E Interconnection Risks

PG&E allows 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 must be incorporated into LPI’s siting analysis to anticipate the risk of delay and expense of interconnection.

Financing Structure Risks

The end of the PGC program and other financing and billing restriction issues have posed barriers to the advancement of efficiency measures. SFDOE remains confident of securing funding for the next program cycle on the basis of their impressive achievements of 800%+ over program goals in some cases.

Both on-bill and off-bill financing for efficiency technologies are being considered. A variety of financing mechanisms are required to meet customer needs, segregated by customer type and intervention points. 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. On-bill financing is also being advanced by the CPUC for the 2014 program cycle.

PACE lien financing provided an appealing way for homeowners to finance clean energy technologies as part of the property tax bill until 2010, when Freddie Mac and Fannie Mae were successful in blocking this innovation by refusing to accept mortgages with PACE liens (because the lien has priority over the mortgage holder). PACE is still active in the commercial sector in San Francisco, but often targets commercial properties with access to capital already, does not pursue measures with long paybacks, and may not offer interest rates as low as those that could be achieved through H Bond financing.

Ways to structure funding and financing relative to asset ownership present a number of risks, especially in situations where tenants may be the primary users and beneficiaries of the technologies. Strategies appropriate for ongoing asset control will need to be considered in light of minimizing or managing risk for any demand-side assets that are revenue financed. Differences in the repayment risk, repossession, and collateral profile of different measures and customer segments will require a range of financing mechanisms; 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,¹ or a penalty under municipal taxation authority.

Difficulties in Driving Demand for DSM

Driving demand for energy efficiency and other demand-side services, and developing the labor force necessary to implement these volumes, are critical aspects of this work. Financing is not a panacea. To help accomplish this, program design and outreach will be informed by the customer data analysis and polling. For example, the top 30% most energy-intensive (by square footage) medium-sized offices could be selected, and then sorted by credit score and other relevant metrics. SFDOE has a database of thousands of customer audits, partial-retrofits, and retrofits which will be reviewed. Contact information for key decision makers is available for many of the businesses for targeted marketing. In terms of driving demand, this approach holds a high level of promise, because the best targets will be front-loaded for the first few years in order to ensure high levels of success and word-of-mouth marketing. Demonstrating early successes to financiers and implementers will allow the program to scale more rapidly than would be the case otherwise.

Demand Response Technology and Regulatory Risks

For grid-integrated appliances, there is industry interest and guiding public policy at the federal level through the development of interoperability, cyber-security, and grid integration standards

¹ 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.

under development at the National Institute for Standards and Technology for review by the Federal Energy Regulatory Commission.

For OpenADR devices on the commercial side, the market is in an advanced development stage. Some manufacturers are ready to deliver larger orders given assurances of retail market access. Many of the devices and control protocols have been successfully developed, and in California have been installed at hundreds of commercial facilities.

Retail market penetration depends on the development of wholesale and capacity markets under CAISO, ancillary service definitions at WECC, and retail markets under IOU or CCA control. These are in varying states of development and present development timeline risks that will be analyzed.

Insurance for Solar

For the SFPUC solar projects, the construction risks were handled through conventional contractor insurance requirements, such as Builder's Risk and General Liability. No Solar-specific coverage was required. For loss coverage for operations solar installations on residential and commercial facilities, the insurance provider will want to understand the value of the project, and will adjust the replacement cost of the building to ensure that the owner is covered for typical peril losses.

Microgrids

Microgrids are technically feasible and legally permissible within limits still being researched. Risk factors associated with the construction and operations of microgrids are still being formulated.

Contract Risk

The SFPUC's use of Design/Build and task order contracting for its solar projects has been successful from the construction and cost-control risk perspectives. LPI has received these documents for review. PPAs are another risk reducing contractual avenue that suppliers are interested in for participation in CCA Projects.