

- 4.* Update: Microgrid White Paper Draft Review**
Facilitator: John Griffiths, Committee Consulting
Member (or designee)
- Discussion and public input

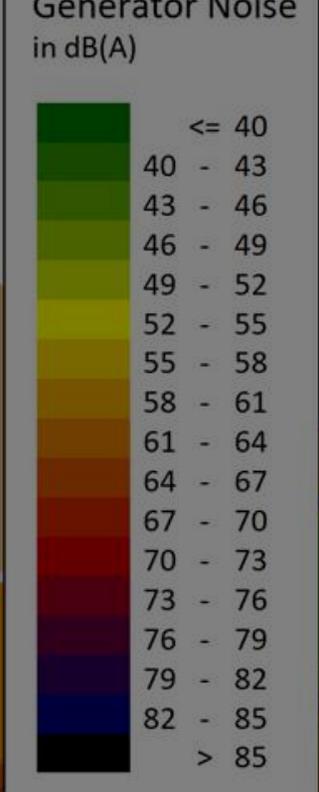
* Agenda was taken out of order

HSBS Microgrid White Paper

Office of Statewide Health Planning and Development
Energy and Conservation Management Committee

Prepared by CONTECH-CA, John Griffiths PE LEED AP

June 18, 2020



Introduction and Background (Why)

AGENDA

- Current Essential Power Systems
- Proposed Essential Power Systems
- Roadmap Approach
- Questions

Current Essential Power Systems

Types of systems – as defined in CEC 517 Typically a diesel generator, with new code modifications, possibly fuel cell

Advantages

- Owner, contractors, and Vendors familiar with generators
- Equipment readily available
- Codes, testing and commissioning well established
- Diesel is a stable fuel source, able to take step loads and power quality

Current Essential Power Systems...

Challenges

- Require ongoing testing and maintenance
- Generates noise
- Exhaust
 - Required extensive coordination
 - Air Quality Management issues
- System is a stranded asset. It does not provide value until loss of power
- Fuel
 - Non-renewable source
 - Fuel delivery availability during PSPS
 - Limited fossil fuel resources

Proposed Essential Power Systems

Types of systems – as defined in CEC 705

Hybrid system utilizing alternate power sources such as solar/storage or fuel cell to supplement traditional back up power

Supplant tradition emergency power systems with renewable systems

Proposed Essential Power Systems

Advantages

- Utilize renewable resources
- Asset is constantly being utilized
- Grant funding available for suitable systems
- Not subject to fuel delivery problems during major outage
- No noise or exhaust to be addressed

Proposed Essential Power Systems...

Challenges

- Institutional inertia
- Perceived safety risk associated with alternate solutions
- Capital expense
- Excessive complexity
- System components and supply chain
- Cyber Security
- Providing consistent power for extended period of time
- Design guides not readily available
- Codes do not allow optimal system configuration
- Owner, contractors, and vendors not familiar with alternate systems
- Equipment standards evolving
- Project team is risk-averse and do not want to use new systems

Roadmap Approach

Convene charrettes

- Technology
- Codes/Regulation
- Institutional
- Financial

Recommendations

- Establish Working Group
- Set Schedule with Regular Reporting
- Engage other National and State Agencies

Acknowledgements

OSHPD – Bill Gow, Les Wong, Corey Hiratsuka

tk1sc – Louise Belair

CEC – David Erne

Kaiser – Seth Baruch, Gary Mullaney, Jun Timbang

Schneider Electric – Michael Polling, Steven Higgins & John Westernan

Sam Worley

ChargeBliss – David Bliss

John Griffiths PE LEED AP

415 652 4833

WWW.CONTECH-CA.COM

2. Update: California Energy Commission collaboration with OSHPD on energy standards for healthcare facilities

Facilitator: Richard Tannahill, Ryan Nelson, OSHPD (or designee)

- Proposed code modification affecting healthcare
- Discussion and public input

Energy Commission Update

- **California Energy Commission Collaboration with OSHPD on Energy Standards for Healthcare Facilities**

Energy Commission Update

- **California Energy Commission Collaboration with OSHPD on Energy Standards for Healthcare Facilities**
 - No new requirements for healthcare anticipated for 2022 code cycle
 - just sections that already apply to healthcare facilities.
 - The one exception may be the high performance duct measure, which includes some exception language proposals in section 140.4 (c).

3. Update: Energy Code Ace's building energy modeling and the Statewide Code and Standards Enhancement Team's energy initiatives

Facilitator: Richard Tannahill, Ryan Nelson, OSHPD (or designee)

- Discussion and public input

Energy Commission Update

- California Energy Commission Collaboration with OSHPD on Energy Standards for Healthcare Facilities
- **Energy Code Ace's building energy modeling and the Statewide Code and Standards Enhancement Team's energy initiatives**

Energy Commission Update

- California Energy Commission Collaboration with OSHPD on Energy Standards for Healthcare Facilities
- **Energy Code Ace's building energy modeling and the Statewide Code and Standards Enhancement Team's energy initiatives**
 - Building Standards Unit (BSU) assisted with developing training for Plan Reviewers
 - Training for Plan Reviewers conducted May 28 & 29, 2020 to all OSHPD staff

Energy Commission Update

- California Energy Commission Collaboration with OSHPD on Energy Standards for Healthcare Facilities
- Energy Code Ace's building energy modeling and the Statewide Code and Standards Enhancement Team's energy initiatives
- **Inspection Services Unit (ISU) development of the OSHPD Testing, Inspection and Observation forms for energy code compliance complete**

Energy Commission Update

- **OSHPD 1R and Energy Code Compliance Update**
 - **Is a OSHPD 1R Building considered a healthcare facility (exempt from energy code alteration requirements)?**
 - **Only if it remains a licensed healthcare facility**
 - **If there is no longer a license, it will require compliance with Alteration requirements of the energy code for Change of Use**
 - **If it is a freestanding building, and delicensed, it is no longer considered a healthcare facility**

Energy Commission Update

- **OSHPD 1R and Energy Code Compliance Update**
 - **Is a OSHPD 1R Building considered a healthcare facility (exempt from energy code alteration requirements)?**
 - ~~Only if it remains a licensed healthcare facility~~
 - ~~If there is no longer a license, it will require compliance with Alteration requirements of the energy code for Change of Use~~
 - **If it is a freestanding building, and delicensed, it is no longer considered a healthcare facility**

Energy Commission Update

- **OSHPD 1R and Energy Code Compliance Update**
 - **Is a OSHPD 1R Building considered a healthcare facility (exempt from energy code alteration requirements)?**
 - **If the 1R building remains part of the architectural building it is still considered a hospital building and exempt**
 - **A licensed service is not required in the 1R building**
 - **Change of Use requirements would still apply**
 - **If it is a freestanding building, and delicensed, it is no longer considered a healthcare facility**

5. Presentation: Healthcare Decarbonization – How to Eliminate Scope 1 Emissions

Facilitator: Walt Vernon, Mazzetti (or designee)

- Discussion and public input



Healthcare Decarbonization – How to Eliminate Scope 1 Emissions

HOSPITAL BUILDING SAFETY BOARD

Energy Conservation and Management Committee

California Regulations

This grant-funded project addresses and aligns with the energy goals described in the following laws and policies:

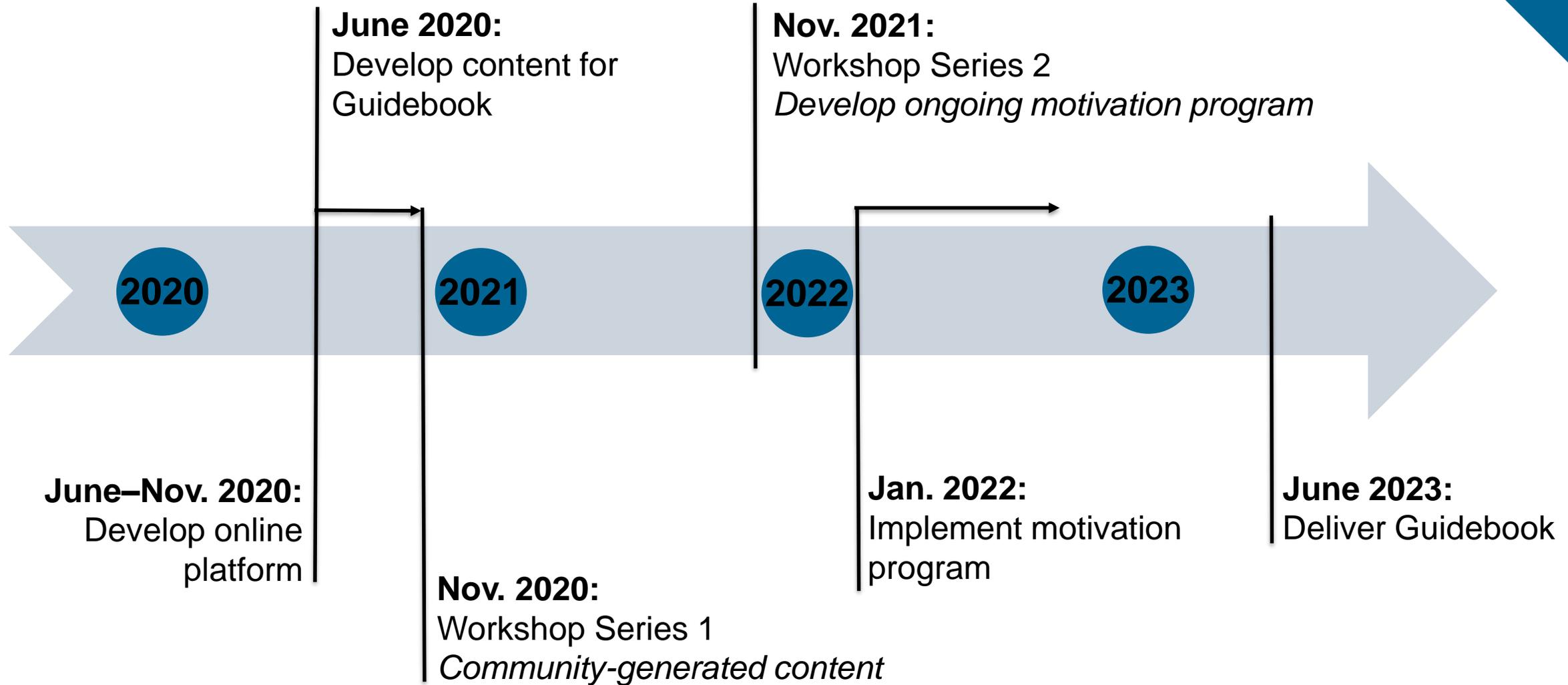
- AB 32: Global Warming Solutions Act of 2006
- SB 32: CA Global Warming Solutions Act of 2006
- AB 758: Building Efficiency, Statutes of 2009
- SB 100: The 100% Clean Energy Act of 2018
- SB 350 Clean Energy and Pollution Reaction Act of 2015
- Appliance Efficiency Regulations
- California Energy Code
- Integrated Energy Policy Report
- CPUC's Energy Efficiency Strategic Plan (2008)
- CA's Existing Buildings Energy Efficiency Action Plan
- 2019 CA Energy Efficiency Action Plan
- Executive Order B-30-15: CA Governor's GHG emission reduction plan
- Executive Order B-55-18: CA Governor's carbon neutrality achievement plan

GFO-19-504 - De-carbonizing Healthcare and Large Buildings

GOAL: *to fund applied R&D, demonstration, and deployment of innovative approaches to decarbonize healthcare and large commercial buildings*

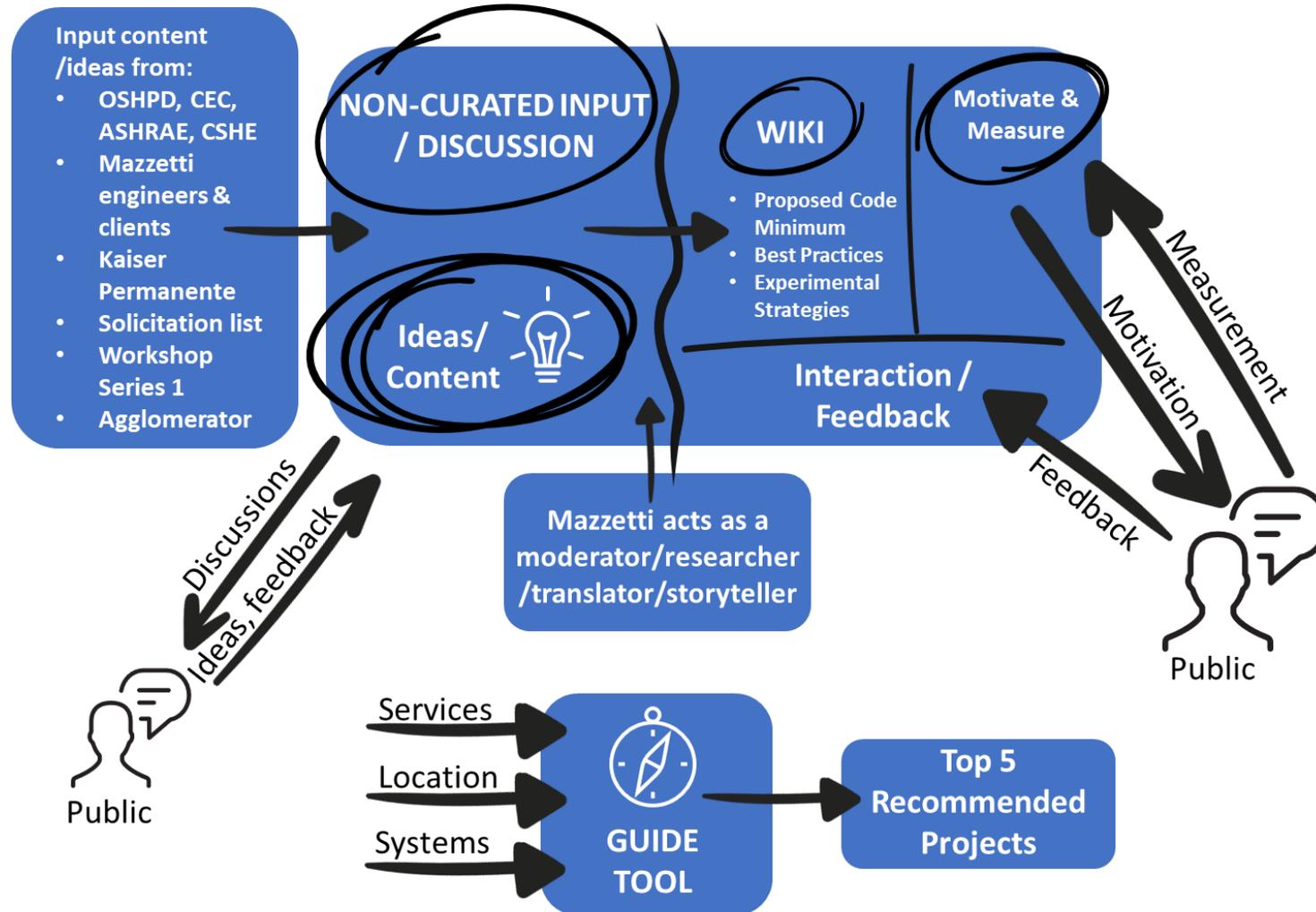
- Focus on reducing carbon intensity on HVAC and hot water systems
- Guided by two goals of the Natural Gas Research Program:
 - **Reduce greenhouse gas emissions** (GHG) from natural gas sources through increased efficiency
 - **Drive customer adoption** of energy-efficient and low-carbon technology solutions for natural gas end uses

Grant Workplan



Public Input Process

DECARBONIZING HEALTHCARE GUIDEBOOK



STRATEGIES E.G.



EACH STRATEGY INCLUDES:

- Overview of Design Influences
- Control Strategies
- Design Considerations
- Implementation Considerations and Recommendations
- Regulatory Considerations
- Relevant Case Studies
- Financial Model & Utility Rebates
- Quick Benefit Calculator

Building Performance & Energy Codes





How might we collaborate to ensure that the solutions we develop will work **and** be implemented?



Join our LinkedIn Group:
'Decarbonizing Healthcare'



Join our Technical Advisory Committee:
Please reach out to Cassidy and Austin



Austin Barolin

Senior Energy Analyst

Abarolin@mazzetti.com

Cassidy Thompson

Mechanical Designer

cthompson@mazzetti.com

6. Comments from the Public/Committee Members on issues not on this agenda

Facilitator: Louise Belair, Committee Chair

The Committee will receive comments from the Public/Committee Members. Matters raised at this time may be taken under consideration for placement on a subsequent agenda.