

**Electronics Scrap Recycling   
Advancement Prize (E-SCRAP)  
Phase 3: Demonstrate Narrative Template**

# Team Name: (Team Name)

# Four Question Written Narrative Instructions

Answer each of the following four questions:

1. **LCA/TEA Analysis Impact** – What is the impact of the innovation and how have the economic and environmental benefits been validated?
2. **Capacity Expansion** – What is the potential to scale the impacts of the innovation?
3. **Value Chain Integration** – How is the innovation optimized to connect with upstream and downstream partners?
4. **Post Prize Plan** – What is your plan to advance the innovation to deployment and achieve scale post-prize?

For convenience, these questions are provided in the headings of the tables on pages 2-9 along with suggested content (and corresponding judging statements) to help guide your responses. You decide where to focus your answers.

You should answer each of the following four questions listed below. The content bullets are only suggestions to guide your responses. You decide where to focus your answers. The individual answers to the four questions do not have a word limit; however, **the aggregate response to these four questions must not exceed 7,500 words,** not including captions, figures/graphs, and references. A word count must be included at the end of your submission. You may also include **up to eight supporting images, figures, or graphs**. The reviewers will score the questions based on the content you have provided. The narrative should be submitted as a PDF file.

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| **Topic and Percent of Score** | **Suggested Content to Include** | **What the Score Will Be Based On** |
| **Question 1:**  ***LCA/TEA Analysis Impact***  What is the impact of the innovation and how have the economic and environmental benefits been validated?  This section is 25% weight of your total score. | * Describe your innovation’s value proposition and how it will deliver critical materials capacity expansion with improved economic/environment impacts relative to the status quo. Explain how the development and maturity of the innovation has evolved over the course of the prize. * Show how you know this is a significant opportunity using evidence-based validation. Describe how the activities during the prize have informed your understanding of the significance of implementing the technology or process. * What specific quantitative metrics can be presented to illustrate the environmental and economic benefits of the innovation compared to the status quo? * How do the analysis results highlight the economic/environmental advantages or improvements offered by the innovation in comparison to the status quo? | * The competitor demonstrates the economic and environmental significance of the innovation using TEA, LCA, and/or other analysis results. * In collaboration with potential off-take partners and national laboratories, the competitor identifies key metrics to validate quality and performance of the process and or produced critical material. * In collaboration with a national laboratory, the competitor assesses and validates material quality, purity, price, performance, and the repeatability of their process and or produced materials and compare results to the status quo. * The competitor indicates the technoeconomic viability of the technology or process to recover one or more critical materials from e-scrap. * The competitor provides evidence-based life-cycle impacts and economic metrics and how they compare to the status quo-baseline. * The competitor illustrates the direct impact of the innovation on economic outcomes and environmental factors through well-defined metrics. * The competitor shares how LCA will assess social and community impacts of the technology or process integration. |

**Response to Question 1:**

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| **Topic and Percent of Score** | **Suggested Content to Include** | **What the Score Will Be Based On** |
| **Question 2:**  ***Capacity Expansion***  What is the potential to scale the impacts of the innovation?  This section is 25% weight of your total score. | * Describe advancements to the innovation that indicate the scalability of the technology or process. * Demonstrate the scalability and credibility of the critical materials production process where quality, purity, and repeatability of the critical material production process is comparable to current critical materials markets. * Describe how progress made during Phase 3 will inform the ability to scale and replicate critical materials recovery from e-scrap. * Indicate the flexibility of the process to handle variability in the feedstock. Explore how the process can adapt to multiple feedstocks. * Provide estimates of e-scrap feedstock availability and the potential critical materials yield and capacity. Where possible indicate the flexibility of your innovation to recover critical materials from a variety of feedstocks. * Indicate the value proposition of scalability on life cycle impacts and economic competitiveness. | * The competitor demonstrates the ability to produce critical materials from e-scrap with at least one feedstock that they have established is available and accessible. Multiple feedstocks are preferred. Materials produced should be assessed in collaboration with a national laboratory as stated in Question 1. * The competitor demonstrates the process to produce critical materials is credible; the critical materials produced by the competitor repeatably meets quality and purity benchmarks set by critical materials currently in the marketplace. * The competitor demonstrates how the process can adapt to variations in the feedstock to maintain productivity, material quality, and costs. * The competitor presents a detailed plan indicating how the progress achieved will be translated into scalable processes for critical materials recovery. * The competitor works with national laboratories to validate the repeatability of their process and reports on the current production capacity and production rate. * The competitor communicates the potential to reduce life cycle impacts and foster economic competitiveness through scaling. * The competitor describes the societal benefits of scaling and deploying the technology or process, emphasizing broader positive implications beyond business and industry. |

**Response to Question 2:**

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| **Topic and Percent of Score** | **Suggested Content to Include** | **What the Score Will Be Based On** |
| **Question 3:**  ***Value Chain Integration***  How is the innovation optimized to connect with upstream and downstream partners?  This section is 20% weight of your total score. | * What are the partnerships that will allow you to integrate your innovation into existing and new recycling value chains? * What value does your innovation offer to these potential partners within existing or new recycling value chains? How does it align with their objectives or enhance their operations? * Describe how progress made throughout the prize actively decreases project risks and adoption risks (value proposition, market acceptance, resource maturity, and license to operate). * How will you ensure continuous collaboration and alignment of goals with these partners for a long-term partnership? * What strategies are in place to optimize outputs to specifically meet the needs or requirements of downstream partners? * How will you incorporate feedback from both upstream and downstream partners to continuously improve or adapt? Do you have processes in place for gathering and implementing this feedback? | * The competitor demonstrates their ability to improve economic and environmental benefits of the innovation. This includes working with a partner organization to optimize inputs/feedstock or to optimize outputs to meet downstream partner needs/requirements. * The competitor illustrates how the innovation aligns the goals of partners, showcasing mutual benefits. * The competitor assesses and reports progress toward enhancing adoption readiness. The commercial adoption readiness tool can be used. * The competitor outlines measures to ensure continuous collaboration and engagement with partners. * The competitor has established clearly defined processes for gathering feedback from both upstream and downstream partners. * The competitor identifies and engages with customers who will offtake the produced critical materials. Special emphasis will be placed on purchasing agreements or commitments. |

**Response to Question 3:**

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| **Topic and Percent of Score** | **Suggested Content to Include** | **What the Score Will Be Based On** |
| **Question 4:**  ***Post Prize Plan***  What is your plan to advance the innovation to deployment and achieve scale post prize?  This section is 20% weight of your total score. | * Estimate the potential capacity/magnitude of critical materials production. Base your estimates on TEA, industry partnerships, and available feedstock. * Describe your plan to scale and replicate the recycling value chain post prize. * Indicate how economically competitive (costs) your critical materials outputs are compared to the status quo and how it changes with scaling. * Describe how you will continue advancing your innovation towards commercial adoption and full-scale deployment post-prize. What kind of support will you need to ensure your innovation can succeed post prize? How will you secure this support? * How has your understanding of and approach to community benefits evolved over the prize? * What is your actionable plan to expand the benefits of your technology or process on disadvantaged, underserved, and/or marginalized communities? | * The competitor utilizes data from TEA, LCA, and material and process assessments with nation laboratories, input from industry partnerships, and knowledge about available feedstock to design a plan for expanded production capacity. The plan is flexible and adaptable to changes in the market. * The competitor plans to explore the possibility of handling additional feedstocks and producing an expanded portfolio of critical materials. * Appropriate metrics to measure progress have been identified. * The approach to implement the innovation to full-scale deployment and commercial adoption beyond the prize is well-reasoned and feasible (may include business plan, Go-to-Market plan, market analysis, customer acquisition and/or partnership plans). * The competitor demonstrates deepening insight into the impact of the proposed supply chain on communities. * The post prize plan to expand on community benefits is actionable and likely to succeed. |

**Response to Question 4:**

## Four question narrative word count: \_\_\_\_\_\_\_ total words

**Please read and comply with submission requirements in the** [**Official Rules**](https://www.herox.com/ESCRAP-Prize/resource/1667)**.**

**COMPETITORS THAT DO NOT COMPLY WITH THESE REQUIREMENTS MAY BE DISQUALIFIED.**