



COMPETITIVE PROCUREMENT OF RENEWABLE ENERGY INDEPENDENT ADMINISTRATOR'S REPORT

DUKE ENERGY CAROLINAS (DEC)

Competitive Procurement of Renewable Energy Program (CPRE)
Request for Proposal (RFP) – 600 MW

DUKE ENERGY PROGRESS (DEP)

Competitive Procurement of Renewable Energy Program (CPRE)
Request for Proposals (RFP) – 80 MW

CONCLUSION OF STEP 2 EVALUATION AND SELECTION OF PROPOSALS

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I. EXECUTIVE SUMMARY

On April 9, 2019, the Independent Administrator (“IA”) for the Competitive Procurement of Renewable Energy Program (“CPRE”) completed the evaluation of proposals for Tranche 1 for both Duke Energy Carolinas (“DEC”) and Duke Energy Progress (“DEP”). On this date the IA delivered to the Duke Evaluation team the winning proposals. This ends the Tranche 1 RFP, with the expectation that each successful third party Market Participant (“MP”) will promptly execute a Renewable Power Purchase Agreement (“PPA”).

Summaries of the Tranche 1 process, and of the final selections are in the following sections. Because PPAs have not been finalized, the identity of projects and the successful MPs are not disclosed at this time. Project information and the identity of the successful MPs will be included in the final Tranche 1 report that will be presented after the contracting period is concluded.¹

CPRE Tranche 1 was successful in establishing a competitive procurement process that will provide twenty years of renewable energy at pricing below Duke’s Avoided Cost. In DEC, the average price per proposal is 36.93 \$/MWh. In DEP, the average price per proposal is 31.24 \$/MWh. The total nominal savings were estimated versus avoided cost over the full 20-year term. DEC is estimated to have \$290.20 million in savings, and DEP to have \$84.69 million in savings. Also, Tranche 1 succeeded in further clarifying the need to address ways to permit “shovel ready” renewable projects to move to development without delay. A number of MPs declined to provide the required proposal security² when informed that their projects were ranked in the competitive tier at the end of Step 1, suggesting to the IA that a number of projects holding positions on the transmission queue are not ready to be developed.

A total of 249 MPs registered to participate in the program for either DEP or DEC, and 28 submitted at least one proposal. For DEC, 58 proposals were received³ for a total of 2682.72 MWs, and for DEP 19 proposals were received for a total of 1156.25 MWs. All of these proposals used solar photovoltaic (PV) technology; three included battery energy storage. After the IA completed the Step 1 evaluation, MPs for 20 of the proposals declined to provide the required proposal security, thereby effectively withdrawing from the CPRE Tranche 1. At the conclusion of Step 2, the IA determined that 12 proposals offered to DEC met the CPRE requirements and were recommended for PPAs. These proposals total 515 MWs. Two of those proposals included storage facilities. Notwithstanding a robust response from the market, the Tranche 1 procurement fell short of the goals of 600 MW by 14% (85 MW) for DEC. For DEP, the goal was to procure 80 MW. Three proposals qualified to be selected as winners, and the IA

¹ All contracting is to be completed within sixty (60) days of this announcement.

² Proposal security was required to avoid the potential of completing evaluations with the selection projects that were unwilling to commit to execute a PPA. The proposal security was released for all proposals that were not selected as winners. The IA believes this requirement was a success in that only committed MPs had proposals move to the Step 2 review.

³ As shown below, 58 proposals were initially submitted. The IA determined that one was erroneously submitted twice, and after confirming the MP’s intent, one submission was set aside, resulting in 57 proposals being included in the Step 1 analysis.

recommends entering into PPAs with two projects for a total of 87 MW. IA's recommendation for DEP exceeds the Tranche 1 goal by approximately 9%.

The IA estimates that the cost of transmission system upgrades for all of the selected proposals will be approximately \$5 million.

A significant number of proposals were withdrawn once identified as being on the competitive tier, thereby reducing the number of projects available for consideration in Step 2. The Step 2 evaluations identified system impact costs to be imputed to proposals resulting in some proposals being above Avoided Cost and therefore not eligible for selection.

Employing knowledge from our nation-wide practice, the IA estimates the investment in solar projects, excluding land costs, to be \$1 million - \$1.5 million /MW. Therefore, the IA estimates that the successful proposals, if they are completed, will result in capital investments of:

Estimated Capital Investment of Selected Projects

Solar Investment	DEC (515 MW)	DEP (87 MW)
\$1 million/MW	\$515 million	\$ 87 million
\$1.5 million/MW	\$772.5 million	\$130.5 million

The IA believes the Tranche 1 solicitation was fairly conducted, with all MPs having access to the same information at the same time, and the IA is unaware of any bias towards or against any Market Participant. Both Duke Energy Renewables, Inc ("DER") and the DEC/DEP Proposal Team submitted proposals, which were evaluated in the same manner as all other proposals.

II. SUMMARY OF SELECTED PROJECTS

Twelve proposals were selected as winners for DEC. As depicted here, the projects ranged from 7 MW to 80 MW for a total group of selected proposals totaling 515 MW. Two of those selected proposals included storage.

Three proposals were quantified as potential winners in DEP. The RFP established that up to 80 MW would be selected, with the possibility of exceeding that amount by up to 5%. The selection of all three finalist proposals would result in a total of 167 MW being selected, which was unacceptable. For this reason the IA recommends Duke accept two proposals in DEP for a total of 87 MW. The best ranked proposal was from a small project, which necessitated selecting the next best ranked proposal in order to get close to the Tranche 1 goal for DEP.

Figure 1
Summary of DEC Selected Proposals
(NOTE: MW sizes rounded)

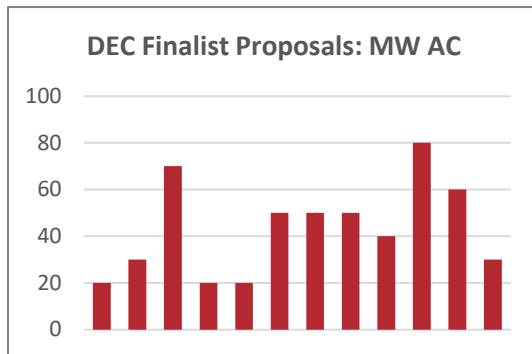
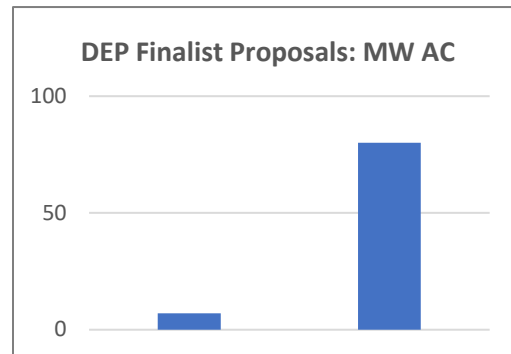


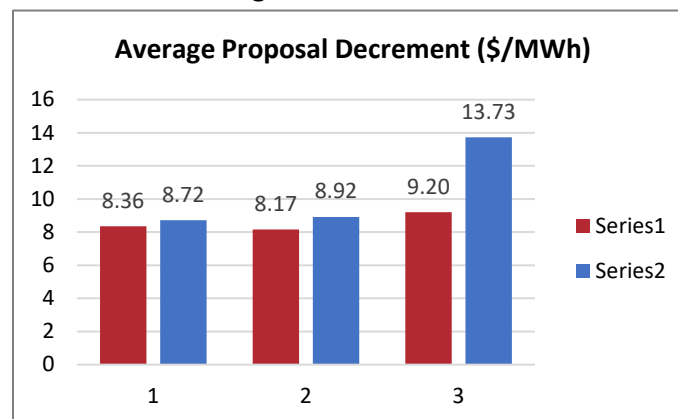
Figure 2
Summary of DEP Selected Proposals
(NOTE: MW sizes rounded)



III. SUMMARY OF EVALUATION PROGRESSION

The on-line proposal form required MPs to present pricing in the form of a price decrement to the respective DEC or DEP average Avoided Cost. The evaluation process determined which proposals would be below Avoided Cost, after assessing the cost of system upgrade costs, if any, to each project that would require transmission upgrades.⁴ While the MPs priced their proposals by setting a decrement to Avoided Cost in each proposal, the decrement was not determinative of which proposals would provide the most value. Figure 3 presents the difference between the averaging of all submissions, and the average decrement after proposals withdrew or were eliminated.

Figure 3
Average Decrement – DEC & DEP



⁴ MPs were required to include the cost of interconnection as part of their initial proposals. Transmission system upgrade costs for successful proposals are to be recovered through rates. The system upgrade costs of each proposal, if any, were imputed to the proposal to establish the full cost of each proposal.

The reduction in the Average Decrement from the original submissions to Step 1 ranking reflects the removal of one proposal each in DEC and DEP.

Figures 4 and 5 depict the progression from submission of proposals to the final selection for both DEC and DEP. In DEC, there were 58 proposals, with 57 remaining after the IA conducted the non-price evaluation of project and proposal viability. Proposals were evaluated and ranked by system benefit, first at the conclusion of Step 1. The Step 2 evaluation of system upgrade costs, and the imputing of those costs to associated proposals, and proposals were then re-ranked. This process further reduced the number of proposals in DEC to 33.

The progression of proposals for DEP followed the same process, going from 20 submitted proposals to three proposals to satisfy the 80 MW requirement for Tranche 1. The most competitive proposals below Avoided Cost, after the Step 2 determination of system upgrade costs were selected as winners.

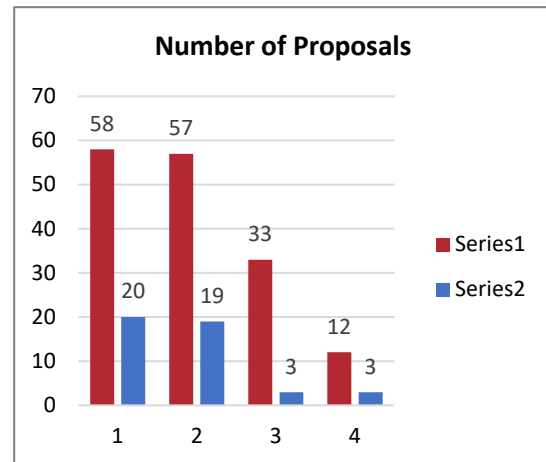
Figure 4
Evaluation Progression

	Submitted Proposals	Step 1 Ranking	Step 2 Ranking	Finalists
DEC	58	57	33	12
DEP	20	19	3	3

Figure 6
Average Net Benefit (\$/MWh)

	Step 1 Ranking	Finalists (With T&D Costs)
DEC Average Net Benefit:	5.79	6.29
Total DEC Bids:	57	12
DEP Average Net Benefit:	5.09	9.75
Total DEP Bids:	19	3

Figure 5
Evaluation Progression

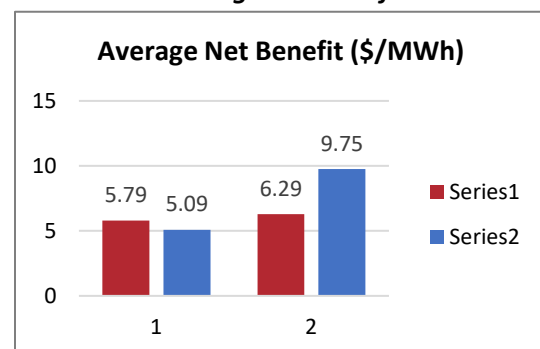


The IA evaluation team determined the net benefit (See: Section VIII below) of each proposal to establish the ranking of proposals to be reviewed for system impact as part of the Step 2 process. Figures 6 and 7 summarize the Step 1 net benefit of proposals.

The average net benefit for Finalists includes the system upgrade costs shown in Figure 7.

The evaluation process, including the withdrawal of proposals, reduced the capacity of the initial offerings to the finalist list. While the Step 1 ranking included a large field, the Step 2 process (and the withdrawal of proposals) significantly reduced the number of proposals ultimately available to be selected as winners.

Figure 7
Average Net Benefit



Tranche 1 included the opportunity for MPs to include storage in proposals. Proposals with storage were required to include production profiles for the project (8760 hours/year for the 20-year term), both with and without storage. The IA used these profiles to determine whether the MP reasonably projected the use of storage. The RFP required that the MP be responsible for dispatching the storage, and that it be recharged only from the associated renewable resource. Protocols in the PPA also included provisions that guide the MP in charging and discharging.

IV. SUMMARY OF LOCATIONS

The on-line proposal form required MPs to identify the location of their project and the proposed Point of Interconnection ("POI"). The IA confirmed project locations and corresponding Transmission Queue Application with the Duke Transmission Team. As expected, few projects located in transmission constrained locations were offered in Tranche 1. The geographic distribution of selected proposal sites is as follows:

Figure 8
GEOGRAPHIC DISTRIBUTION OF PROJECTS

	North Carolina	South Carolina
DEC	9	3
DEP	1	1

V. SUMMARY OF ELIMINATED BIDS - DEC

Throughout Tranche 1 proposals either withdrew or were eliminated during evaluation in Step 1 and Step 2. Figure 9 summarizes the reasons why proposals were eliminated.

Figure 9

DEC: Summary of Eliminated Bids Progression		
Reason for Disposition	Proposals	MW AC
MP Failed to Post Proposal Security	20	865
T&D System Upgrade Costs Resulted in Proposal Above Avoided Cost	15	794
Result of Step 1 Analysis – Proposal is Above Avoided Cost	3	127
MP Withdrew	3	191
Unique Disqualifying Reasons	5	233
Bids were more expensive to ratepayers than selected winners	N/A	N/A
Total:	46	2,210

VI. SUMMARY OF ELIMINATED BIDS – DEP

Consistent with the description of the evaluation process in the RFP, at the conclusion of Step 1 all remaining proposals in DEP were ranked by benefit to the Duke system. After eliminating a duplicate proposal, the 19 remaining proposals were available for Step 2 evaluation of transmission and distribution system cost impact. The proposals were reviewed in ranked order with the Step 2 cost determination continuing until the program goal for DEP (80 MW) was reached without exceeding Avoided Cost. At that point the Step 2 evaluation of the remaining proposals was halted because additional system analysis could not improve the ranking of other proposals, especially if the review identified costs to be imputed to proposals.

Three proposals were identified as eligible to be selected. The IA recommends accepting the two best-ranked proposals, which will result in exceeding the goal by 9%, and not accepting the third for that would far exceed the Tranche 1 goal for DEP. Figure 10 represents the DEP proposal eliminations.

Figure 10

DEP: Summary of Eliminated Bids Progression		
Reason for Disposition	Proposals	MW AC
MP Failed to Post Proposal Security	N/A	N/A
T&D System Upgrade Costs Resulted in Proposal Above Avoided Cost	3	148
Result of Step 1 Analysis – Proposal is Above Avoided Cost	N/A	N/A
MP Withdrew	N/A	N/A
Unique Disqualifying Reasons	1	75
Bids were more expensive to ratepayers than selected winners	13	842
Total:	17	1,065

VII. SUMMARY OF PARTICIPATION BY DEC/DEP PROPOSAL TEAM and DER

Both DER and the DEC/DEP Proposal Team presented proposals in Tranche 1. These proposals were evaluated in the same manner as all other proposals. Proposals from each are included among the successful proposals.

The DEC/DEP Proposal Team proffered proposals that were selected from projects offered for acquisition. The IA conducted an audit of the acquisition process employed by DEC/DEP Proposal Team and will include findings in the final Tranche 1 report.

VIII. SUMMARY OF PRICE SCORING PROCESS

Each proposal was evaluated on four measures: the bidder's pricing information (using 3 price tiers), the facility MW AC capability, facility storage parameters where storage was included, and the MP's

load shape information, as reflected in the 8760-production profile provided by the MP. The Evaluation Model utilized the bid input parameters to calculate each proposal's "Net Benefit" to the Duke Energy system on a twenty-year net present value of benefit per MWh. A proposal's net benefit can be described as the sum of facility's net energy benefit and the facility's capacity benefit, less the T&D costs borne by Duke Energy to accommodate the facility. That is:

$$\text{Net Benefit} = \text{Net Energy Benefit} + \text{Net Capacity Benefit} - \text{T\&D Cost}$$

After the Step 1 initial ranking of proposals, the Transmission & Distribution system facility costs were calculated outside of the IA's Evaluation Model for each specific proposal for which the Proposal Security was provided, other than Late Stage projects⁵. The calculated Transmission & Distribution facility costs for a project were assigned to reflect the cost of adding the project to the Duke system. The evaluation model was then re-run to produce the final ranking of proposals at the end of the Step 2 evaluation.

The "Net Energy Benefit" was calculated as energy savings to Duke Energy resulting from the operation of the proposed facility. The energy savings for a facility can be described as difference between the Duke Energy marginal energy cost and the proposed facility's energy cost (as established in the submitted pricing). This analysis was run on an 8760 hour per year basis for twenty years.

The facility's Net Capacity Benefit is the cost savings to the Duke system from Duke deferring the addition of future generating capacity, if the facility were on-line. Similar to the calculation of Net Energy Benefit, this analysis was run on an 8760 hour per year basis for twenty years. The facility's resulting capacity benefit was estimated using the Duke system (DEC or DEP) avoided cost.

The Evaluation Model processed 20 years of data as submitted by the bidder; each of these years was processed individually. Since the bidder was required to submit pricing that conformed to 3 price tiers (Summer peak, Non-Summer peak, and off-peak), the evaluation model accounted for hourly details, such as weekend days, holidays, leap year impact, and Daylight Savings time shifts.

IX. SUMMARY OF IA DUE DILIGENCE

A. PROJECT SUFFICIENCY REVIEW

The IA Project Sufficiency Team ("PST") was responsible for performing a detailed technical evaluation of each project that was identified in proposals received in CPRE. The technical evaluation included a complete review of the project design and equipment specifications as well as a review of the experience of the MP's Project Team. This due diligence review was completed to confirm that any project the IA recommended for a PPA was technically capable of providing the service proposed.

In its initial examination, the PST reviewed each proposal and its associated uploaded documents to determine whether the response was "complete and conforming," that is, whether all of the required information met the RFP criteria. The PST found a number of deficiencies within or questions about the

⁵ Late Stage projects included system upgrade costs in the proposal price and, therefore, were not included in the Step 2 system impact studies.

project design and initiated the “cure” process to provide MPs the opportunity to clarify the information provided with the initial proposals. Ultimately, all of the submitted proposals were corrected and deemed conforming. No proposals were rejected in the initial review due to a failure to establish the viability of a project.

After the Step 1 scoring was completed, the PST proceeded through its evaluation in the ranked order established by the price scoring. All proposals were reviewed for the sufficiency of the project, with projects receiving a full technical review as they were identified for inclusion on the competitive tier. This approach permitted the best-ranked projects to proceed to the Step 2 review without delay, and those drawn from the reserve list were reviewed sequentially.

Scores were assigned to each proposal using the Scoring Sheet identified in the RFP to establish a record of the individual reviews.

B. LEGAL SUFFICIENCY: SITE CONTROL, PERMITTING, SITE DESCRIPTION

The IA’s legal team was responsible for assessing whether proposals had provided sufficient information to confirm the associated projects were capable of being constructed. In particular, based on prior experience the IA was committed to only recommending proposals to Duke that had secured site control of a tract that was fully described and where the developer had demonstrated knowledge of the permitting requirements to be met. A Site Control Acknowledgement Affidavit, the form of which was prepared by the IA, was to be submitted with each proposal, along with other documentation of site control. After bids were submitted, the legal team reviewed the following documents for completeness: Site Deed, Site Lease, Site Control Acknowledgement, Title Insurance Copy, Title Insurance, Title Insurance Report, Boundary Survey, Description of the Site, Easements, Environmental Studies, Facility Descriptions, Facility Permits, Other Permits, the Project Map, Project Map with Landmarks, and the Sitemap. After the curing process, all projects were included in the Step 1 price scoring evaluation.

C. FINANCIAL QUALIFICATIONS

The Financial Review conducted for Tranche 1 of the CPRE evaluated the credit-worthiness factors identified in the RFP (see Appendix F, item 6 – “Credit Worthiness”). The purpose of the financial review, as stated in the RFP, was to determine the “... financial assurances to meet schedule and milestones in PPA.” The credit worthiness factor (Item 6) was assigned five percent of the bid score, equal to 50 points of the total maximum score of 1000 points.

Bidders who withdrew from Tranche 1 by declining to post Proposal Security or for other reasons were not evaluated.

D. TRANSMISSION AND DISTRIBUTION

Prior to the receipt of proposals for Tranche 1, the IA established transmission and distribution system review protocols with a sub-team of the Duke Transmission Team (“T&D Sub-team”). The T&D Sub-team was led by senior personnel. Duke Account Managers were not included in the Step 2 evaluation process. When proposals were received, the on-line proposal form required the inclusion of the transmission queue number assigned to the project. Before any system impact evaluation was

conducted, the IA and the T&D Sub-team determined whether a proposed project had a valid interconnection queue number. One proposal was rejected as part of that review.

During the Step 1 evaluation period, the IA transmission team determined whether the proposed transmission path from the project to the Point of Interconnection (“POI”) had sufficient site control for each parcel to be traversed, and whether the MP had included a reasonable estimate of interconnection costs. One proposal was unable to confirm sufficient transmission path site control, which was identified for Duke Transmission by the IA.⁶ So-called Late Stage projects were identified as part of the proposal submission process, and those projects were excluded from the Step 2 system impact studies.

System impact was determined for proposals in ascending order of net benefit, as determined in Step 1. All projects that declined to post the proposal security were excluded from the Step 2 evaluation. It was apparent that the cost of adding some projects to the grid would make the all-in cost of those projects (that is, proposal cost plus the imputed system impact cost) far above Avoided Cost. The system impact of adding the successful proposals will be approximately \$5 million. The system improvements required to accommodate the proposals that were evaluated but not selected would cost approximately \$230 million.

X. CONCLUSION

Tranche 1 was successful in nearly reaching the targeted goal for DEC and meeting the goal for DEP. The unmet targeted capacity will be included in future tranches. Tranche 1 highlighted the challenges with transmission access when speculative projects in the transmission queue are treated as development-ready. As noted in the transmission review summary, \$230 million in upgrades would be required to accommodate the uneconomic projects submitted in Tranche 1, after considering all projects with transmission queue positions preceding the CPRE Tranche 1.

⁶ The proposal was determined to be otherwise sufficient and well ranked. The IA confirmed the MP would assume the risk of failing to secure a firm route to the POI, and execute a PPA if proffered, including the associated potential financial penalties.