

# Powering the Future

New Partners for Smart Growth 2018

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# GRID 1.0

- Centralized generation
- Mostly carbon based
- Long distances
- Unidirectional
- No local control
- Socialized costs

# GRID 2.0

- Distributed resources
- Low carbon / renewable
- Customer-based
- Dispatchable load
- Local control
- Owner pays / possible revenue streams



# gaps to fill, questions to answer

- Finance
- Location
- Equity
- Infrastructure
- Organizational
- Professional
- Regulatory
- Governance



An isometric illustration of a microgrid system. The central focus is a cluster of buildings representing a community or campus. Surrounding this central area are various energy and control components, each on a circular base: wind turbines on the left, a solar panel on the right, a battery storage unit on the right, and a server rack on the bottom right. A laptop with a control interface is labeled 'Microgrid Controls'. In the top left, a larger industrial facility is labeled 'Central Grid'. The entire scene is set against a dark teal background with a grid pattern.

**microgrids are test-beds  
of technologies and ideas**

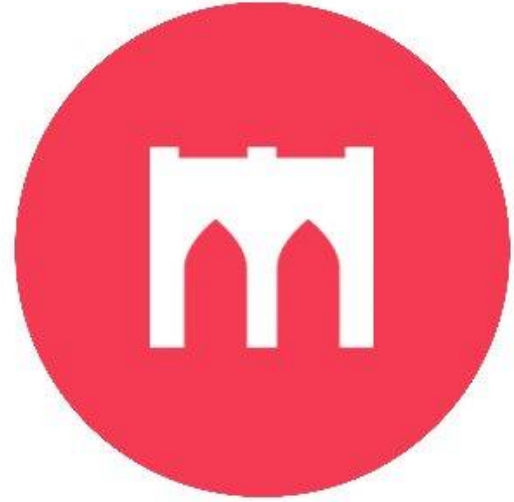


# Con-Ed Low Income Microgrid (New York)

- \$200M in non-wire alternatives vs. \$1.2B in grid upgrades
- 625 low-income units
- 400 kW of solar
- 400 kW fuel cell
- 300 kW/1,200 kWh batteries
- 1.1 MW to leverage for 1.5 MW demand

# Power (and money) to the People

- Neighbor-to-neighbor energy transactions
- Enabled by blockchain technology
- Utilizes smart meters
- Energy sold by automated auction



B R O O K L Y N  
MICROGRID



# City Yards Multiuser Microgrid (Santa Monica)

- City public works facility anchors microgrid
- Non-city entities on adjacent parcels to be interconnected
- Enable vehicle electrification
- Supports resilience of essential operations
- Optimizes use of renewables



# The Grid of the Future will...

- Challenge the utilities' status quo and role of local governments
- Engage public agencies, business and residents in ways we never have before
- Require an increasing level of sophistication in technology, finance, workforce skills and governance
- Not automatically result in equitable outcomes unless the community is involved and the public interest is maintained in goal setting



# Thank you

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