

SUMMARY OF PROPOSAL REVIEW PROCESS
RFP FOR LOCAL AND REGIONAL RENEWABLE, LOW-CARBON, AND ZERO CARBON ENERGY AND CAPACITY RESOURCE OPTIONS TO SERVE THE CITY OF GLENDALE

I. Intro to Glendale RFP

Glendale Water & Power (GWP) is seeking to replace 234 MW of capacity that is set for retirement in April 2021. GWP requests proposals for cost-effective and flexible resources to replace this capacity. Additionally, GWP is seeking cost-effective sources of energy in the range of 200,000 – 600,000 MWh annually. Competitive proposals will demonstrate feasible and rapid deployment, reliability, cost effectiveness, and environmental performance. All projects are evaluated in the context of GWP's overall resource portfolio and will be incorporated into GWP's Integrated Resource Plan.

II. Process Summary

The evaluation process is:

Initial Screening

- Proposals screened for completeness and satisfaction of GWP minimum requirements.

Individual Proposal Scoring

- Proposed projects scored according to the Project Evaluation Criteria table.
- Proposal pool filtered to top 10 to 15 projects.

PowerSimm Production Cost Modeling Assessment

- Proposed projects evaluated in an "In/Out" analysis to identify net benefits for individuals bids.
- Proposed projects combined and tested to find optimal portfolio for GWP customers.

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III. Evaluation Process Details

A. Initial Screening

Submitted proposals will be screened for completeness and satisfaction of the criteria stipulated in the Request for Proposals from GWP. Proposals that fail to meet these criteria will be removed from the candidate pool. This includes submission of all required data and submittals, including but not limited to: demonstrated prior experience meeting the minimum criteria specified in the RFP, project funding plan, implementation schedule, data on dispatchable power/demand reduction, projected emissions, contribution to RPS, and estimated capital and operating costs.

B. Individual Proposal Scoring

Proposals that meet all the listed criteria will be filtered down to a finalist pool of 10 to 15 proposals based on a score calculated according to the Project Evaluation Criteria Scoring Table below. Each proposal will be evaluated according to these criteria by an evaluation panel of GWP and Ascend staff.

Project Evaluation Criteria Scoring Table

Criteria Component	Points
Project feasibility	Pass/No Pass
Proposer’s experience and expertise to complete the project	15
Environmental performance with respect to the impact on RPS, air quality, and other environmental attributes	20
Administrative burden and contract terms	10
Project’s ability to supply reliable energy and capacity	30
Cost effectiveness, which will include value attributed to system reliability and deferred or avoided system infrastructure costs	25

- Project Feasibility** – Projects must be at least 1.0 MW and be physically possible as proposed. Bidders whose proposals are rejected based on feasibility will be informed of the reason and given five business days to submit clarifying information to demonstrate that the project is feasible. The evaluation will review the information and make a determination.
- Proposer’s experience and expertise to complete the project** – GWP prefers working with firms that have a proven track record of successfully delivering a project of similar scope and magnitude. Proposers should describe in detail previous experience and include a reference name, title, and contact information for each highlighted project.
- Environmental performance with respect to the impact on RPS, air quality, and other environmental attributes** – Projects that meaningfully contribute to RPS compliance are preferred. GWP also prefers projects that can deliver or shift renewable energy or reductions in load to the net load peak (approximately 6 PM to 8 PM, May

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through October). Projects large enough to reasonably allow GWP to reduce the scope of the Grayson repower will receive credit for air quality improvement.

- **Administrative burden and contract terms** – GWP prefers projects that minimize administrative burden for GWP staff. Turnkey solutions that include full operations and maintenance services are scored higher in this category. Additionally, GWP will evaluate the proposed contract terms. GWP seeks contract terms that align with City policies and applicable legal requirements and will not necessitate a lengthy contract negotiation process.
- **Project’s ability to supply reliable energy and capacity** – GWP prefers projects that are dispatchable by GWP system operators and have a high degree of availability. The project’s projected contribution to GWP’s energy and capacity needs will be scored, with firm capacity contribution valued at 2x the value of bulk energy delivery.
- **Cost effectiveness, which will include value attributed to system reliability and deferred or avoided system infrastructure costs** – The evaluation team will run an initial cost-effectiveness screen, which will calculate a levelized cost in \$/kW-month for capacity and \$/MWh for the energy component. A final combined cost-effectiveness score will be calculated that weighs capacity value 2x the energy value. This combined score will then be used to assign 0 – 30 points.

The 10 to 15 proposals with the highest scores will continue to the next evaluation stage. GWP reserves the right to evaluate additional bids to achieve a diversity of resource options.

C. PowerSimm Production Cost Modeling Assessment

The evaluation team will perform an in-depth modeling analysis using Ascend’s simulation-based production cost model, PowerSimm. PowerSimm models GWP’s portfolio, including GWP’s load, generation resources, transmission limits, and market hubs in an hourly dispatch optimization model. Rather than using weather-normalized average profiles, Ascend simulates hundreds of future states, including realistic forecasts of weather, load, renewables, forced outages, and prices.

In the near term (the next 5 years), price simulations are driven by forward market data for gas, power, and emissions. In the long term (6 to 20 years) price simulations are driven by changes in market fundamentals, such as declining market heat rates, exacerbated duck curve, and increasing price volatility (a function of increased deployment of renewables in the broader California market).

The simulation approach allows for the evaluation of loss of load probability and assures that sufficient resources are available in a full range of weather and generation availability conditions. GWP plans to the industry standard 1 day in 10 years planning criteria, meaning that the standard will assure that GWP has sufficient GWP dispatchable resources so that demand exceeds supply on average only 24 hours during a 10-year period.

Value is defined as the Net Present Value (NPV) over 20 years of the portfolio of resources to meet GWP’s load projections. The components are levelized capital cost, fixed operations and

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maintenance costs, variable operations and maintenance cost, ancillary services cost, REC value, and market purchases and sales. GWP's model economically evaluates dispatch decisions relative to a market price benchmark at Palo Verde hub + \$3 or SP-15 + TAC charge (whichever is cheaper), subject to transmission constraints.

Behind-the-meter projects that positively demonstrate a deferral of distribution infrastructure, or conversely add costs for interconnections, will be incorporated into the overall NPV analysis.

The values of energy efficiency and demand response are derived from reductions in cost to serve load and reduction in need to serve peak capacity with supply resources.

1. Individual project "In/out" evaluation

Each of the short-listed projects will be modeled in PowerSimm. Ascend will run simulation and dispatch analysis to capture the production cost of the portfolio with the project against a baseline run without the project. The value assigned to the project is the difference in NPV with the project in the portfolio compared with the NPV of the portfolio without the project.

2. Portfolio Analysis

The results of the individual evaluations will be used to further shortlist and rank each bid. The evaluation team will construct candidate portfolios of resources to solve the capacity requirement at least cost and least risk to GWP's customers. Key points about this stage in the analysis are as follows:

- The evaluation team will run a base case scenario with the Grayson repowering, as currently specified in the EIR. This is the portfolio against which we compare the alternative portfolios.
- The evaluation team will construct a portfolio of the best clean energy resource options that will meet the reliability requirements discussed in the RFP. This may include a single proposal or may include two or more proposals combined into a diverse and reliable clean energy portfolio.
- The evaluation team will also evaluate the highest ranked clean energy options with a scaled down repowering, which may include different thermal technologies (e.g. ICEs, Recips, aero-derivatives) than the ones specified in the EIR for the proposed Grayson repowering project.

Portfolios will be iteratively reformulated using the top-performing assets from previous simulations until a final, optimized, overall portfolio for GWP is identified.

Based upon this analysis, the evaluation team will develop first, second, and third recommendations for resource portfolios that: meet all reliability criteria, minimize cost, maximize clean energy content, and minimize GHG and air pollutant emissions.