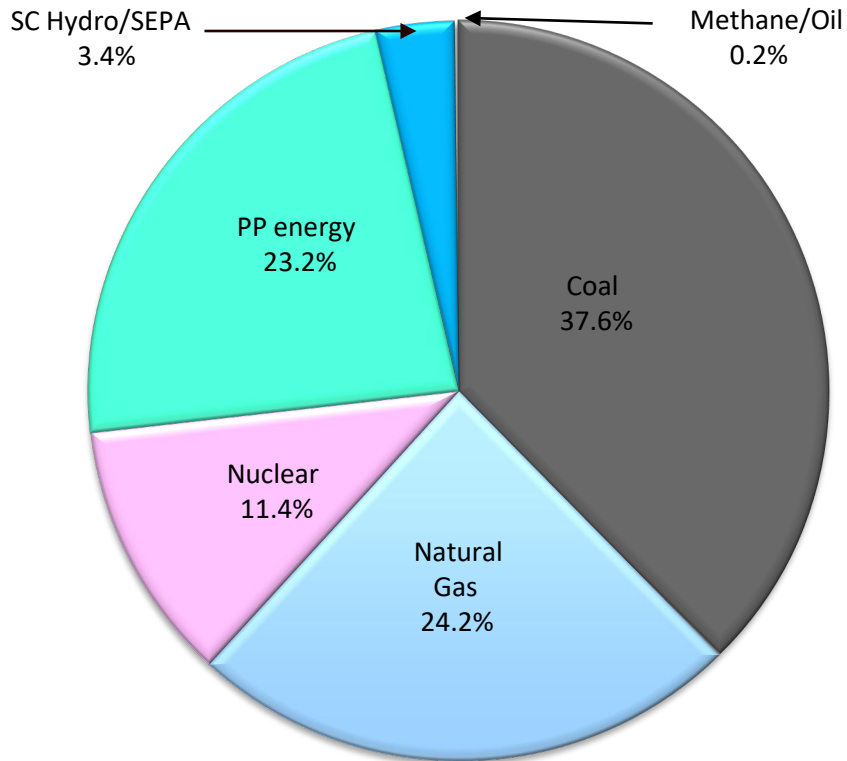


# Value of SEPA Hydropower to Santee Cooper and its Customers

- Santee Cooper supply's electricity to:
  - 2 million people in all 46 counties
  - 20 electric coops and to the cities of Bamberg and Georgetown
  - 27 large industrial customers
  - AMEA, PMPA, Seneca and Waynesville
- Santee Cooper provides wholesale water through the Santee Cooper Regional Water System and Lake Marion Regional Water System
- Santee Cooper is governed by a 12-member Board of Directors appointed by the Governor of SC

## 2020 Actual Resource Mix



- Purchase power agreement to purchase hydroelectric energy and capacity from the Southeastern Power Administration (SEPA)
- Santee Cooper purchases energy and capacity from the Russell and Thurmond projects
  - Santee Cooper customers have PPA's with SEPA and purchases output for the Hartwell, Russell, Thurmond and Cumberland Projects
    - Piedmont Municipal Power Agency
    - Central Electric Power
    - City of Seneca
    - City of Bamberg
    - City of Georgetown
    - Town of Waynesville
- Santee Cooper act as Agent for our customers SEPA allocation

# Lake Hartwell Project



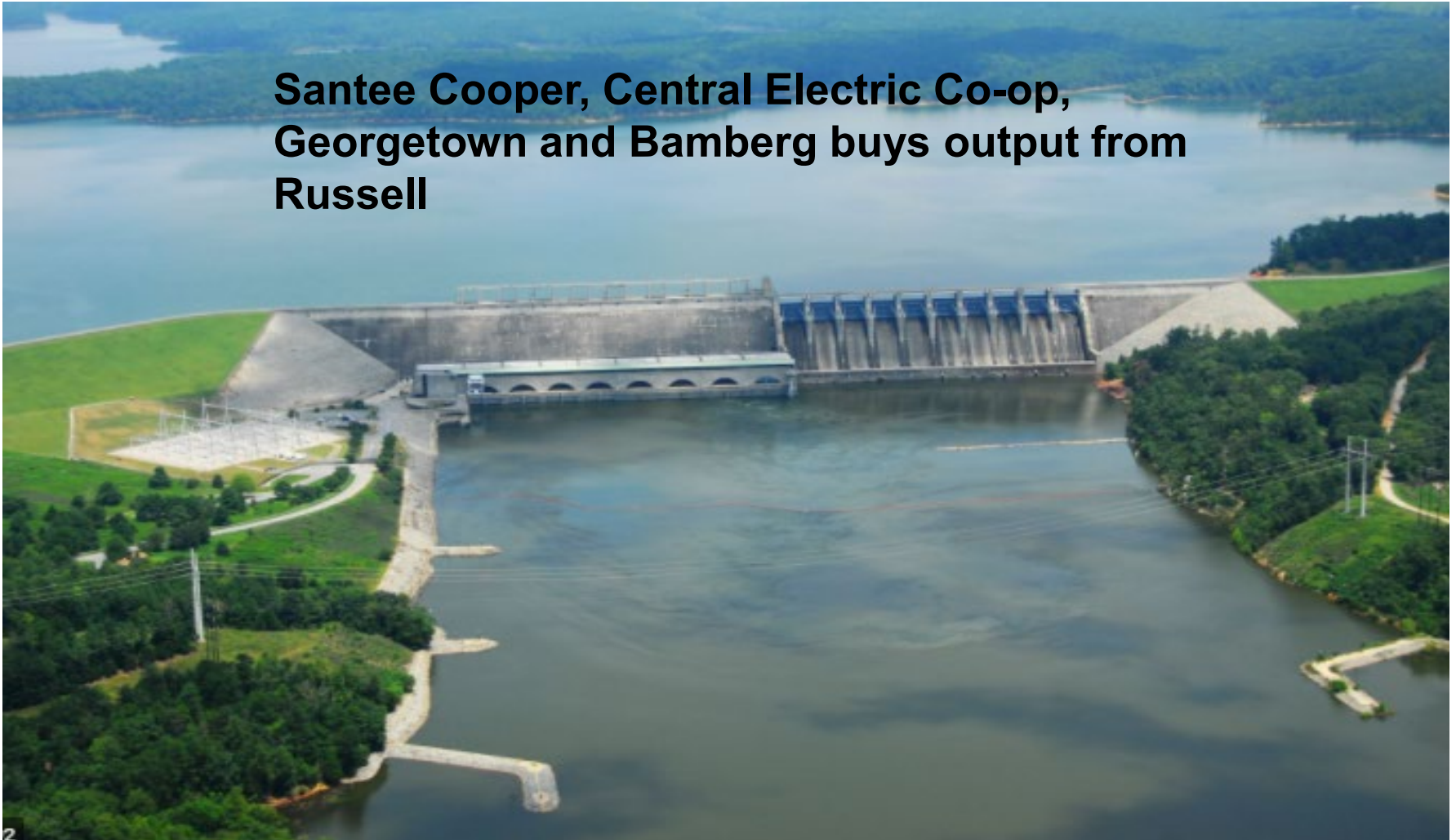
**PMPA and Seneca buys output from  
Lake Hartwell Hydro plant**



# Richard B. Russell Project



**Santee Cooper, Central Electric Co-op,  
Georgetown and Bamberg buys output from  
Russell**

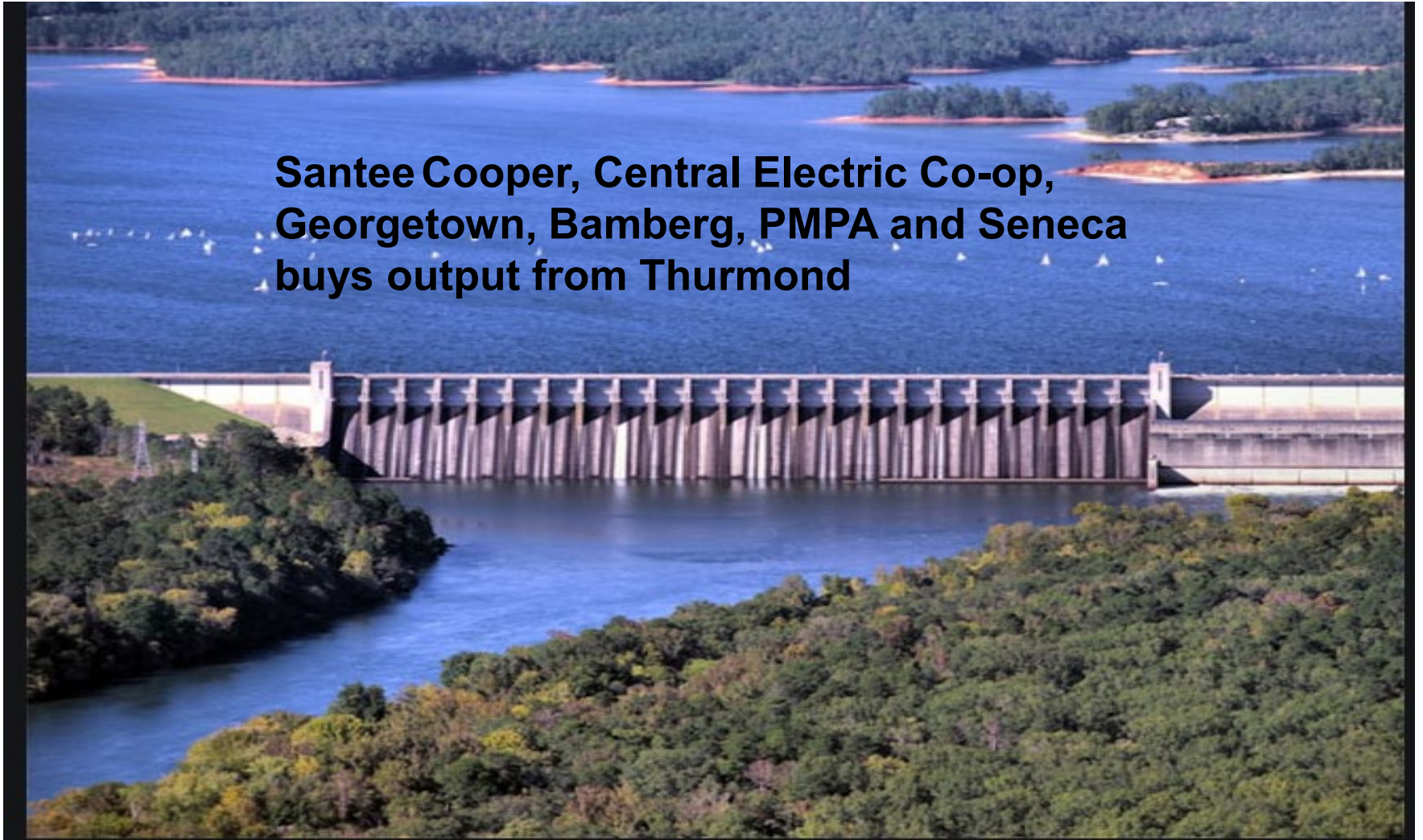




# J. Strom Thurmond Project



**Santee Cooper, Central Electric Co-op,  
Georgetown, Bamberg, PMPA and Seneca  
buys output from Thurmond**



# Cumberland Project (Center Hill)



**Waynesville purchases output from the  
Cumberland Project**





## SEPA scheduling

- SEPA week runs Saturday – Friday
  - Waynesville – Yearly allotment
- Santee Cooper uses a dispatch model as a guide to schedule SEPA economically
  - SEPA is typically schedule across the peak hours for the week
- SEPA is very accommodating for schedule changes during the week.
- SEPA does allow for storage

# SEPA Billing Determinates



- Energy - \$12.33/MWh
- Demand - \$4.09/KW
- Ancillary Service – \$0.12/KW
- Pumping – rate and volume varies
- Replacement Power Cost – market
- Capacity Factor: less than 5%
- All in rate paid over last 14 years: \$65.30/MWh

**WHY SEPA ???**

# Benefits of SEPA

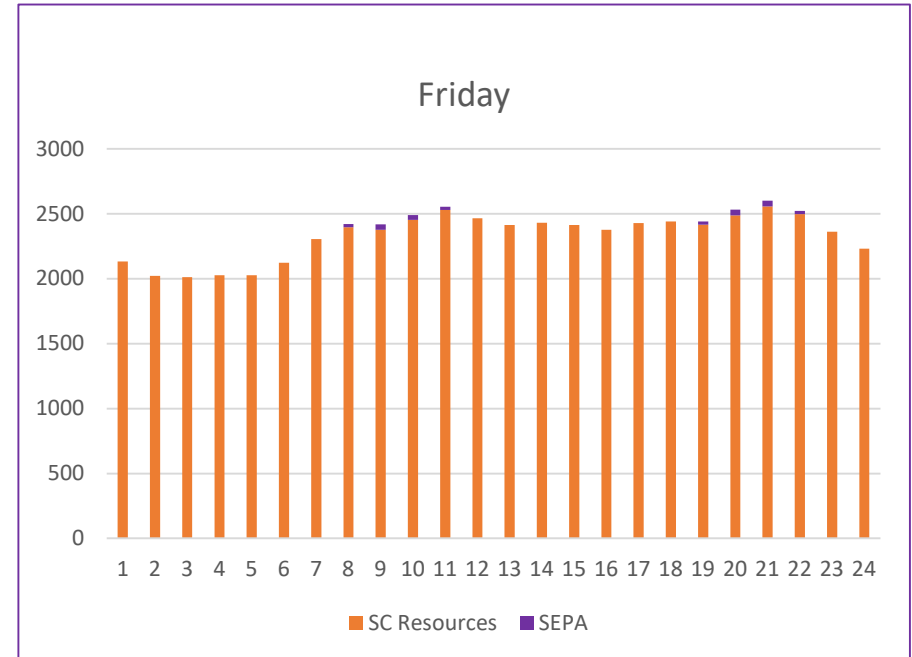
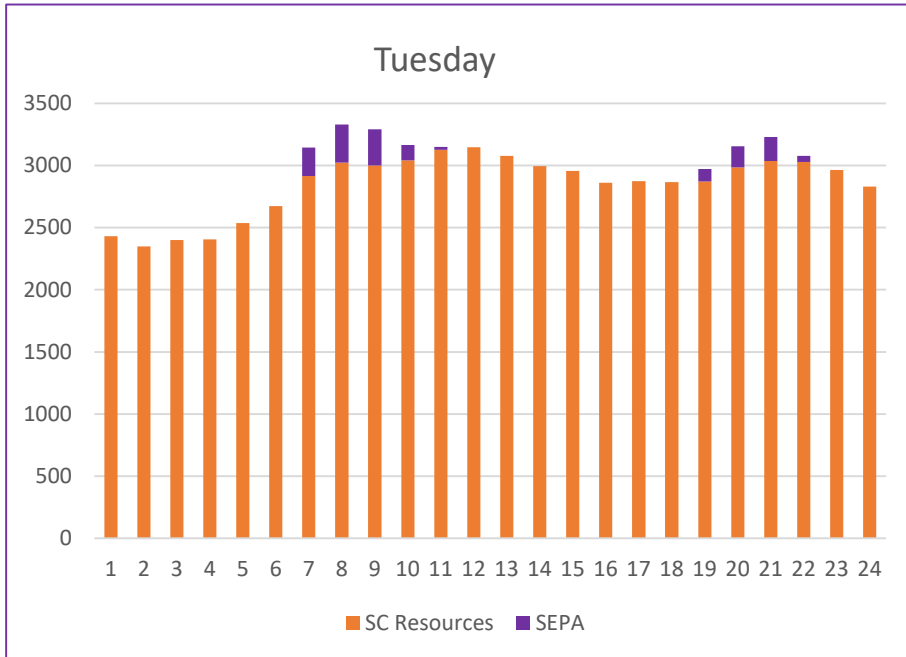


- Santee Cooper customers get full credit for SEPA capacity and energy
- Santee Cooper and customers benefit from SEPA allotments because:
  - Avoids running peaking units across peak hours
  - Avoids purchase power across peak hours
  - Avoids starting large generators for short runs
  - Reductions in O&M expenses
  - Flexibility of scheduling

# Advantages of Flexible Scheduling



## Week in Spring



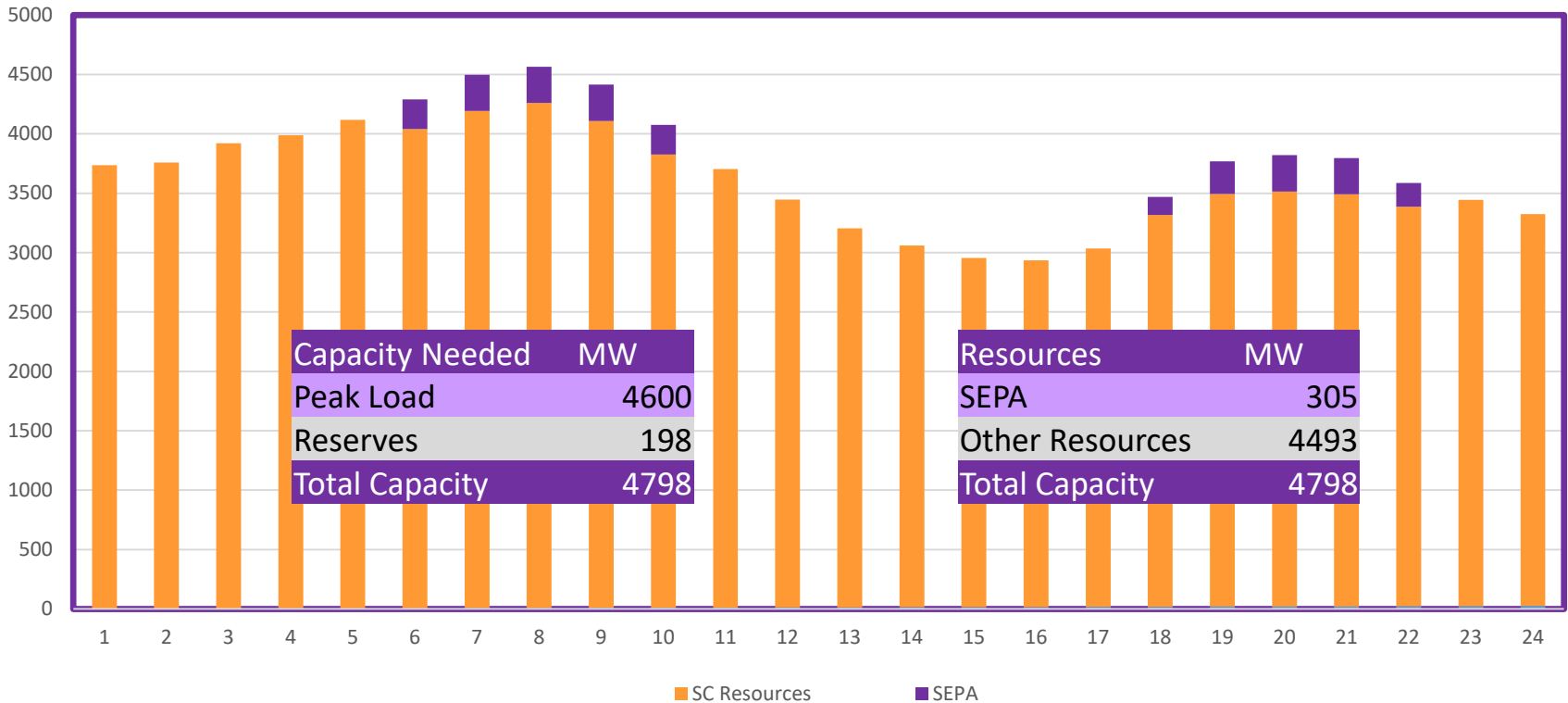
	Avoided Cost \$/MWh	MWh's	Savings/(Cost)
SC System	\$48.00	1,489	\$71,472
SEPA	\$37.21	1,489	\$55,406
Savings/(Cost)			\$16,066

	Avoided Cost \$/MWh	MWh's	Savings/(Cost)
SC System	25.00	265	\$6,625
SEPA	37.21	265	\$9,861
Savings/(Cost)			(\$3,236)

# Winter Load Shape / SEPA Scheduling



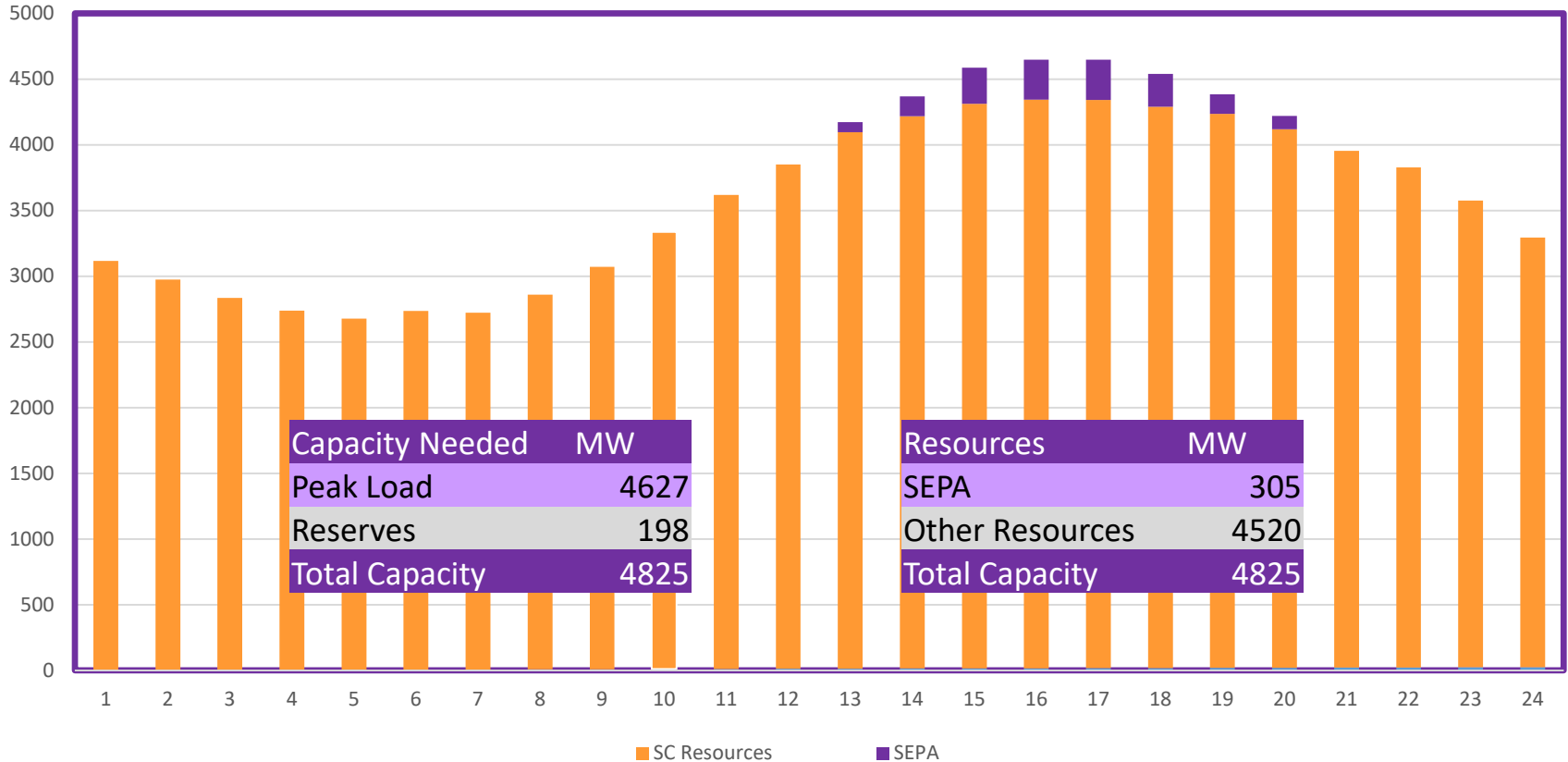
## Artic Blast 2021



Winter Peak	
SEPA Cost \$/MW	\$38.02
Market/Peaking unit \$/MW	\$111.23
Peaking MW's	2,650
Peak Hours Savings	\$194,007



# Summer Load Shape/SEPA Scheduling



Capacity Needed MW	
Peak Load	4627
Reserves	198
Total Capacity	4825

Resources MW	
SEPA	305
Other Resources	4520
Total Capacity	4825

Summer Peak	
SEPA Cost \$/MWh	\$42.14
Market/Peaking unit \$/MW	\$48.36
Peaking MW's	2,450
Peak Hours Savings	\$15,239

# Russell Schedule



SOUTH CAROLINA PUBLIC SERVICE AUTHORITY  
ENERGY SCHEDULE with SOUTHEASTERN POWER ADMINISTRATION

Plant: Richard B. Russell Project

Week of: **Saturday, 4/10/21** through **Friday, 4/16/21**

EPT	CPT	Saturday, 4/10/21	Sunday, 4/11/21	Monday, 4/12/21	Tuesday, 4/13/21	Wednesday, 4/14/21	Thursday, 4/15/21	Friday, 4/16/21	EPT
		Declaration	Declaration	Declaration	Declaration	Declaration	Declaration	Declaration	
2	1								2
3	2								3
4	3								4
5	4								5
6	5								6
7	6								7
8	7								8
9	8								9
10	9								10
11	10								11
12	11								12
13	12								13
14	13			100	100	100	100	87	14
15	14			150	150	150	150	150	15
16	15			175	175	175	175	175	16
17	16			225	225	225	225	225	17
18	17			250	250	250	250	250	18
19	18			225	225	225	225	225	19
20	19	75	75	175	175	175	175	175	20
21	20	150	150	150	150	150	150	150	21
22	21	75	75	75	75	75	75	75	22
23	22								23
24	23								24
1	24								1
		<b>300</b>	<b>300</b>	<b>1525</b>	<b>1525</b>	<b>1525</b>	<b>1525</b>	<b>1512</b>	

Total Declaration: **8,212** MWh

Total Schedule: **8,212** MWh

Scheduling Notes: 75 - 275MW per hour

Min MWh/hour: **75**

Max MWh/hour: **305**

Storage for the Week: **0** MWh

**Check: Balanced**

# The Gist:



- Santee Cooper and its customers realize economic and operational benefit from SEPA hydro energy
- SEPA Administration and staff are very accommodating and a pleasure to work with