

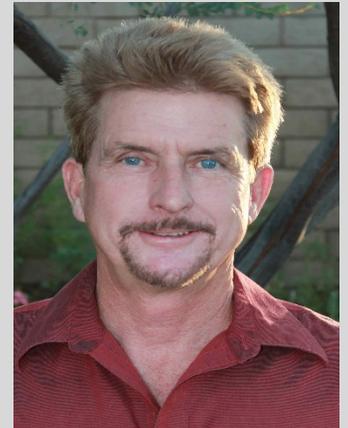


IFMA CALIFORNIA CHAPTERS 2020 SUSTAINABILITY COMMITTEE PROGRAM PROPOSAL

October 14, 2020

Prepared and presented by
Corey Lee Wilson

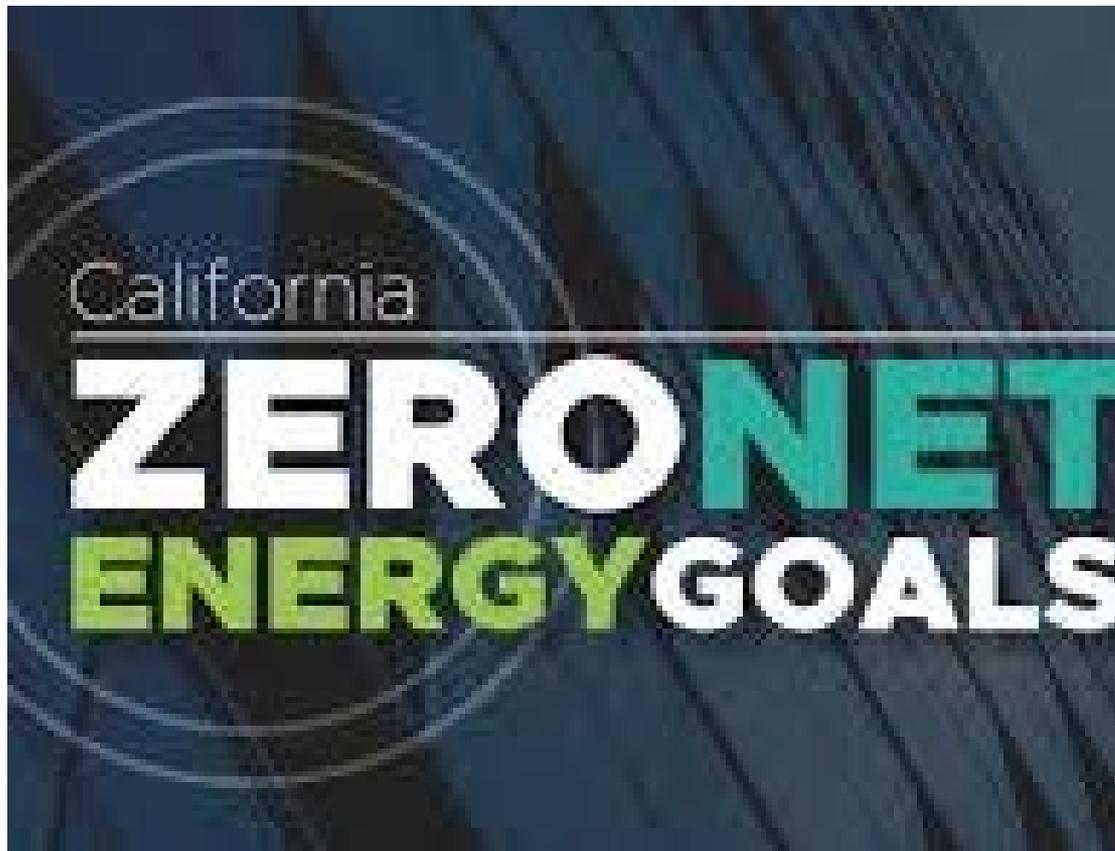
*IFMA FMP, LEED AP O+M, CMAA CCM
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(IFMA) member
IFMA Inland Empire Chapter past president
IFMA Environmental Stewardship,
Utilities & Sustainability Community member
USGBC-LA Chapter member
President of CLW Enterprises
Energy partner for MicroNOC Inc.*



**2020 Sustainability Program Focusing on
Energy Use Reduction for the New
Decade**



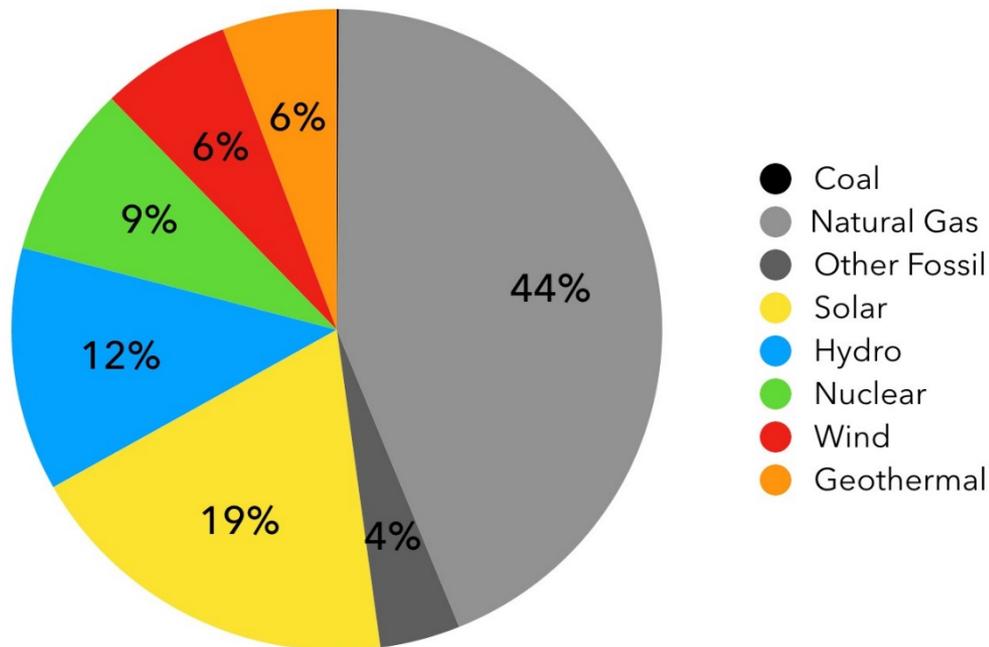
California's Ambitious ZNE Goals



- AB 2514 – Incorporates energy storage into the electricity grid (plan)
- FERC Order 841 – Removes barriers to the participation of electric storage in wholesale markets (requirement)
- SB 100 – Is California's commitment to 100% clean energy by 2045 (target)

California's Most Promising Renewable Energy Program is Distributed Energy Resources (DER)

California's Energy Mix, 2018



Source: Data from U.S. Energy Information Agency referring to 2018

- Decentralized, modular, and flexible
- Located close to the load they serve
- Allows capacities up to 10 megawatts
- Managed and coordinated behind the meter
- Collection of energy from many sources
- Lowers environmental hazards and impacts
- Improves the security of electrical supply

California's Clean Energy Technologies for Renewable Power

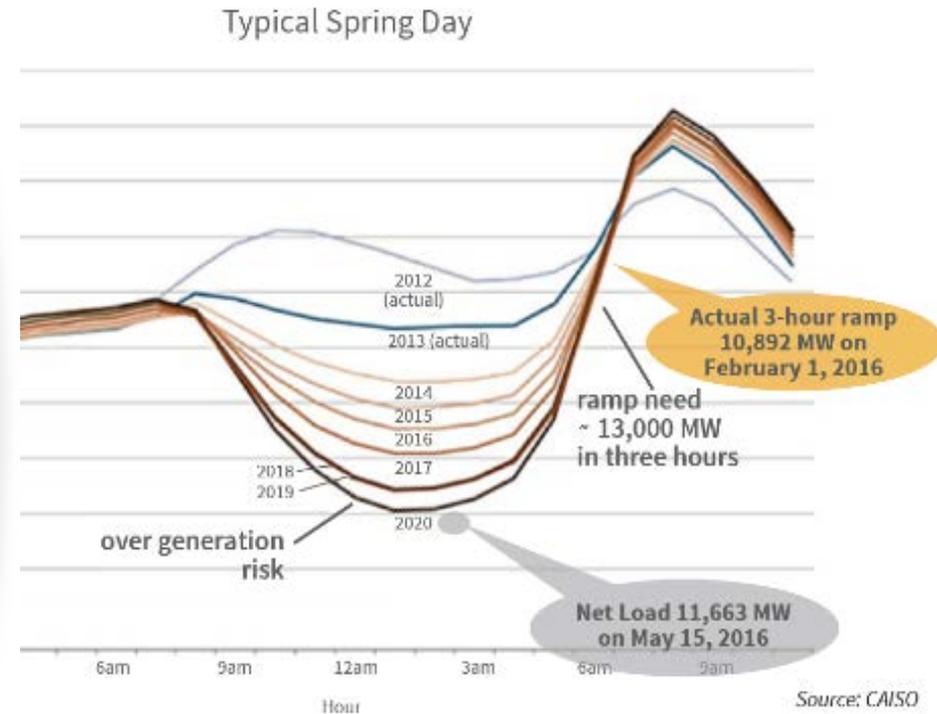
- Photo-voltaic (PV) solar
- Wind powered generators
- Hydro electric dams
- Energy storage systems (ESS)



What is the 'Duck Curve'

And welcome to the Solar Energy Paradox

- Solar production increases in the late morning hours and peaks around noon before tailing off in the late afternoon and early evening.
- This reduces demand for natural gas during the midday hours, when utilities traditionally imposed higher, on-peak TOU rates.
- Then, as solar power generation diminishes in the late afternoon hours, utilities face a spike in demand for power from natural gas peaker plants.
- This extreme energy use and power fluctuation is known in the energy industry as the 'Duck Curve.'



Time-of-Use Shift

Peak 4-9 pm Time-of-Use (TOU) Shift

- In response, California's utilities have begun adjusting their TOU rate schedules to account for the Duck Curve.
- San Diego Gas & Electric (SDG&E) shifted on-peak hours for its summer season to 4-9 pm, from its previous schedule of 11 am-6 pm in 2017.
- Pacific Gas & Electric (PG&E) and Southern California Edison (SCE) followed and shifted their on-peak hours in 2018 and 2019 to 4-9 pm.

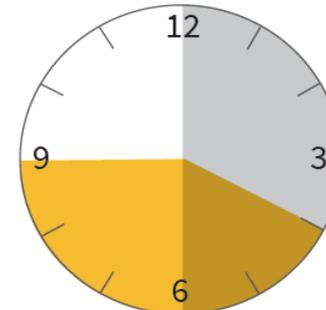
SDG&E
effective 2017



ON-PEAK
11am-6pm, May-Oct

OFF-PEAK
6pm-11am, May-Oct

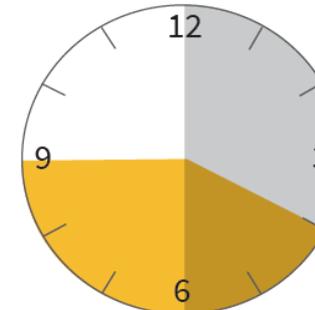
SCE
effective Feb 2019



PREVIOUS
12pm-6pm, June-Sept

NEW
4pm-9pm, June-Sept

PG&E
effective Oct 2019



PREVIOUS
12pm-6pm, May-Oct

NEW
4pm-9pm, June-Sept

Developing a Sustainable Energy Buildings Plan (SEBP)

- The tactical objectives and outcomes of this program are to empower and enable FM's to develop their own Sustainable Energy Buildings Plan (SEBP).
- As part of a SEBP, an ESS and other clean energy systems can optimize efficient energy management in support of the primary purpose of the organization.
- MicroNOC's 25% off electricity cost partnering program, with no capital investment, a one-time \$5k registration fee, refundable security deposit, with site provided space for the BESS—is an excellent SEBP option.



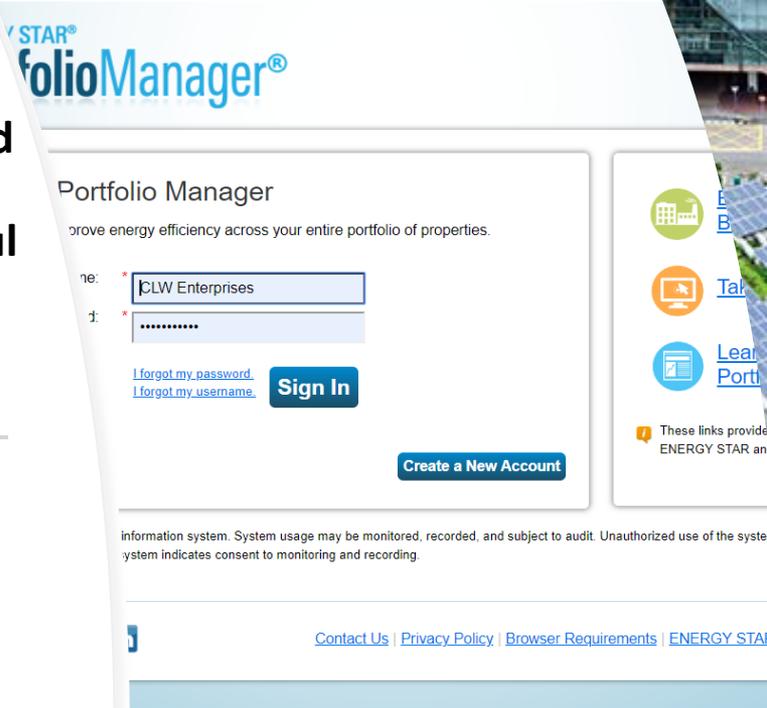
Are Energy Storage Systems (ESS) the Best Option?

- As distributed energy resources (DER) become more economical for buildings, FM's are no longer reliant on solar energy and instead can utilize ESS without reliance on solar if not already available.
- With these new energy systems and the new technology to optimize, aggregate, and control their energy time of use (TOU) at the user side or behind the meter (BTM) for synchronization with the power grid's time of supply—the time to act is now more critical than ever.
- IFMA recognizes the importance of a SEBP and ESS and is featuring them in a 4 articles series for their 2020 *Facility Management Journal (FMJ)* magazine.



The 4 Program Modules Summarized in IFMA's *FMJ* Article Series for a Successful Sustainable Energy Buildings Plan (SEBP)

- 1 - Planning and Project Management for Energy Savings
- 2 - Energy Sustainability for Real Estate, Property Management & Space Occupancy
- 3 - FM Leadership & Innovation for Sustainable Energy Buildings
- 4 - The Future of Sustainable Energy & Buildings for the Next Decade



Module 1: Planning and Project Management for Energy Savings

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- How the United States Uses Energy
- What's Your Energy Usage? Good? Bad? Or Ugly?
- Energy Rates and Solar Policies Are in Flux
- Smart Energy Saving Systems (SESS) Lower Building Operation's Energy Costs
- Facility & Property Managers Can Significantly Reduce Their Energy Costs
- Smart Energy Saving Systems (SESS) for Battery Storage Have Arrived!

Module 2: Energy Sustainability for Real Estate, Property Management & Space Occupancy



- **Conducting Energy Assessments**
- **Energy Audits Using ASHRAE Levels 1, 2 & 3**
- **Retrocommissioning & Recommissioning**
- **Tailoring the Business Case to Your Organization's Energy Saving Goals**
- **Investment Analysis and Financing Options if Needed**

Module 3: FM Leadership & Innovation for Sustainable Energy Buildings



- **What is a Sustainable Energy Buildings Plan (SEBP)**
- **Starting a Sustainable Energy Buildings Plan (SEBP)**
- **California's Utilities Respond to the 'Duck Curve'**
- **The Impact of New TOU Rate Schedules on Solar PV and Energy Storage**

Module 4: The Future of Sustainable Energy & Buildings for the Next Decade



- Energy Storage Systems Driving Energy Sustainability
- Electric Vehicle (EV) Growth Will Become an Energy Demand Issue
- Solar PV Systems
- Zero Net Energy (ZNE) Standards and Challenges

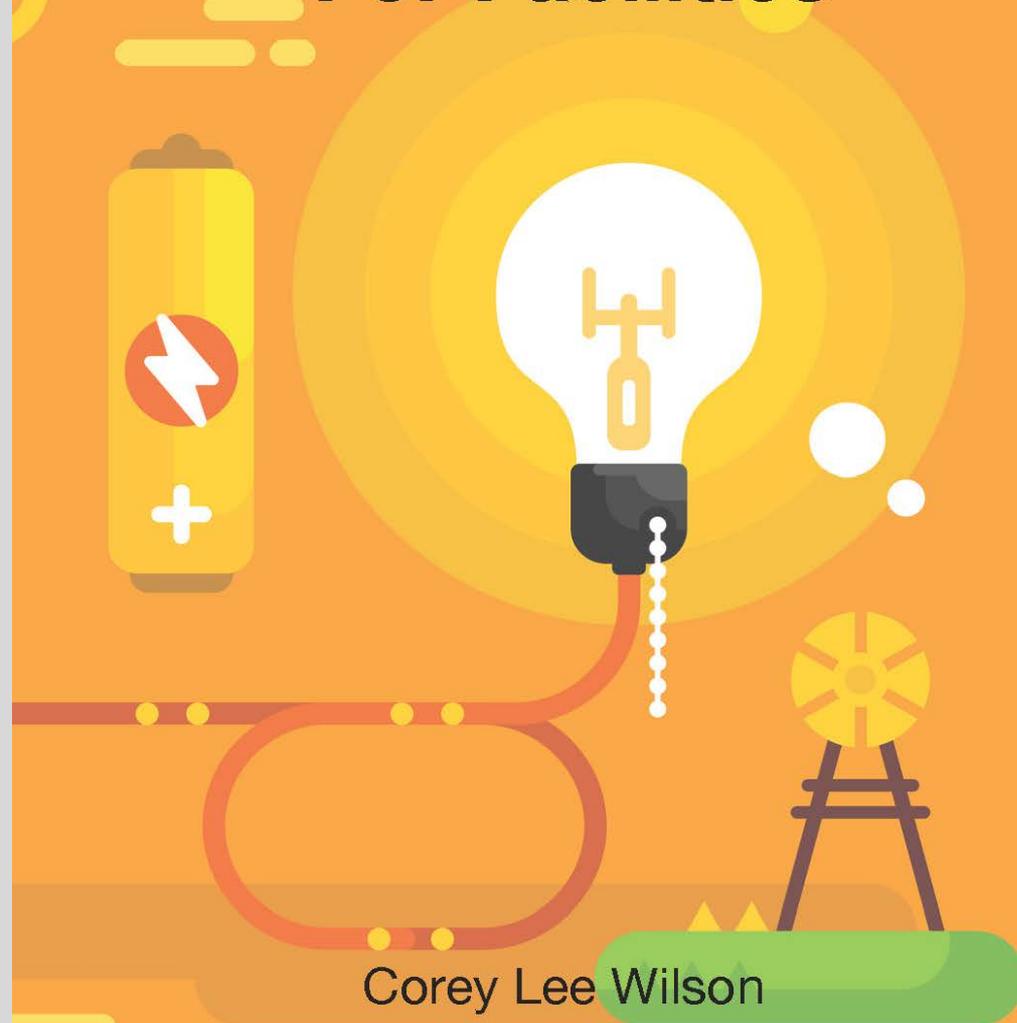
**Resource Textbook for FM's,
Operations & Maintenance,
Teachers and Students**

Chapters included:

- 1 – ENERGY Savings Introduction*
- 2 – Your Electrical ENERGY Future is Now*
- 3 – Electrical ENERGY Saving Systems for Building*
- 4 – Potential ENERGY Cost Savings*
- 5 – Sustainable ENERGY Buildings Plan*
- 6 – ENERGY and Buildings Management Software*
- 7 – ENERGY Surveys, Inspections, Audits and Commissioning*
- 8 – ENERGY Benchmarking Using Portfolio Manager*
- 9 – ENERGY Efficient Lighting*
- 10 – ENERGY Efficient HVACR Systems*
- 11 – California's Time-of-Use ENERGY Rate Changes*
- 12 – ENERGY Code Compliance Measures*
- 13 – ENERGY Certifications for Facilities and Managers*
- 14 – Securing an ENERGY Savings Plan Budget*
- 15 – Your ENERGY Savings Dashboard*

ENERGY

Cost Savings For Facilities



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