

### **Keeping the Natural Gas Option**

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#### Carl Garofalo, Director of Sustainability and Renewable Gas Solutions at Southern Company Gas,

Carl supports the development of renewable natural gas (RNG) and hydrogen sustainability solutions for Southern Company Gas and its customers. Carl collaborates with internal and external stakeholders on federal, state, and local policy, outreach, and communications efforts, and manages the energy and sustainability needs of Southern Company's national accounts are met. Carl has engineering experience in the gas appliance industry designing water heaters, boilers, and space heating systems as an applications engineer for Rinnai America Corporation.

Carl graduated from Boston University with a mechanical engineering degree and a master's degree in biology with a concentration in biomechanics.

**Tim Echols, Georgia Public Service Commissioner,** After building a national non-profit organization, Tim ran for and was elected to statewide office in 2010 serving as Public Service Commissioner. His primary job is energy regulation. When Tim took office, Georgia was 34th in solar power. Now, eleven years later the state is 4th in the nation in approved solar. Tim's commitment to promoting clean energy has resulted not only in millions of solar panels being installed but an increase in electric vehicles with Georgia now ranking fourth in the nation in electric vehicles.

Tim, earned a master's degree in Non-Profit Organizations, considers the charities in his state of Georgia a great resource

**Joel Gilbert, P.E., President and Chief Software Architect, Apogee,** Joel directs the development of energy analysis applications using the highest standards in building science, engineering, operational patterns, weather data and pricing to ensure analytical integrity. Every Apogee application undergoes the rigors of his mathematical and engineering training, strategic management evaluation, and bottom-line business pragmatism.

He built his career in energy consulting, being retained by over 200 gas and electric utilities and over 100 industrial and commercial firms across the United States to help them implement successful customer energy programs. His clients included investor-owned utilities and their trade associations including EEI, EPRI, as well as NRECA, and APPA.

Joel holds both bachelor and master degrees in chemical engineering and a masters in management from Rensselaer Polytechnic Institute in Troy, New York. He is also a licensed professional engineer in New York State.



# GEORGIA'S SECRET SAUCE RECIPE

#### **COMMISSIONER TIM ECHOLS**

## STEP 1: START WITH FRESH INGREDIENTS

ELECTED COMMISSIONERS, AN IRP PROCESS AND 5-STAR UTILITY

## INTEGRATED RESOURCE PLAN

Why Georgia doesn't need the Green New Deal or Clean Power Plan



#### Supply-Side

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



#### **Demand-Side Options**

- EE Programs
- Demand Response

#### Transmission 10 Year Plan

- Reliability is Job #1
- Keeping rates low
- Diverse mix of energy sources as a hedge against increases
- Utilization of technology
- Anticipating change

THE 1991 IRP HAS NEVER BEEN AMENDED



## STEP 2: AN ALL-OF-THE-ABOVE APPROACH

NEW NUCLEAR, BIG COAL, AND A GROWING FLEET OF NATURAL GAS UNITS

#### Georgia Power Company Capacity Mix Evolution Post-2022 Integrated Resource Plan



These capacity mixes reflect nameplate capacity for renewable resources, program capacities for demand-side options ("DSOs"), and designated/demonstrated capacity for the remaining fuel types. A portion of the renewable generation capacity included in these charts includes capacity where the renewable generator retains the related Renewable Energy Credits ("RECs").

## NATURAL GAS BENEFITS FOR GEORGIA

- Fleet Transition: As a cost-effective alternative to coal, it enables a continued transition to a low-to-no carbon future
- Dispatchability: It fuels dispatchable resources that can respond to a changing net load in any hour
- Energy Security: Absent significant advancement in longduration energy storage and other technologies, domestically abundant natural gas is critical to energy security and reliable energy service

Supportive Commissioners with Secretary Rick Perry at Plant

Vogtle

## **IMPACTS ON THE RECIPE**

- 2022 IRP policy decisions
- Changing political landscape
- Advanced Reactors and RNG
- Battery impact on grid
- Coal Ash solutions



## STEP 3: TOSS IN SUME RED STATE SOLAR

THE PROGRAM IS UTILITY SCALE HEAVY AND HAS A "BELOW AVOIDED COST" REQUIREMENT



#### Southern Company Gas Fueling a Sustainable Future

Carl Garofalo, Director of Sustainability and Renewable Gas Solutions



#### Southern Company Gas

**GAS Distribution Operations** Atlanta Gas Light Chattanooga Gas Nicor Gas Virginia Natural Gas

**Marketing Services** 

**Renewable Natural Gas** 

LNG Storage

Storage

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**Pipeline Investments** 



#### 2022 Stats

4.4 Million utility customers 622,000

retail customers

**77,891** Miles of pipe

**157** Bcf storage capacity

4,600 employees



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Sacramento

Natural gas and the infrastructure that transports it are foundational to America's clean energy future.



### Natural Gas Plays a Foundational Role in the US Energy Ecosystem



- Nearly 187 million Americans use natural gas in their homes, and more than 5.5 million businesses rely on natural gas daily
- The U.S. has 2.6 million miles of pipeline infrastructure network
- ↗ 1,900 natural gas power stations deliver 40 percent of the total power production in the U.S.
- ↗ Natural gas is more affordable than other energy sources
- Over the last 15 years, natural gas is responsible for lowering greenhouse gas emissions – more than 40% in power generation sector

## **Natural Gas Energy Delivery**

#### NATURAL GAS INFRASTRUCTURE IS FOUNDATIONAL TO TRANSPORTING AND DELIVERING ENERGY COST-EFFECTIVELY, RELIABLY AND RESILIENTLY.

"Investing more in the domestic natural gas pipeline network could help the US reach net-zero emission goals more quickly and cheaply. Fortifying and upgrading the system could prepare the existing infrastructure to transport zero-carbon fuels as they become available and, in the meantime, reduce harmful methane leaks from natural gas."<sup>1</sup>



Even "slow months" for

natural gas delivery systems are nearly

electricity systems.



Monthly U.S. Energy Delivery (Quads/Month, Ratio)



Sources: DOE-EIA, GTI 1. "Investing in the US Natural Gas Pipeline System to Support Net-Zero Targets," Columbia SIPA Center on Global Energy Policy. <u>https://www.energypolicy.columbia.edu/research/report/investing-us-natural-gas-pipeline-system-support-net-zero-targets</u>

### Meeting the Demands of Today Natural Gas Underground Storage

#### COST-EFFECTIVE AND EFFICIENT RESOURCES TO MEET PEAK DEMAND RELIABLY

On consecutive polar vortex days in late January 2019, Nicor Gas withdrew from storage about 1.5 bcf/day followed by 1.6 bcf/day of gas (together equal to 912 million kWh)

- Would require 228,000 MW of battery energy storage plants costing nearly \$300 billion
- These plants would occupy a volume of two Willis (Sears) Towers and a weight of over 16 Willis Towers
- This does not consider operational feasibility this is simply an energy-to-energy comparison





## **Implementation of Sustainability Pathways**



UPSTREAM



DOWNSTREAM



#### **Next Generation Natural Gas**

- Industry engagement and coalitions
- ESG integrated into gas supply RFP process
- Next Generation Natural Gas supply for traditional natural gas
- GTI Veritas sponsorship
- Renewable gas

#### **Net Zero Operational Emissions**

- Pipeline modernization
- Advanced leak detection and repair
- Equipment mitigation efforts
- Damage prevention
- Fleet
- Renewable gas

#### **Empowering Our Customers and Communities**

- Energy efficiency
- Next generation natural gas technology
- Customer programs
- Natural gas vehicles
- Stewardship
- Renewable gas



### **GHG Emissions Across the Natural Gas Value Chain**



the of US total GHGs in 2020

## The Role of Renewable Gas

### Natural gas infrastructure is foundational to realizing a cleaner energy future

#### What is the Goal?

- Integrate a portfolio approach toward decarbonization, both in terms of the clean technologies we pursue and the value chain avenues we impact.
- Integrate renewable gas as part of the portfolio of solutions to deliver clean, safe, reliable, and affordable energy to customers.

#### What is the future of our infrastructure?

- Leveraging our existing infrastructure for new, lower carbon sources of gas (e.g. RNG, hydrogen, power to gas)
- Supporting economy-wide emission reductions, such as in the transportation and electric industries.
- Supporting efficient use of energy for our customers sustainability goals.









Wastewater Treatment Plants

Municiple Solid Waste

Wood and Agricultural Residues





## Natural gas utility solutions for customers in a net zero energy future



A portfolio approach to energy integrating renewable gas, energy efficiency, and next generation gas appliances

- Preserves affordability
- Accelerates GHG emissions reductions
- Preserves a resilient energy system
- Offers customer choice and value
- Supports energy diversity and security

## Any Questions





## **Upcoming Events**

#### Webinar:

Feb. 14thCustomer Communications Amid Rising Inflation & Increasing RatesGuest Speakers: Fayetteville PWC and Our Host Hometown Connections

#### **Conference:**

Feb. 27 AESP Annual Conference, New Orleans







Joel Gilbert jgilbert@apogee.net

Tim Echols timothyechols@gmail.com

Carl Garofalo cgarofal@southernco.com



