ZNE Decision Making Matrix for State Agencies

September 13, 2017

Facility Type	Owners' ZNE Responsibilities	Tenant's ZNE Role
1. State Owned Existing Building	a) Assess energy efficiency (Source EUI) and compare with ZNE target EUI to determine needed increased efficiency needed to meet targets. • Utilize Energy Star Portfolio Manager for data • Can utilize ZNE calculator • May be able to utilize department roadmap facility data sheets • Reference Energy Efficiency Targets Matrix b) Determine which buildings in portfolio to pursue and achieve ZNE by 2025 in 50% of department building area. • Some may already meet efficiency target c) Determine energy efficiency projects/efforts to improve efficiency to reach targets. • Utilize alternative financing if operation budgets are not available • (ESCo's, GS $Mart, OBF, etc.) • The DGS Energy Efficiency Retrofit Program can help departments identify and achieve energy efficiency reductions on existing buildings. d) Evaluate facility rooftops and sites for on-site renewable energy generation capacity. • Procure if possible to install as much as possible on-site, or through Power Purchase Agreement (PPA). • Consider other options for balance of renewable energy. e) If over-generation is needed to offset gas or other energy use, consider EV charging as option to use excess generation, since it does not count toward ZNE loads.	a) Procure energy-efficient office equipment to reduce plug loads. b) Operate energy-saving data controls to automatically shut down computers and monitors when not in use. c) Conserve energy by following thermostat set points, turning out lights when not in use, closing blinds in summer to reduce solar gain, etc. d) Comply with Standard Operating Efficiency Procedures (SAM Section 1805.3) as applicable and within control of tenant.

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2. New or major renovation building beginning design	a) DGS will conduct these tasks for departments without building authority and working under DGS authority. Owners with their own authority are responsible for the following efforts. b) ZNE specialist to be integral part of project A&E team from beginning. c) Verify project exceeding T-24 by 15% min., or higher if cost effective d) Evaluate and consider applicable energy-saving measures in design (optimal insulation of building envelope and efficient glazing & roofing, efficient HVAC systems, natural ventilation & daylight, monitoring-based commissioning, etc.) e) Evaluate site and building orientation to optimize on-site solar generation, including massing and landscape design. f) Assess capacity of building and/or site to generate on-site renewable offsetting facility energy load. g) Include ZEV charging, as appropriate, to potentially use excess energy generation needed to offset natural gas use. h) Consider option to eliminate natural gas use. i) Ensure that electrical conduits and panel capacity is installed to likely future points of renewables, regardless if not purchased or installed now.	a) Consider utilizing energy saving office structures and layouts that lead to improved efficiency (hoteling, shared/open office layout, etc.) b) Consider ultra-low energy use office equipment (laptops, tablets, virtual servers, eliminating personal printers, etc.) c) Include ZNE in facility requests, budget packages and long-term facility planning.

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3. New or major renovation building already in design or construction	a) DGS will conduct these tasks for departments without building authority and working under DGS authority. Owners with their own authority are responsible for the following efforts. b) Verify building efficiency is exceeding T-24 by 15% or more. If possible, and cost effective, increase efficiency through design even further. c) Conduct renewable energy resource analysis of building and site to see what solar access and/or wind resources may be available to site. d) If renewable energy systems are not available to site, consider partnering with neighboring property owner or community solar program. e) To the extent possible, design the roof structure and/or parking areas for the eventual installation of renewable energy system. f) Design the mechanical/electrical rooms to include space for future installation of inverters and additional electrical/plumbing equipment. g) Design and install conduits/chases for eventual wiring/plumbing required for connecting renewable energy systems to mechanical/electrical rooms.	a) Consider & implement as many energy efficiency measures and practices as practical from new and existing building lists above.
4. Build-to-suit lease beginning design	a) Include in site evaluation and lease agreements the same criteria as for new or major renovation projects beginning design.	Consider & implement as many energy efficiency measures and practices as practical from new and existing building lists above.
5. Build-to-suit lease already in design or construction	b) Include in site evaluation and lease agreements the same criteria as new or major renovation building already in design or construction to the extent possible.	Consider & implement as many energy efficiency measures and practices as practical from new and existing building lists above.