Local Power.

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

Introduction

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.

This report contains:

- Detailed list of permitting requirements relevant for the deployment of renewables in San Francisco or other critical areas (includes local, state, utility (PG&E) and other permitting requirements).
- Detailed revisions to any permitting requirements necessary to enhance the roll out of renewables.

The structure of this report is primarily organized around permitting entities, as many of the processes under these entities may be broadly applied to many of the technologies considered in the CleanPowerSF portfolio. However, wave and tidal power have very complex permitting processes, and are detailed separately as well.

Recommendations

A summary of recommendations in this report is listed below:

1. Zoning for maximum wind turbine pole height should be set at the height of communications towers and facilities already constructed in the Height and Bulk Districts (SF Planning Code, Article 2.5) specified in the table provided in this report.
2. The Board of Supervisors should request by ordinance that all local permitting agencies implement "Expedited Processing" of all CleanPowerSF projects, (as solar, wind, and LEED Gold buildings currently are classified by Planning) defining all in-City deployment projects as City and County projects, so that local permitting staff may process these permits quickly as City projects without being accused of prejudice.
3. SFPUC should act as the lead agency for purposes of all California Environmental Quality Act and National Environmental Policy Act permitting, either by staff authority, or resolution of the SFPUC Commission.

4. The SFPUC Commission should request by resolution, and Board of Supervisors direct by ordinance, that all local permitting fees for CleanPowerSF projects be set at the cost of City staff time and materials.
5. SFPUC should make a determination to be the party of record in submitting interconnection permits to PG&E for all CleanPowerSF City-financed projects, either by staff authority, or authorization by resolution of the SFPUC Commission.
6. For in-City local permitting, SFPUC should request by resolution, and the Board of Supervisors adopt by ordinance, mandating Administrative Review for all RE and EE projects in the CleanPowerSF portfolio (except for wind, tidal, wave, and the TransBay CHP heat district) instead of Discretionary Review.
7. SFPUC should work with DPW/BSM and DBI as the program deployment becomes more defined to identify if any technologies or program elements will be deployed at a sufficiently high volume to warrant a streamlined process (for example, this would be advisable if CleanPowerSF were to deploy in the neighborhood of 1,000 EV chargers).
8. SFPUC and SFDOE staff should monitor the implementation of DBI/Planning's electronic Project and Permit Tracking System (PTTS), and the SFPUC Commission and Commission on the Environment should request by resolutions that the platform grant CleanPowerSF programmatic access to the system to monitor all relevant permit pulls and processes to ensure timely processing and immediate identification of any disputes or delays, and to allow streamlining where possible and as appropriate over the life of the program.

PG&E Interconnection

Electrical Interconnection

Electrical interconnection tariffs may be divided into retail (over which the state has control) and wholesale (over which the Federal government has control). Below is a table showing the most common tariffs and associated requirements:

Applicable Tariff	**NEMS**	**Rule 21**	**WDT GIP**	**GIP**
Market Classification	Retail	Retail	Wholesale	Wholesale
Administrator	PG&E	PG&E	PG&E	CAISO
Oversight Jurisdiction	CPUC	CPUC	FERC	FERC
Serves Onsite Load?	Yes	Yes	No	No
Distribution Export?	Incidental	No	Yes	No
Transmission	No	No	No	Yes

Export?				
Generator Size Limit	≤ 30 kW	Limited based on dist. Circuit	n/a	n/a
Customer Types	Res, Small Commercial	All	All	n/a
Technologies	PV/Wind/Both	All	All	All

There are several other retail net energy metering tariffs, shown below:

- Expanded NEM: solar and wind for Agricultural and Demand Rate (medium, large commercial and industrial) customers whose generator is of any size and for Residential and Small Commercial rate customers whose generator capacity is over 30 kilowatts
- NEMVNMA: photovoltaics, for customers in low-income multi-family affordable housing.
- NEMBIO: For customers with generators fueled from an eligible biogas digester.
- NEMFC: For customers with eligible fuel cell generators.
- Wind Energy Co-Metering: For customers with a wind generator over 50 kilowatts in size.

Proposed Rule 21 Settlement

Rule 21 is undergoing revision and should be closely monitored. Below is an excerpt of the proposed Rule 21 Settlement (not adopted):

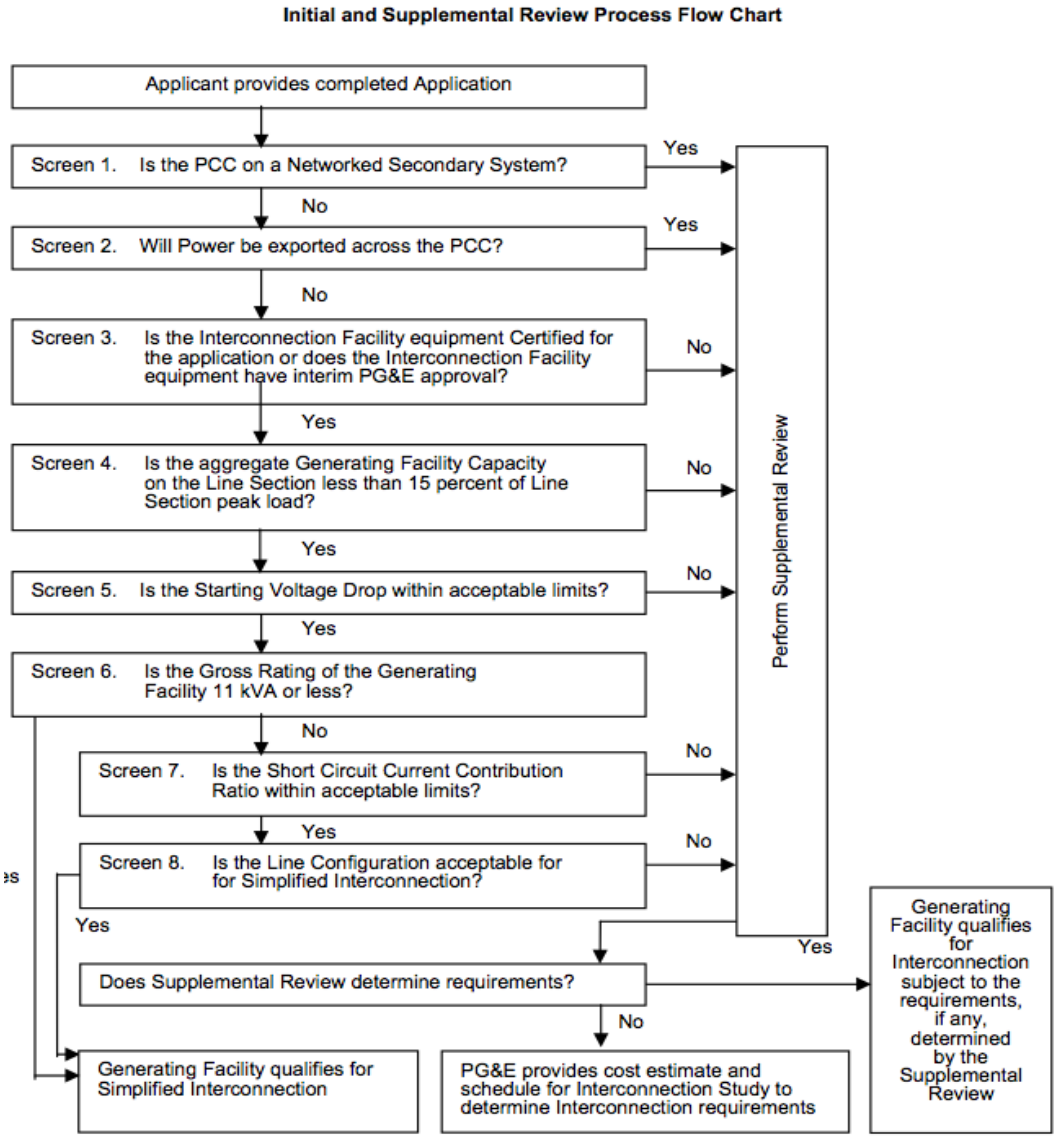
> This Rule describes the Interconnection, operating and Metering requirements for those Generating Facilities to be connected to Distribution Provider's Distribution System and Transmission System over which the California Public Utilities Commission (Commission) has jurisdiction. All Generating Facilities seeking Interconnection with the Distribution Provider's Transmission System shall apply to the California Independent System Operator (CAISO) for Interconnection and be subject to CAISO tariffs except for 1) Net Energy Metering (NEM) Generators and 2) Generating Facilities that do not export to the grid or sell any exports sent to the grid (Non-Export Generators). NEM Generators and Non-Export Generators subject to Commission jurisdiction shall interconnect under this Rule regardless of whether they interconnect to Distribution Provider's Distribution or Transmission System. Subject to the requirements of this Rule, Distribution Provider will allow the Interconnection of Generating Facilities with its Distribution System and Transmission System. Generating Facility interconnections to the Distribution Provider's Distribution System that are subject to FERC jurisdiction shall apply under the WDAT.

Retail Distribution Tariff Strategy – Rule 21:

A key strategy for minimizing both the cost and time delays associated with interconnection processes is to match generation assets to target sites with loadshapes which ensure minimal export into PG&E's grid, and minimal use of Net Energy Metering as a source of power revenue.

When San Francisco requests interconnect for a generator or microgrid connection point, PG&E's processing timeline for bringing the site online will lengthen in relation to the level of impact on PG&E's distribution grid. PG&E will review each interconnect proposal to see how it will effect PG&E infrastructure, and identify where it will require mitigation, outlining distribution grid upgrades to be completed, and the costs to be paid for these upgrades will be assessed to the permit.

Below is a flow chart showing PG&E's Rule 21 initial and supplemental review process for interconnection:



[1]

[1] PG&E's Rule 21 tariff, available [http://www.pge.com/tariffs/tm2/pdf/ELEC_RULES_21.pdf]

If PG&E rejects an application for initial review, a supplemental review is required. In particular, the supplemental review will clarify whether relays need to be added, and whether over-current or over-voltage protection is required. Supplemental Review takes an additional 10 days, and usually calls for a specific protection scheme.

In cases where an applicant's proposed facility would export power through the distribution grid and therefore require an assessment of required PG&E upgrades, a Detailed Interconnection Study (DIS) is required. Projects in areas of San Francisco such where there are secondary networks and spot networks have a higher likelihood of requiring a DIS. The cost and timeline are set out in this agreement, which the parties sign, and it is executed with an average schedule and fee of 45 days and $5,000 - $20,000 (depending on the complexity of the DIS).

A table of fees for all stages is shown below:

TABLE C.1 Summary of Fees and Exemptions

Generating Facility Type	Initial Review Fee	Supplemental Review Fee	Interconnection Study Fees	Additional Commissioning Test Verification**
Non-Net Energy Metering	$800*	$600	As Specified by PG&E	$113/ Person Hour
Net Energy Metering (per Public Utilities Code Sections 2827, 2827.8, 2827.9, or 2827.10	$0	$0	$0	N/A
Solar 1 MW or less that does not sell power to the grid (per D.01-07-027)	First $5,000 of total review and study fees waived			$113/ Person Hour

* Subject to 50% refund pursuant to Section C.1.b.3.
** The rate indicated is the maximum labor rate as PG&E utilizes multiple job classifications to perform this work.

[2]

Use of California Energy Commission-Certified Remote Shut-Off Device

On non-exporting facilities, if there is a synchronous generator that operated in parallel, even though it was non-export, there is a rare chance that it could impact PG&E's network – so a remote shut-off device will be required for the site. CleanPowerSF should use UL certified CEC listed equipment, in order to streamline PG&E's approval process. While not required, using non-certified equipment would automatically trigger a Supplemental Review, and could lead to a delay, as the burden of proof of performance would be on the applicant.

Multiple Tariff Projects – Sheet 28

Projects combining multiple tariffs will require a lengthier, more complex process. For example, if a CleanPowerSF facility chose to deploy 3 MW of generation under a non-export tariff, and 1 MW of generation under a NEMS tariff on a single facility, a separate meter would have to be installed for the NEM account.

[2] Electric Rule 21, Sheet 6, available from: [www.pge.com/tariffs/tm2/pdf/ELEC_RULES_21.pdf]

Virtual Net Energy Metering

PG&E has recently had some accommodation for sharing power for low-income housing across tenants or delivery points in the NEMVNMA tariff. This structure has been approved, but there has been a dispute filed regarding how it will function.

PG&E Interconnect Permit Volume

The CleanPowerSF In-City Rollout will involve a substantial increase in the number of renewable power facilities requiring interconnect to PG&E's system in San Francisco. Whereas last year the vast majority of systems installed were less than 30 kW, CleanPowerSF will be installing medium-sized facilities in the 50kW-300 kW range. Last year, PG&E processed approximately 50 interconnects according to staff, with only 3 or 4 installations 30 kW or larger.

The Secondary Network Challenges

The downtown area in San Francisco is served by what is known as a Secondary Network. Under this configuration, multiple supply lines serve a ring of critical loads. Therefore, loss of any supply line does not interrupt service. This arrangement is highly reliable and secure and is intended to provide continuous service to high-rise buildings. Secondary Networks have complex relaying and protection schemes and are not designed for the interconnection of power plants.

Interconnection to the Secondary Networks that do not intentionally island or separate from the secondary network will require extensive studies and may require special hardware and monitoring requirements and therefore may be economically cost prohibitive.

Wholesale Distribution Tariffs:

Note that CAISO's wholesale transmission tariff is detailed in the proceeding section 'State Permitting'.

PG&E's distribution (below 60 kV) interconnection process, referred to as Generator Interconnection Procedures (GIP) is part of its Wholesale Distribution Tariff (WDT),[3] and approved by FERC.

There are three programs for WDT interconnection, known as Fast Track, the Independent Study Path, and the Cluster Study Path. These depend on size of the power plant and voltage at the point of power plant interconnection, among other factors. It initially requires the submission of an interconnection application to PG&E.

The Fast Track program has a very streamlined processing, small application fee and limited study window. Under the Fast Track Program the power plant capacity will be limited to 5 MWs. The Fast Track Program has one drawback and that is the resources under this program are energy only and are not recognized for their capacity. Therefore, these resources do not count toward the resource adequacy requirements mandated by the CPUC. The Fast Track has the advantage of limiting the exposure of the developer to network upgrade costs beyond the point of interconnection.

[3] An overview of PG&E's WDT GIP is available from:
[http://www.pge.com/mybusiness/customerservice/nonpgeutility/generateownpower/wholesalegeneratorinterconnection/]

Under PG&E's WDT up to 2 MWs may be interconnected to 12 kV system, up to 3 MWs on 21 kV system and up to 5 MWs on higher voltages (less than 60 kV).

To be eligible for the Fast Track Program, the project must further pass the following additional Initial Review Process screens: [4]

1. Generating Facility (GF) must interconnect to applicable Jurisdiction, e.g. distribution if under WDT
2. GF, in aggregate with other generation, shall not exceed 15% of Peak Load
3. Requirements to interconnect to Spot Network
4. GF, in aggregate with other generation, shall not contribute more than 10% to the circuit's maximum fault current
5. GF, in aggregate with other generation, shall not exceed 87.5% of the short circuit interrupting capability
6. Line configuration and transformer connection required to prevent over-voltage due to a loss of ground during the operating time of any anti-island function
7. GF, interconnecting to single-phase shared secondary, shall not exceed 20kW
8. GF that is single-phase and is to interconnect on a central tap neutral of a 240 volt service, shall not create an imbalance between the two sides of the 240 volt service of more than 20% of the nameplate rating of the service transformer
9. GF, in aggregate with other generation interconnected to the transmission side of a substation transformer feeding the circuit the GF is connecting to shall not exceed 10MW in an area where there are known transient stability limitations
10. No construction of facilities by PG&E (distribution or network upgrades)

Facilities which do not qualify for Fast Track it must either undertake the ISP or Cluster Study Process*:*

> The ISP typically takes six to eight months. The Cluster Study Process is more time-consuming and costly, and typically takes about two years. It involves evaluating a particular project with others submitting applications in the same application window. There are two application windows per year, in the spring and the fall. Projects move in a cluster through two phases of interconnection review, both of which have associated costs, may take substantial time, and may involve expensive upgrades to the distribution system whose costs are shared among cluster participants.[5]

[4] These are simplified 'screens' and available from:
[http://www.pge.com/includes/docs/pdfs/b2b/newgenerator/wholesalegeneratorinterconnection/Fast_Track_Roadmap.pdf].
The tariff language is more technically detailed, and available from:
[http://www.pge.com/includes/docs/pdfs/b2b/newgenerator/wholesalegeneratorinterconnection/PGE_WDT_GIP_effective_2011Mar03.pdf]

[5] Keyes & Fox LLP, 'Wholesale Options for CleanPowerSF to Procure Local Renewable Generation: Feed-In Tariff (FIT) versus Request for Proposals (RFP)', December 7, 2011.

PG&E Interconnect Permit Volume

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Natural Gas Interconnection

Depending on the size of the proposed system, an increase in natural gas pressure may be required at the installation site and permits will be necessary to route this gas from the local gas main to the system. If necessary, this process may take several months.

PG&E's G-EG tariff, Gas Transportation to Electrical Generation, provides significant price discounts to qualifying generation devices[6] that compensate for its separate metering requirement.[7]

Recommendations

A fundamental challenge of CleanPowerSF is to take ownership of the in-City deployment as essentially City projects. Traditionally renewables developers are treated at 'arm's length' as permit applicants; under CleanPowerSF, the City itself must provide the kind of support and hands-on involvement that City-owned projects receive even when built by contractors. CleanPowerSF will involve many smaller companies implementing separate projects but which will ultimately be financed, controlled and operated by the City as integral components of the community's power supply.

SFPUC should make a determination to be the party of record in submitting interconnection permits to PG&E for all CleanPowerSF City-financed projects, either by staff authority, or authorization by resolution of the SFPUC Commission.

State Permitting

California Environmental Quality Act (CEQA)[8]

In general CEQA is triggered by all projects that could have an impact on the environment. When counties with discretionary authority seek to develop renewable power facilities, it is critical that project documentation include detailed descriptions of the projects as well as data points to satisfy reviewing agencies. Counties with over-lenient criteria run the risk of not satisfying review agencies and triggering review.[9]

[6] Applicability defined in Gas Schedule G-EG.
[7] LPI interview with William Martini 3.5.12 and Sara Mulhauser 4.11.12
[8] We would like to thank Terry Watt, Office of Governor Edmund G. Brown, as well as Chris Calfee and Sandy Goldberg, both Senior Council of the Governor's Office of Public Research, for guidance in creating this section.

Thorough documentation for all projects, even projects not expected to trigger CEQA review, is advisable to avoid inappropriate review based on lack of information.

SFPUC should act as the lead agency for purposes of all California Environmental Quality Act, either by staff authority, or resolution of the SFPUC Commission.

The implementing proposals listed below include small-scale projects individually exempt from CEQA. These early proposals will be rolled out in a series of RFPs. Larger-scale Implementing Proposals, such as tidal and wave power, will be rolled out in separate RFPs, and will be subject to environmental review when they may be more fully described. All RFP respondents should be asked to provide guidance on satisfying environmental permitting requirements.

The proposed CEQA determinations in the table below are to be validated with the lead agency and by RFP respondents (for larger-scale projects):

Technology	**Timing***	**CEQA Determination**	**Location**
Photovoltaic	Near-term	Exempt	In-City
Solar Hot Water	Near-term	Exempt	In-City
Wind - small	Near-term	Exempt	In-City
Wind - large	Medium-term	ND/EIR	In-City
Wind - 150 MW farm	Medium-term	MND/EIR	Out of City
Microturbines	Near-term	ND/exempt	In-City
Fuel Cells	Near-term	Exempt	In-City
Reciprocating Engines	Medium-term	Exempt	In-City
Absorption Chillers (for Tri-Gen)	Near-term	Exempt	In-City
Ground-Source Heat Pumps	Medium-term	Exempt	In-City
Energy Efficiency Measures	Near-term	Exempt	In-City
OpenADR Servers, Control Systems, and Software	Near-term	Exempt	In-City
HAN Gateways, Appliances, and Software	Medium-term	Exempt	In-City
Battery Storage (distributed, small)	Near-term	Exempt	In-City

Compressed Air	Near-term	Exempt	In-City
Thermal Storage	Near-term	Exempt	In-City
Wave Power - Pilot	Medium-term	MND/EIR	In-City
Wave Power	Long-term	EIR	In-City
Tidal Power	Long-term	EIR	In-City
Electric Vehicles	Near-term	Exempt	In-City
Over the fence transactions	Near-term	Exempt	In-City
NRG CHP	Medium-term	MND/EIR	In-City
Steam Loop	Medium-term	Exempt	Out of City
Microgrid	Near-term	MND may be required at scale	In-City
Regional RE	Medium-term	MND/EIR	Out of City

*Timing approximated as:
Near-term: Deployment commences 2013.
Medium-Term: Permitting commences 2013, online 2014/2015
Long-Term: Permitting 2013, online 2015-2020

California Independent System Operator (CAISO)

Interconnection to PG&E's transmission systems (60 KV and above voltages) requires submission of an application to the CAISO under its FERC Tariff. Similar to PG&E's WDT, this is referred to as GIP and has similar approval tracks.

Under CAISO's Fast Track program, power plant capacity is limited to 5 MWs or less and applies to the portion of the PG&E transmission grid. The first six out of ten screens detailed for the Fast Track process above under 'PG&E Interconnection' also apply for CAISO's process.

Once approved for interconnection, remote resources within PG&E Service territory will sign an Interconnection Agreement (IA). The IA specifies key information about the interconnection which include but not limited to the point of interconnection (where the power plant is connected to), a price node which will be used to settle for differences in price of energy and the point of interconnection and the point of receipt (downtown San Francisco). Under the IA, PG&E requires compensation for transmission usage, loss compensation (additional loss burden or credit to the system) and an energy price difference between the point of interconnection and the point of receipt.

Placing a power plant outside PG&E service area and within California requires the same process as described above. However, some details will be different. This option may require developing agreements with possibly several transmission owners.

California Coastal Commission

Within the coastal zone, the Coastal Commission retains permit jurisdiction over any project in state waters, up to the mean high tide line, or on lands subject to the public trust. Projects sited within this portion of the coastal zone must apply for a Coastal Development Permit (CDP) from the Coastal Commission, required under Coastal Act Section 30600(a).

In sections of the coastal zone under SF Planning jurisdiction, a project may be appealable to the Commission under the appeal provisions of Coastal Act Section 30603.

Bay Conservation and Development Commission

The San Francisco Bay Conservation and Development Commission (BCDC) is a State Agency that oversees the shoreline of the San Francisco Bay. Proposed developments on the shoreline (inland 100 feet) should seek permits or plan review from BCDC for new construction.

Air Quality

The California Air Resources Board (CARB) DG certification program requires manufacturers of electrical generation technologies that are exempt from district permit requirements (BAAQMD) to certify their technologies to specific emission standards. [10] These technologies include microturbines and fuel cells. For non-exempt systems, an Authority to Construct and Permit to Operate, issued by the BAAQMD, is required. Non-exempt projects below 50 MW (such as reciprocating engines) are permitted by BAAQMD under New Source Review (CARB).

California Energy Commission (CEC)

Distributed generation less than 50 MW in capacity are excluded from the Energy Commission's power plant siting jurisdiction.

Federal Permitting

Federal Energy Regulatory Commission (FERC)

FERC has oversight over transmission planning processes.

National Environmental Policy Act (NEPA)

It is possible if CleanPowerSF seeks to install solar panels or other renewable distributed power generation on national park land (such as a tidal power just outside the Golden

[10] Section 94203 in article 3, subchapter 8, chapter 1, division 3 of title 17, California Code of Regulations.

Gate Bridge), two lead agencies will be involved - one state, one federal (NEPA), that will review the package of documents for each project.

SFPUC should act as the lead agency for purposes of all National Environmental Policy Act permitting, either by staff authority, or resolution of the SFPUC Commission.

Local Zoning

Local Coastal Program

Through the City's Local Coastal Program (the Western Shoreline Plan), Planning (and not the Coastal Commission, as would otherwise be the case) oversees development within the coastal zone above the mean high tide line.

Bird Safe Buildings

The Standards for Bird-Safe Buildings, Section 139 (c)(1)(C) of the Planning Code, states: "Wind generators in this area [Urban Bird Refuge] shall comply with the Planning Department's permitting requirements, including any monitoring of wildlife impacts that the Department may require." Ordinance No. 199-11, as adopted by the Board of Supervisors, does not expressly prohibit specific types of wind generators. The Planning Code requires that proposals for wind turbines undergo individual project review to evaluate their specific risk to birds.

Current Height Restrictions for Turbines

Planning code essentially limits turbine height to 10-16 feet above a building's mapped height, depending on the zone. A Conditional Use[11] permit may be applied for to approve structures above this height; this is a costly and time-consuming process.

Wind Turbine Height Exemption

Zoning for maximum wind turbine pole height should be set at the height of communications towers and facilities already constructed in the Height and Bulk Districts (SF Planning Code, Article 2.5) shown in the table below:

Height and Bulk District	Building Max Height (ft)	Communication Facility Height (ft)	Difference (ft)
40-X	40	978	938
80-130-F	130	840	710
84-E	84	594	510
65-A	65	500	435
65-X	65	400	335
250-S	250	581	331
225-S	225	522	297
300-S	300	591	291

[11] SF Planning Code, Section 303

50-N	50	341	291
120-X	120	400	280
85-X	85	340	255
150-S	150	400	250
400-S	400	650	250
90-X	90	340	250
50-X	50	262	212
160-F	160	340	180
80-T	80	236	156
350-S	350	486	136
450-S	450	574	124
80-T-130-T	130	225	95
65-PM	65	151	86
45-X	45	130	85
120-R-2	120	200	80
500-S	500	550	50
80-A	80	130	50

Maps showing the location of these specific Height and Bulk Districts in relation to the City's wind resources are shown at the end of this report, in Appendix A.

Local Permitting

Permitting Agencies

City staff and private sector energy contractors we have interviewed broadly agree that local permitting requirements in San Francisco do not pose undue or unreasonable timelines or requirements, except for wind turbines. The City has worked for several years to analyze and streamline its permitting procedures[12] and to educate staff on energy related technologies. Capacity within permitting agencies to process the increased applications expected from the CleanPowerSF deployment is adequate, and will represent a small percentage of their overall workload.

The agencies involved in local permitting and their respective areas of responsibility are broadly characterized below:

- The Department of Building Inspection: oversees building code compliance for plan review and site inspections for mechanical, electrical, structural, construction and plumbing aspects of a project.
- The Planning Department: oversees zoning code compliance, CEQA and environmental review, historical preservation concerns and neighborhood impacts. The Planning Commission conducts hearings on proposed projects for

[12] DBI's Business Process Reengineering effort, DBI/Planning's forthcoming electronic Permit and Project Tracking System, and the successful effort to streamline solar photovoltaic permitting.

which reviews and studies are conducted, as well as appeals from interested parties including neighborhood organizations.

  - The Historic Preservation Commission is an authority under Planning that addresses development concerns for specific buildings and neighborhoods deemed to have historic significance.
  - The Local Coastal Program (LCP) administers permitting in San Francisco's coastal zone; however, all permits and determinations of the City within their authority under the LCP may be appealed directly to the California Coastal Commission.

- The San Francisco Fire Department Plan Check: reviews and certifies proposed developments that must meet safety standards for fire hazards such as fuel or battery storage, emergency fuel shut-offs, and maintaining unobstructed roof access.
- The Department of Public Health: monitors the impact of new development on neighborhood safety, including noise concerns.
- The Department of Public Works: issues easements for access, siting street furniture, and permits for trenching in the public rights of way (ROW) within City jurisdiction, in particular the Bureau of Street-Use and Maps.
  - Note that within the boundaries of Port, Parks and Recreation, State and Federal lands, these agencies control ROW in their respective jurisdictions.
- The San Francisco Public Utilities Commission: is the charter-empowered public utility for water, sewer and in certain cases electricity of the City of San Francisco.
- The Port has a unique autonomy in the City regarding the local permitting of projects on its properties, having 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 like BCDC, Army Corps, NEPA, CEQA, health and other agency approval, as required, but not from the City itself.

Permitting 'One Stop Shop'

DBI and Planning have begun to implement an electronic Permit and Project Tracking System (PTTS) to unite all city department permitting processes in a single 'one stop shop' platform. The system is expected to be operational November 2013.[13]

SFPUC and SFDOE staff should monitor the implementation of DBI/Planning's electronic Project and Permit Tracking System (PTTS), and the SFPUC Commission and Commission on the Environment should request by resolutions that the platform grant CleanPowerSF programmatic access to the system to monitor all relevant permit pulls and processes to ensure timely processing and immediate identification of any disputes or delays, and to allow streamlining where possible and as appropriate over the life of the program.

[13] DBI news release available from: [sfdbi.org/Modules/ShowDocument.aspx?documentid=1412]

Discretionary Review Process

This process is unique to San Francisco, and allows any member of the public to request a Planning Commission review on the subject of a building permit, turning what should be an administrative review process into a discretionary review process. Thirty-day notice is required for any building permit in a Residential and/or Neighborhood Commercial zoning district, as well as in historic overlay districts. The process makes it virtually impossible to streamline any project that requires a building permit. Photovoltaics are exempted from discretionary review, except for unusual applications.

For in-City local permitting, SFPUC should request by resolution, and the Board of Supervisors adopt by ordinance, mandating Administrative Review for all RE and EE projects in the CleanPowerSF portfolio (except for wind, tidal, wave, and the TransBay CHP heat district) instead of Discretionary Review.

Priority Permitting

The Board of Supervisors should request by ordinance that all local permitting agencies implement "Expedited Processing" of all CleanPowerSF projects, (as solar, wind, and LEED Gold buildings currently are classified by Planning) defining all in-City deployment projects as City and County projects, so that local permitting staff may process these permits quickly as City projects without being accused of prejudice.

Permitting Fees

The SFPUC Commission should request by resolution, and Board of Supervisors direct by ordinance, that all local permitting fees for CleanPowerSF projects be set at the cost of City staff time and materials.

Selectively Streamlining Permitting Processes

In general, it is a very complex and expensive undertaking to coordinate across agencies and public stakeholders to review and streamline permitting processes. SFPUC should work with DPW/BSM and DBI as the program deployment becomes more defined to identify if any technologies or program elements will be deployed at a sufficiently high volume to warrant a streamlined or otherwise coordinated process (for example, this may be advisable if CleanPowerSF were to deploy in the neighborhood of 1,000 EV chargers).

Permitting by Technology

The actual local permits required for a given installation will depend on project- and building- specific attributes and location; listed below are permits likely to be required by technology:

- Solar Photovoltaic: streamline procedure that typically requires only a DBI electrical permit.[14]
- Solar Hot Water: DBI plumbing and structural.

[14] See Electrical Permit Application for Roof-Mounted Solar Photovoltaics systems. This form is available on line at the Department of Building Inspection website at http://www.sfdbi.org/ftp/uploadedfiles/dbi/Services/InspectionServices/Solar%20Permit%20Worksheet.pdf

- Wind: Planning Conditional Use permit and most likely environmental evaluation, DBI electrical and mechanical, DPH for noise levels.
- CHP: DBI building and electrical permits, SFFD, Planning (if in historic building or air quality concern).
- Demand-Response: none.
- Energy Efficiency: DBI structural or electrical permits expected only for deep retrofits that impact the building envelope or the retrofit of major equipment such as chillers.
- Battery storage: DBI electrical (and structural if size/volume threshold met), SFFD.

Energy Infrastructure

Public Rights of Way (ROW) and Utility Infrastructure

The City regulates access to the public ROW in San Francisco and can determine how various City departments can use the ROW. Under Charter section 8B.121(a), the SFPUC has ownership and control of the supplies and utilities of the City related to water, power, and so on.

'Over the Fence' Transactions [15]

If crossing ROW, 'over the fence' transactions would require an entity with the authority to enter ROW to construct and own the connection (such as the SFPUC), with ROW permitting administered by DPW; if not crossing a ROW, it would require an easement between contracting parties. Both would require electrical permits. Any undergrounding of wires would require DPW excavation permits.

District Heating

NRG has a thermal utility franchise in San Francisco but may not enter ROW. Expanding steam loops would require a DPW permit for an entity with the authority to enter ROW (such as the SFPUC) to connect the steam company to the customer, a DPW excavation permit, and a plumbing permit from DBI. Any internal steam systems would also require a DBI building permit.

Microgrids

Microgrids, depending on their configuration, would likely require electrical and structural permits from DBI, as well as a Fire Department Plan Check review. Running wires from existing poles would require DPW to file a #2 temporary occupancy permit. Any undergrounding of wires would require an excavation permit from DPW.

Surface cabinets are an important permit component of microgrids in some instances. For surface-mounted facilities, like control boxes, there are several issues. The City strives for collocation of utility cabinets and multi-use cabinets under a review process controlled by DPW.

DPW Master Plan Process

The DPW has a Master Plan that requires all Utilities to put forward all their proposed work for the next 5 years. These plans need to be consistently updated and DPW

[15] PUC Section 218(b)(2)

publishes a map every six months reflecting ongoing changes. SFPUC has access to the Master Plan and updates the plan on their own while trying to coordinate with the other utilities. This provides an opportunity to minimize the costs of installing some components of the above infrastructure.

Ocean Power

Wave and tidal power technologies will not come online until approximately the fourth or fifth year of CleanPowerSF service (about 2016) due to permitting complexity and timelines, assuming permit applications are filed before or immediately after Phase I service begins.

Wave Power

The City of Francisco is actively investigating wave power as directed by policy makers. Staff have encountered significant permitting issues and jurisdictional complexity, but have continued with environmental studies. A study conducted by URS and the SFPUC is expected by summer 2012, and there are expectations that a planned 3MW pilot will be developed by 2015.

The jurisdictional complexity has lead the process away from the greatest theoretical resource for wave power to the ideal siting conditions with regard to permitting.

Background:

URS was retained to evaluate wave potential in the sovereign area or "exclusion zone" where the City and County has special authority to develop wave power facilities. They sought a permit from the FERC in order to build a wave power facility in this territory, considered ideal for site control.

Ultimately staff selected the buffer zone, known as the southwest ocean outfall, extending from the SFPUC Oceanside wastewater treatment plant. This area falls under State jurisdiction over which the SFPUC already has an existing easement, through which some portion of future transmission of electricity could be deployed to connect with a wave resource.

Oceanside Wave Energy Project

The San Francisco Oceanside Wave Energy Project was intended to begin as a 3MW pilot in 2012 (eventually expanding to 10-30 MWs). The jurisdictional conflict between the Department of the Interior's Mineral Management Service (MMS) and the Federal Energy Regulatory Commission (FERC) over permitting wave energy projects in the Outer-Continental Shelf (OCS) pushed development plans into the Exclusion Zone, closer to San Francisco and a less powerful wave resource, which is within State jurisdiction, simplifying the permitting process by side-stepping MMS, (now BOEMRE) leasing requirements in the OCS.[16]

The URS study recounts the initial rejection of the City of San Francisco's permit request because of the DOI/FERC conflict. The move to the Exclusion Zone elevates this problem, although projects that straddle the OCS are in a regulatory gray area.

[16] 4310-MR-W, Department of the Interior, Bureau of Ocean Energy Management, Regulation and Enforcement [BOEM-2011-0039] Available from:
[http://www.boemre.gov/offshore/renewableenergy/PDFs/2011_22608_PI.pdf]

At present, the City is not confident that the technology is ready for a pilot to proceed. The environmental studies are being completed at this time; however, if those studies do not cause significant concerns, a pilot could begin in 2015.[17]

Tidal Power

While tidal would perhaps the most complicated of projects to develop, there is an opportunity to create a reliable electricity generating resource in the Bay. The permitting process is complex. In January 2007, the Department of the Environment and the CTAC Tidal and Wave Generation Committee compiled a Permitting Matrix to outline the likely agencies and government bodies who would have jurisdiction over a tidal power project. There would be as many as 16 Federal, State, and local agencies involved in permitting tidal power in the Bay:[18]

Federal agencies would include:

- Federal Energy Regulatory Commission (FERC)
- United States Army Corps of Engineers (USACE)
- United States Coast Guard (USGC)
- United States Fish and Wildlife Service (USFWS)
- National Oceanic and Atmospheric Administration (NOAA)
- Advisory Council on Historic Preservation
- Bureau of Indian Affairs

State agencies would include:

- San Francisco Bay Conservation and Development Commission (BCDC)
- California Energy Commission (CEC)
- State Lands Commission
- Department of Fish and Game
- San Francisco Regional Water Quality Control Board
- Office of Historic Preservation/State Historic Resources Commission

Local agencies would include:

- City and County of San Francisco
- San Francisco Port Commission
- Marin County

[17] LPI interview with SFPUC Randall Smith 4.9.12
[18] For a copy of the SFDOE/CTAC permitting matrix, see Attachment A3 of Local Power, Inc., "CCA Program Report Attachments", 28 February 2009. Available from: [http://www.local.org/sfccaipappendices2007.pdf]