

**NORTH CAROLINA UTILITIES COMMISSION  
DOCKET NO. E-7, SUB 1297**

**APPLICATION FOR A  
CERTIFICATE OF PUBLIC  
CONVENIENCE AND NECESSITY**

**MARSHALL ENERGY COMPLEX  
SIMPLE-CYCLE GAS COMBUSTION TURBINE  
ADDITIONS PROJECT**

**Exhibit 3: Cost Information**



**3.1 CONSTRUCTION COST**

Duke Energy Carolinas, LLC’s (“DEC” or the “Company”) projected total project costs as spent dollars as of in-service in 2029 to construct two hydrogen capable, advanced-class combustion turbine (“CT”) generating units at the existing Marshall Steam Station (this Exhibit will refer to the CTs and their ancillary facilities as the “Proposed Facility”) are presented below in Table 3.1.

**Table 3.1: Proposed Facility Cost Summary**

[BEGIN CONFIDENTIAL]

Category	Cost
On-site bus connection to switchyard	
Definitive Interconnection System Impact Study network upgrades	
Generator Replacement Request upgrades	
Engineering, Procurement, and Construction	
Other owner costs including major equipment and contingency (but excluding AFUDC)	
Total project costs (excluding AFUDC)	
Winter output, MW	
Summer output, MW	750 MW
Project cost \$/kW (winter)	

[END CONFIDENTIAL]

**3.2 CASH FLOW**

The projected cash flow for the costs presented in Table 3.1 are presented below in Table 3.2.

**Table 3.2: Projected Cash Flow**

[BEGIN CONFIDENTIAL]

<b>Spend Year</b>	<b>Direct Cost</b>	<b>AFUDC</b>	<b>Total</b>
2024			
2025			
2026			
2027			
2028			
2029			
<b>Total</b>			

[END CONFIDENTIAL]

**3.3 COST ESTIMATING METHODOLOGY**

The Company’s cost estimate for constructing the Proposed Facility is based upon several sources of information, including: (1) a third-party quantity-based estimate; (2) firm bids that DEC received to supply major components; (3) transmission interconnection cost estimates; and (4) in-house historical data.

The Company engaged Burns & McDonnell to develop a quantity-based cost estimate for the Proposed Facility. Burns & McDonnell is a third-party engineering firm that provides DEC with engineering and technical documents necessary to support several aspects of DEC’s construction of new generating facilities including, but not limited to, site evaluation, specification development, and permit submittals. The Company developed and then provided Burns & McDonnell with a site-specific layout and general arrangement for the Proposed Facility. Burns & McDonnell utilized DEC’s site-specific layout and general arrangement documents in conjunction with its own historical project database to generate a quantity-based estimate for the cost of constructing the Proposed Facility, which it then delivered to DEC. Burns & McDonnell’s quantity-based estimate included civil, earthwork, structural, piping, electrical, and equipment components that aligned with the Proposed Facility’s scope of work.

In parallel with the above-described process involving Burns & McDonnell, DEC developed specifications for major components (transformers and combustion turbines) and received firm bids for the desired delivery dates.

The electrical transmission interconnection cost estimate is itself composed of three

separate components. First, it includes the estimate for the new collector yard and bus lines connecting the new generation to the on-site switchyard. Second, it includes the estimated costs for upgrades and interconnection facilities defined by the Generator Replacement Request Interconnection Agreement. Finally, it includes the results from the Phase I Definitive Interconnection System Impact Study (“DISIS”). Note that the DISIS Phase I study reported no potential impacts to neighboring affected systems and, therefore, DEC did not budget for costs associated with affected systems issues.

The Project Management and Construction Team (“PMC”) also maintains a database of various project quantities and estimates to inform new project estimates. PMC’s database includes information accumulated from actual EPC project bids and/or similar work that PMC has executed.

The Company utilized all of the above-described sources of information (i.e., Burns & McDonnell’s estimate, firm bids for major components, transmission interconnection estimates, and in-house historical data) to build a detailed cost estimate that includes the facility quantities and material costs and all other components of DEC’s construction costs. The Company’s costs include the development, permitting, any DEC-furnished components, EPC oversight, interconnecting facilities, contingencies, risk mitigation, and AFUDC.

### **3.4 OPERATING COSTS**

The Proposed Facility’s estimated annual operating costs by category are presented below in Table 3.4.

**Table 3.4: Annual Operating Costs**

[BEGIN CONFIDENTIAL]

Category	Anticipated In-Service Expenses for the 12-Months After Commencement of Commercial Operation	Annual \$/MWh for 12 Months After Commencement of Commercial Operations	5-Year Average Annual Cost
Fixed O&M			
Variable & Start O&M			
Gas Pipeline Firm Transportation			
Fuel			
<b>Total</b>			

[END CONFIDENTIAL]

The in-service expenses associated with the Proposed Facility reflect modeled costs projected for 2029. Variable operations and maintenance (“O&M”) and fuel costs are based on projections from planning models. Assumptions relative to costs and forecasts vary and are subject to change.

**3.5 UTILITY REVENUE REQUIREMENTS DURING CONSTRUCTION**

The Construction Work in Progress for the Proposed Facility will not be included in rate base but will instead accrue AFUDC. Therefore, there should be no impact on DEC’s revenue requirement during the construction period.

**3.6 CUSTOMER RATES**

DEC estimates the 2029 North Carolina retail revenue requirement to be \$104 million, which would result in an approximate average retail rate increase across all classes of 2.2%.