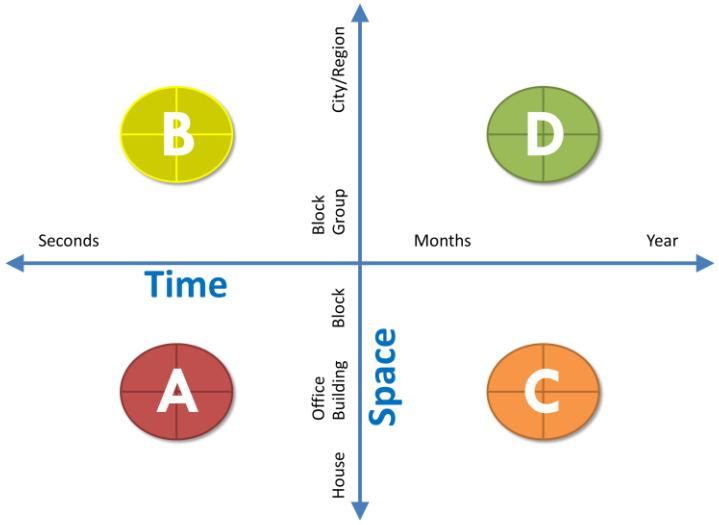
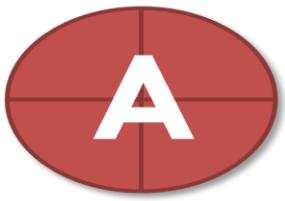
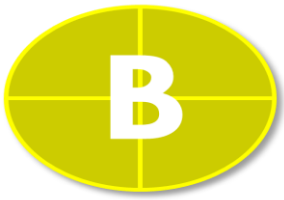
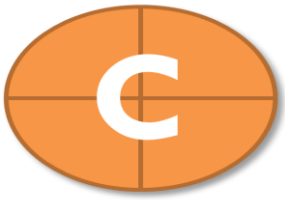
Energy Data Access: A Map

A map of Energy Data Access as a suggested framework to enable clear and consistent discussion in CPUC Energy Data Center proceeding (Rulemaking 08-12-009). The sensitivity of energy usage data varies with resolution, both geographic and temporal. An effective public policy will weigh this sensitivity alongside other key public interests recognized prioritized in California law and policy, including effective stewardship of ratepayer investments in energy efficiency, the energy resource loading order, public transparency, and greenhouse gas emissions mitigation.
Clear communication is essential as public concerns are weighed in the context of relevant laws, so the following map is proposed, which divides energy usage data into four 'quadrants' of resolution, labeled A, B, C, and D:

Figure 1: Energy Data Access Map. Divides temporal and geographic aggregation/resolution of energy usage data into four quadrants.



	Specific location and small time interval	Geographic aggregation and small time interval	Specific location and large time interval	Geographic aggregation and large time interval
Quadrant Label				
Sensitivity	**High** Clearly personally identifiable, includes details of timing, and specific activities can be exposed.	**Moderate** Location is not personally identifiable.	**Moderate** Location is identifiable. Monthly (or annual) data masks timing of specific activities, such as startup or occupancy.	**Low** Not personally identifiable. Monthly or annual interval masks specific activities.
Public Policy Value	**Limited** Contains more data than necessary for uses other than academic research or services provided with consent.	**Moderate** Illuminates load shape, limited use in efficiency program delivery.	**High** Informs priorities for investment and service delivery.	**High** Essential for greenhouse gas emissions tracking and city planning.

	Specific location and small time interval	Geographic aggregation and small time interval	Specific location and large time interval	Geographic aggregation and large time interval
Useful to Study	• Limits of demand response • Customer to DR program signals • Effect of building age & shell on DR • Impact of rate design (including Critical Peak Pricing) • Plug load management • Effect of weather on residential PV output	• Effect of geographically targeted measures on load shape. (Example: Intensive appliance installation in a targeted city/zone vs. a "control" area • Demand response program design	• Effect of building characteristics on energy consumption (such as building age, shell, most recent permit, etc.) • Relate energy use to demographic trends such occupant age, vulnerable population, linguistic isolation, proximity to cooling shelter for climate adaptation • Efficiency program effectiveness	• Community greenhouse gas program impacts • Renewable resource planning • Effect of efficiency programs on community/ neighborhood energy use.
Suggested Protection	Access only via: • Customer consent • Academic research with NDA and protocols similar to Census protocols • Opt-out notification?	• City or County aggregation: Public data (as with CSI program) • Block-group (or largest scale vulnerable to geographic disaggregation): Available to EE/renewable energy service providers under NDA, or via user interface designed to limit potential.	• Available to building owner or designated representative for compliance with AB1103, CPUC benchmarking order, or local energy efficiency program/ ordinance.	• Publicly accessible, published to the web, and updated annually.

Figure 2.1, 2.2, and 2.3: Energy Data Center discussions mapped onto the proposed framework.

Figure 2.1: Mapping the Primary Quadrant for proposed Use Cases

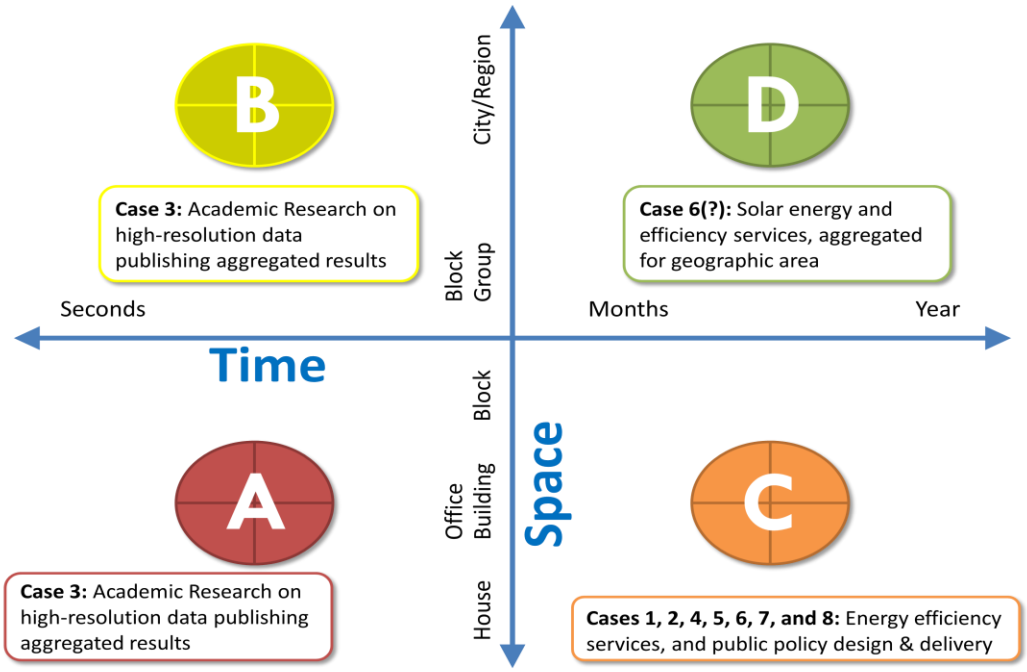


Figure 2.2 Applicable quadrant for commonly used types of energy data

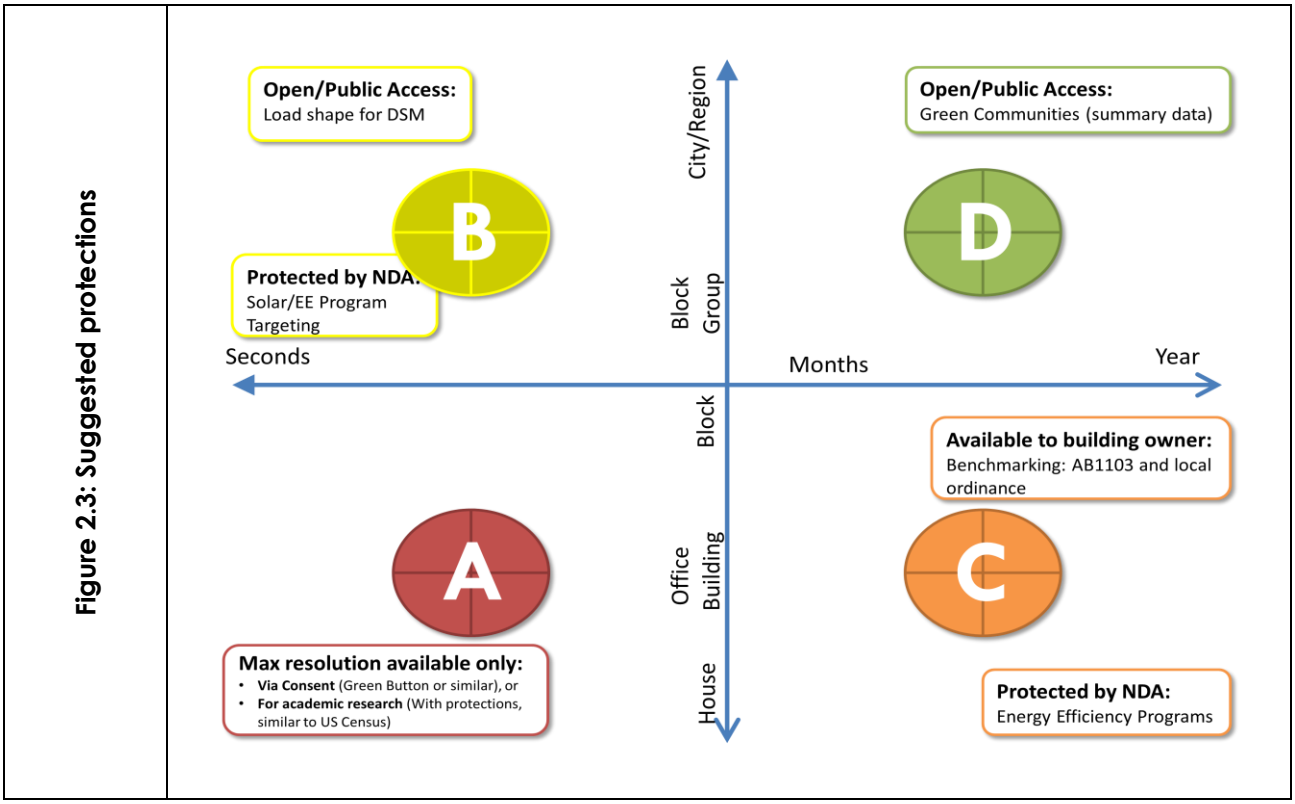


Figure 2.3: Suggested protections

Leadership Examples of Data Access Supporting Benchmarking

Utility	Minimum meters to share whole building monthly data with owner	Reference
ConEdison (NY)	2	ConEdison http://www.coned.com/energyefficiency/PDF/FAQ-Aggregated-Consumption.pdf
Avista Utilities (WA)	2	Leona Doege, Avista Utilities
Seattle City Light (WA)	2	City of Seattle: Seattle City Light Portfolio Manager Automated Benchmarking Consumption Request Form. http://www.seattle.gov/environment/benchmarking.htm
Commonwealth Edison (IL)	4	Presentation by Kevin Bricknell, "Energy Usage Data System." Energy Efficient Buildings Hub Regional Data Management Working Group Meeting, October 25, 2012.
Austin Energy (TX)	4 (4/80 rule)	Institute for Market Transformation – Utilities' Guide to Data Access for Building Benchmarking (March 1, 2013)
Puget Sound Energy (WA)	5	Presentation by Chris Thompson. "Energy Data and Benchmarking." Energy Efficient Buildings Hub Regional Data Management Working Group Meeting, October 25, 2012.
Pepco (DC)	5	Building Electricity Consumption Data Request Form. http://www.pepco.com/business/services/consumptionrequestform/
Colorado PUC (CO)	15 (15/15 rule)	CODE OF COLORADO REGULATIONS (CCR) 723-3 PART 3