



U.S. DEPARTMENT OF ENERGY

EVGrid Assist

ACCELERATING THE TRANSITION

Vehicle Grid Integration and Infrastructure Morality

November 15, 2022

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U.S. DEPARTMENT OF
ENERGY

EVGrid Assist: Accelerating the Transition

Comprehensive VGI Technical Assistance Initiative

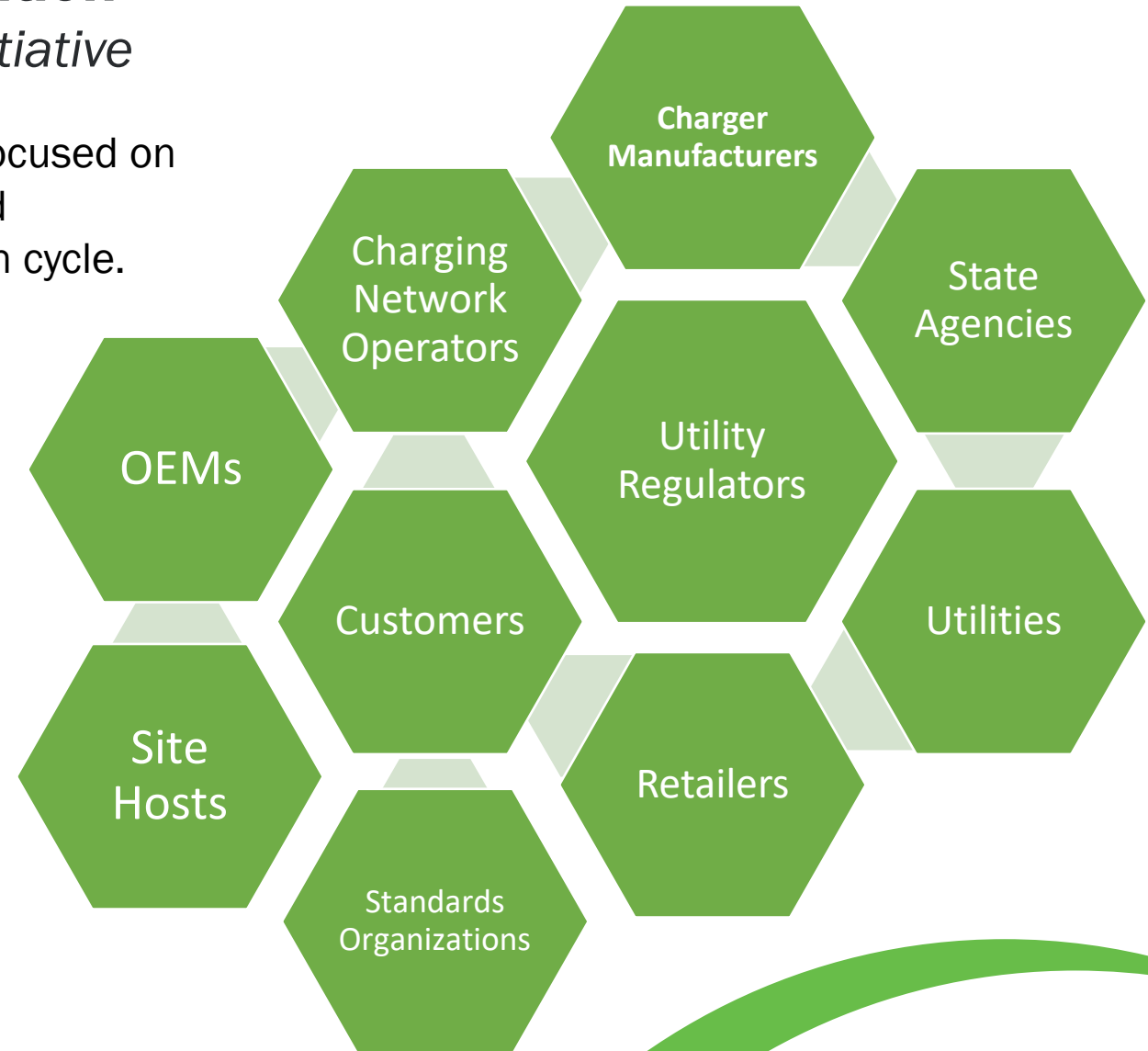
A cross-DOE coordination and technical assistance effort focused on the interface between vehicle charging and the electric grid considering the full spectrum of the R&D, deploy, use, learn cycle.

Purpose:

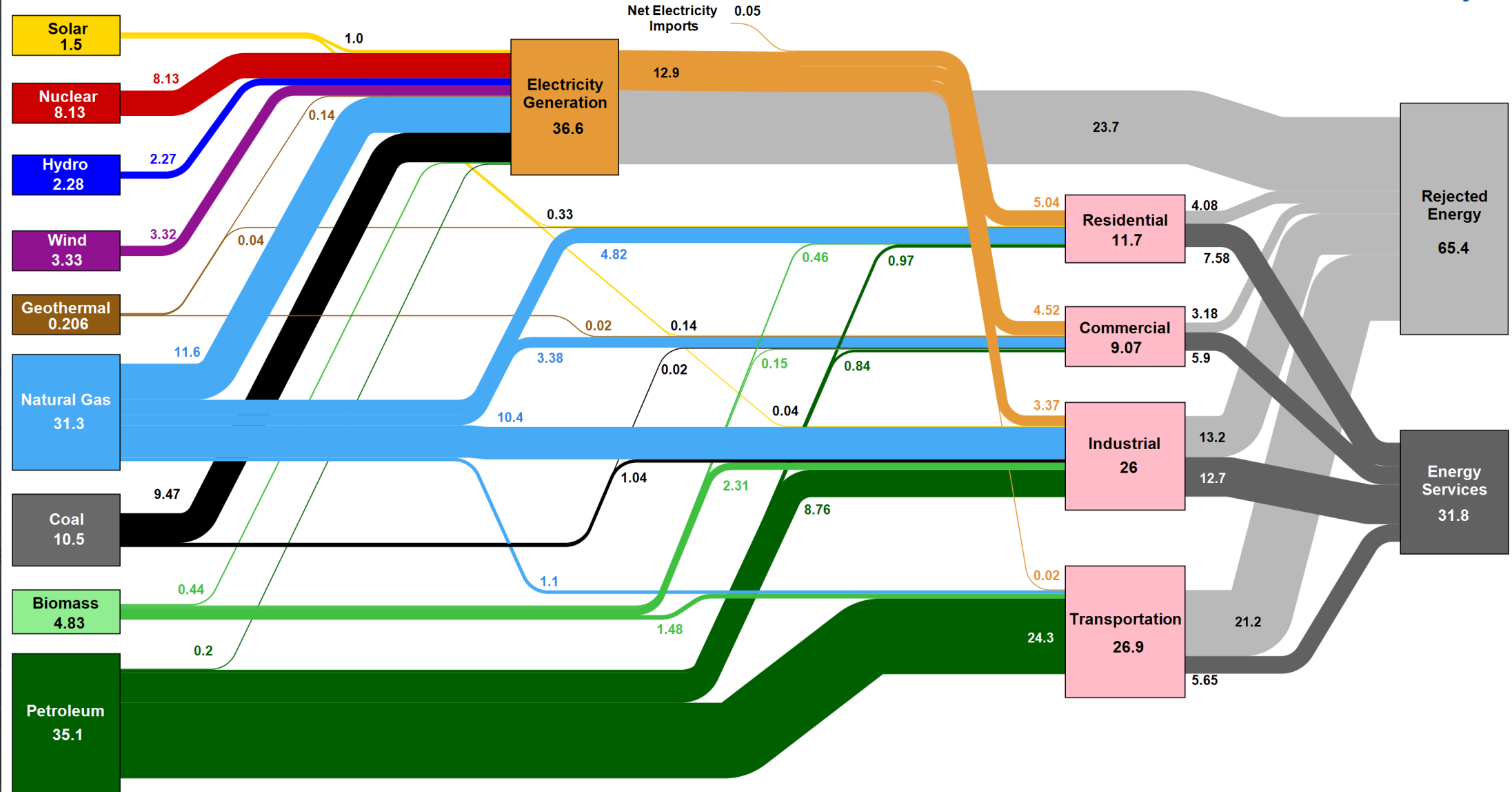
- Increase stakeholder knowledge
- Drive actions to resolve VGI challenges and barriers
- Provide pathways for stronger VGI coordination

Objectives: Activate the community to

- Prioritize challenges to solve
- Accelerate planning and decision making
- Enable proactive infrastructure investments and supporting markets, rates and regulations
- More quickly achieve decarbonization goals



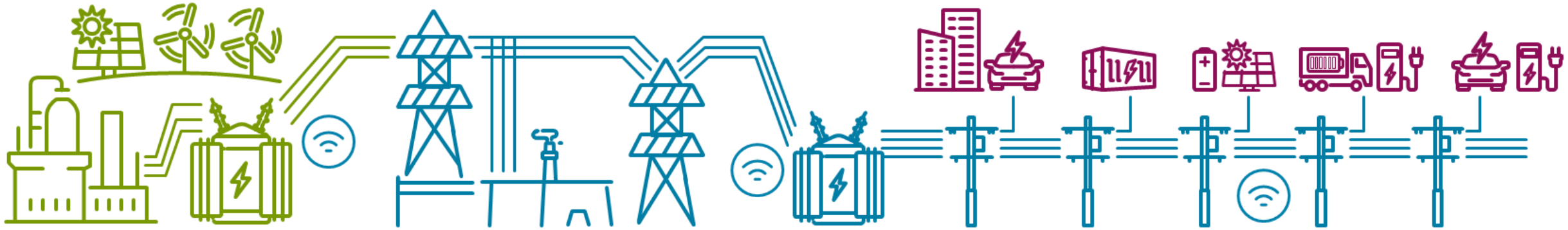
Estimated U.S. Energy Consumption in 2021: 97.3 Quads



Vehicle Grid Integration (VGI) for Electric Mobility

Essential for Achieving Transportation and Power Sector Goals

Decarbonized | Reliable | Resilient | Cost-effective

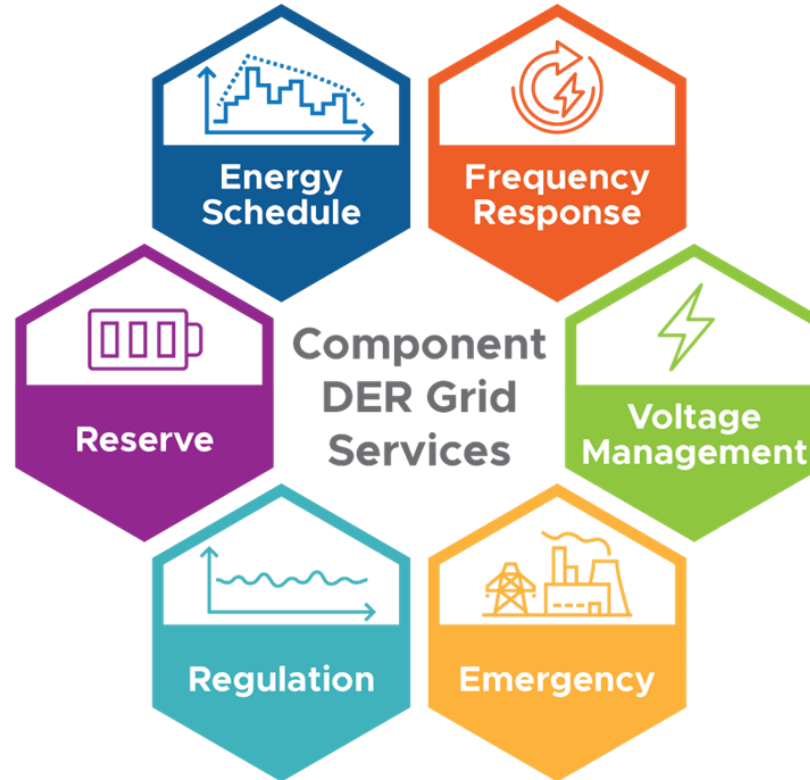
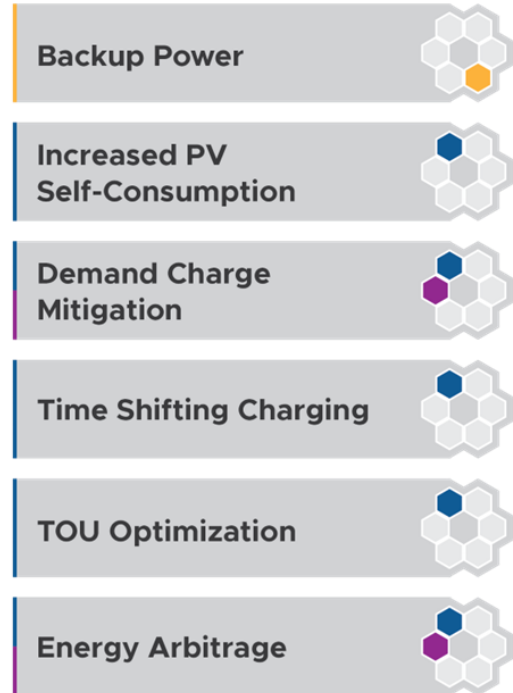


ENABLED BY

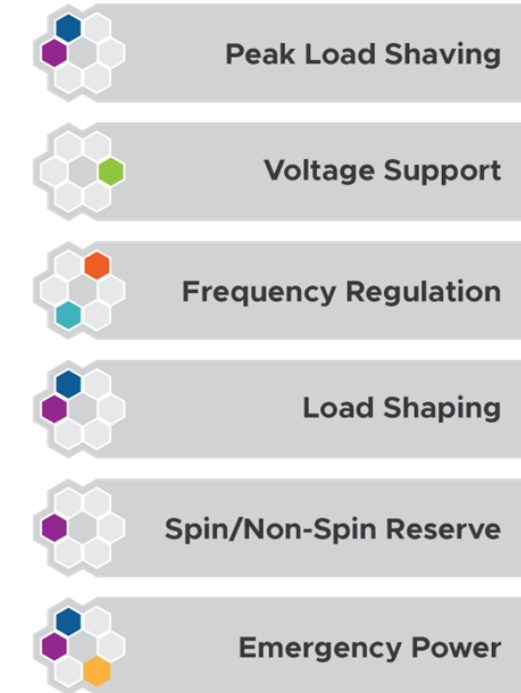
- Renewable Resources
- Reliable Charging
- Sufficient Capacity
- Driver Behavior
- Communications & Controls
- Technical Standards
- Cyber Security
- Retail Rates
- Grid Services Markets
- Actionable Data
- Policy
- Transparency & Oversight
- Investment

Grid Services Categories – V1G, V2G

CUSTOMER ENERGY SERVICES



OPERATIONAL GRID SERVICES



ALTERNATE TERMINOLOGY

- Bidirectional Power
- Black-Start Capacity
- Capital Investment Deferral
- Deferred Upgrades
- Demand Reduction

- Demand Response
- DER Utilization
- Distribution Back-tie Service
- Distribution Congestion Relief

- Emergency Load Transfer
- Emergency Power
- Energy
- Firm Capacity
- Frequency Responsive Reserves

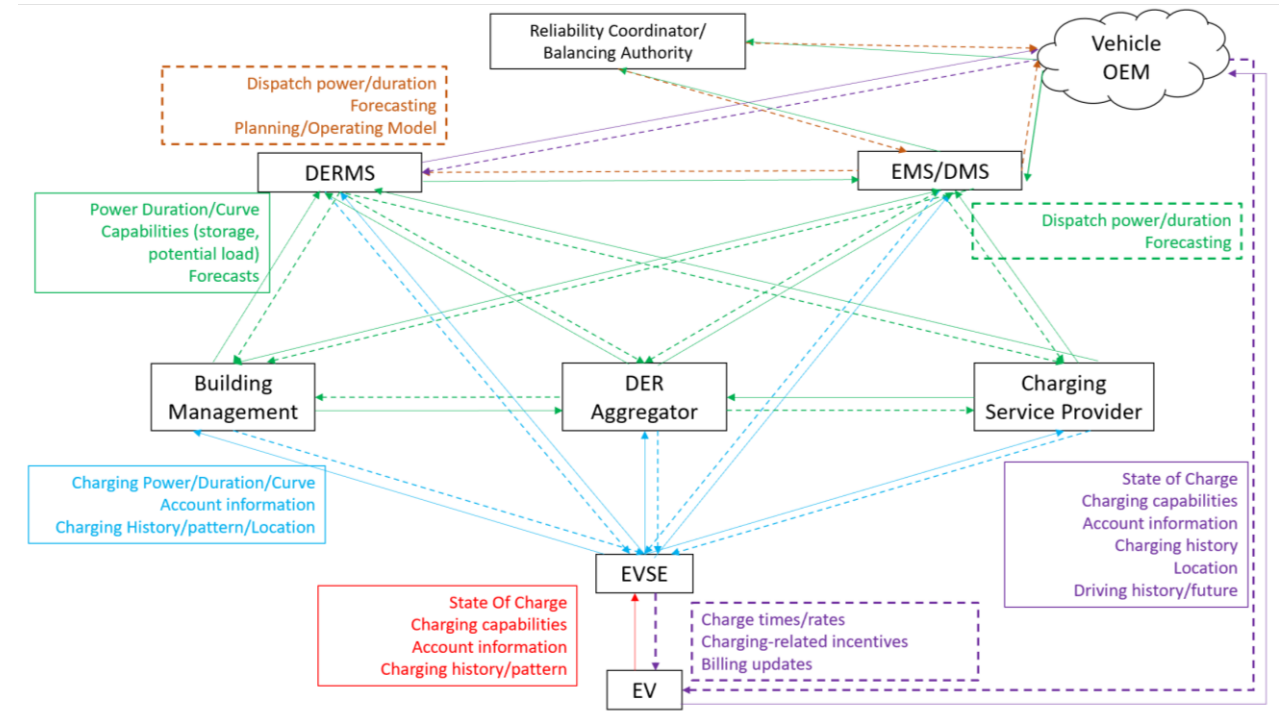
- Load Management
- Managed Charging
- Max Capacity Relief
- Outage Recovery
- Phase Balancing
- Power Quality

- Providing Capacity
- Ramping Reserves
- Reactive Power Support
- Regulating Reserves
- Renewable Energy Integration

- Restoration Services
- Transmission Congestion Relief
- Transmission & Distribution Deferral

A word about data....

- Data landscape is changing
- May require new data types and insights into customer behavior
- Could lead to challenges around access or privacy
- Multiple parties have different data
- Parties may want or need data that they don't have



Infrastructure Morality?

- Empowers those with less
- Strengthens what binds us
- Democratizes energy



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