

Southern States Energy Board

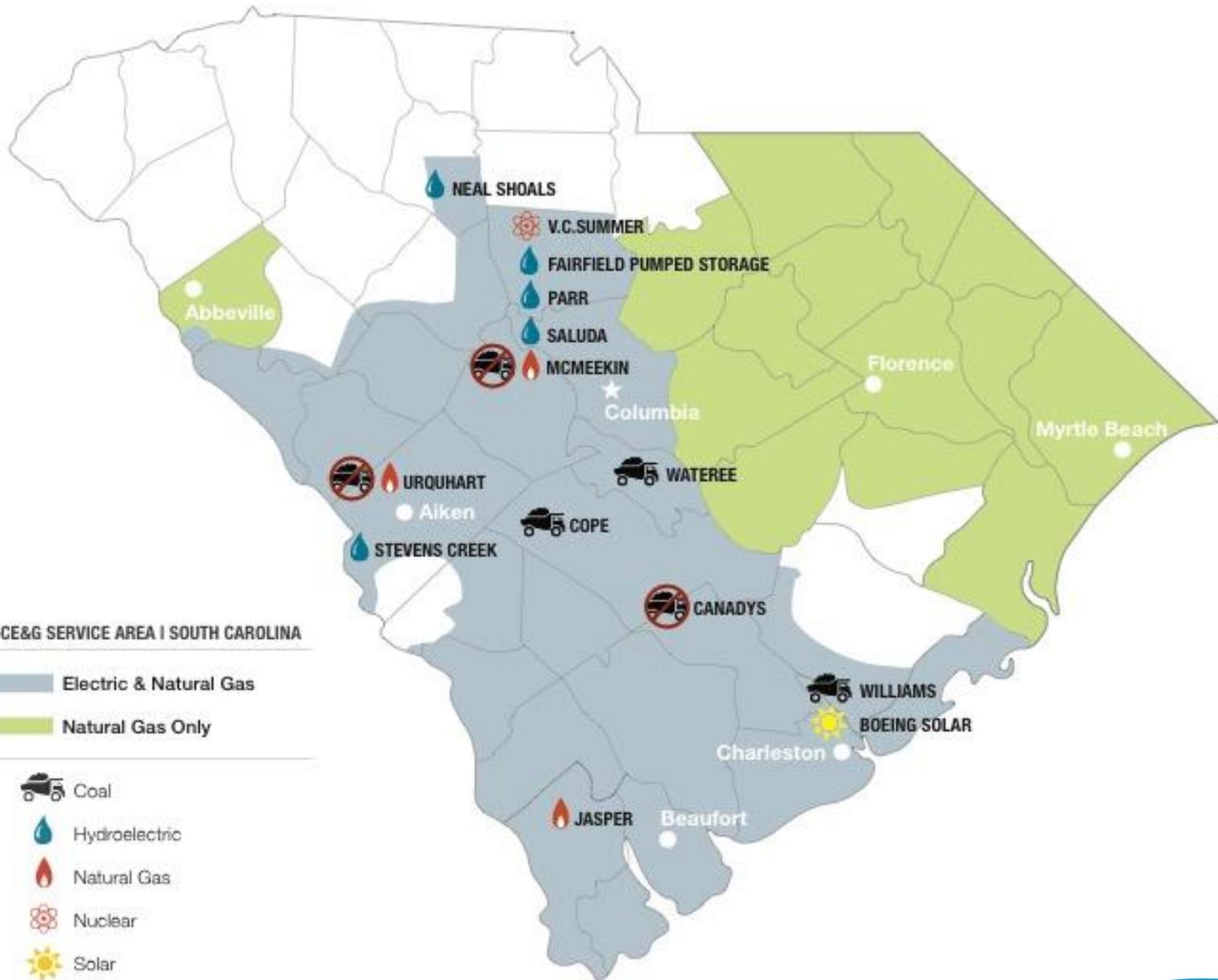
New Challenges Facing

U.S. Utilities

September 25, 2017

Challenges and Opportunities

- Diversity of Resources – Emerging Technologies – Solar/Storage
- Decarbonization – Still Coming?
- Regulatory – How to Keep Up with the Rapidly Changing World?
- Grid Reliability – Still the Foundation for any Business Model





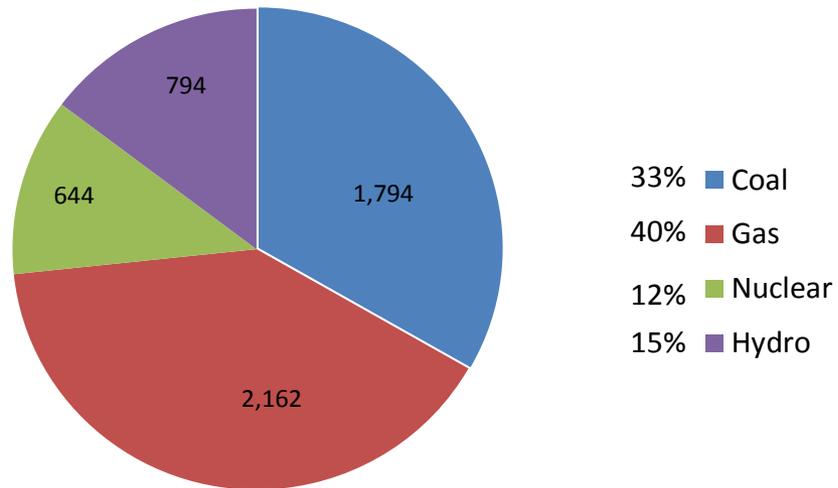
Unit 1

Unit 2

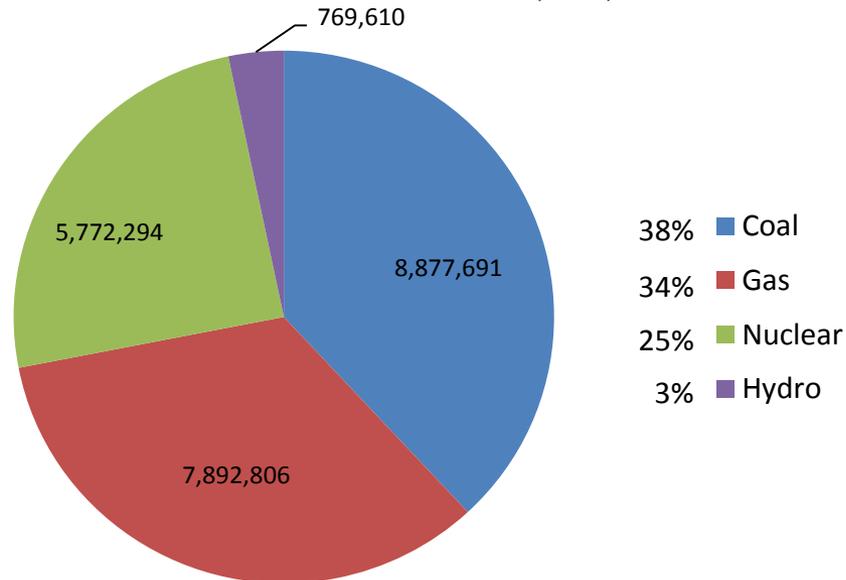
Unit 3

SCE&G GENERATION PORTFOLIO

2016 INSTALLED CAPACITY (MW)

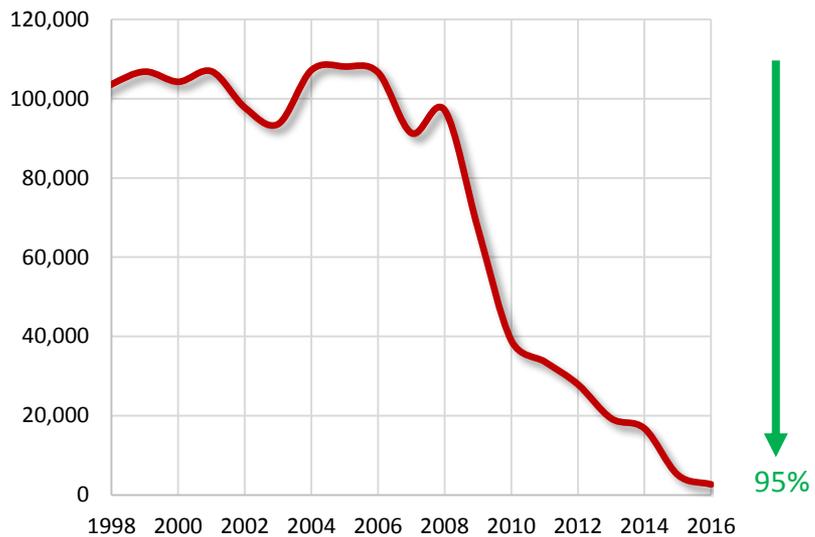


2016 NET GENERATION (MWH)

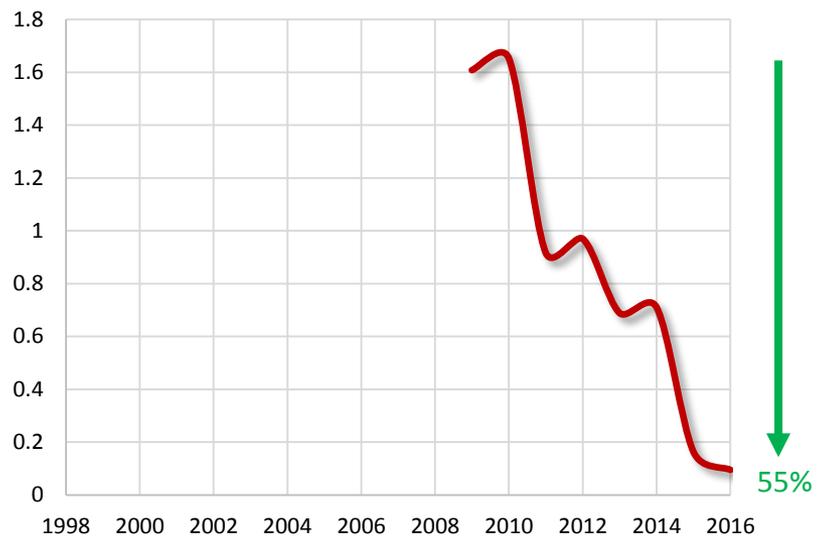


Air

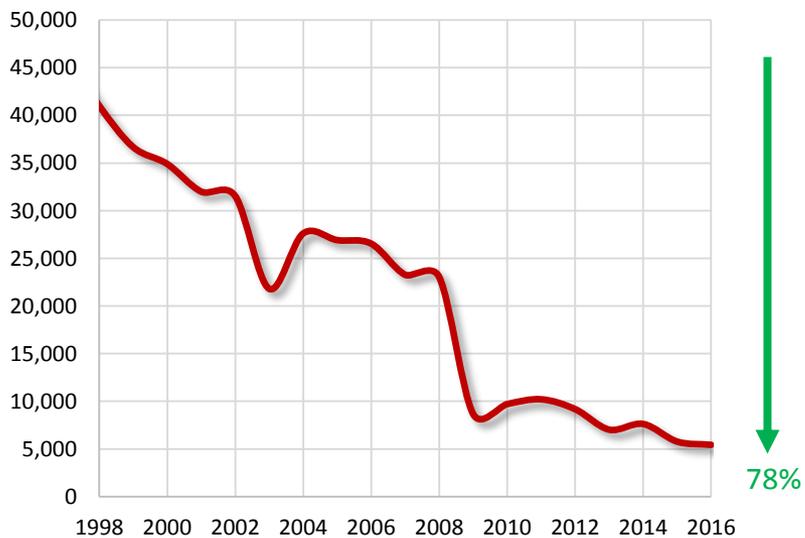
SO₂ Tons



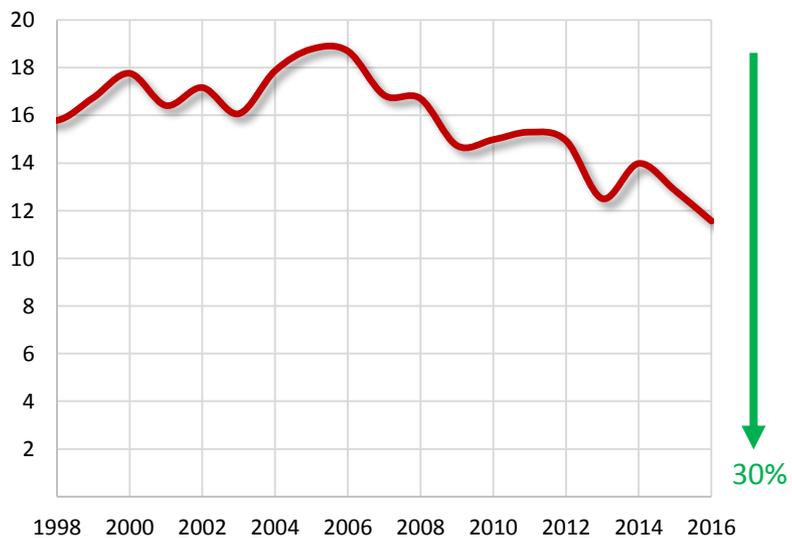
Hg Lbs



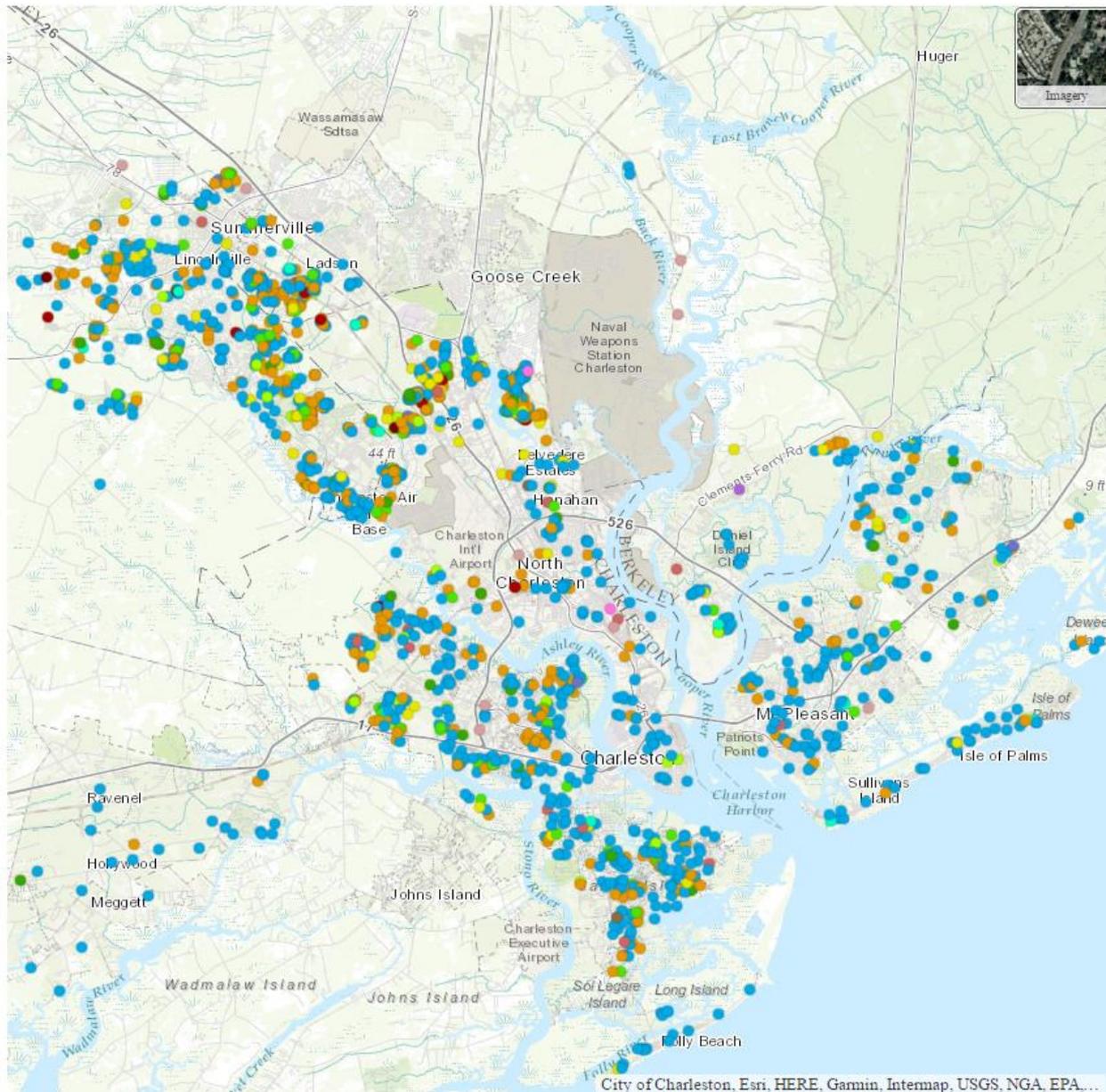
NO_x Tons



CO₂ Million Tons



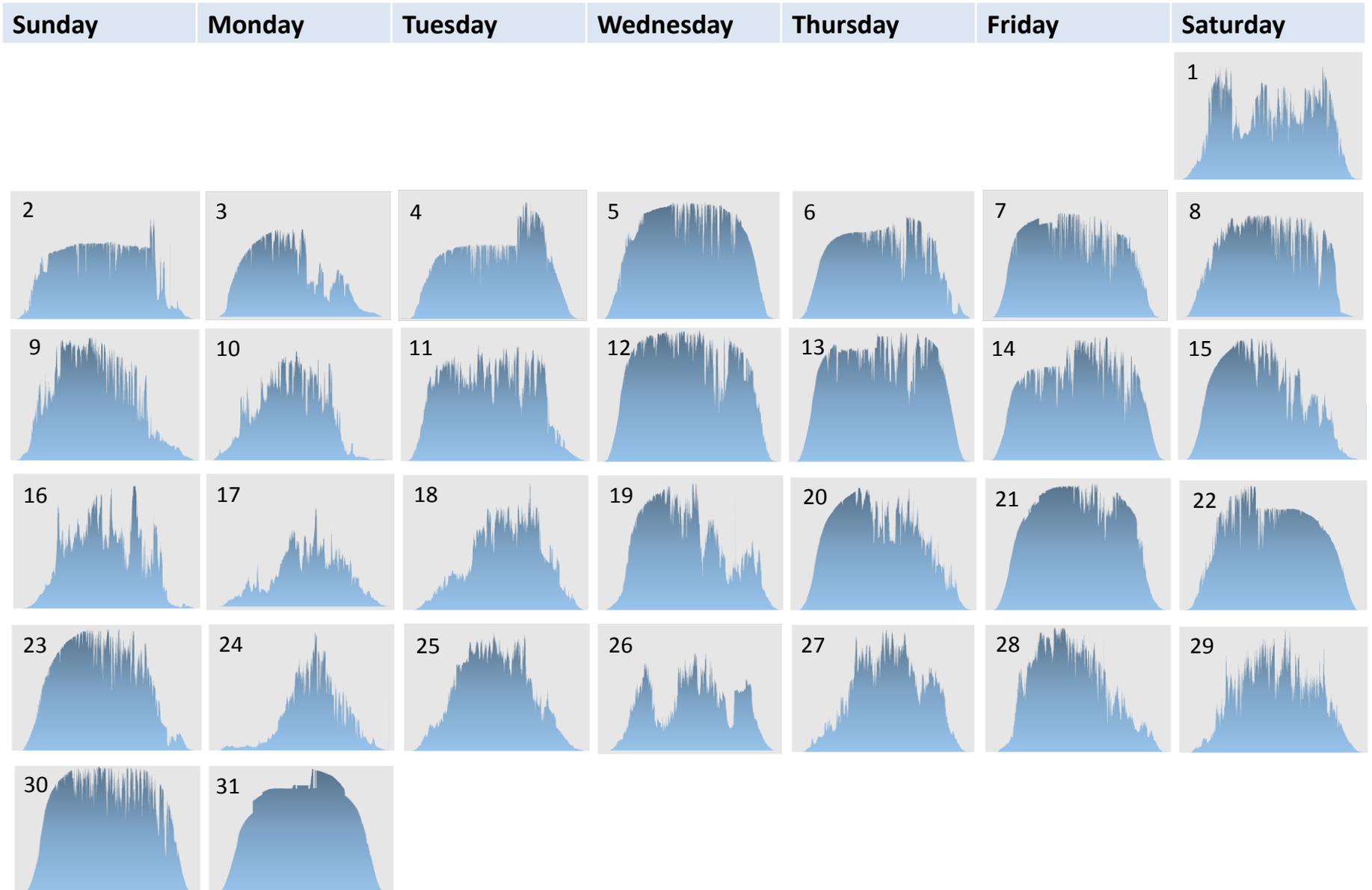
Charleston Distributed Generation



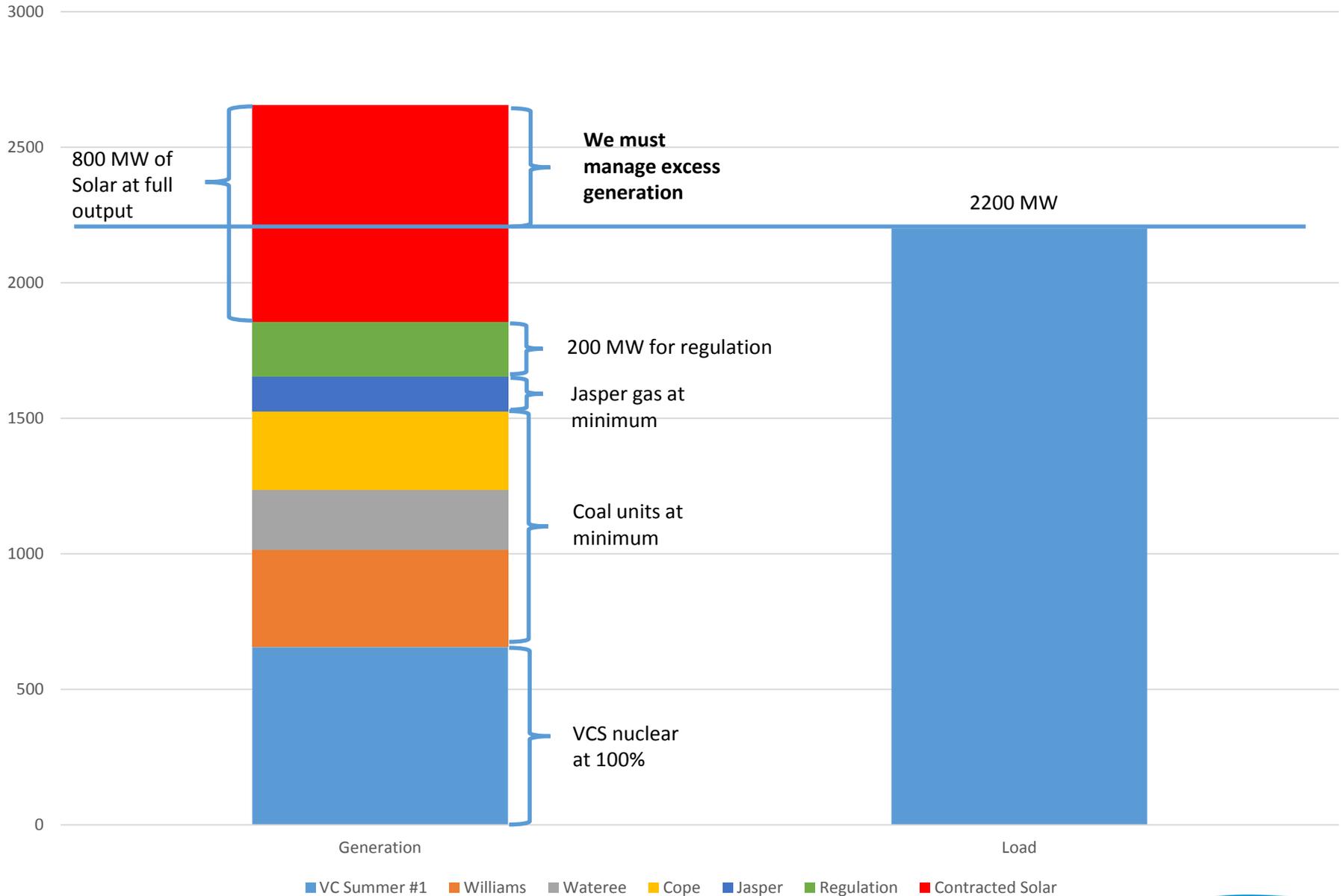
Consumer Marketing Challenges



SCE&G – July 2017 Utility Scale Solar Production



Example – Minimum Dispatch against Daytime Minimum Load



Variable Integration and Distributed Generation Challenges

- Central station load model now coupled with Intermittent distributed generation model.
- Summer PV profile fairly coincidental with peak. Shoulder/winter profile upside down.
- PV/Battery Synergies.
- Generator ramping and frequency regulation increases.
- Minimum loads cause heat rate deficiencies and increased environmental impacts.
- Plant O&M wear and tear increases.
- Rate design for self-generation has not evolved like the incredible pace of technology.