**HPC4EI Program collects submissions using an electronic proposal application managed by Idaho National Laboratory. To access the application portal visit** **<https://proposalshpc4.inl.gov/>. Applicants are required to create a user account, complete the electronic application form, and upload concept paper as a PDF file.**

**Some content requested in the electronic proposal application and in the uploaded PDF concept paper template, may be a duplication. Ensure the uploaded information is consistent with your electronic application form.**

**If you need assistance, contact Michelle Herawi at (925) 423-4964 or**

[**hpc4ei-submissions@llnl.gov**](mailto:hpc4ei-submissions@llnl.gov)**.**

|  |
| --- |
| Use the following template as an outline to develop your concept paper.  Formatting: Single spaced pages using 12-point Times New Roman font, and 1” margins. Upload to electronic proposal application as a PDF file.  **Shaded instructional boxes are for reference only. Delete shaded boxes from your submission. To delete, select table by placing cursor over the top left corner of the box and press delete.** |

Tracking ID Number:

Project Title:

Company Name:

Unless explicitly stated, all the following sections are included in the two-page limit for this concept paper submission. The limit is (2) single spaced pages using 12-point Times New Roman font, and 1” margins. All figures, pictures, graphs, tables, and other illustrations are considered part of this two-page limit. A concept paper that does not meet guidelines may be rejected for review.

# Abstract (150 words or less)

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| Non-proprietary, publishable summary of the problem being addressed, why the problem is important to the energy future of the US, plan to address the problem, and what impact the solution will have. |

# Background

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| --- |
| Explain the technical challenge to be addressed, the state of the art in this area and how this work advances the state-of-the-art, how solving this problem will meet the goals of the HPC4EI Program as defined by the list of topics of interest, the relevant expertise of the industry partners, what national lab expertise is needed, and why national laboratory HPC resources are required and how they will be used. |

# Project Plan and Objectives

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| --- |
| Describe the technical scope of work to be performed and how this project fits into an overall solution strategy for the challenges being addressed. Describe how the results of the project will be validated, including availability of data. If possible, identify simulation codes to be used in this effort. Summarize how your project plan will address the key proposal review criteria listed below. |

***Advances the current state of the art in the industrial sector:***

***Technical feasibility:***

***Relevance to high performance computing:***

# Impact

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| --- |
| Estimate how this specific HPC effort will result in national-scale, long-term energy, and carbon savings across the industry; the performance improvements that are expected over existing technologies; and the ability of industry to accelerate the adoption of energy-efficient technologies. Describe how this specific HPC work contributes to a transformational change in the energy sector and enduring economic impact. Describe how this effort will result in changes in the way your company operates. Describe the alternative actions if this effort is not funded including reliance on experimental technologies or other courses of action. Include metrics for energy/carbon improvements, performance increases, cost savings, and/or time reductions. Describe *additional impacts* this work will have on manufacturing and HPCcommunities. *Include* plans for any publications, improvements to open*-*sourcesoftware, public databases that will be released or improved, and training provided forstudents or postdocs, etc. |

## Energy Savings Estimates

|  |  |
| --- | --- |
|  | Energy Savings Estimates – Proposals must include numerical estimates for annual energy and carbon savings. Energy/carbon savings should be on an annual basis, assuming successful implementation of the technology being enabled by the HPC effort. Estimates for market penetration used for the savings should be realistic and conservative. |

Annual Energy Savings Company-wide: TBTU or GJ or Gallons Fuel Savings

Annual Nationwide Savings: TBTU or GJ or Fuel Savings

Justification for Estimated Energy Savings:

Product Lifecycle Annual Energy Savings: TBTU or GI or Gallons Fuel Savings

Justification for Estimated Energy Savings:

CO2 Reduction: \_\_\_\_\_\_ tonnes /year

Justification for Estimated Carbon Reductions:

# Changes from Previous Submissions (Reapplications)

|  |
| --- |
| For proposals that have been re-submitted from a previous solicitation, briefly describe how you have incorporated changes based on reviewer comments from the previous submission. |

For the follow-on projects, the concept paper should not exceed three (3) single spaced pages using 12-point font (Times New Roman preferred). In addition to the required sections above, the following component is required:

# Results from the prior funded project (one page maximum with figures)

|  |
| --- |
| Review the results and knowledge gained from the prior funded project. Explain how these results will be used to address the objectives of the current proposal. If you believe that the current proposal is distinctly different from the previous project and should not be considered as a follow-on project, please articulate the differences. |

# Appendix A. References (optional – not included in page count)

# References are considered to be citations to journal publications and/or conference proceedings. Additional information or additional appendices will be considered non-compliant with the page limits for this concept paper submission.