Green AI Project Proposal Early Brief

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Related Issue & Discussions: [Green AI Discussion · Issue #1 · Green-Software-Foundation/greenAI (github.com)](github.com)

Working Group Governance: GSF Standards Working Group

Brief Overview

The GSF has been receiving a great number of inbound requests and interest in the intersection of Green Software and Artificial Intelligence. During a Steering Committee meeting, discussion ensued around what is the official stance of the GSF in relation to Green Software and AI. The Steering Committee asked the Standards Working Group to consider what the GSF should do.

The Standards Working Group came up through conversation that this should be a significant effort (almost as much gravity of the SCI specification in its effort) and that a project should be considered that addressed three outcomes/tenets:

1. A Preliminary Position Summary.
2. Providing insight into applying the SCI to specific AI use cases.
3. Expanding GSF training/learning content for Software Practitioners on this topic.

This document is intended to provide an early briefing and stimulate discussion to move this to a project under the Standards Working Group but will have scope across the GSF. The early thinking this paper represents and the three outcomes mentioned above have been discussed in a Steering Committee meeting and they encouraged the project to move forward.

Since the project if approved would be a significant undertaking and we currently have a growing interest from GSF members as well as those outside of the GSF in this space and our perspective, the content team has created a stop-gap measure to create an article which will be posted on the GSF website that takes all of the related Green Software and AI content (from articles to videos to podcasts, etc.) and presents it in an effective way to help the community in their first step to get insight into this space.

Design Principles

Design considerations are constraints and concepts that help to provide guiderails and directions to keep from "boiling the ocean" (e.g., trying to do everything which most likely keeps a project from ever taking off).

During the planning process and beyond, design considerations may be changed or iterated on. They are not intended to be edicts, but to guide discussions and planning. They can also provide contextual direction so that things decided are not re-discussed unless needed.

Here is an organic list that will continue to grow and reduce as needed, not in any priority order (and of course significant changes will be discussed):

- We will not be trying to cover every aspect where Green Software and AI intersect so that as mentioned above, we will not try and boil the ocean. We will focus on the three outcomes/tenets mentioned in the Executive Briefing of the document.
- Our intent will be vendor agnostic in any of our activities or content.
- Will assume that consumers of the outcomes are already convinced of climate change and focus on Green Software and its practical application.
- Any content will have a license that allows consumers of the outcome to do what they want with the content but not redistribute/amend for financial purposes.
- Outcomes are not intended to encourage thoughtfulness around the current significant carbon output of AI technologies, not to "call out" companies nor "shame" them for their use of AI technologies.
- Assume a thoughtful, technically authentic, based in intellectual honestly approach to the future of AI and not take on the "AI is evil and will take all jobs" speculation.
- Since Generative AI such as Large Language Models (LLM) have a large amount of perception share and interest from our members and audiences, we will prioritize our efforts here although this can lead to adjacent technologies such as Small Language Models and Multimodal AI (from different data types like text, images, audio and video).
- We will attempt to proactively engage the holistic GSF membership community since this will be a cross-working group initiative. We will communicate with the non-GSF community via GitHub Discussions and other communication channels such as the Environmental Variables podcast.
- We will incorporate efforts from other communities, companies, and individuals into this effort as there are already folks who've invested time and research into this space and will ensure that we identify their inclusion in our work.

The Three Tenets

Here we will provide a description of what the tenets are.

1. **A Preliminary Position Summary.** This summary which will be on the GSF website will provide the official GSF position on our thoughts around the intersection of Green Software and AI. This should be broad enough to answer the majority of inbound questions or provide guidance around our position of this space. This most likely will need to be supported by the Policy Working Group and Community Working Group since we will want to address a large amount of the community from an individual green software practitioner to legislators.

2. Providing insight into applying the SCI to specific AI use cases. We will identify specific use cases and provide practical and technical guidance on how to apply the SCI to them. We will first focus on LLMs as mentioned above in the Design Principles section. These guides should have enough depth so that practitioners not only understand the conceptual approach but have enough depth to allow practical application in their own carbon-aware AI applications and systems.

3. **Expanding GSF training/learning content for Software Practitioners on this topic.** Today we have [the practitioners training](#) to help them understand Green Software concepts and measurement. We'd like to expand that training so that there is understanding of the concepts, how to measure AI workloads with GSF open source projects and an approach to implementation. This would result in a similar certification that would specifically focus around this topic (such as Green Software and AI Practioners course hosted on the Linux Foundation training and certification site).

There have been discussions online and in the Standards Working Group around these three tenets. In upcoming next steps, we will be taking those discussions into consideration as we decide what activities and deliverables we need to address the three tenets. Also, we will use those and the Design Principles to scope the work as well.

Points of Discussion

Current links to discussions on the topic.

[Green AI Discussion · Issue #1 · Green-Software-Foundation/greenAI (github.com)](#)

https://github.com/Green-Software-Foundation/standards-wg/issues/103

https://github.com/Green-Software-Foundation/standards-wg/issues/102

[2023.01.18 · Issue #98 · Green-Software-Foundation/standards-wg (github.com)](#)

Next Steps/Actions

To be discussed at the next Standards Working Group meeting on February 29, 2024.

- Make the Standards Working Group aware of this document and provide time to review.
- Provide a shortened briefing version of this document to include in the next newsletter with a [link to the issue/discussion](#).
- Is the Standards Working Group ok with moving forward to create a [new project proposal](#) once there has been time to review the document? While we are reviewing, we can also begin working on the authoring of the new project proposal but won't publish until Standards Working Group gives official approval.
- Thomas can update the Steering Committee at the next meeting on the progress of this activity.
- Create a core team to work on the project.
- Begin meeting with other Working Groups to discuss the idea, get their feedback, and where we may need their support. Currently the Community and Standards Working Groups are aware.