

MICROGRID KNOWLEDGE™

2023 CONFERENCE

LIGHTS ON!

May 16-17, 2023 | Anaheim, CA

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Resilience Hubs: Powering energy equity in climate disasters and year-round

Geoff Oxnam, CEO & Founder, American Microgrid Solutions

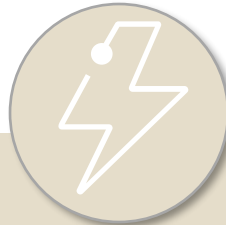
Peter Lilienthal, Global Microgrid Lead & HOMER Software Creator,
UL Solutions

Problem: Climate disasters disproportionately impact low-to-moderate income communities



Limited Mobility

Fewer options to relocate to safety



Challenged Infrastructure

Neighborhoods more susceptible to storm shock



Proximity to Hazard

More likely to be impacted by poor air and water quality, and substandard housing



Financial Vulnerability

Fewer protections against financial impacts

Solution: Resilience Hubs

What

Resilience Hubs are community-serving facilities, augmented to:

- Support residents
- Coordinate communication
- Distribute resources
- Reduce carbon pollution
- Enhance quality of life



Solution: Resilience Hubs

What

Resilience Hubs

Who

Neighborhoods, community-based organizations & local government

Where

Nationwide

When

Normal (>99.9%), disruption, recovery

Why

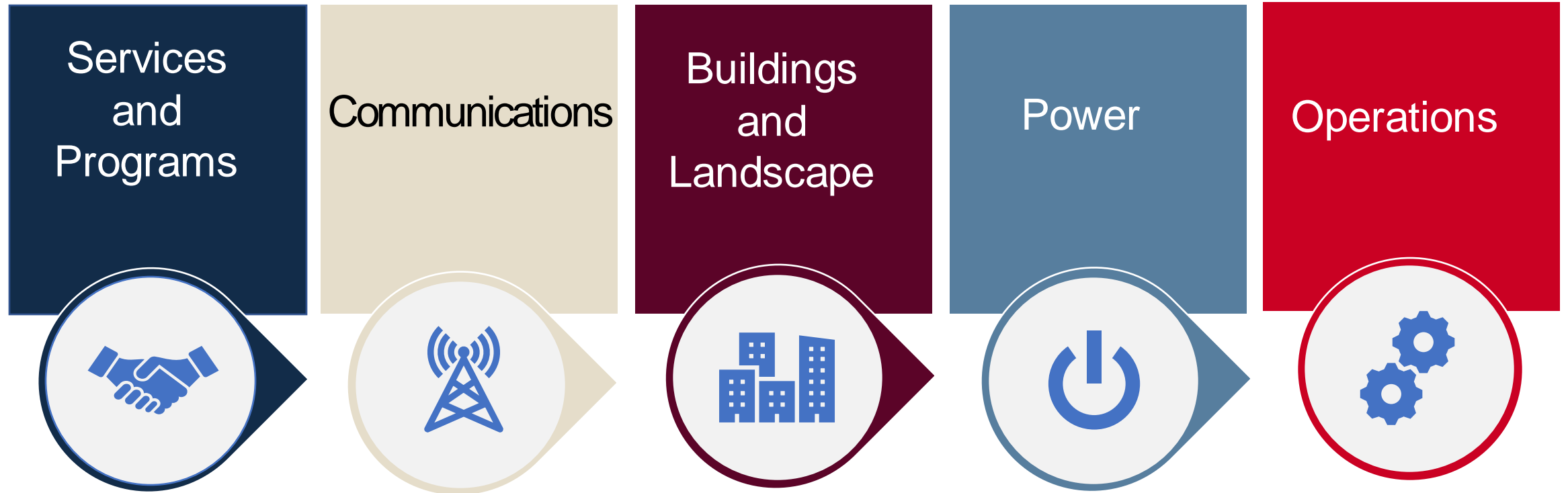
Community resilience 24/7/365

How

USDN Resilience Hub Framework (resilience-hub.org)



Resilience Hubs: Enhance 5 areas



How to develop a Resilience Hub



Lenox Center Resilience Hub

Part of the ECN Resilience Network championed by City, supported by GM Foundation and Elevate Energy.

Community
Served

Jefferson Chalmers community
Detroit, Michigan

Stakeholders

City of Detroit, Community, ECN, Resilience Network, GM Foundation, Elevate Energy, Clean Energy Group, DTE

Power Solution

Solar – 68 kW
Battery – 125 kW/220 kWh
Generator-ready

Status

Construction est. COD Q4 2023



Resilience Hubs present design challenges

Tips

Iterative Process

✓ Stay flexible

Stakeholder Engagement

✓ Listen, be inclusive, manage expectations, communicate visually

Franken-Finance

✓ Multiple sources of support with differing constraints

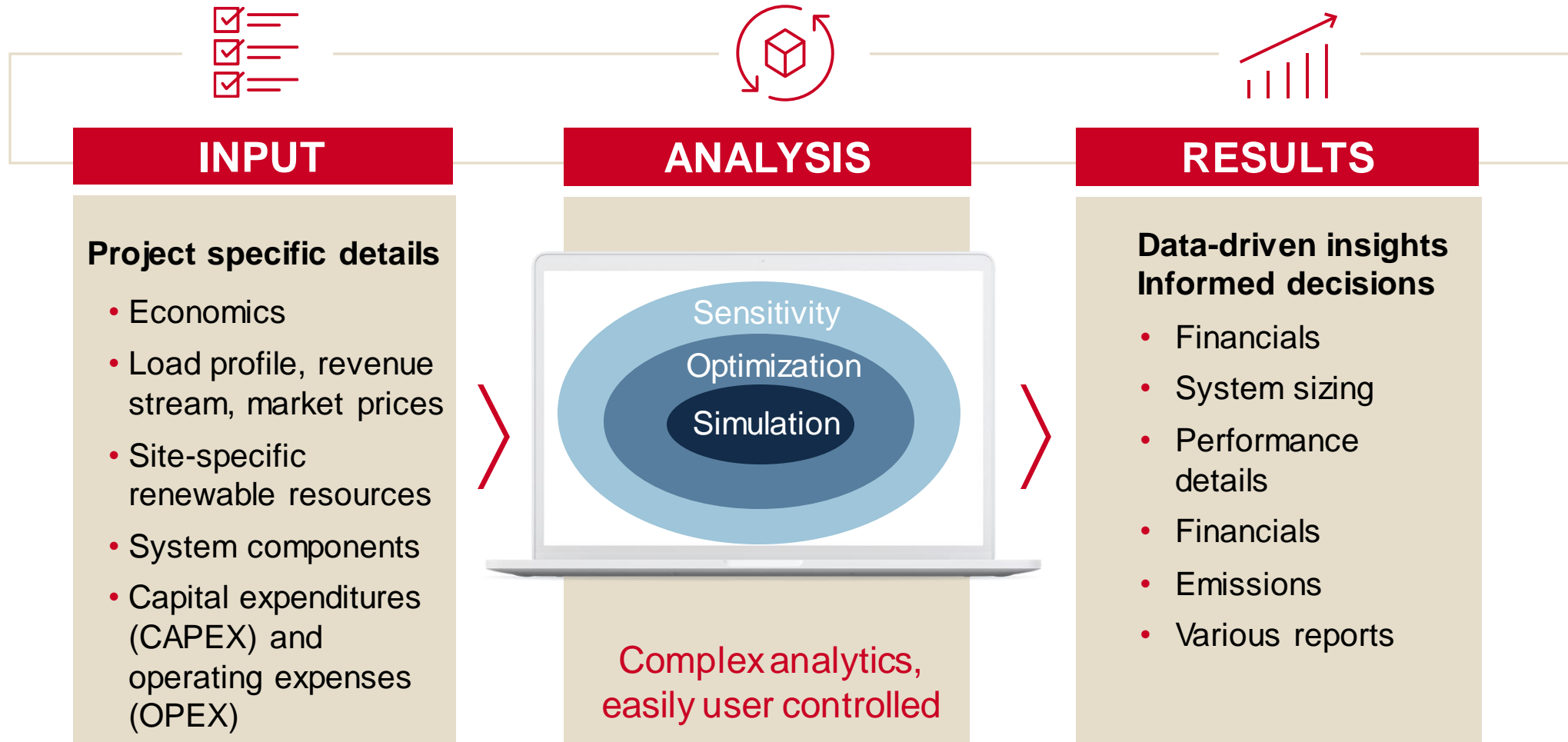
Holistic Design

✓ Power is only part of the solution

Demonstrate Options

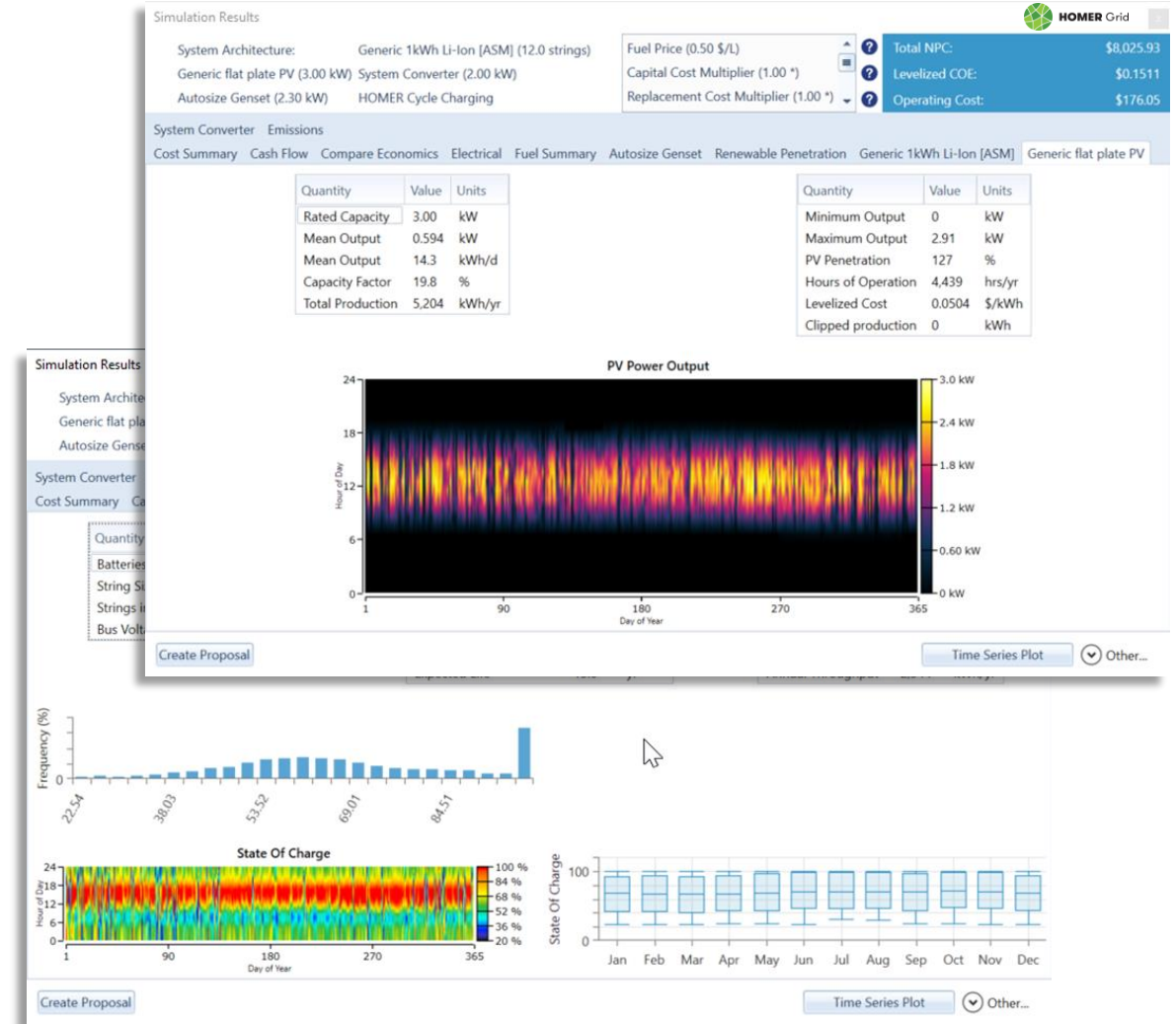
✓ Stakeholders want to see the choices they are making

Techno-economic analysis



Role of Modeling

- **Insights** for early in development process, research & policy
 - Sensitivity analysis
 - Alternative results
 - Trade-offs
 - Thresholds
 - Stakeholder engagement
- **Numbers** for later in development
 - Financial pro-forma
 - Detailed inputs



Thank you!

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