CALIFORNIA

Efficiency + Demand Management

COUNCIL

Advancing Our Clean Economy

Monthly Member Readout

October 6, 2023

REC

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Today's Agenda

Council News

- Fall Conference Early Bird Tix Still Available!
- What's Coming Up
- Solicitations

Issues/Topics

- Legislative Re-Recap
- CPUC EPIC Strategic Planning Process
- CalTF Data Charette II
- CPUC (A.18-11-015 et al): Final decision in Click-Through proceeding
- Quick Updates

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Fall Conference Early Bird Tix Still Available!

- **Tuesday, November 7, 2023:** evening kickoff reception
- **Wednesday, November 8, 2023:** full day conference with networking reception following
- **Scottish Rite Center, Oakland, CA** (with online option)

Topics:

- Consumer energy finance strategies,
- The latest guidance on layering incentives,
- Emerging opportunities for deep efficiency and electrification retrofits,
- Performance-based approaches to managing program and project risk,
- Portfolio objectives in transition - from Energy Efficiency to Total System Benefit, market transformation; and
- Energy affordability and equity

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Fall Conference Early Bird Tix Still Available!

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Opinion Dynamics

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What's Coming Up

- **October 9: CEC Wksp on Understanding the Role of Long Duration Energy Storage in California's Evolving Energy System**
  - 1:30 p.m. - 3:30 p.m.
  - Zoom; (888) 475-4499 | Webinar ID 820 1069 0375 | Passcode 012157
- **October 9: Workshop on Proposed Regulations for Electric Vehicle Charger Inventory, Utilization, and Reliability Reporting**
  - *10:00 a.m - 2:00 p.m.*
  - *Zoom; ID: 898 8686 6123 | Passcode: 364075*
- **October 10, 2023: R.18-04-019 Modeling and Investment Workshop: Tasks 1 & 3**
  - *9:00 a.m - 4:00 p.m.*
  - *Webex; 1-855-282- 6330| Passcode: RmQAMRR975Z*
- **October 10-11, 2023: CEC & EPRI Building Electrification Summit: Clean and Healthy Homes for All**
  - *8:00 a.m. - 4:00 p.m. each day*
  - *In-Person: California Natural Resources HQ: 715 P Street, Sacramento, CA 95814*
  - *Register here (registration required)*
- **October 13, 2023: CalMTA Market Transformation Advisory Board (MTAB) Meeting**
  - *9:00 a.m. - 4:00 p.m.*
  - *Register in person | Register via zoom*
- **October 16, 2023: Notice of Senate Bill 643 Staff Report Workshop**
  - *2:00 p.m. - 4:00 p.m.*
  - *Zoom; ID: 886 1770 7525 | Passcode: 566955*
- **October 17, 2023: Environmental and Social Justice High Road Workforce En Banc**
  - *9:00 a.m - 4:30 p.m.*
  - *Webex; ID: 2485 661 2953 | Passcode: 2023*
  - *In-Person: The California Endowment - Adelante Meeting Room, 1414 K Street, Sacramento, CA 95814*

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What's Coming Up (Cont.)

- **October 19, 2023: Subject: Resiliency Planning and Evaluation: 4-Pillar Methodology Use Case**
  - *9:00 a.m. - 12:30 p.m.*
  - *Webex; ID: 2482 394 7214| Passcode: GRMG*
- **October 19, 2023: R.21-10-002: Notice of Availability of Slice of Day Compliance Materials**
  - *2:00 p.m. - 4:00 p.m.*
  - *Webex; ID: 2491 162 6001 | Passcode: QyYqa8J2Xb8*
- **October 26, 2023: CPUC Workshop: Gas Utility/Independent Storage Provider Winter 2023-24 Preparations**
  - *9:00 a.m. - 12:00 p.m.*
  - *Webex; ID: 2481 723 7220 | Password: Gasworkshop*
- **October 31, 2023: Notice of Senate Bill 100 Analytical Framework Workshop**
  - *1:00 p.m. - 4:00 p.m.*
  - *Zoom; ID: 871 7711 5028 | Passcode: 417172*
- **November 2, 2023: UC Davis Global Energy Managers Workshop**
  - *Details*
  - *Zoom registration*
- **November 3, 2023: CalFlexHub Symposium**
  - 8:00 a.m. - 4:00 p.m.
  - In-Person: 1 Cyclotron Road, Berkeley CA 94720 | Remote: Available
  - Register for in-person *or* remote here. If attending in-person, register by October 16

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Open Solicitations

IOU UPDATED SOLICITATIONS SCHEDULE EXCEL DOWNLOAD (current as of Sep. 1, 2023)

10/6/23: SDCP RFP - Procurement Counsel Legal Services RFP
10/09/23: EBCE RFO - Energy Resilient Municipal Critical Facilities 2023
10/09/23: PG&E RFP 168642 Mover Services Program
10/12/23: CARB GFO - Advanced Technology Demonstration and Pilot Projects
10/20/9/15/23: CEC GFO-22-308 - Decarbonizing Heating, Ventilation, and Air
10/27/23: MCE RFP - EV Charger Replacement Project
11/07/23: PG&E RFP 180713 - PG&E 3P EE Commercial Strategic Energy Management Program
11/10/23: PG&E GFO-22-603 - Implementation of Medium- and Heavy-Duty Zero-Emission Vehicle Infrastructure Blueprints
11/15/23: SCE RFO 2023 Distribution Investment Deferral Framework (DIDF)
11/17/23: CEC GFO-23-602 - Charging and Refueling Infrastructure for Transport in CALifornia Provided Along Targeted Highway Segments (CRITICAL PATHS)
11/17/23: CEC GFO-23-701 - California's Fifth Climate Change Assessment Tribal Research Grant Program
11/17/23: MCE RFO - 2023 Community Solar Connection
11/27/23: PG&E RFO Fall 2023 Distribution Investment Deferral Framework (DIDF)
2/02/24: CEC GFO-23-301 - Energy Efficiency and Load Flexibility in Industrial and Commercial Cold Storage Facilities
2/24/24: SDCP RFO - Disadvantaged Communities Green Tariff (DAC-GT) and Community Solar Green Tariff

Ongoing:

- EE program 3P solicitation information and links found on the CAEECC Website
- CEC: GFO-21-901 - Cost Share for Federal Clean Energy Funding Opportunities
- CEC: GFO-22-902 - Cost Share for Federal Funding Opportunities Industrial Decarbonization and Improvement of Grid Operations Program, Food Production Investment Program (released March 24)
- CEC: GFO-22-301 - Commercialization Industrial Decarbonization (2022 CID Program
- CARB: GFO - Clean Off-Road Equipment Voucher
- CARB: GFO - Funding Agricultural Replacement Measures for Emission Reductions (FARMER) Program

DOE: Funding Opportunity Exchange

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Issues/Topics

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Legislative Re-Recap

September 14: End of session
October 14: Deadline for Governor Newsom to either sign legislation into law, allow legislation to become law without signature, or veto.

January 1: Statutes take effect
January 3: Legislature reconvenes

Over 2,650 bills were introduced during this session.
Of those, **close to 1,100** made it to the Governor's Desk.

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Legislative Re-Recap (Cont.)

2023 was a different legislative session than 2022 for our industry.

2022 Legislative Shifts & Trends:

- $100 billion + in revenue surplus
- $7+ billion in general, clean energy related future funding
- Two energy trailer bills (AB 205 and AB 209)

2023 Legislative Shifts & Trends:

- $31+ billion revenue shortfalls (projected)
- No energy trailer bills like last year's
- Major legislation with major players consumed "energy" time, attention, resources
  - I.e. Dept. of Water Resource Central Procurement Mechanism (AB 1373), corporate emissions reporting requirements (SB 253), Clean Transportation Program extension (AB 126)
  - Impacting budgetary interests
  - Lower # of amendments/bills specific to our industry overall due to different scope and prioritization

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Legislative Re-Recap (Cont.)

Council priority bills that passed:

- AB 43 (Holden) GHG emissions: building materials: embodied CO2 trading system (*no position*)
- AB 50 (Wood) Public utilities: timely service: customer energization (*no position*)
- AB 126 (Reyes) Clean Transportation Program: extension (*no position*)
- AB 1373 (Garcia) Energy - central procurement (*no position*)
- SB 48 (Becker) Building Energy Savings Act (Council supported)
- SB 410 (Becker) Powering Up Californians Act (*no position*)
- SB 416 (Laird) State agencies: building and renovation projects: LEED certification (*no position*)

Council priority bills that stalled:

- AB 538 (Holden) Multistate regional transmission system organization (*no position*)
- SB 233 (Skinner) Battery EVs and EVSE: bidirectional capability (*no position*)
- SB 422 (Portantino) CEQA: expedited environmental review (*Council concerns*)
- SB 755 (Becker) Energy efficiency and building decarbonization programs (*no position*)
- SB 795 (Stern) Building EE: HVAC equipment sale registry and compliance tracking system (*Council supported*)

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CPUC EPIC Strategic Planning Process

CALIFORNIA Efficiency + Demand Management COUNCIL

EPIC's Mission Integrates Equity

Mission Statement: EPIC invests in innovation to ensure equitable access to safe, affordable, reliable, and environmentally sustainable energy for electricity ratepayers.

- **CPUC:** Establishes EPIC policy and planning criteria; approves 5-year cycle EPIC Investment Plans; reviews Administrator Annual Reports; and implements a program evaluation on a cycle basis to inform EPIC improvements
- **CEC:** Administers 80% funds in all three EPIC categories:
  - Applied Research and Development
  - Technology Demonstration and Deployment (TD&D)
  - Market Facilitation
- **IOUs:** Administers 20% funds in only one EPIC category:
  - Technology Demonstration and Deployment

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CPUC EPIC Strategic Planning Process

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Refined EPIC Guidance for Measurable Strategic Planning (D.23-04-042)

Requirement	Description
Strategic Goals and Objectives	• Establish clear, measurable, and reasonable program-level goals and administrator-level objectives aligned with achieving the State's climate and equity goals, including guidance by the DER Action Plan
Equity	• Utilize ESJ Action Plan and Justice40 to guide investment plans • Continues AB 523 DAC allocation requirements for TD&D projects and expands to IOUs
Uniform Impact Analysis Framework	• Establishes a process to develop criteria and reporting of project impacts on a consistent basis, including equity
Program Evaluation	• Establishes a process to assess current program progress and compliance • Improves oversight by requiring an Advice Letter for Annual Reports and Database compliance; funds ongoing database updates and improvements

California Public Utilities Commission 3

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CPUC EPIC Strategic Planning Process

EPIC Strategic Planning through 2024

Timeframe	Activity
Aug – Dec 2023	**Establish Strategic Goals** • CPUC receives stakeholder input via workshops • Workshop reports distributed to participants for technical correction • Energy Division Staff proposal issued for comment via Ruling • CPUC Issues Proposed Decision establishing Strategic Goals
Oct 2023 – Aug 2024	**Launch Program Evaluation and Impact Analysis Framework**
Jan – Jul 2024	**Establish Strategic Objectives** • Stakeholder workshop process similar to Strategic Goals resulting in staff proposal for comment via Ruling
Oct – Nov 2024	**Proposed Decision** • Synthesizes record for Strategic Goals/Objectives, Impact Analysis, Program Evaluation for EPIC 5 Guidance Decision (2026-2030)

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Kickoff Workshop: Defined Criteria for Establishing Strategic Goals (S.F., Aug 16)

Pathways	Set of critical actions necessary to support meeting the State's 2045 energy, climate, and equity goals via the most effective strategies and technology innovation
Gaps	Key challenges for achieving zero carbon goals and how RD&D should be prioritized to address opportunities and barriers more quickly along critical pathways
Roles	The best-positioned stakeholders (ratepayers, state, federal, academic, private sector) to lead innovation investment addressing identified gaps, including through coordination and collaboration
Outcomes	Clear, measurable, and reasonable targets for developing EPIC portfolios and used in program evaluations to measure impacts of EPIC in supporting achievement of California's 2045 goals

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CPUC EPIC Strategic Planning Process

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Kickoff Workshop: Identified Innovation Pathways

EPIC Innovation Pathways	Related CPUC Proceedings	DACAG Priorities
Overarching Themes	R.18-04-019 R.20-08-022	• Long-term Planning • Affordability • Community / Tribal Engagement
Grid Modernization	R.13-11-005 R.18-12-006 R.19-09-009 R.21-06-017	• Transportation Electrification • Reliability / Flexibility / Resiliency • DERs • Energy Impacted and Impacting Services
Changing Paradigms of Electrification	R.19-01-011	• Building & Industrial Decarbonization • Electrification, and Gas Transition
Emerging Strategies	R.20-05-003	• IRP and Long-term Planning • Clean Hydrogen

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CPUC EPIC Strategic Planning Process

Equity Workshop: Ensuring Everyone Benefits from Innovation Investments (S.F., Aug 17)

Overview:

- **Attendance:** Nearly 130 participants, 16 panelists
- **Topics:** Current investments, Equity Frameworks/Principles, Equity Benefits
- **Perspectives:** Broad range of perspectives presented including community, tribal, academia, DACAG, Justice40, Equity Frameworks
    - **Early Engagement:** Need for community engagement before projects are developed
    - **Tribal Participation:** Many small CA tribes are unaware of EPIC opportunities and lack resources to pursue them
    - **Best Practices:** Several equity frameworks and principles should be considered in developing equity metrics

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Pathway Workshops: Grid Modernization (L.A., Sep 6-7)

Overview:

- **Attendance:** Nearly 200 participants, 16 panelists
- **Topics:** Transportation Electrification, DERs, Reliability, Resilience
- **Perspectives:** Broad range of perspectives, including customer, community, safety, federal/state coordination, academia, industry, utility
  - **Customer Experience:** Key to success, several tools are available to assess vulnerable community needs
  - **Transportation Electrification:** Reducing air pollution health impacts
  - **DERs / Microgrids:** Essential to support reliability and independence for disadvantaged and remote communities
  - **Process Strategies:** Consider efficiencies and promote affordability such as for interconnection, standardization, processing large data

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CPUC EPIC Strategic Planning Process

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Upcoming Strategic Goals Workshops

September 19

10 am – 4 pm: The Built Environment

- **Customer Focused Solutions**
- **Building Decarbonization, including Hydrogen**
- **Electrification and the Coordinated Role of Gas**

September 20

1 pm – 4:30 pm: Emerging Strategies

- **Emerging Technologies** (e.g., offshore wind; geothermal; green hydrogen; carbon capture, use & sequestration)
- **Emerging Strategies** (e.g., standards; process efficiencies; streamlining for affordability; Artificial Intelligence (AI) and large data; customer experience)

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CPUC EPIC Strategic Goals Built Environment Speakers and Topics, 9/19/2023

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Session	Start Time	End Time	Topic	Perspective	Organization	Person	Email Contact	Attendance Type
	10:00	10:10	Welcome, Process Recap, and Agenda Overview		TAG	Andrew Barbeau	andrew@theacceleratedgroup.com	IP
	10:10	10:25	Opening Remarks		CPUC	Commissioner Shiroma		
RT 1	10:25	10:40	DOE Market Facilitation	DOE Market Facilitation	SBA Office of Innovation and Technology Leadership	Elden Hawkes JR.	elden.hawkesjr@sba.gov	V
RT 1	10:40	10:50	CUSTOMER PSYCHOLOGY AND BEHAVIOR	CUSTOMER PSYCHOLOGY AND BEHAVIOR	UC Berkeley	Ethan Elkind	eelkind@law.berkeley.edu	IP
RT 1	10:50	11:00	FINANCING AND RATE DESIGN	Equitably Paying for Electricity	Environmental Defense Fund	Michael Colvin	mcolvin@edf.org	IP
RT 1	11:00	11:10	LOAD MANAGEMENT	Load Management: Using data to target	Recurve	Carmen Best	carmen@recurve.com	V
RT 1	11:10	11:20	LOAD MANAGEMENT	Smart Devices	Efficiency + Demand Management Council	Joe Desmond	jdesmond@cedmc.org	V
RT 1	11:20	11:30	DEMAND SIDE SOLUTIONS	DEMAND SIDE SOLUTIONS	Laboratory	Jared Langevin	jared.langevin@lbl.gov	V
RT 1	11:30	11:40	POLICY TEST BEDS	REALIZE	RMI	Brett Webster	bwebster@rmi.org	V
RT 1	11:40	12:20	Q&A and Discussion					IP and V
	12:20	1:30	LUNCH BREAK					

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CPUC EPIC Strategic Goals Built Environment Speakers and Topics, 9/19/2023

DOE Market Facilitation	DOE Market Facilitation	SBA Office of Innovation and Technology Leadership	Elden Hawkes JR.	elden.hawkesjr@sba.gov
CUSTOMER PSYCHOLOGY AND BEHAVIOR	CUSTOMER PSYCHOLOGY AND BEHAVIOR	UC Berkeley	Ethan Elkind	eelkind@law.berkeley.edu
FINANCING AND RATE DESIGN	Equitably Paying for Electricity	Environmental Defense Fund	Michael Colvin	mcolvin@edf.org
LOAD MANAGEMENT	Load Management: Using data to target	Recurve	Carmen Best	carmen@recurve.com
LOAD MANAGEMENT	Smart Devices	Efficiency + Demand Management Council	Joe Desmond	jdesmond@cedmc.org
DEMAND SIDE SOLUTIONS	DEMAND SIDE SOLUTIONS	Laboratory	Jared Langevin	jared.langevin@lbl.gov
POLICY TEST BEDS	REALIZE	RMI	Brett Webster	bwebster@rmi.org
Q&A and Discussion				

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CPUC EPIC Strategic Goals Built Environment Speakers and Topics 9/19/2023 (cont.)

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RT 2	1:30	1:45	BUILDING DECARBONIZATION	PRIMARY PRESENTATION	Building Decarbonization Coalition	Beckie Menten	bmenten@buildingdecarb.org	IP
RT 2	1:45	1:55	BUILDING DECARBONIZATION	Equitable Decarbonization	APEN/California Green New Deal Coalition	Zach Lou	zach@apen4ej.org	IP
RT 2	1:55	2:05	BUILDING DECARBONIZATION	Multi-Family Electrification	Association For Energy Affordability	Andrew Brooks	abrooks@aea.us.org	IP
RT 2	2:05	2:15	BUILDING DECARBONIZATION	Commercial Decabonization	Stanford	Jacques de Chalendar	jdechalendar@stanford.edu	IP
RT 2	2:15	2:25	BUILDING DECARBONIZATION	Low Income Electrification	San Diego 350 Climate Action	Kelly Lyndon	kelly.lyndon@sandiego350.org	V
RT 2	2:25	2:35	BUILDING DECARBONIZATION	Local Perspective	City of Oakland	Daniel Hamilton	DHamilton2@oaklandca.gov	IP
	2:35	2:45	BREAK					
RT 2	2:45	2:55	BUILDING DECARBONIZATION	Challenges and Opportunities: Hydrogen in the Built Environment	Communities for a Better Environment	Theo Caretto	Theodore@cbecal.org	V
RT 2	2:55	3:05	INDUSTRIAL DECARBONIZATION	Hydrogen for industrial process	CEC or E3	Peter Chen or ??		
RT 2	3:05	3:15	COORDINATE ROLE OF GAS	Who should pay for tech innovation	TURN- The Utility Reform Network	Mark Toney	mtoney@turn.org	IP
RT 2	3:15	3:55	Q&A and Discussion					
	3:55	4:05	Closing Remarks					
	4:05	4:15	Wrap Up and Next Steps		TAG	Andrew Barbeau	andrew@theacceleratedgroup.com	IP

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CPUC EPIC Strategic Goals Built Environment Speakers and Topics 9/19/2023 (cont.)

CALIFORNIA Efficiency + Demand Management COUNCIL

BUILDING DECARBONIZATION	PRIMARY PRESENTATION	Building Decarbonization Coalition	Beckie Menten	bmenten@buildingdecarb.org
BUILDING DECARBONIZATION	Equitable Decarbonization	APEN/California Green New Deal Coalition	Zach Lou	zach@apen4ej.org
BUILDING DECARBONIZATION	Multi-Family Electrification	Association For Energy Affordability	Andrew Brooks	abrooks@aea.us.org
BUILDING DECARBONIZATION	Commercial Decabonization	Stanford	Jacques de Chalendar	jdechalendar@stanford.edu
BUILDING DECARBONIZATION	Low Income Electrification	San Diego 350 Climate Action	Kelly Lyndon	kelly.lyndon@sandiego350.org
BUILDING DECARBONIZATION	Local Perspective	City of Oakland	Daniel Hamilton	DHamilton2@oaklandca.gov
BREAK				
BUILDING DECARBONIZATION	Challenges and Opportunities: Hydrogen in the Built Environment	Communities for a Better Environment	Theo Caretto	Theodore@cbecal.org
INDUSTRIAL DECARBONIZATION	Hydrogen for industrial process	CEC or E3	Peter Chen or ??	

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CPUC EPIC Strategic Goals Built Environment

Electric Program Investment Charge Program - EPIC workshop 9/19:

EPIC Policy + Innovation Coordination Group - Strategic Goals Built Environment Workshop; 10AM - 4PM

- Meeting and participation details here

Purpose:

- In its most recent EPIC decision, the CPUC directed that program-wide goals are needed to evaluate the progress of innovation investments and the extent to which investment plan portfolios maximize ratepayer benefits and impacts in achieving California's clean energy and climate goals.

Agenda:

Welcome and Agenda Overview
10:00 – 10:10 AM

Opening Remarks
10:10 – 10:25 AM

Customer-focused Solutions Roundtable
10:25 – 11:35 AM

Stakeholder Discussion
11:35 AM – 12:15 PM

LUNCH
12:15 – 1:30 PM

Building Decarbonization, Electrification, and the Coordinated Role of Gas Roundtable
1:30 – 3:10 PM

Stakeholder Discussion
3:10 – 3:50 PM

Wrap Up Discussion, Next Steps, Closing Remarks
3:50 – 4:00 PM

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CPUC EPIC Strategic Goals Built Environment

There is also an EPIC Strategic Goals workshop scheduled for 9/20 re: Emerging Strategies; 1PM - 4:30PM:

I.	Welcome and Agenda Overview	1:00 – 1:10 PM
II.	Opening Remarks	1:10 – 1:20 PM
III.	Strategies for a Net Zero Future - Presentations (1)	1:20 – 2:10 PM
IV.	BREAK	2:10 – 2:30 PM
V.	Strategies for a Net Zero Future - Presentations (2)	2:30– 3:10 PM
VI.	Stakeholder Discussion	3:10 – 4:00 PM
VII.	Wrap Up Discussion, Next Steps, Closing Remarks	4:10 –4:30 PM

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CPUC EPIC Strategic Goals Built Environment

You can find all previous, relevant workshops here:
https://epicpartnership.org/strategicgoals.html

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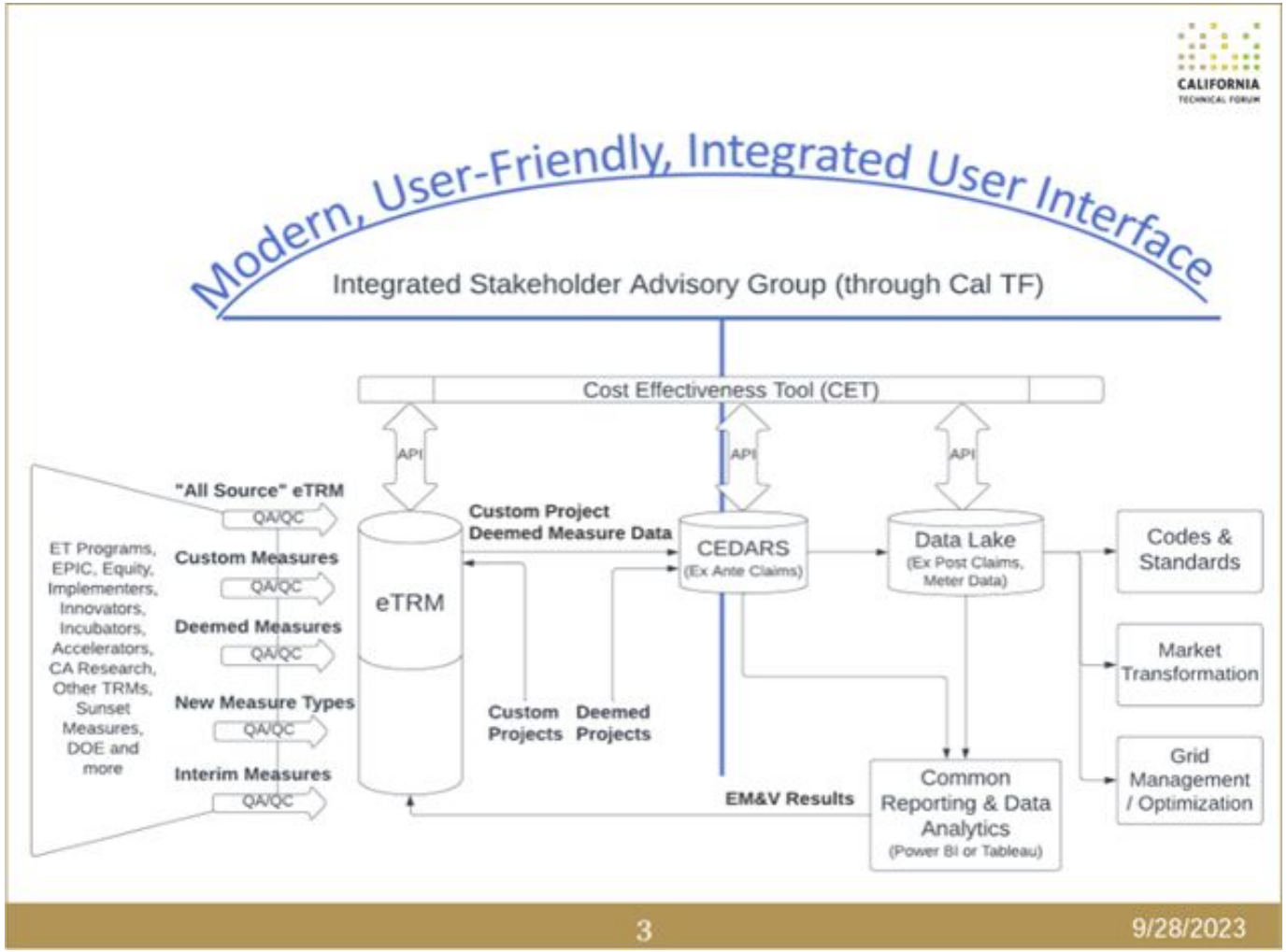
CalTF Data Charette II

The first presentation focused on the [Proposal for Improved Data Flow] (Al-Shaik) and the business case goals to reduce costs, time, and errors associated with EE/DR data administration and enable data analytics using commercially available tools and by combining EE/DR data with other federal, state, and private data sources.



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CalTF Data Charette II

The second session was a [Proposal to Improve Total System Benefit] (Lipp), with a discussion centered on questions and potential solutions to improve the use of TSB.

What is Total System Benefit?

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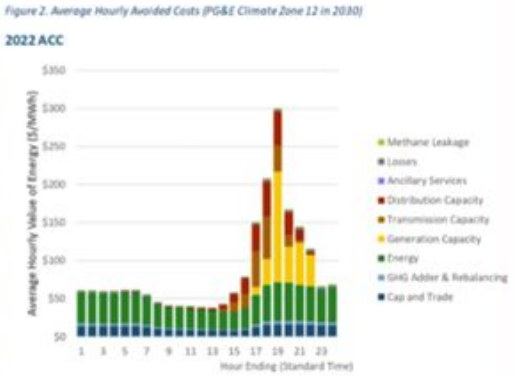
$$TSB = (NTG)(\sum Benefits - \sum Increased\ Supply\ Costs)$$

Category	TSB Component	TSB Term
Energy	Energy Savings	Benefit
	Interactive Effects	Supply Cost
GHG Impacts	GHG Cap and Trade (Marginal Emissions)	Benefit
	GHG Adder (Marginal Emissions)	Benefit
	GHG Portfolio Rebalancing	Benefit
	Methane Leakage	Benefit
	GWP Leakage (from RACC)	Supply Cost
Grid Impacts	Generation Capacity	Benefit
	Transmission	Benefit
	Distribution	Benefit
	Avoided AS Procurement	Benefit
	Losses	Benefit
	Fuel Substitution	Supply Cost



9/28/2023

Total System Benefit Myths

6

- **TSB replaces cost effectiveness**
  - False
  - D.21-05-031 ordered TSB to replace energy savings as program goals but TRC requirements remain
- **TSB is based on the measure EUL and ACC Combo**
  - Partially true
  - GWP leakage is calculated with the Refrigeration Avoided Cost Calculator (RACC)
- **TSB drives programs to target measures that save energy during high value hours**
  - Partially true
  - Limitations in program claims does not allow full credit for IDERM measures
  - Normalized TSB for refrigeration (~14%) and chiller systems (~9%) slightly better than lighting

9/28/2023

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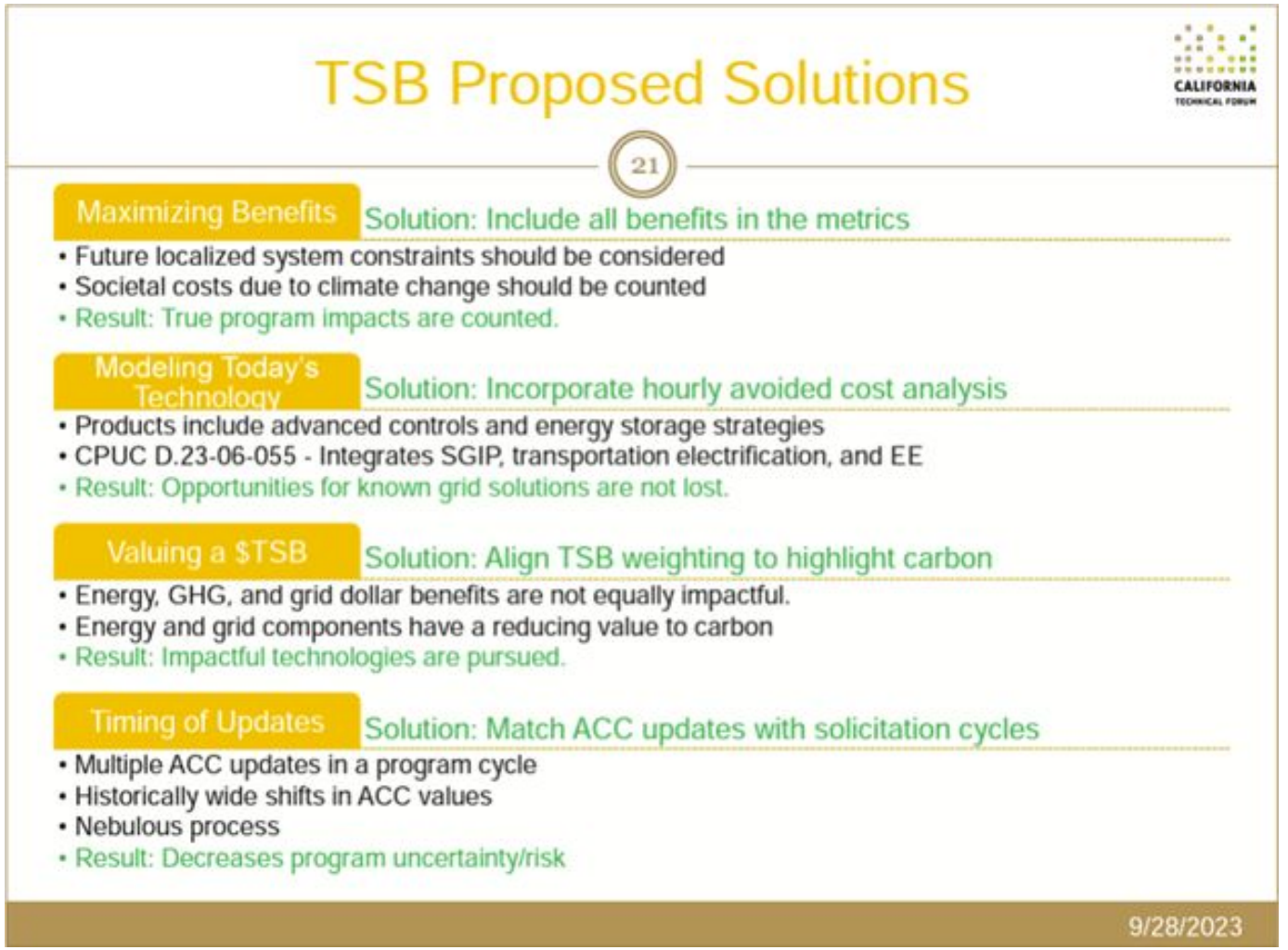
CalTF Data Charette II

The second session was a **Proposal to Improve Total System Benefit** (Lipp), with a discussion centered on questions and potential solutions to improve the use of TSB.



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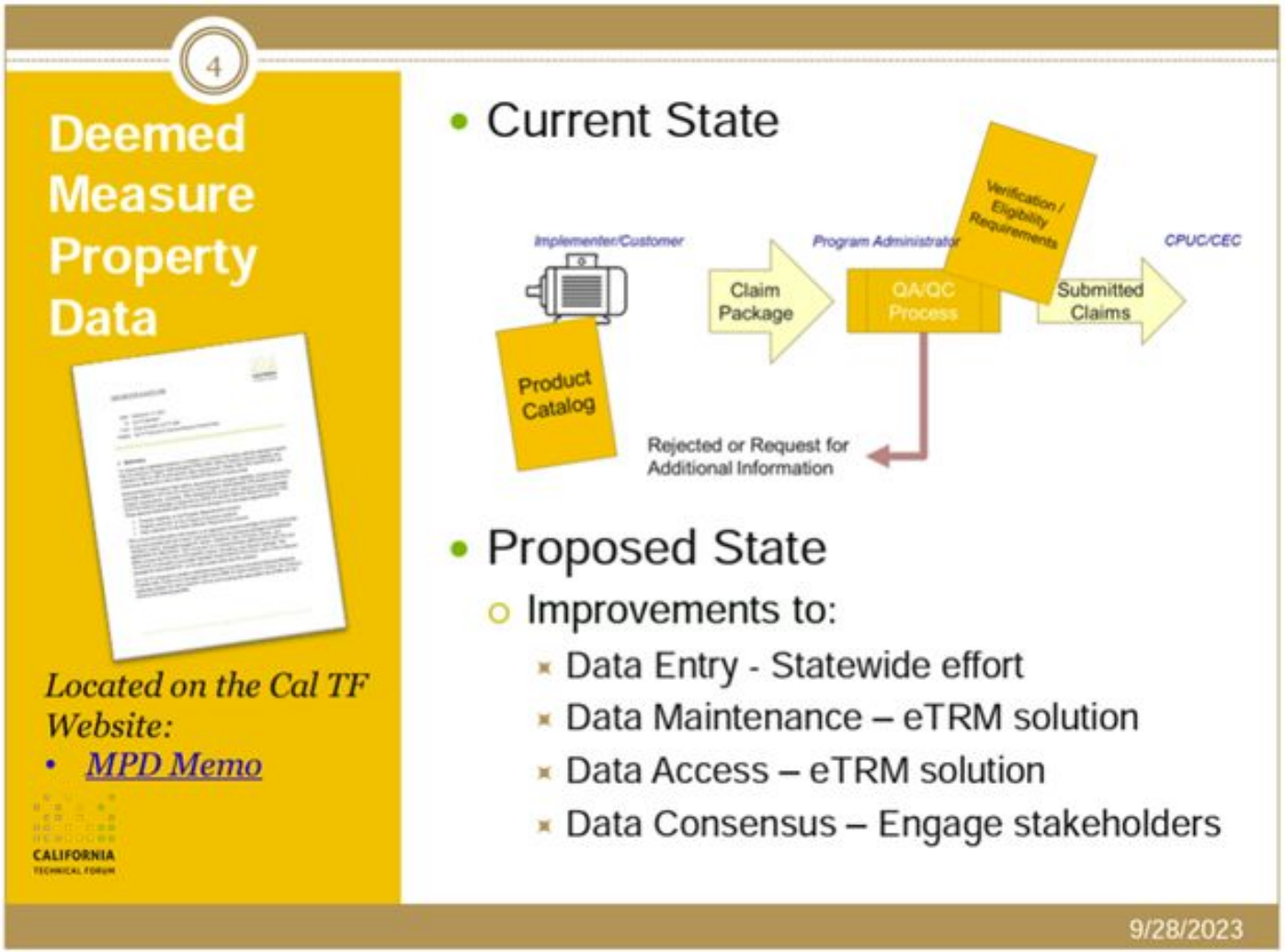
CalTF Data Charette II

The [Proposal for Standardizing Data Requirements] focused on Measure Property Data for Deemed Measures:



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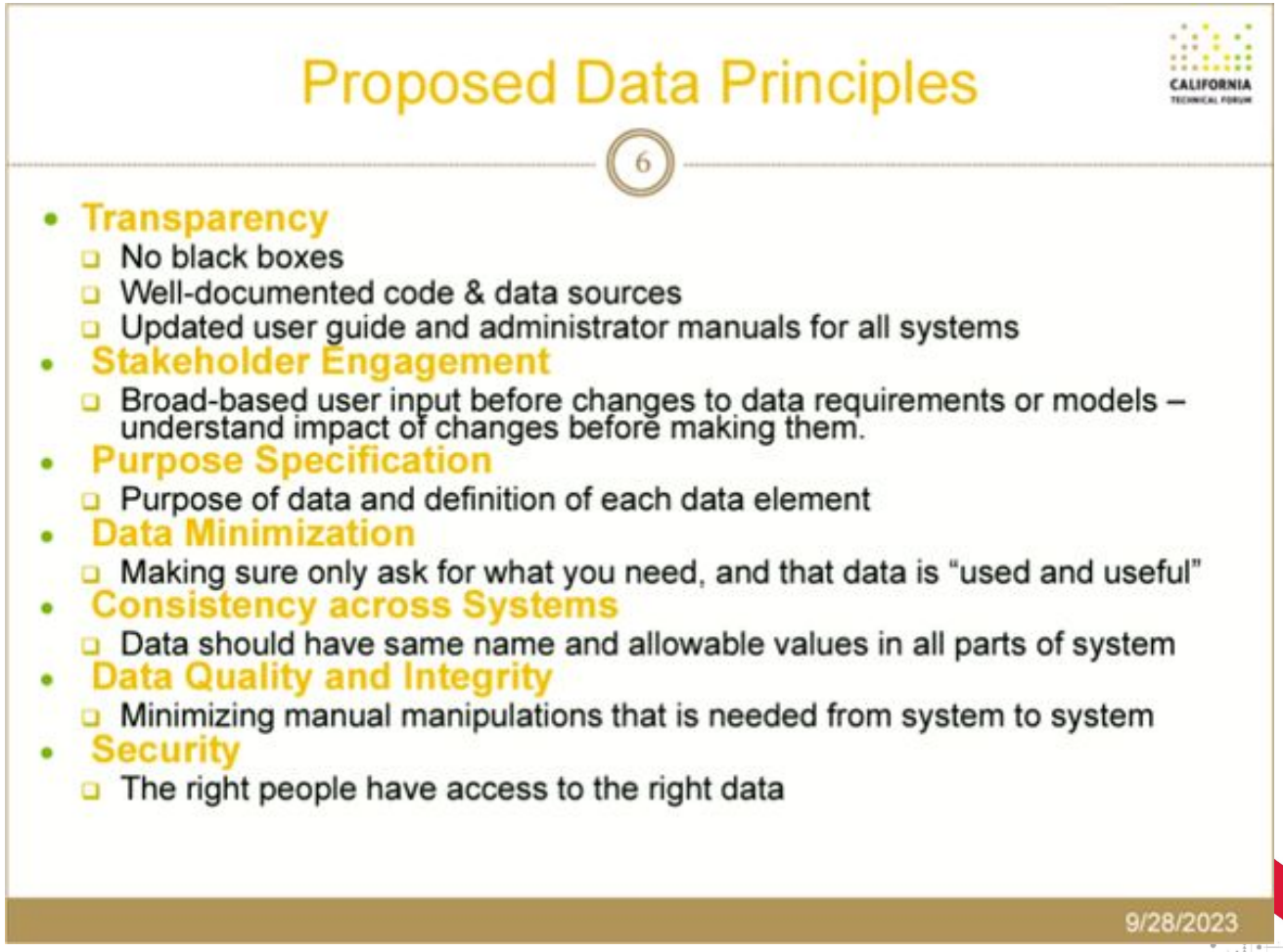
CalTF Data Charette II

The [Proposal to Improve Reporting CEDARs, CET and eTRM] (Bohn and Olsen) noted that the user interface and inputs are very complicated and hard to learn and understand. Equations and systems should be more transparent and as simple as possible.

- Excessive inputs and ad-hoc system changes create extra work for implementers and Portfolio Administrators.
- Data validations cause significant internal labor to manage claims processes and should be thoughtfully implemented, including citing the source of the validation requirements.
- User system update impacts often don't properly consider downstream consequences and scheduling to PA and Implementer systems and processes.



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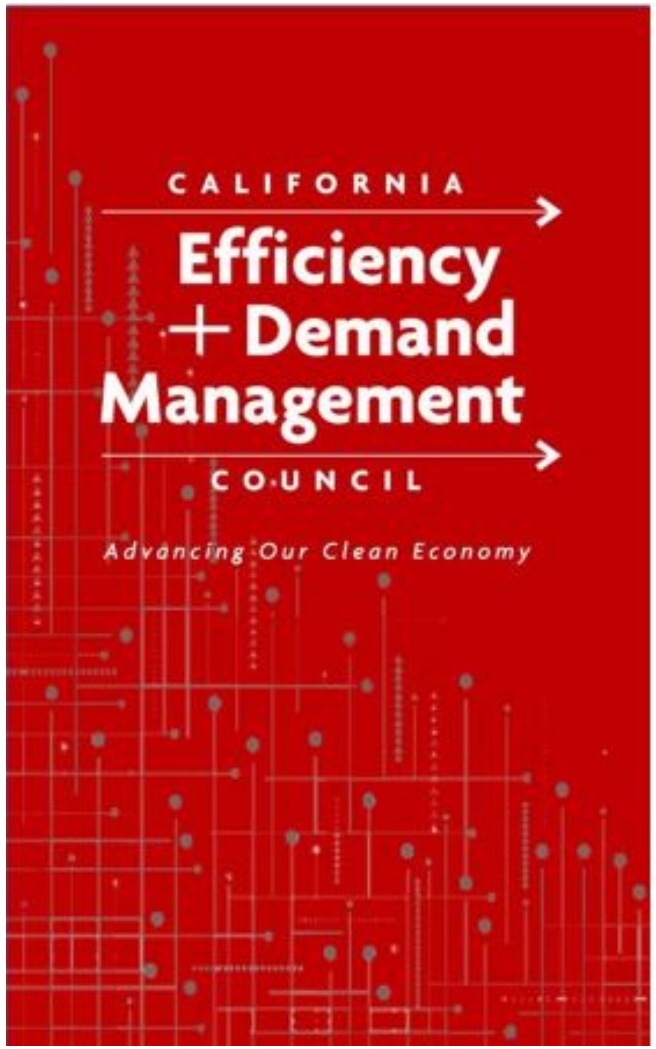
CalTF Data Charette II



Future Data: Innovation

Data Charette #2

Understanding Data Frameworks; Data Infrastructure; Data Principles, Data Storage, Data Access, and the Critical Distinction between Traditional (Transactive) Data and Sensor Time-Series Data

Joseph Desmond
September 28, 2023

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Today's Agenda

- Time-Series Data is not like other data; Business Systems are challenged to put time-series data to work effectively
- Infrastructure addressing the special needs of time-series data, as well as access, privacy, and applications, is an innovation game changer
- Storing all data in a single central location is not sufficient for optimization; arguably, centralization may not even be a requirement.

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Enabling Innovation

CALIFORNIA Efficiency + Demand Management COUNCIL

Traditional	Sensor Time Series
Transactional, independent events	Continuous, auto-correlated, sampled
Easy to index and search	Impractical to index by value, hard to search
Joins	Joined by time, which requires interpolation (math operations)
Dimensional cubes	Multivariate analysis
Languages, Semantics	Units, Metric Prefixes
Facts	Precision, Accuracy, Resolution, Tolerance
Clerical errors, syntax	Noise, Flyers, Bias, Calibration
Statistical Analysis, Batch Calculations	Signal Processing, Stream Calculations
Quasi-static meta data	Dynamic meta data
Context self-contained	Context is largely external
Empirical, Rule-based models	Empirical, rule-based, and first principles
Discrete Math	Calculus
Editable	Append only
Lossless compression	Lossy compression
ETL	Streaming, Historic blend
SQL, relational	Purpose built, never on SQL, time is a continuous dimension
Archives, Databases	“Historian” market

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Recap: How to Improve Data Access and ROI

- Identify & Incorporate Best Data Management Practices
- Minimize Data Replication
- Anticipate Use-Cases into the Future (3-5 years)
- Understand the Important Differences between Traditional (transactional) and Sensor Time Series Data
- Use Data Where It Exists (Big Data is Very Costly to Move and Store when it may not be necessary)
- Focus Exclusively on Fast ROI; Everything else is Optimization, which should come only AFTER the Value is Shown.
- Rule of Thumb: Making Use of the Data is 10 to 100x the Value of the IT Side (cost, savings, effort, etc.)

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CPUC (A.18-11-015 et al): Final decision in Click-Through proceeding

- On 9/28, the CPUC issued Decision 23-09-006 approving the IOUs' click-through enhancement applications
- Background
  - IOUs directed to submit applications to improve the click-through process (CTP) utilized by customers to authorize IOU sharing of customer data with DRPs
  - The current CTP involves a customer starting on the DRP's website, presented with a pop-up from the IOU website where they enter their credentials and select the parameters of their data authorization, then are re-directed back to the DRP
  - This CTP has proven to be problematic for many reasons which has led to a high rate of customers failing to complete the authorization process
  - The IOUs were directed to submit applications containing proposals and budgets to make several specified improvements to the CTP, including an API-based solution that would avoid customers being sent to IOU web pages to input credentials
- Key issues
  - Alternate Solution Proposal: IOUs oppose adopting the API-based solution b/c it is duplicative of current CTP, would be too expensive, and higher risks to customer privacy; DRPs want it because it is faster and more reliable which would reduce customer attrition during authorization process
  - Relevance of IOU proposals: The IOU proposals have aged and need to be updated
  - Service Level Agreement: Mission:data & Ohmconnect advocated for an SLA to guarantee 99.8% CTP uptime
  - Additional elements: OhmConnect advocated for IOUs providing error codes to DRPs when a customer fails to authorize data sharing
  - Future changes to CTP customer experience: Mission:data advocated for restrictions on changing the customer-facing authorization experience w/o CPUC approval

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Quick Updates

- The CEC has issued a Notice of Consideration to adopt DEBA Guidelines (aimed for the 10/18 CEC Business Meeting) (PDF download)
- 10/5 afternoon, CEC released its final Equitable Building Decarbonization Program Guidelines (PDF download)
- The Council submitted the following filings since our last Monthly Member Readout:
  - September 25 – CPUC R.22-07-005 (Demand Flexibility) Council Opening Comments on August 15 ALJ Ruling
  - September 22 – CPUC R.21-10-002 (Resource Adequacy / RA) Jt. Response To Petition For Modification Of D.23-06-029 by CLECA
  - September 1 – Council Joint Comments (DR Coalition) on DR Performance Assessment Proposals, Supply Side DR Qualifying Capacity Working Group
- The Council submitted the following testimony since our last Readout:
  - September 15 – DR Coalition Comments on Capacity Shortfall Penalty Proposals – Supply Side DR Qualifying Capacity Working Group
  - September 7 – EESG Joint Letter to U.S. DOE and EPA re: Greenhouse Gas Reduction Fund (GGRF) and Home Energy Rebate Programs
  - September 1 – EE Coalition Letter of Concern to Energy & Water Congressional Leadership re Proposed FY24 Cuts to Vital U.S. DOE Energy Efficiency Programs

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Discussion & Q&A

Thank You!

Please contact us if you have any questions.

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Next Monthly Member Readout: November 3

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