Applicant Name:

Project Name:

**Deliverable Intent:**

This document is intended for the applicant to identify project-specific metric targets at the beginning of the agreement. The performance targets should be a combination of scientific, engineering and techno-economic metrics that provide the most significant indicator of the research or technology’s potential success, such as those listed in Section I.C.’s Project Focus of the Solicitation Manual. The metrics should provide constructive targets for the performance of the technology or project and how the metric will be measured and evaluated, during the project and after the project is complete.

**Performance Metric Content:**

For each performance metric, the applicant should provide the following information:

* A short description of the *performance metric*.
* Performance Metrics:
  + Benchmark – Current industry standard or status (if applicable)
  + Current – Performance demonstrated to date (if applicable)
  + Low Target – Low goal for successful results
  + High Target – High goal for successful results
* The *target performance* that is the high expectation that can be achieved beyond the baseline. This is the ultimate goal for the specific project’s or technology’s metric to achieve by the end of the project.
* The *evaluation method* that will be used to assess or measure the metric or target. If not evaluated during final analysis a date of measure may be useful in this section.
* The *significance of the metric* or target to the research or technology’s success and beneficial impact. This should address how meeting or failing to meet the performance metric might impact the project or technology on a high level.

**Performance Metrics Table**

Metrics should address advancements of the technology being deployed that represent that the technology is being advanced relative to the expected goal; examples include water consumption, hydrogen purity, carbon intensity, production costs, and hydrogen leakage. Additionally, critical measurements can be included that justify results of the project; examples include electricity use (kilowatt hours), production capacity (metric tons per day), and water consumption for plant operations (kilograms of water per day).

| Performance Metric | Benchmark Performance | Current Performance | Low Target Performance | High Target Performance | Evaluation Method | Significance of Metric |
| --- | --- | --- | --- | --- | --- | --- |
| *Ex. 1) Example metric description.* | *5 units* | *4 unit* | *5 units* | *10 units* | *Example evaluation. Date.* | *Example significance statement.* |
| *Ex. 2) Direct water consumption* | *9 - 13.5 kg water per kg of hydrogen produced* | *20 kg water per kg of hydrogen produced* | *15 kg water per kg of hydrogen produced* | *18 kg water per kg of hydrogen produced* | *Tracking direct water consumed by the hydrogen production technology* | *California faces challenges with water scarcity.* |
| *Ex. 3) Carbon intensity* | *0 kg of carbon dioxide-equivalent per kg of hydrogen produced* | *1 kg of carbon dioxide-equivalent per kg of hydrogen produced* | *0 kg of carbon dioxide-equivalent per kg of hydrogen produced* | *0.45 kg of carbon dioxide-equivalent per kg of hydrogen produced* | *Internal tracking of completed and screened applications* | *Hydrogen produced with low carbon emissions can act as a replacement for fossil fuels.* |
| *Ex. 4) Technology readiness level (TRL)* | *TRL 8* | *8* | *9+* | *NA* | *Evaluate against defined steps of the DOE’s Technology Readiness Assessment Guide[[1]](#footnote-2)* | *Commercial readiness supports broader clean hydrogen adoption and deployment.* |
| *Ex. 5) Production costs by 2029* | *<$2/kg* | *$5/kg* | *$2/kg* | *<$2/kg* | *NREL's Hydrogen Analysis hydrogen production models* | *Cost-competitiveness ensures market adoption of clean hydrogen.* |
| <insert> | <insert> | <insert> | <insert> | <insert> | <insert> | <insert> |

1. Department of Energy. “Technology Readiness Assessment Guide.” Available at: https://www2.lbl.gov/DIR/assets/docs/TRL%20guide.pdf. [↑](#footnote-ref-2)