



Docket No. E-100 Sub 190

Technical Conference

Jeffrey Bower on behalf of Avangrid Renewables

JUNE 17, 2024



Consulting business and practice areas



Clean energy | Focus on emerging clean energy markets, opportunities, risks, and specific business plan due diligence



Power markets | Customized analysis of power markets and support of clients' strategic policy and investment decisions



Power system planning | Grid expansion strategies, detailed interconnection and transmission planning studies



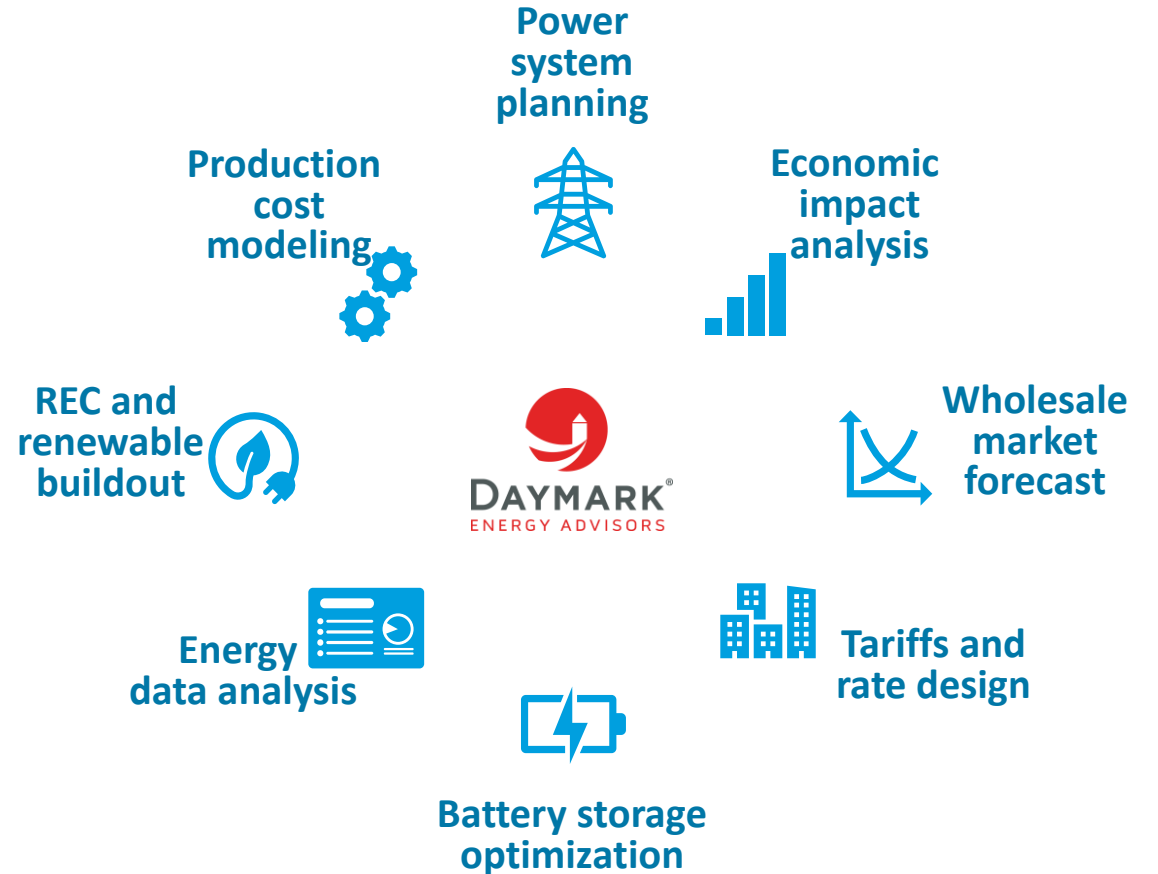
Procurements and portfolios | Power portfolios tailored to clients' needs, preferences, and visions for the future



Rates and pricing | Aligning policy objectives, regulatory frameworks, customer expectations, and utility business models



Regulatory economics | Analysis and advice on market design, regulations and capital planning



Key conclusions from Direct Testimony

- Offshore wind is critical to meeting Duke's planning needs
 - Large, non-emitting resource with high **reliability value in Duke's generation portfolio**
- Advancing offshore wind deployment will allow earlier compliance with emissions requirements and optionality in future CIPRPs
- Immediate offshore wind deployment provides valuable **risk mitigation benefits**:
 - Potential acceleration of load growth
 - Nuclear development uncertainty
 - Avoided underutilization of fossil resources in face of carbon emissions reductions
- Accelerated offshore wind deployment has **minimal rate impact**, provides important hedging benefit

Thank you

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DAYMARK ENERGY ADVISORS

Our team brings deep knowledge and an integrated view of energy infrastructure, regulation, and markets to help our clients succeed in the face of uncertainty and transformative change.

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APPENDIX: Testimony Figures & Tables (Public Only)

Figure 1 & Figure 2

Figure 1. Load Forecast Evolution, 2021 to 2023 Carolinas Combined DEC and DEP Non-Coincident Winter Peak at the Generator
(Duke Figure SPA 1-1)

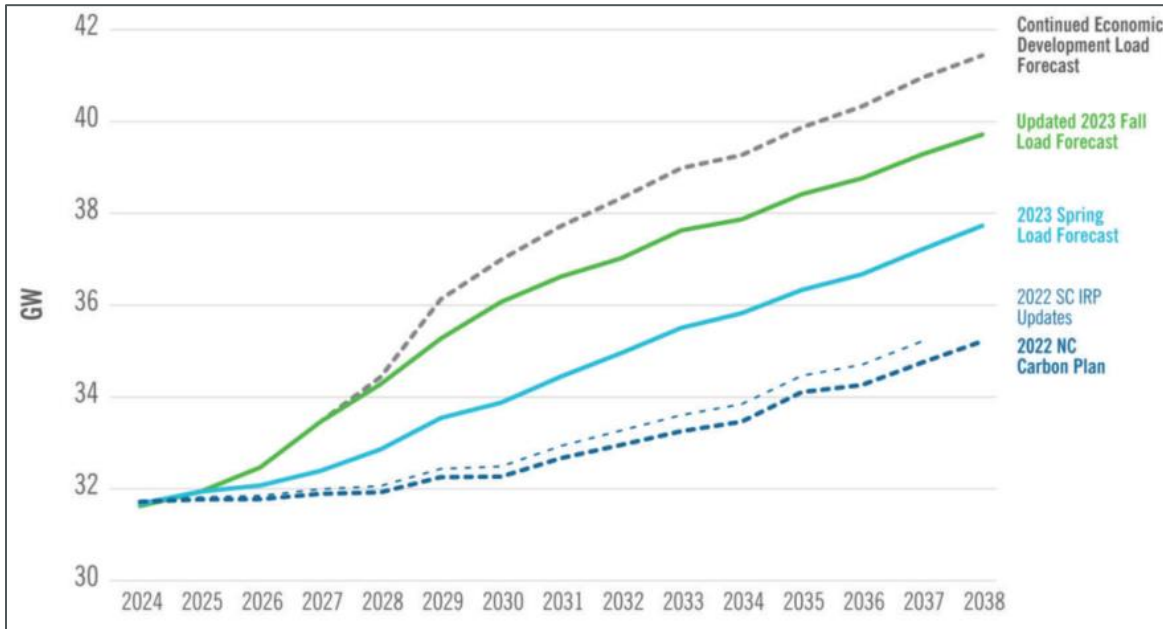


Figure 2. Supplemental Portfolio Analysis Results - Incremental Resource Additions by 2035 and 2038
(Duke Figure SPA 1-2)

By January 1	Grid Edge	Coal Retirements	Solar	Battery	CT	CC	Onshore Wind	Pumped Storage Hydro	Advanced Nuclear	Offshore Wind
2035										
P3 Base	EE at least 1% of eligible retail sales	-6.2 GW	11.9 GW	4.3 GW	2.1 GW	4.1 GW	2.1 GW	1.7 GW	0.6 GW	0 GW
P3 Fall Base	IVC growing to 96% DEC & 97% DEP circuits		12.6 GW	5.1 GW	2.1 GW	6.8 GW		1.8 GW		2.4 GW
Difference	Winter DR & CPP	0 GW	0.7 GW	0.8 GW	0 GW	2.7 GW	0 GW	0.2 GW	0 GW	2.4 GW
2038										
P3 Base	EE at least 1% of eligible retail sales	-8.4 GW	14.6 GW	6.0 GW	3.0 GW	4.1 GW		1.7 GW	2.4 GW	0 GW
P3 Fall Base	IVC growing to 96% DEC & 97% DEP circuits		17.5 GW	6.3 GW	2.1 GW	6.8 GW	2.3 GW	1.8 GW	2.1 GW	2.4 GW
Difference	Winter DR & CPP	0 GW	2.9 GW	0.3 GW	-0.9 GW	2.7 GW	0 GW	0.2 GW	-0.3 GW	2.4 GW

Table 1 & Figure 3

Table 1. Combined DEC/DEP Annual Resource Availability Assumptions (Duke Table SPA 2-11)

Technology	Initial Plan Assumption		Supplemental Planning Analysis Assumption	
	Annual	Cumulative	Annual	Cumulative
Solar (including SPS)	2028-2030: 1,350 MW 2031+: 1,575 MW	N/a	2028-2030: 1,350 MW 2031: 1,575 MW 2032+: 1,800 MW	N/a
Stand-alone Battery	2027+: 4,400 MW	N/a	2027: 200 MW 2028-2029: 500 MW 2030+: 1,000 MW	N/a
CT	2029+: 4,250 MW	N/a	2029+: 4,250 MW	N/a
CC	2029: 1,360 MW 2030+: 2,720 MW	4,080 MW (3 CC Units)	2029: 1,360 MW 2030+: 2,720 MW	8,160 MW (6 CC Units)
Onshore Wind	2031: 300 MW 2032+: 450 MW	2,250 MW	2031: 300 MW 2032+: 450 MW	2,250 MW
Pumped Storage	2034: 1680 MW	1,680 MW	2034: 1834 MW	1,834 MW
Offshore Wind	2032+: 800 MW	2,400 MW through 2038	2033+: 800 MW	2,400 MW through 2038
Advanced Nuclear	2035: 2 Units	15 Units through 2040	2035: 2 Units	11 Units through 2040

Figure 3. P3 Fall Base non-emitting capacity additions
Data Sources: SPA, p. 28, Table SPA 2-11 and Figure SPA 3-2

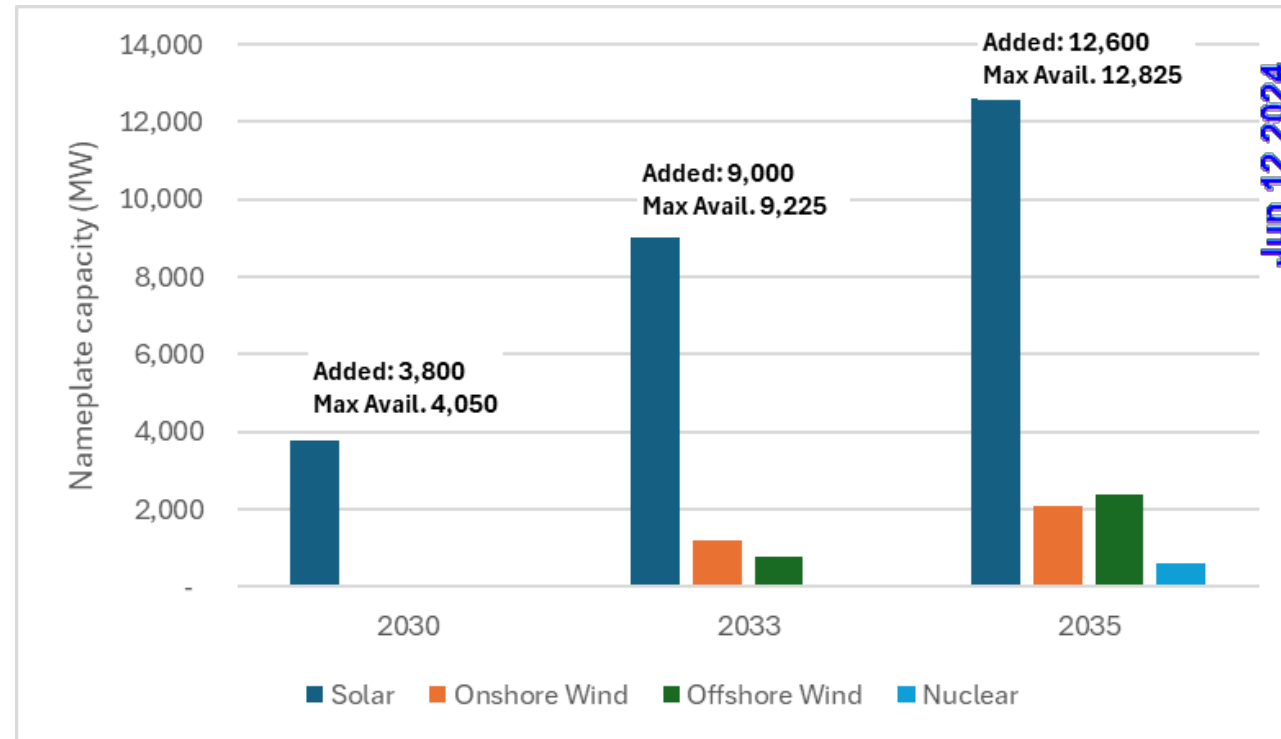


Figure 4 & Figure 5

Figure 4. Modeled Energy Mix, Combined Carolinas System (Duke Figure SPA 3-3)

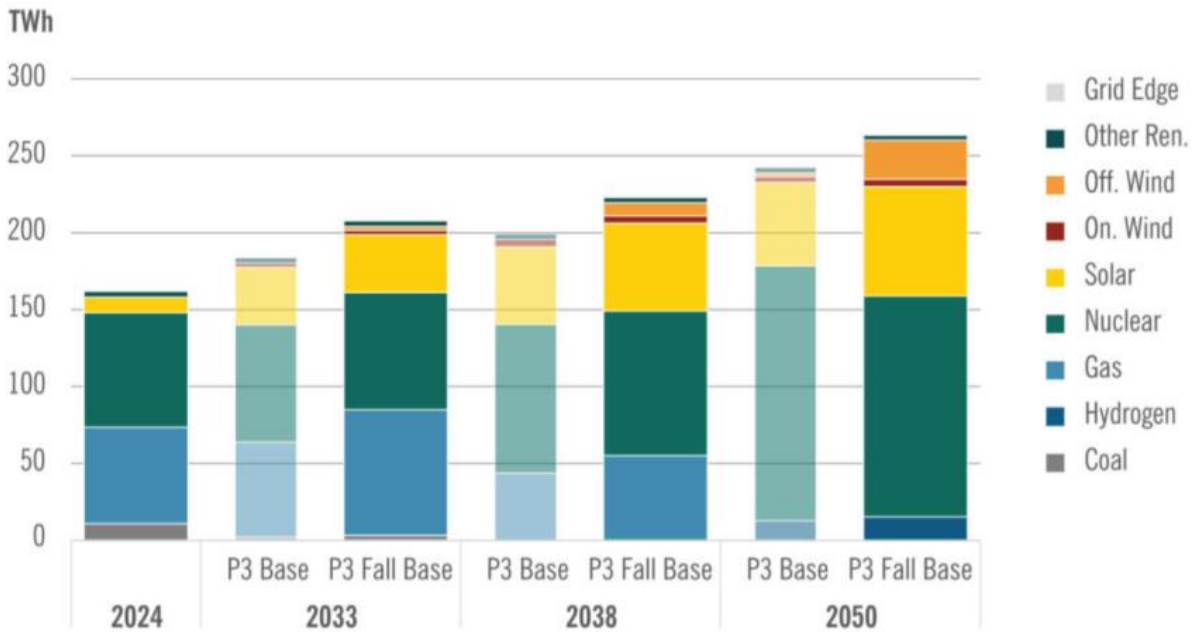


Figure 5. Marginal ELCC, Onshore and Offshore

Data Source: Duke Initial Filing, Attachment III: 2023 Wind Effective Load Carrying Capability (ELCC) Study, p. 4

