



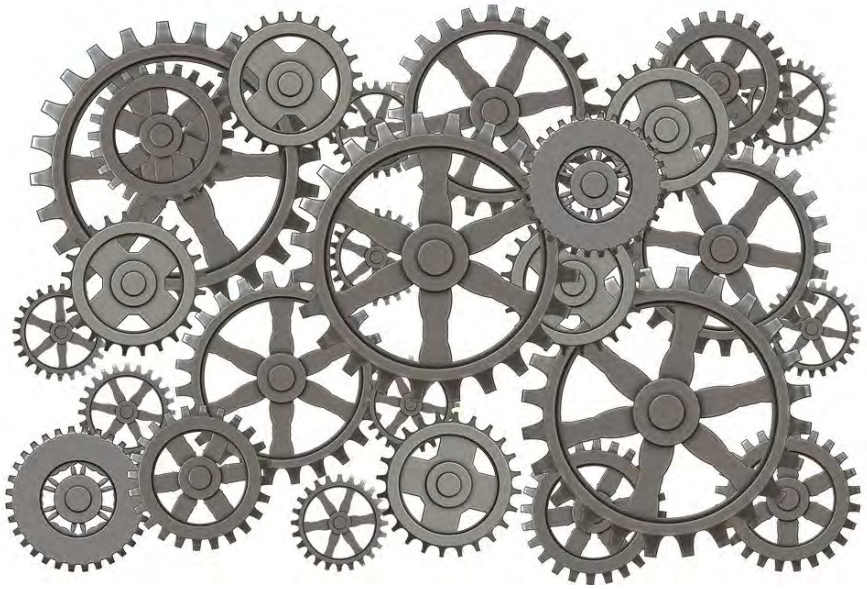
Sustainability and Energy for Georgia's Future



To agree on a
definition is
not always
easy

Which do you believe it is?

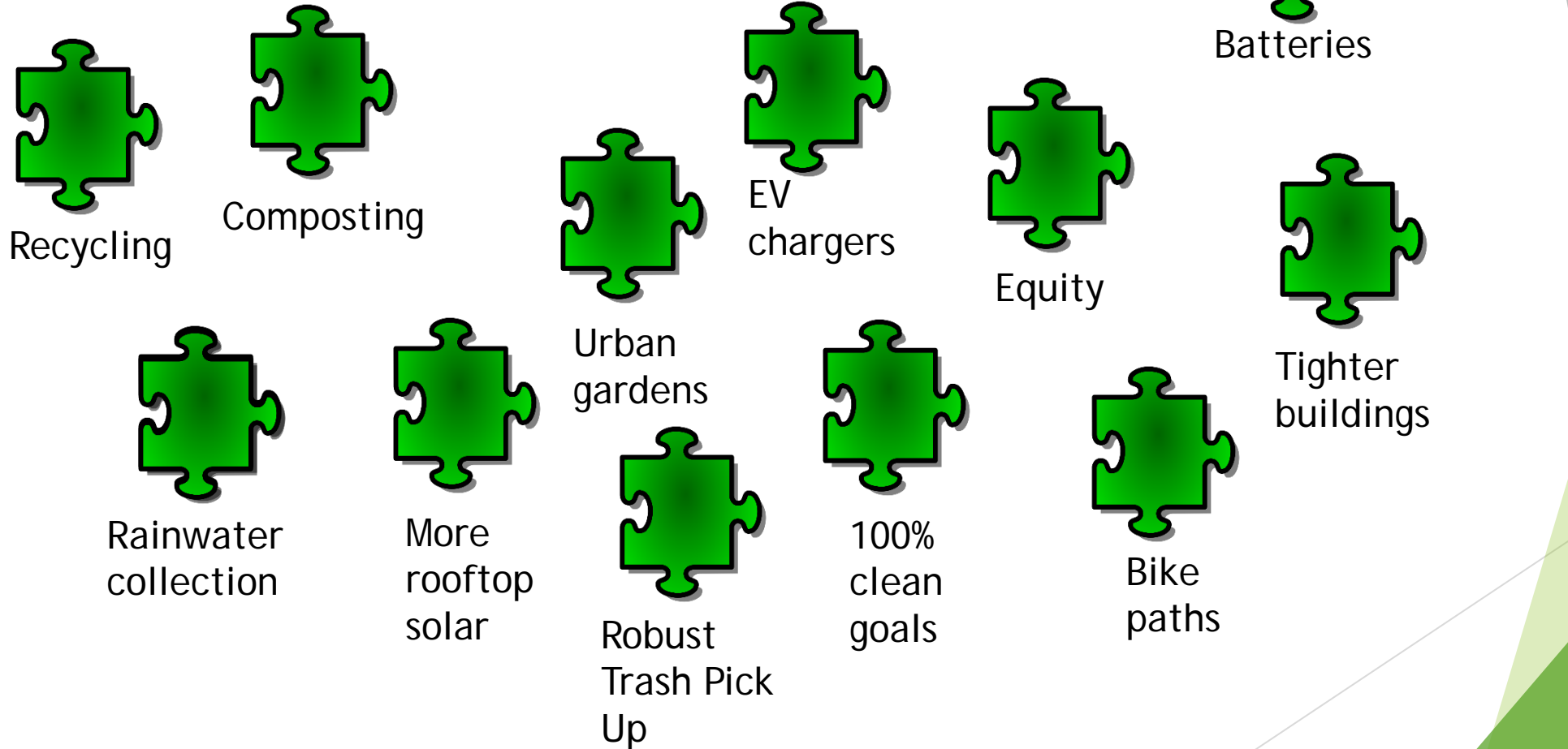
Many Moving Parts?



Puzzle?



Puzzles are better than gears in sustainability planning



Energy Policy Around World and how it affects you city

Top Down Federal Approach



State or Region Approach



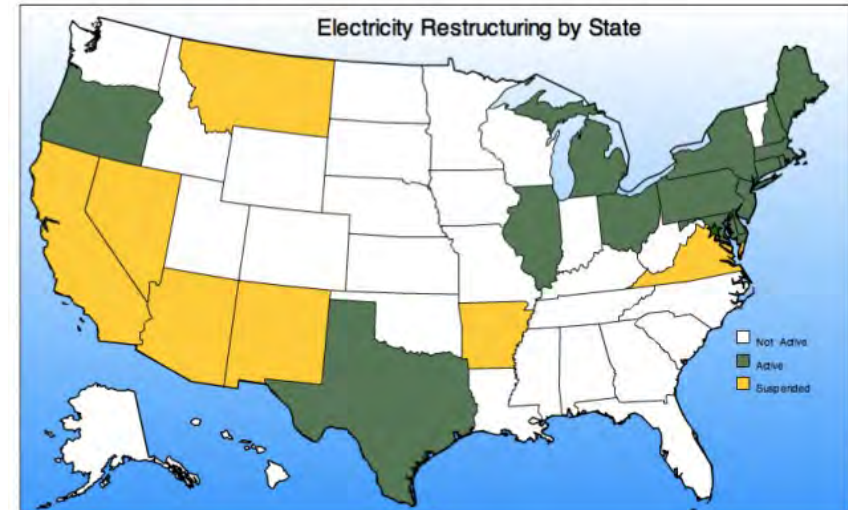
Deregulation and Decoupling: Advantages and Disadvantages

GA—Territorial Act, IOU and less regional considerations

Texas and others with less incentive for reserve margins and Preventative Maintenance including winterization



- The map below shows information on the electric industry restructuring. Click on a State for details.
- Restructuring means that a monopoly system of electric utilities has been replaced with competing sellers.



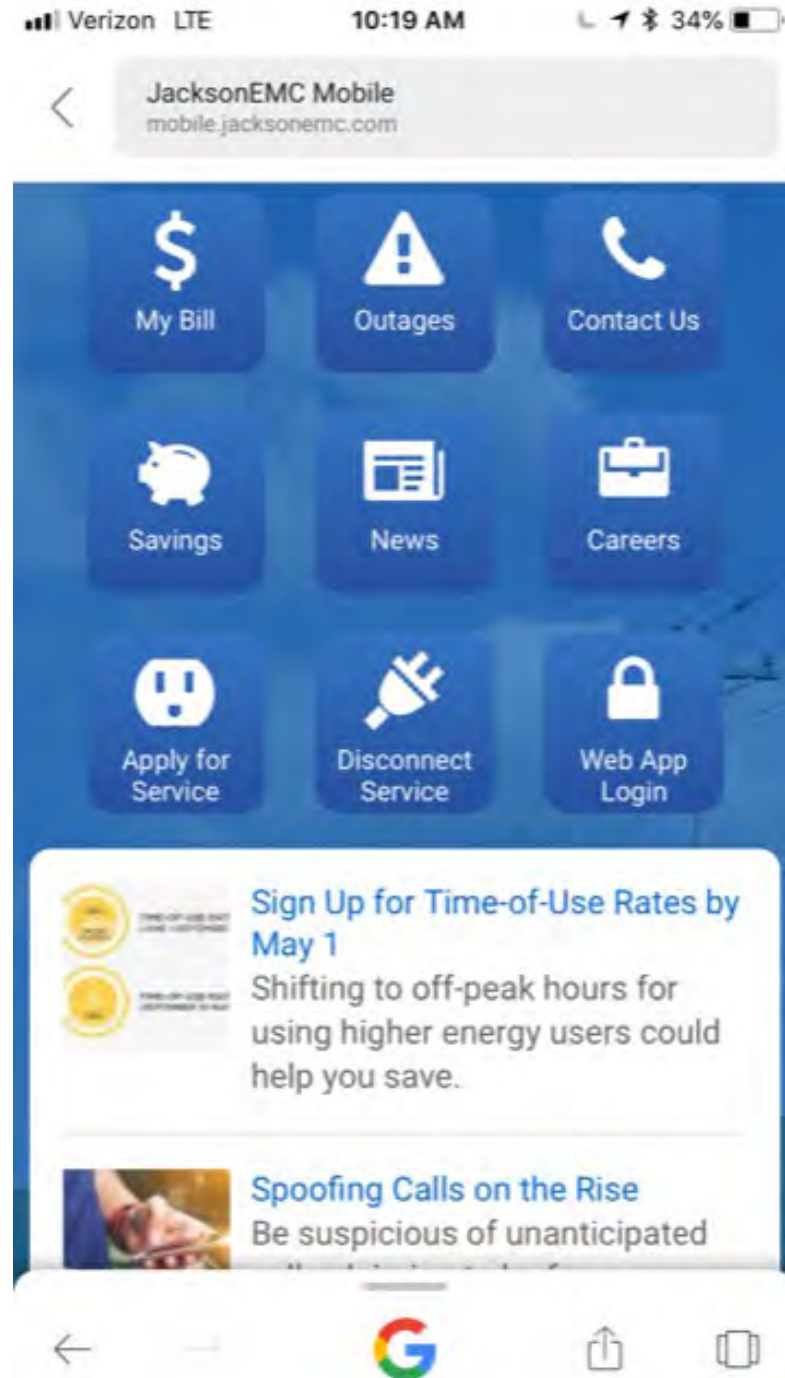
Source: Energy Information Administration

GRID, PIPELINES, TELECOM, FIBER (EMC)



Connecting w/ Millennials:

- Apps and notifications
- Attractive TOU rates
 - Pre-pay plans
- Incentivize solar without breaking bank (CGEMC)
 - Pay as you save plans
 - Energy Efficiency



**Measure Twice
Oops, forgot about shade.**



ECHOLS AND ALT FUEL

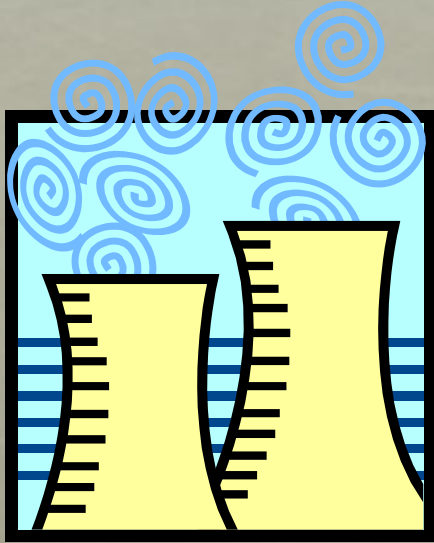


THE SOLAR
ROAD?

SOME
IDEAS
DON'T
WORK



Integrated Resource Plan (2022)



Supply-Side

- Nuclear, Gas, Coal
- Renewables
- Unit Retirement Studies



Demand-Side Options

- EE Programs
- Demand Response



Transmission

- 10 Year Plan

Getting Rural Areas in on EVs



- Charging at home, at night, provides better grid utilization and puts downward pressure on rates
- Uses in-state fuel
- Vehicles weigh less and have less impact on highways
- Environmental Attributes

Cities and EMCs will play an important role moving forward



F150 Lightning and Rivian
will engage GOP and South
GA

Grid ready?



Is Bi-directional charging in our future?





Petite LeMans EV Fan Zone Team

Objectives to Overcome

- Lost time charging
- Range limitations
- Technology soon out of date
- Additional costs (upfront & chargers)
- Employee dissatisfaction
- Fuel card issues

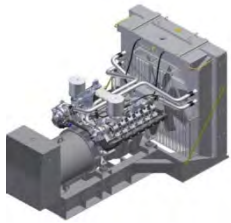
Could a micro-grid help your city? Maybe...



200 kW/400 kWh
Lithium-ion Battery



625-kW
Diesel Generator



Two 200-kW
Natural Gas Generators



200-kW
Fuel Cell



- Collaboration between Southern Company, Georgia Power & Georgia Tech
- Understand the resiliency, sustainability, cost of microgrids in an urban setting
- Integrate customer-sited DERs operated and controlled by the utility

Grid Tied Batteries being tested and will help guide cities

Approved by GPSC in the 2019 Integrated Resource Plan

Exact sizes, configurations, locations, and use cases to be tested are still under development

65 MW LARGE STANDALONE BESS	SOLAR + 13 MW STORAGE	2 MW SMALL STANDALONE BESS
Independently sited storage system	Located at or near a solar facility (solar + storage)	Independently sited storage systems
Connect to & charge from the transmission grid	Coupling a storage resource with a solar facility to evaluate the benefits, costs, and requirements of combining intermittent resources with a BESS	Connect to & charge from the distribution grid
65 MW 4-hour BESS, providing a total capacity of 260 MWh	13 MW 4-hour BESS coupled with solar	One or more sites may be selected with a total capacity target of 2 MW

Collaboration Enables Acceleration



Helping under-served
communities like Hog
Hammock on Sapelo
Island



ENERGY MATTERS

A RADIO SHOW



*“Helping you save money,
use technology
and be more sustainable.”*

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