



PLANNING RESILIENT ENERGY WORKING GROUP OUTPUT

September 28, 2018



U.S. DEPARTMENT OF ENERGY
CHP Technical Assistance Partnerships
SOUTHEAST

WORKING GROUP DISCUSSION FORMAT

BREAKOUT GROUPS

- #1: Public sector buildings –
- #2: Public Schools / Higher Education –
 - Yoca Ardit-Rocha, CLEO Institute
 - Samantha Danchuk, Broward County
- #3: Hospitals, Nursing Homes & LMI Housing –

WORKING GROUP DISCUSSION FORMAT

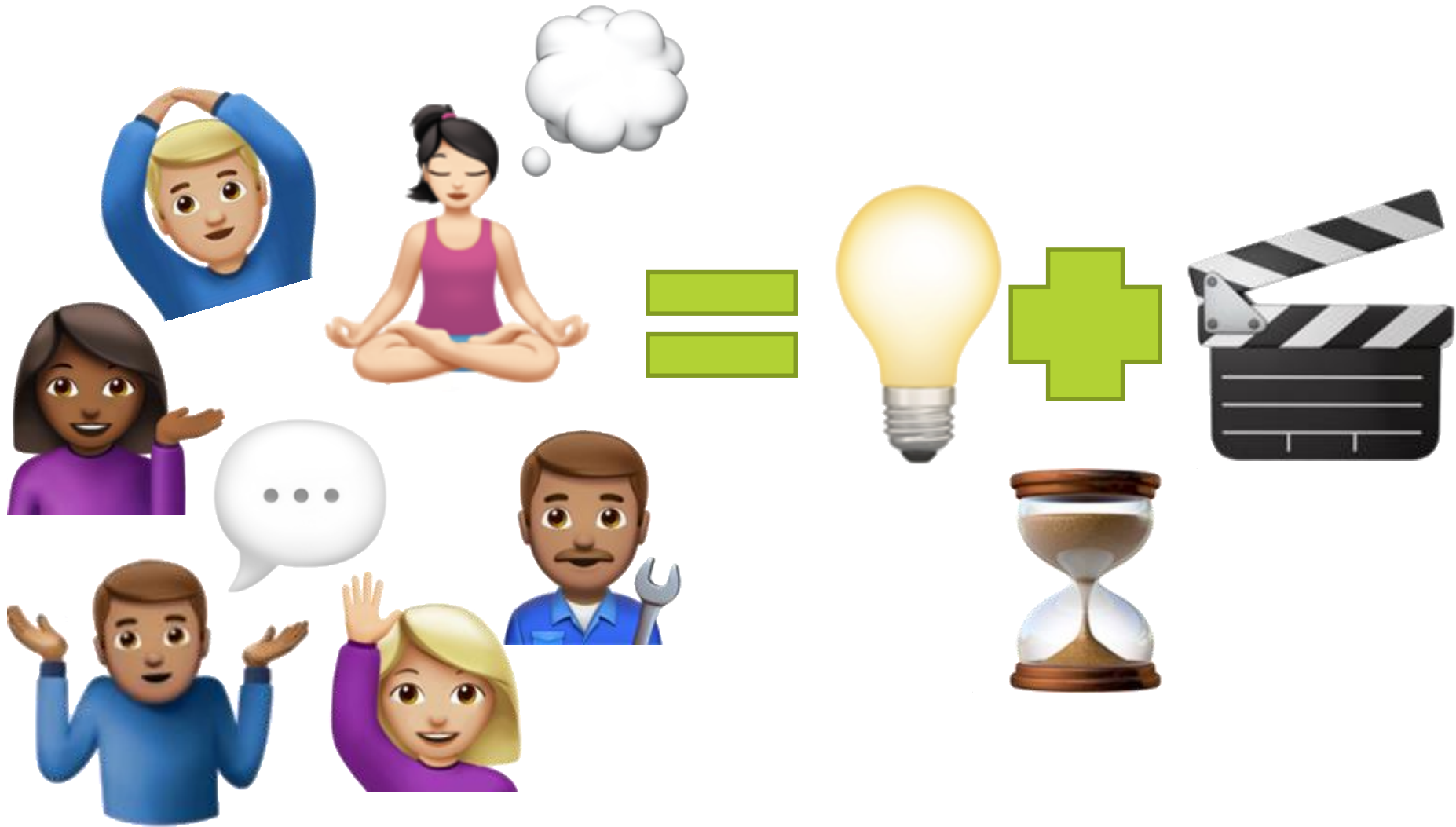
QUESTIONS

How can we recognize the importance of critical infrastructure resilience to communities?

How do we move from the idea of energy resilience to building resilient infrastructure?

What state and local policies exist or are needed to support the development of resilient energy?

DISCUSSION GOAL



PUBLIC SECTOR BUILDINGS

vulnerabilities

- water waste / treatment
- ~~generators~~ diesel generators
- communication infrastructure
- pumps for stormwater flooding
- fuel shortages
- food security

"immediate impact on public health + safety"

Services

- ensuring emergency operations
- use infrastructure regularly to get benefits - saving \$\$\$ for citizens
- replace purchased energy
- include stricter ^{lengthen} building construction standards + communication infrastructure
- 911 services (ERC) + communication w/ ancillaries
- community systems to support people post-disaster (i.e. EV charging)
- energy efficiency • demand response
- shelters for the public

MOVING to BUILDING

- natural gas is the most resilient in emergencies, if not renewable
- retrofits + code changes ^{building}
- something that building value beyond emergencies
- Microgrids + diversifying
- becoming more resilient w/ systems & buildings outside the core of typical "critical" buildings (hospitals, etc.)
+ hardening existing back-up infrastructure
- community education
- storage technologies (emerging)

POLICIES

- wheeling of power: transferring energy between different meters
- decoupling
- length of contract regulation: allowing for certainty longer-term
- municipalities having resilience plans
↳ directive + funding
LMS funding mechanism - helps to have resilience projects ready
- Model energy policies off of water policies that encourage diversification

Financing

- ACDE → capped for mitigation
- FEMA → recovery grants
- CBDG
- P³ → private public partnerships
- 3rd party investors
↳ someone still making \$; gov't aren't paying additional costs
- ↳ Tax equity investment
- Solar + Battery as a Service
↳ they own/manage; you receive services; they upgrade technology

contract mechanisms:

- PPA + REC's to meet renewable energy standards
- Incentives → building permit fees
↳ motivate private developers
- environmental barriers?
↳ regulators have to look @ localized emissions
- ↳ self-contained models more attractive - having all systems possible to be on site
- private sector incentives for public sector buildings

BREAKOUT 1 – PUBLIC SECTOR BUILDINGS

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 1 OUTPUT: MAKING A RESOLUTION

- Whereas the loss of critical infrastructure services having an immediate impact on public health should avoided during and after natural and other disasters;
- Whereas emergency operations and communications must be assured to coordinate and deliver police, fire and ambulatory services during natural and other disasters;
- Whereas water and wastewater utilities, as well as flood control measures must remain operational to mitigate the damage from extreme rainfall and resulting flooding;

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 1 OUTPUT: MAKING A RESOLUTION

- Whereas areas of refuge must be ready to provide temporary shelter for those displaced by flooding, fire or other destruction;
- Whereas vulnerabilities to winds and flooding hazards to utilities, including electric and telecommunications, affect essential public services and may be mitigated using locally sited distributed energy resources;
- Whereas conventional diesel generators may present weaknesses due to failure or fuel availability issues;

WORKING GROUP DISCUSSION FORMAT

PHASE 1 OUTPUT: MAKING A RESOLUTION

- Let it therefore be resolved, to
 - develop resilient energy systems for public sector buildings that serve as critical infrastructure;
 - pursue a diverse set of distributed energy resources including microgrids with solar, combined heat and power, energy storage and other resources;
 - encourage private sector investments in resilience to promote benefits on a broader scale.

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 2 OUTPUT: PLANNING R.E.S.

- Step 1 - Look at DER investments that provide energy resilience value while achieving cost savings
- Step 2 - Pursue diverse resources that provide resilience, economics and environmental benefits
- Step 3 - Push energy resilience beyond the core of typical CI applications into the community
- Step 4 - Community education on energy resilience

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 2 OUTPUT: PLANNING R.E.S.

Strategies to consider:

- Community energy systems “pods” to provide people with support post-disaster with charging for devices, wheelchairs, EVs, etc.
- Look at CHP with district energy and microgrids for core urban areas
- Hardening existing backup infrastructure
- Energy efficiency retrofits to reduce energy footprint
- Look at emerging technologies and cost trends to optimize and future-proof designs

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 2 OUTPUT: PLANNING R.E.S.

Financing ideas:

- FEMA pre- and post- disaster funding
- Community development block grant funding
- Attract 3rd party investors to help make resilient energy projects cost neutral to government by monetizing tax incentives
- Solar PV, energy storage and other DER as a service to promote private partnerships

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 3 OUTPUT: POLICY SUPPORT

Local

- Municipal resilience plan directives & funding
- More consistent Local Mitigation Strategy funding and development of more funding ready projects
- Model energy & water policies that encourage diversification of resources and resilient self-contained buildings in the public & private sector
- Incentives to motivate resiliency in private sector buildings; permit fees

BREAKOUT GROUP 1: PUBLIC BUILDINGS

PHASE 3 OUTPUT: POLICY SUPPORT

State

- Renewable & efficiency portfolio standards
- Emissions permitting to include output based standards / credit offset of grid emissions
- Decoupling to drive utility investment in DER/EE
- Procurement policies such as 3rd party PPAs or leasing
- PPAs for longer than 3 years for solar / cogen (PURPA QFs)
- Easier wheeling of power between meters

BREAKOUT 2 – PUBLIC SCHOOLS / HIGHER EDUCATION

BREAKOUT GROUP 2: PUBLIC SCHOOLS AND HIGHER EDUCATION

Challenges to DG

1. Lack of funding
2. Education for buy-in
 - Problem with misinformation/bias
 - Ability to convince finance folks that DG projects are a good idea
3. Lack of consistency in educational facility infrastructure, or missing equipment plans
 - Impacts scalability and solutions

BREAKOUT GROUP 2: PUBLIC SCHOOLS AND HIGHER EDUCATION

PHASE 1 OUTPUT: MAKING A RESOLUTION

- Whereas schools/universities make good resiliency hubs/shelters and need resilient power
- Whereas there is a lack of funding for DG
- Let it therefore be resolved, that the State of Florida shall capitalize a state fund to fund DER projects for resiliency. Priority on solar or CHP over backup generators.
 - Maybe a resilience bank or revolving loan fund

BREAKOUT GROUP 2: PUBLIC SCHOOLS AND HIGHER EDUCATION

PHASE 2 OUTPUT: PLANNING Resilient Energy Systems

- Step 1 – Engagement meetings/charrettes - bring varied stakeholders together to come up with DG solution – school, county, PTA, students, teachers, general community
- Step 2 – Design pilot education programs that target different types of stakeholders to train them on the benefits of DG and successful DG applications
 - Empowering Resilient Woman and Girls – The CLEO Institute
 - Regional Climate Action Plan (RCAP) case studies – SEFL Regional Compact
 - Step 3 – Put in pilot projects - prove the concept and then work toward more projects, replicability throughout county/state/territory
 - SunSmart Program – installations at schools – FL Solar Energy Center
- Step 4 – Replicate DG projects at many schools
- Step 5 – Development of active advocates that show up at school board and community meetings to support resilient DG projects.

BREAKOUT GROUP 2: PUBLIC SCHOOLS AND HIGHER EDUCATION

PHASE 3 OUTPUT: POLICY SUPPORT

- Policy 1 – Funding programs
 - Revolving state loan program
 - Resilience bank
 - Energy related lottery
 - FEMA grants, state grants
 - block grants from Federal govt to state and CHP TAPs would oversee the grants, the savings would go back to Fed govt, like a revolving loan fund.
- Policy 2 - Standardization in codes, creating a repeatable model for how schools are built/refurbished, to make them able to host DER
 - New policy to mandate that new schools or those getting refurbished would be rewired to isolate critical loads in case future DG is incorporated. (no incremental cost during construction)

BREAKOUT 3 – HEALTHCARE & LMI HOUSING

HOSPITALS AND LMI

Working Session

Ibrahim Ahmed - IAC / University of Miami, inc. hospitals (2)

Patricia Gomez – Miami-Dade County Resilience (GHG Mitigation)

Natalia Neira - South Florida Regional Planning Council, Coalition, SolSmart

Megan Houston - Palm Beach County - Resilience

Jason Liechty - Broward County – Planning

Jill Horwitz - Broward County Resilience-Climate Change Policy, STAR

Rob Sanders - Clean Energy Group

Grace Relf – ACEEE

Mandy Mahoney - Southeast Energy Efficiency Association

HOSPITAL / HEALTHCARE

Challenges

- Policies re: back-up diesel operation for hospitals and nursing homes are not effective during situations of fuel delivery curtailment.
- Lack of Enforcement / Monitoring

Solutions

- Hospitals need to properly assess the value of resilience.
- Policies should address risk factors inc. geo.
- Partner with insurance companies to lower premiums for resilience level

HOSPITALS AND LMI

Shared Challenges

- Vulnerable Communities (evacuating those at risk / disadvantaged) Health and economic
- Lack of protection for existing structures (Grandfathered buildings under LMI and for healthcare / nursing homes)
- If CI resiliency measures were implemented, this may free utility resources to address LMI comm. as a priority.
- Funding LMI building improvements through a one-intake program weaving funding streams and agency support

LMI

Challenges

Disincentive for Capital Investment

LMI Housing – Split Savings: Disconnect between tenants and building owner / operator for incentives and energy savings

Solutions?

Who should benefit from increased resilience?

How do we structure that?

How do we quantify the savings / improvement?

Resolution-based Concepts

- Build Redundancy
- State-level Policy
- Programs / Financing
- Education Stakeholders
- Tailor Resilience Requirements to Reflect Site Specific Risk Factors

DISCUSSION