
AVEVAWORLD

APRIL 8, 2025

Supporting Kaiser Permanente's energy transition and decarbonization through a platform approach

Seth Baruch, National Director Energy & Utilities, Kaiser Permanente

Alberto Colombo, Founder and President, DERNetSoft

AVEVA

DERNetSoft

Creating a Connected Ecosystem to Ensure a More Efficient and Sustainable Energy Future

DERNetSoft Product Offerings:

Commercial / Industry / Utilities

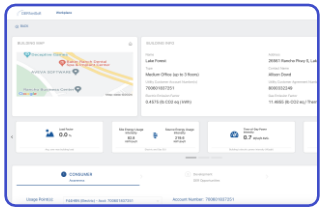
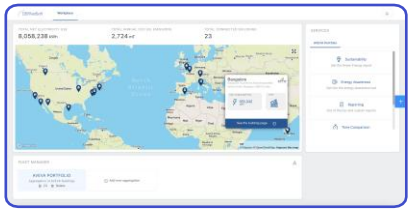
DERNetSoft Basic
Energy Ecosystem

DERNetSoft Plus
Portfolio Manager

DERNetSoft Premium
Prosumer




DERNetSoft

DERNetSoft Success By the numbers

Customer Examples:

CPA Clean Power Alliance — Locally powered energy innovation.
MARBLE
AMERESCO
Mass General Brigham
Sutter Health Sutter Medical Center
Be.
NorthBay HEALTH
AVEVA
WESTLAKE URBAN
KAISER PERMANENTE
California Water Service

3300+
Total Customer Sites

250+
Total Distributed Energy Resources

1210M+
Total Square Foot

DERNetSoft

46+
Utilities, CCAs, Municipalities & Cooperatives

183MW
DER Capacity across all customer base

650GWH
Annual DER Generation

Data Analytics, Distributed Energy Generation and Energy Management

KAISER PERMANENTE®

Kaiser Permanente at a Glance

Recognized as one of America's leading health care providers and not-for-profit health plans

Kaiser Foundation Health Plan

Permanente Medical Groups

Kaiser Foundation Hospitals

> 12 million members

> $80 billion annual operating revenue

200,000+ employees

More than 70 million square feet of occupied space

KAISER PERMANENTE®

Kaiser Permanente Mission

- Provide affordable health care to our members and improve the quality of life in the communities we serve.

- Climate change affects our members' health, so KP seeking to reduce our own impact.

- Carbon Neutral since 2020, implementing net zero goals

  Scope 1: Reduce natural gas usage
  Scope 2: 118 sites with on-site solar (71 MWs); 330 MWs of off-site renewables
  Scope 3: Actively engaged with KP supply chain

KAISER PERMANENTE®

The Challenge

- In addition to on-site solar, KP has 40+ sites with fuel cells and battery storage/microgrids.
- KP has 230 sites that have or will soon have EV chargers (almost 1,500 ports total right now).
- With a dedicated staff of four, no the bandwidth to manage and optimize so many DER assets.
- Different structures: PPAs, KP-owned sites, multiple O&M providers, various monitoring platforms.

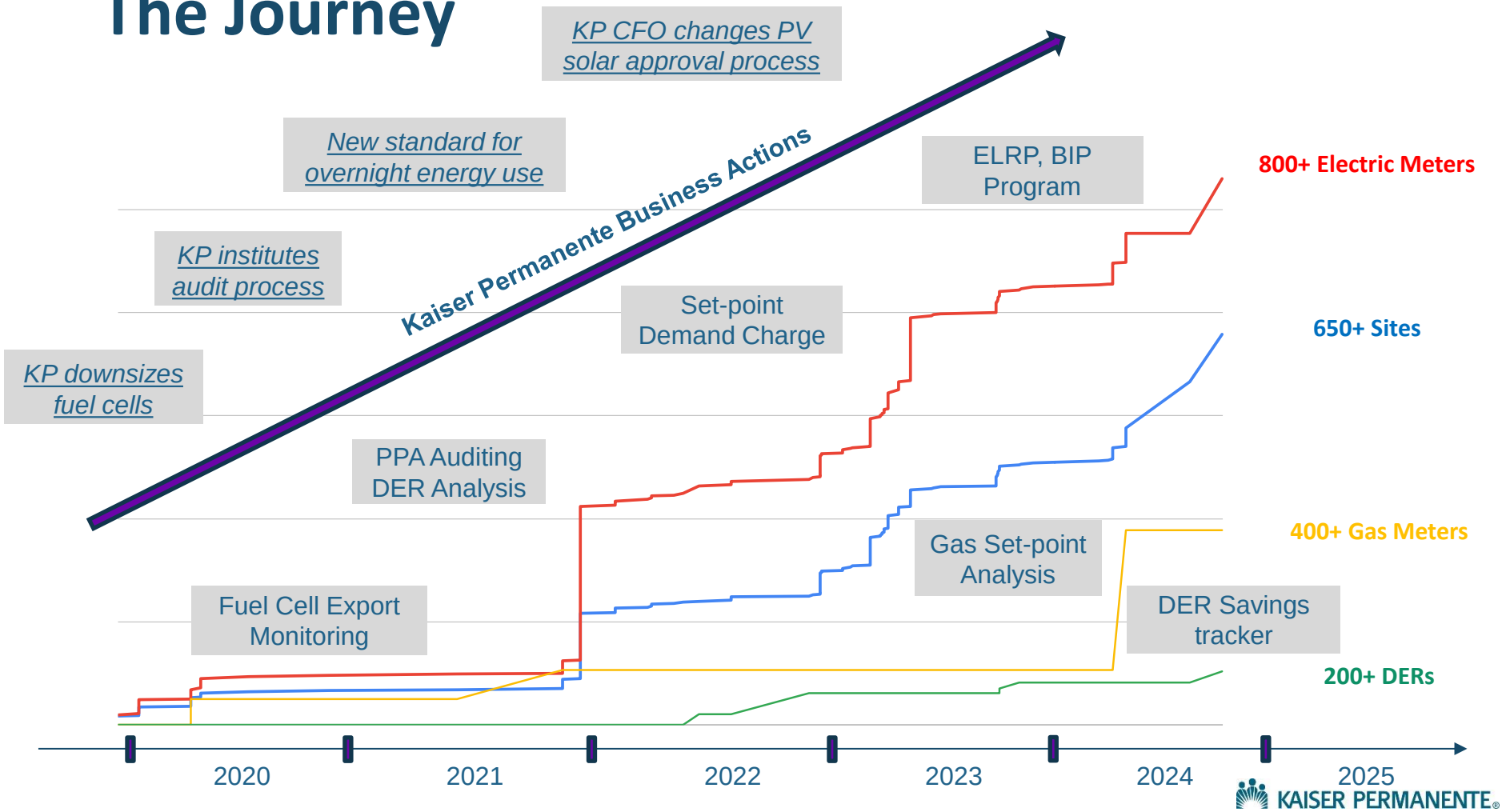
KAISER PERMANENTE®

The Opportunity

- Centralize data from fuel cell vendor, PPA owners, microgrid data providers, solar monitoring platforms, EV charging companies.
- One vendor (DERNetSoft) can collect this disparate data, analysis it, identify gaps and inconsistencies.
- A lot one can do with 15-minute interval data, especially across hundreds of meters.

KAISER PERMANENTE®

The Journey



KAISER PERMANENTE®

Fuel Cell Net Metering

"…too much DER can be a problem; properly size DER and take into account potential for energy efficiency, which will lower DER needs…"

CHALLENGES

- Excessive on-site generation from fuel cells.
- Collecting and analyzing data was too difficult and expensive from utilities or other vendors.
- Some vendors required hardware installation, which can be disruptive.

SOLUTIONS

- DERNetSoft platform to monitor Net Energy Metering.
- Easy-to-use dashboard readily identified where, when and how much NEM took place.
- Scaled over multiple facilities in 4 different utilities territory.

RESULTS

- Some fuel cell capacity being downsized and moved to other sites, saving Kaiser Permanente M$.

KAISER PERMANENTE®

Solar PPA Auditing

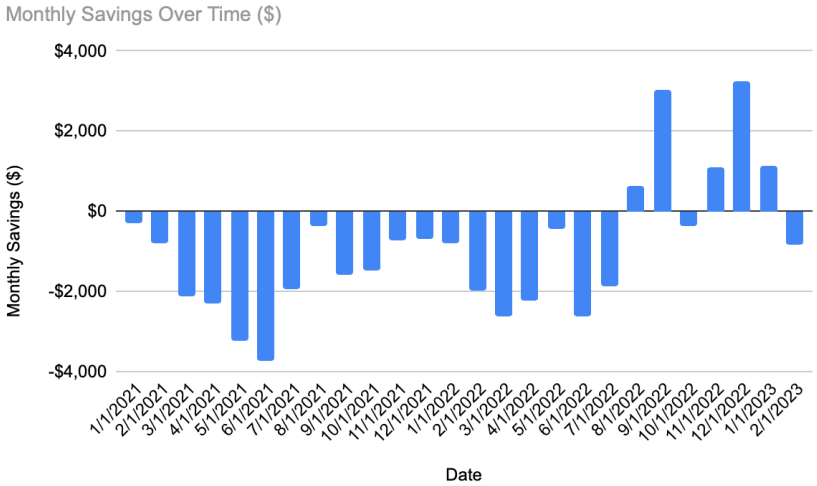
Site	Production Year Start	Production Year End	Production Year	Actual Generation (KWH)	Expected Generation: Pre-Adj. (KWH)	Adj. Expected Generation: Locus (KWH)	% Expected Output Met
CA3941 - Harbor-MacArthur Medical Offices	11/30/20	11/29/21	4	41,858.9	434,753.3	57,544.0	72.74%
CN2203 - Napa Medical Offices	12/20/20	12/19/21	3	33,074.6	572,659.8	42,216.2	78.35%
CN1301 - Union City Medical Offices A	12/28/20	12/27/21	4	44,348.3	943,438.2	55,967.3	79.24%
CN2450 - Livermore Medical Offices	11/1/20	10/31/21	4	93,281.3	716,099.9	112,064.8	83.24%
CN3501 - S. San Francisco Hospital	12/20/20	12/19/21	3	27,302.8	502,016.3	32,993.6	82.75%
CA6051 - East Hills Medical Offices	1/8/20	1/7/21	3	479,755.2	563,971.7	578,375.0	82.95%
CN9201 - San Leandro Medical Center	12/20/20	12/19/21	3	72,710.3	1,271,174.9	92,834.7	78.32%

DER + Tariff Change Savings

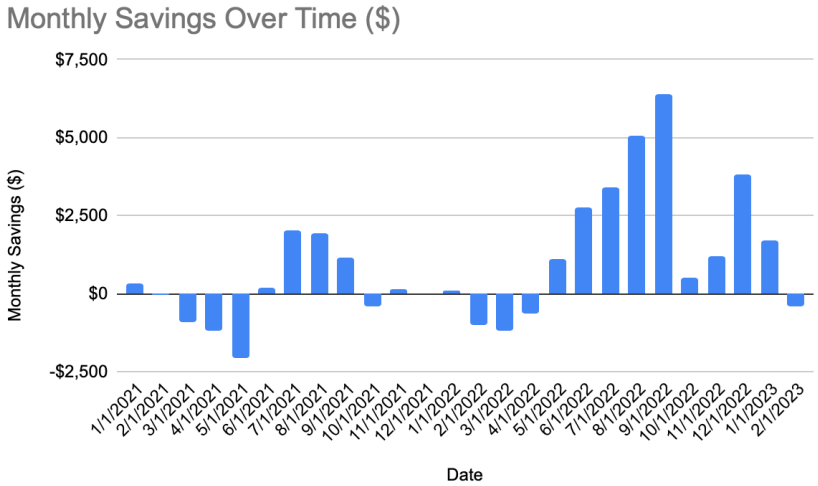
Once an issue was identified for PV System B, DERNetSoft was able to:

- Determine viable alternate delivery tariffs
- Rerun analysis to show what the savings would have been if the site were on these tariffs.
- Provide tariff change recommendation to ensure future savings maximization
- Tariff switch results in > $26,000 increased savings annually based on 2022 rates. Rates are going up.

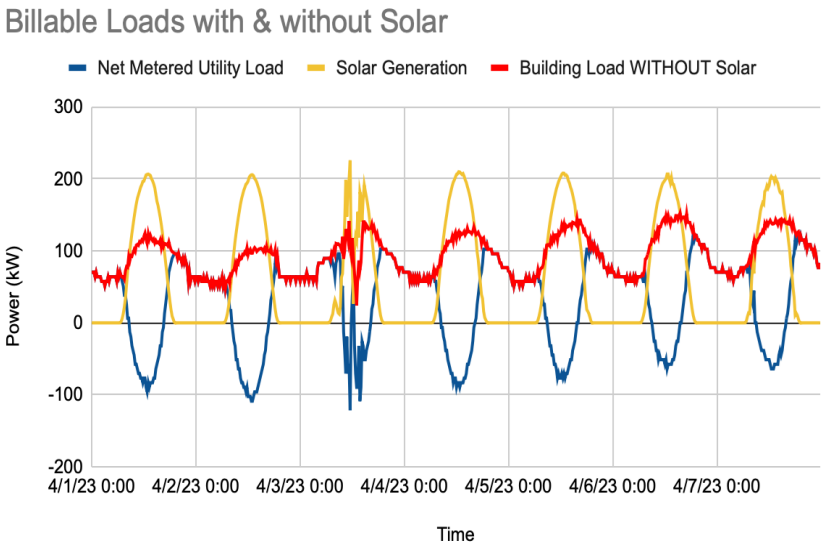
Current Delivery Rate: TOU-GS-2B



Best Alternate Tariff: TOU-GS-2E



Solar Savings Tracker

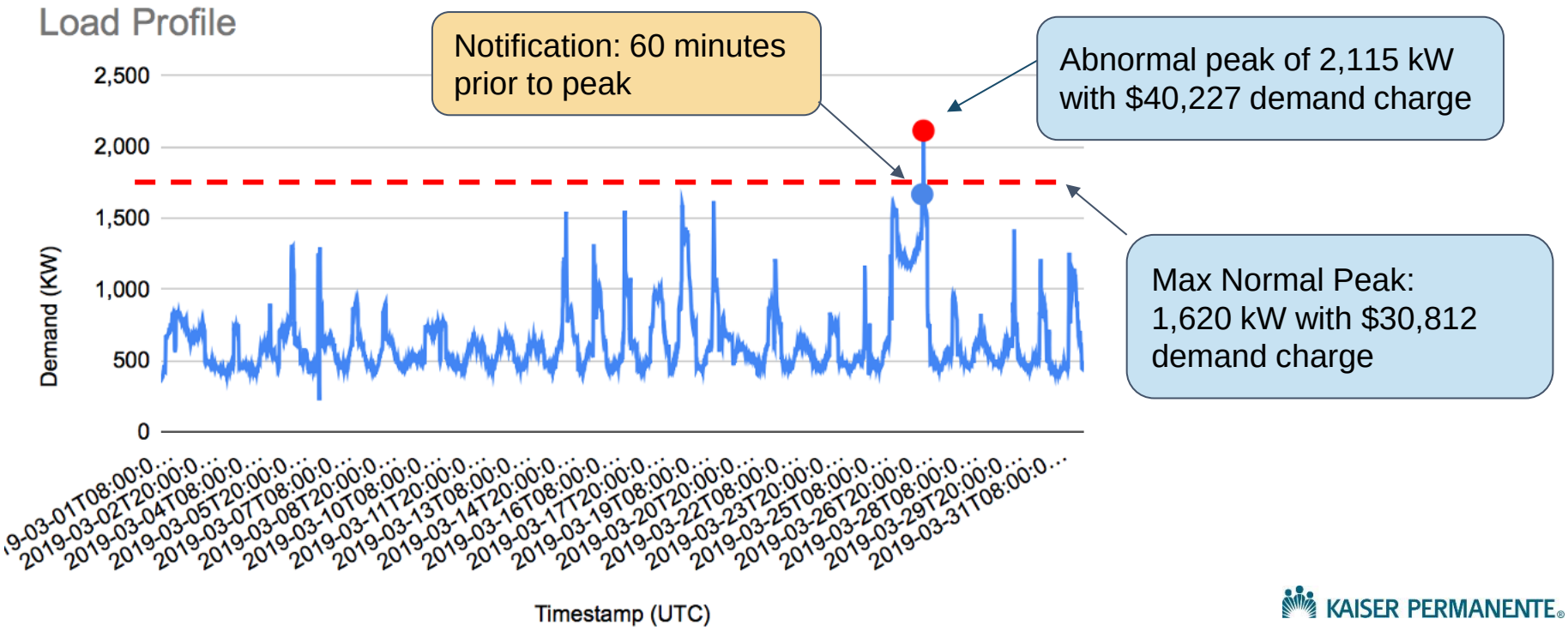


Month	Baseline Tariff	Actual Tariff	Actual SupplyTariff	Cost W/O DER	Cost W/ DER	Savings
2022-03	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$12,195.8	$6,823.6	$5,372.1
2022-04	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$16,554.2	$10,828.2	$5,725.9
2022-05	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$10,317.0	$4,795.4	$5,521.6
2022-06	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$13,790.3	$10,911.1	$2,879.1
2022-07	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$19,754.4	$8,334.3	$11,420.0
2022-08	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$20,308.6	$9,943.1	$10,365.5
2022-09	B19 Secondary Delivery	B19 Secondary Delivery	SCAL DA Index Kaiser Antioch 1	$30,407.9	$17,419.5	$12,988.3

KAISER PERMANENTE®

Demand Charge Management

Possibility to save $10k per month if we can avoid ***abnormal*** peak.



KAISER PERMANENTE®

Nighttime Setback Opportunities

	Setback Percentage: 4 AM Divided by 2 PM Loads		
Building Name	Max (%)	Min (%)	Avg. (%)
MOB (Medical Office Building – 9 am – 5 pm occupancy)	95.1%	39.7%	63.1%
Hospital	100.8%	47.1%	71.0%
Hospital	93.9%	43.9%	69.6%
MOB	114.2%	49.8%	72.1%
Hospital	192.3%	60.6%	74.2%
MOB	101.9%	23.8%	50.5%
Hospital	90.0%	54.9%	69.6%
Hospital	94.1%	56.6%	69.6%
Hospital	91.3%	59.0%	69.8%
Hospital	97.0%	65.9%	82.5%
Central Utility Plant	80.5%	50.3%	61.8%
MOB	100.0%	55.0%	70.7%
Data Center	107.0%	82.0%	91.5%
Admin Building	101.4%	19.6%	27.2%
Admin Building	103.1%	34.9%	41.6%
Call Center	113.5%	37.2%	78.6%
MOB	62.0%	20.0%	34.3%
MOB	683.5%	46.1%	76.7%
MOB	130.9%	45.1%	73.6%
MOB	78.6%	33.3%	41.4%
MOB	58.6%	31.7%	41.9%
MOB	125.9%	41.2%	73.5%
MOB	1802.0%	35.6%	97.7%

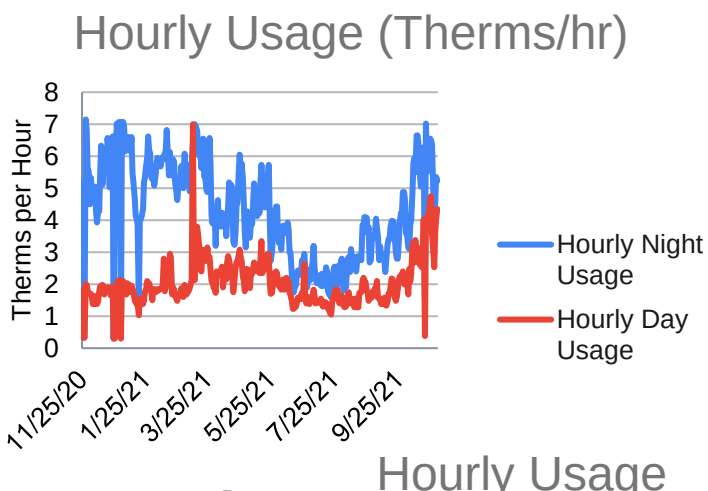
Hospitals are in a tight range

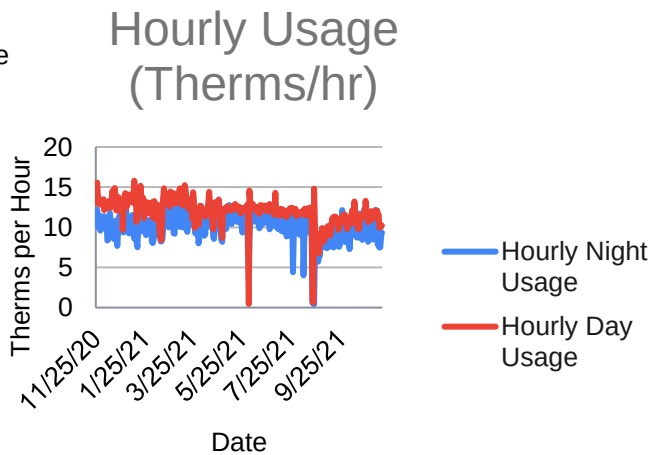
This is what's possible

This is what's avoidable

KAISER PERMANENTE®

This Can Be Done for Gas Too





Building	Avg. Usage Ratio
Regional Service Ctr	0.33
Administrative	0.36
Call Ctr	0.51
Data Center	0.60
MOB	0.63
MOB	0.75
MOB	0.81
Service Center	0.89
Hospital	0.96
MOB	0.99
Hospital	1.04
Warehouse	1.07
Hospital	1.12
Hospital	1.22
MOB	1.37
MOB	1.42
MOB	1.52
MOB	1.69
MOB	1.82
MOB	2.17
MOB	2.37
MOB	2.86
MOB	3.05
MOB	3.12
MOB	3.37
MOB	4.24
MOB	5.00

Wide range of average day/night gas usage

KAISER PERMANENTE®

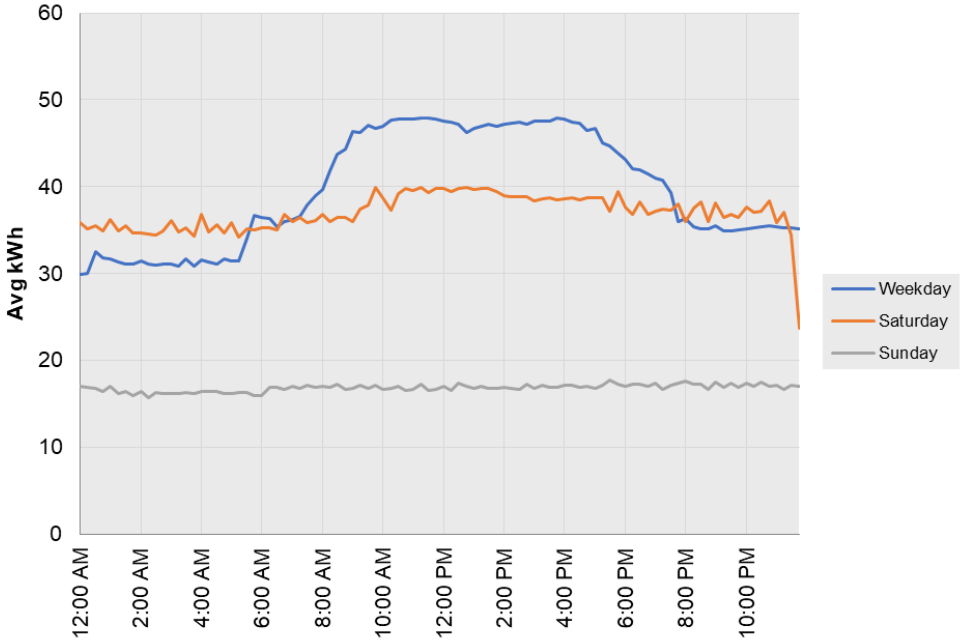
Turning Setbacks into a KP-wide Program

- Initial results convinced regional leadership to incorporate nighttime setbacks into staff goals.
- DERNetSoft load ratios now part of overall KP data tracking EUI and utility expense.
- In S. California, 52 facilities have implemented setbacks (tip of the iceberg).
- Saving $1.4M/year or 4% reduction in electricity consumption and a 12% reduction in natural gas (Scope 1!).
- In N. California, we're already seeing a 6% drop in nighttime energy usage.

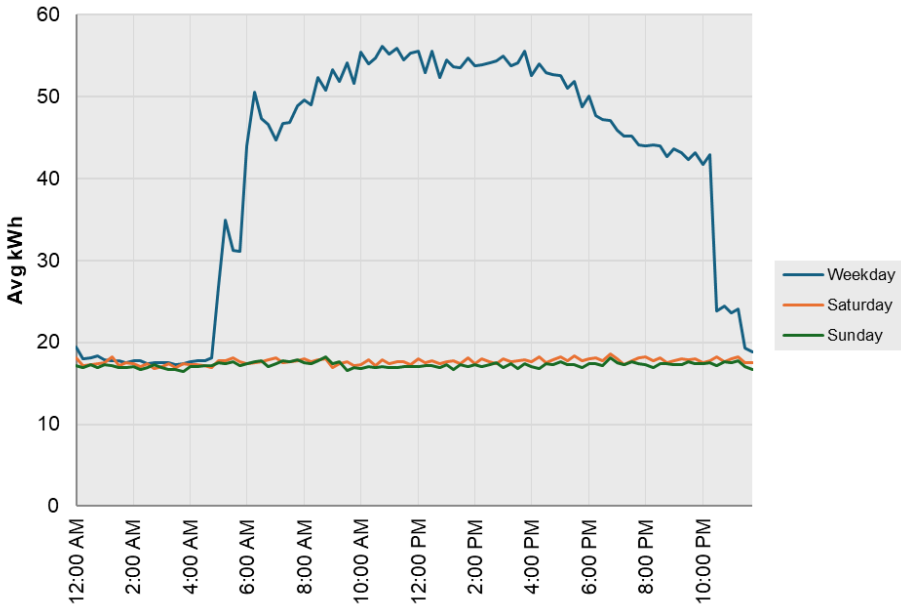
Inglewood MOB

- Weeknights load match Sunday nights: 25 hours savings
- Match Sunday to Saturday HVAC Operations: 24 Hours savings

April 28 – May 4, 2024 (Sunday – Saturday)



June 21 – June 27, 2024 (Friday - Thursday)

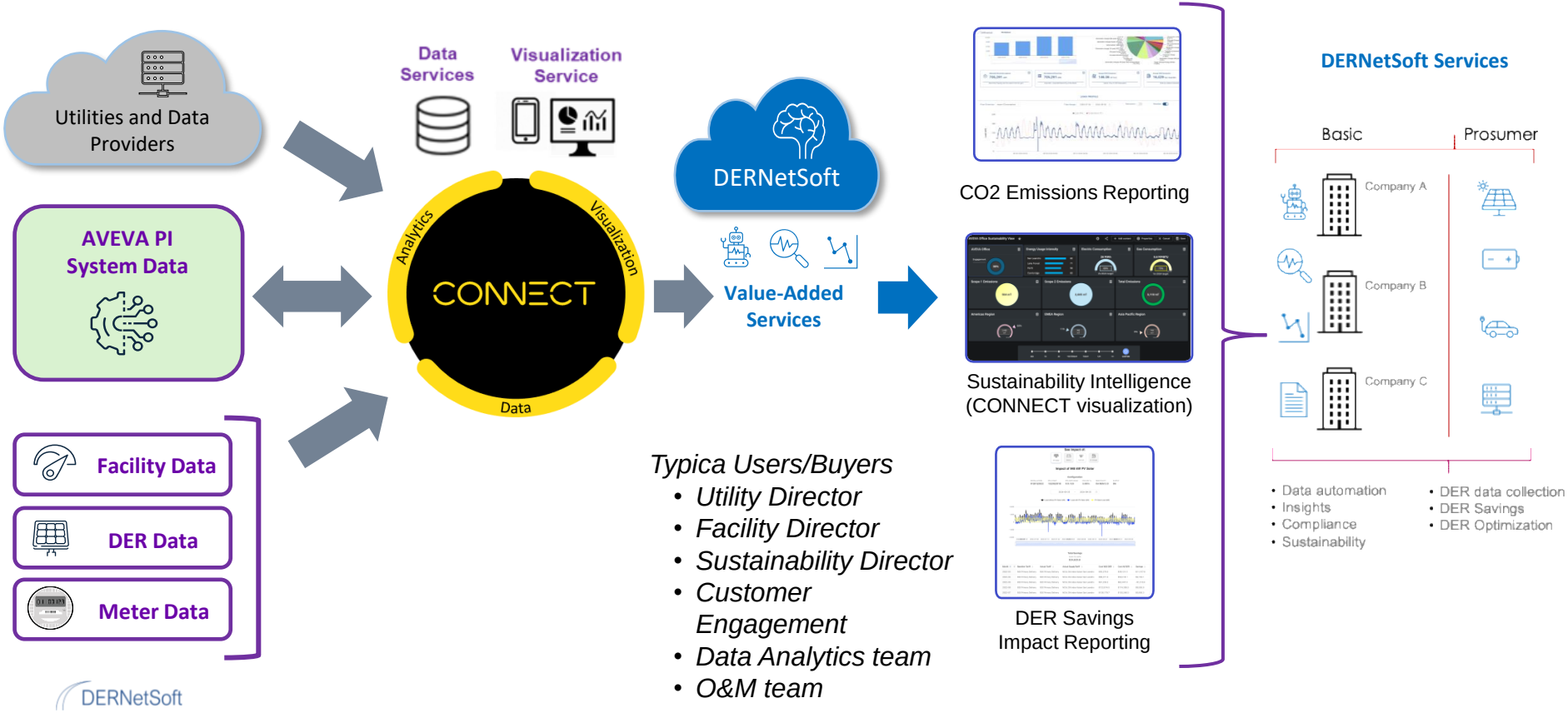


SCAL Nighttime Setbacks – Just in 2024

Market Area	Physical Campus	▲	ec 2023 Base EU	RTM EUI	△ RTM vs Dec 202	ec 2023 Base KBT	RTM KBTU	△ KBTU RTM vs Dec 202	Cost/KBTU	Total
Anaheim	East Street Warehouse	▼	121	98.4	-18.5%	6,701,908	5,464,444	-1,237,464	$ 0.0321	$ (39,661)
Anaheim	Orange Health Pavilion	▼	104	89.8	-13.7%	2,813,093	2,429,050	-384,043	$ 0.0321	$ (12,309)
Anaheim	Garden Grove Medical Offices	▼	139	124.8	-10.4%	11,795,779	10,569,609	-1,226,170	$ 0.0321	$ (39,299)
Anaheim	Yorba Linda Medical Offices	▼	105	97.5	-7.1%	4,928,926	4,578,354	-350,572	$ 0.0321	$ (11,236)
Anaheim	Barcelona Warehouse	▼	45	42.1	-6.7%	2,146,544	2,003,577	-142,967	$ 0.0321	$ (4,582)
Anaheim	Brea Medical Offices	▼	194	181.8	-6.1%	5,896,309	5,539,010	-357,299	$ 0.0321	$ (11,451)
Anaheim	Lakeview MOB (Formerly Anaheim Hospital)	▼	114	107.7	-5.3%	8,984,244	8,505,398	-478,846	$ 0.0321	$ (15,347)
Anaheim	Euclid Medical Offices	▼	124	121.0	-2.3%	7,381,101	7,212,769	-168,332	$ 0.0321	$ (5,395)
Anaheim	Chapman Medical Offices	▼	117	117.0	0.0%	5,997,570	5,994,869	-2,701	$ 0.0321	$ (87)
Anaheim	Kraemer I Medical Offices	▼	107	104.2	-2.9%	11,879,181	11,531,824	-347,357	$ 0.0321	$ (11,133)
Anaheim	La Palma Medical Offices	▼	115	113.2	-1.6%	6,928,524	6,820,876	-107,648	$ 0.0321	$ (3,450)
Anaheim	Tustin Santa Ana Medical Offices	▼	87	86.2	-1.2%	6,044,525	5,974,598	-69,927	$ 0.0321	$ (2,241)
Anaheim	Anaheim Hospital Campus New	▼	290	286.7	-1.1%	179,169,185	177,253,626	-1,915,559	$ 0.0321	$ (61,394)
Antelope Valley	Lancaster MOB Campus	▼	115	113.3	-1.7%	14,432,920	14,185,095	-247,825	$ 0.0321	$ (7,943)
Antelope Valley	Palmdale Medical Offices	▼	157	97.1	-38.4%	7,296,674	4,497,874	-2,798,800	$ 0.0321	$ (89,702)
Downey	Cudahy Medical Offices	▼	121	109.2	-9.9%	7,069,540	6,369,231	-700,309	$ 0.0321	$ (22,445)
Downey	Orchard MOB Campus	▼	128	123.9	-3.2%	35,833,016	34,693,890	-1,139,126	$ 0.0321	$ (36,509)
Downey	Bellflower MOB Campus	▼	219	218.8	-0.1%	69,073,054	69,015,118	-57,936	$ 0.0321	$ (1,857)
Downey	Cerritos Medical Offices	▼	83	79.4	-4.5%	4,294,522	4,099,637	-194,885	$ 0.0321	$ (6,246)
Irvine	San Juan Camino Capistrano Medical Offices	▼	121	82.7	-31.7%	3,569,089	2,437,752	-1,131,337	$ 0.0321	$ (36,259)
Irvine	Foothill Ranch Medical Offices	▼	102	87.4	-13.9%	2,142,638	1,844,328	-298,310	$ 0.0321	$ (9,561)
Irvine	Huntington Beach Medical Offices	▼	82	71.8	-12.7%	2,448,620	2,137,229	-311,391	$ 0.0321	$ (9,980)
Irvine	Harbor/MacArthur Medical Offices	▼	143	127.0	-11.0%	10,770,165	9,590,508	-1,179,657	$ 0.0321	$ (37,808)
Irvine	Irvine Barranca Medical Offices	▼	159	145.6	-8.7%	7,308,679	6,675,518	-633,161	$ 0.0321	$ (20,293)
Irvine	Tustin Ranch Medical Offices	▼	42	38.8	-8.2%	6,068,185	5,573,074	-495,111	$ 0.0321	$ (15,868)
Irvine	OC Irvine Hospital Campus	▼	266	256.4	-3.7%	178,539,294	171,938,617	-6,600,677	$ 0.0321	$ (211,552)
Irvine	Mission Viejo Medical Offices	▼	169	149.6	-11.3%	7,004,339	6,209,555	-794,784	$ 0.0321	$ (25,473)
Kern County	Bakersfield Vision Essentials	▼	78	72.5	-6.6%	648,702	605,840	-42,862	$ 0.0321	$ (1,374)
Kern County	Stockdale Medical Offices	▼	189	185.7	-1.5%	12,953,596	12,763,281	-190,315	$ 0.0321	$ (6,100)
Kern County	Bakersfield Warehouse/Chart - East	▼	72	71.5	-0.4%	1,448,559	1,442,324	-6,235	$ 0.0321	$ (200)
Los Angeles	East Los Angeles MOB Campus	▼	94	80.3	-14.8%	5,952,718	5,070,179	-882,539	$ 0.0321	$ (28,285)
Ontario	Chino Hills Grand Medical Offices	▼	107	97.6	-8.4%	5,113,100	4,684,872	-428,228	$ 0.0321	$ (13,725)
Panorama City	Santa Clarita Medical Offices 2	▼	113	99.9	-11.6%	12,967,925	11,464,002	-1,503,923	$ 0.0321	$ (48,201)
Panorama City	Santa Clarita Medical Offices	▼	139	127.0	-8.4%	9,145,200	8,376,264	-768,936	$ 0.0321	$ (24,644)
Panorama City	Panorama City Medical Offices 2	▼	105	96.8	-7.6%	11,695,939	10,801,200	-894,739	$ 0.0321	$ (28,676)
Panorama City	Panorama City Medical Offices 6	▼	101	100.4	-0.9%	6,632,640	6,575,628	-57,012	$ 0.0321	$ (1,827)
Panorama City	Sylmar Behavioral Health	▼	47	45.9	-1.8%	1,649,022	1,618,943	-30,079	$ 0.0321	$ (964)
Riverside	Moreno Valley Medical Offices	▼	123	102.4	-16.5%	7,781,568	6,500,546	-1,281,022	$ 0.0321	$ (41,057)
Riverside	Temecula MOB Campus	▼	76	64.3	-15.4%	2,365,075	2,001,511	-363,564	$ 0.0321	$ (11,652)
Riverside	Van Buren Medical Offices	▼	155	132.6	-14.6%	2,188,289	1,869,798	-318,491	$ 0.0321	$ (10,208)
Riverside	Granite Street Warehouse	▼	54	48.5	-11.1%	272,473	242,312	-30,161	$ 0.0321	$ (967)
Riverside	Corona MOB Campus	▼	114	102.1	-10.7%	12,785,066	11,414,573	-1,370,493	$ 0.0321	$ (43,924)
Riverside	Palm Springs Medical Offices	▼	75	70.3	-5.7%	408,113	384,847	-23,266	$ 0.0321	$ (746)
Riverside	Indio Medical Offices	▼	93	88.2	-5.2%	1,442,770	1,367,530	-75,240	$ 0.0321	$ (2,411)
Riverside	Riverside Magnolia North Administration	▼	41	41.1	-0.5%	613,303	610,332	-2,971	$ 0.0321	$ (95)
Riverside	Magnolia Home Health	▼	45	25.0	-44.9%	312,896	172,414	-140,482	$ 0.0321	$ (4,502)
Riverside	Magnolia PT	▼	71	55.2	-22.5%	337,480	261,510	-75,970	$ 0.0321	$ (2,435)
Riverside	Wildomar Medical Offices	▼	51	47.4	-6.7%	2,431,308	2,267,474	-163,834	$ 0.0321	$ (5,251)
Riverside	Riverside Hospital Campus	▼	196	192.1	-2.2%	137,018,500	134,004,471	-3,014,029	$ 0.0321	$ (96,600)
West Los Angeles	Inglewood Medical Offices	▼	92	77.6	-15.8%	6,639,309	5,592,606	-1,046,703	$ 0.0321	$ (33,547)
West Los Angeles	Culver Marina Medical Offices	▼	101	88.2	-12.8%	4,345,427	3,789,563	-555,864	$ 0.0321	$ (17,815)
West Los Angeles	Baldwin Hills Crenshaw Medical Offices	▼	87	79.3	-9.3%	8,918,531	8,090,721	-827,810	$ 0.0321	$ (26,531)
West Los Angeles	West Los Angeles Hospital Campus	▼	198	188.4	-4.8%	168,308,480	160,166,489	-8,141,991	$ 0.0321	$ (260,951)
West Los Angeles	La Cienega Vision	▼	49	45.0	-8.7%	561,806	512,778	-49,028	$ 0.0321	$ (1,571)
								(45,657,981)	$ 0.0321	$ (1,463,338)

Total savings

Product Overview

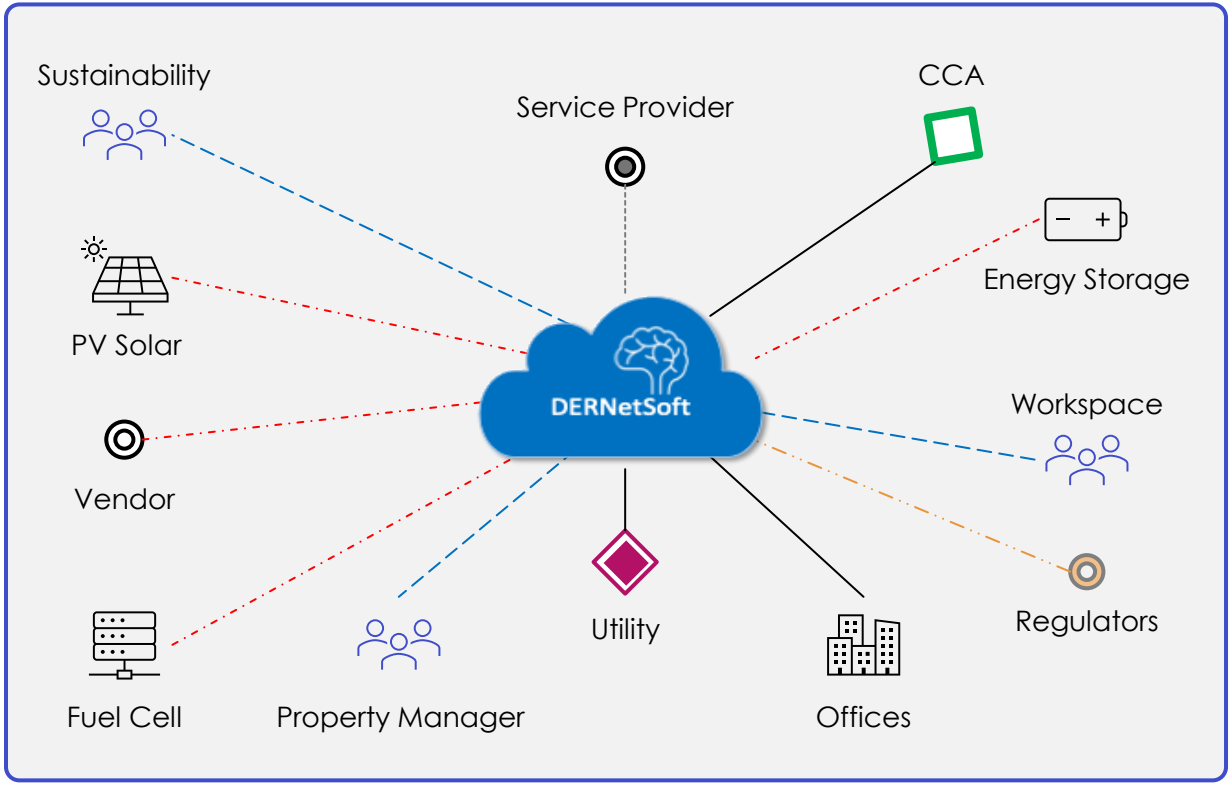


Typica Users/Buyers

- *Utility Director*
- *Facility Director*
- *Sustainability Director*
- *Customer Engagement*
- *Data Analytics team*
- *O&M team*

DERNetSoft

Kaiser Permanente / Energy Ecosystem



Ecosystem Facts

- DERNetSoft Premium
- Prosumer: Yes
- Sites: 650+
- Meters: 1,200+
- DERs: 200+
- Internal user: 40
- External user:20

ROI: 6 months

- Data collection automation
- Energy curtailment
- DER performance and continuous improvement

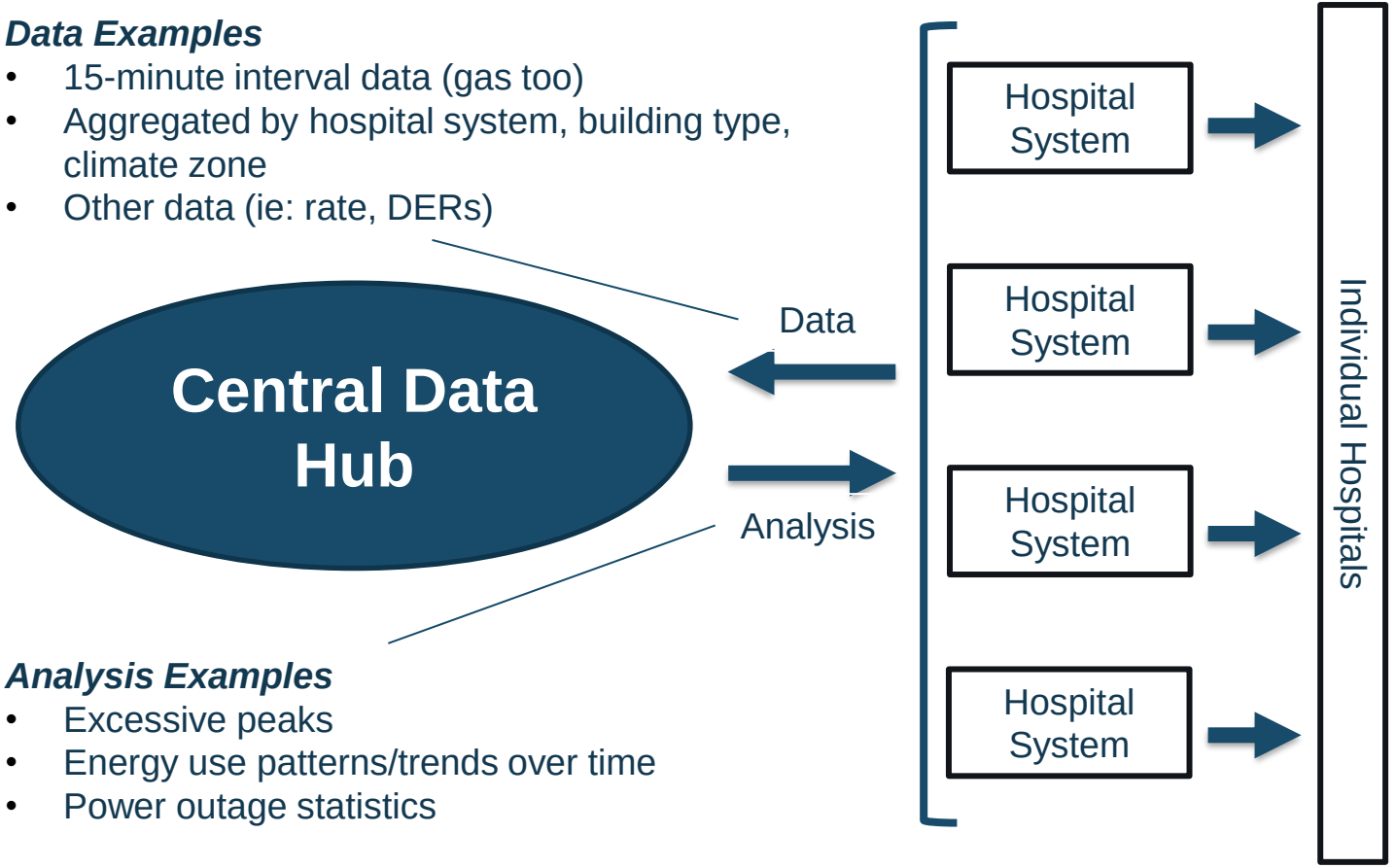
Overall Results

- Millions of dollars in refunds from excess energy production from oversized fuel cells.
- More than $3 million per year in avoided utility costs from on-site solar.
- Nighttime setbacks saving $1.4 million in just SCAL, the number will rise substantially in 2025 and beyond.
- Measurable reductions in Scope 1&2 emissions
- What’s Next: Managing EV charging to avoid increasing demand charges; integration of DERNetSoft data into other KP platforms

Could We Have a Healthcare Data Sharing System?

Data Examples

- 15-minute interval data (gas too)
- Aggregated by hospital system, building type, climate zone
- Other data (ie: rate, DERs)



Analysis Examples

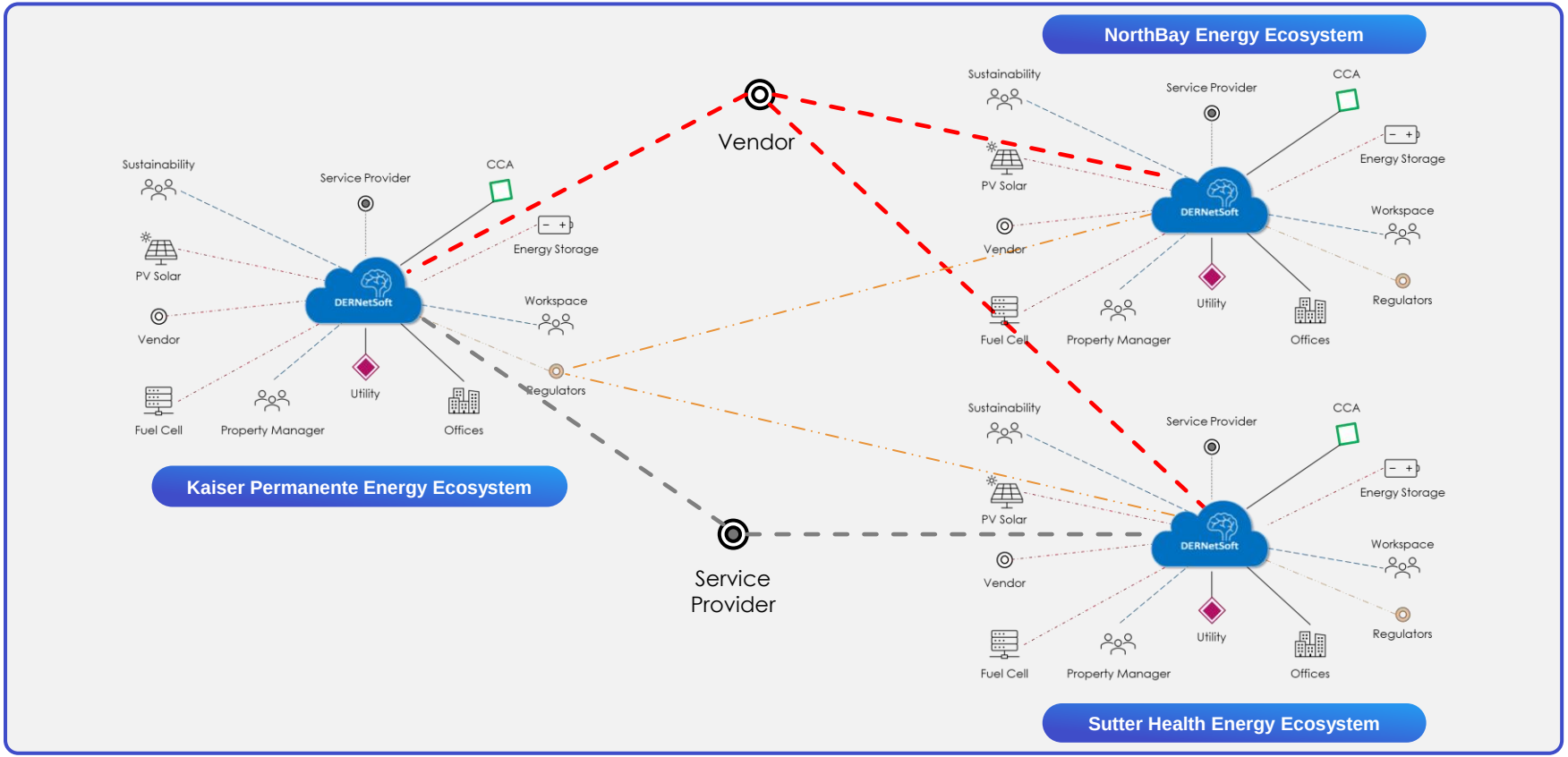
- Excessive peaks
- Energy use patterns/trends over time
- Power outage statistics

Results

- Which facilities are vulnerable to power outages
- Which buildings are the energy "hot spots"
- The sites that are suitable for solar/storage
- Common energy use patterns as well as finding exemplary energy performance that can be replicated

KAISER PERMANENTE®

DERNetSoft Connected Energy Ecosystem



Questions?

Please wait for the microphone.

State your name and company.

Please remember to…

Navigate to this session in the mobile app to complete the survey.

Thank you!