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TAG ENVIRONMENTAL SUSTAINABILITY

# CNCF Technical Advisory Group for Environmental Sustainability

tag-env-sustainability.cncf.io

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# *Niki Manoledaki, Grafana Labs; Marlow Weston, Intel*

# TAG ENV Mission Statement



“This TAG's goal is to advocate for, develop, support, and help evaluate environmental sustainability initiatives in cloud native technologies.

This TAG will identify values and possible incentives for service providers to reduce their consumption and carbon footprint through cloud native tooling.”

https://github.com/cncf/toc/blob/main/tags/environmentalsustainability.md

# TAG ENV Communication Links



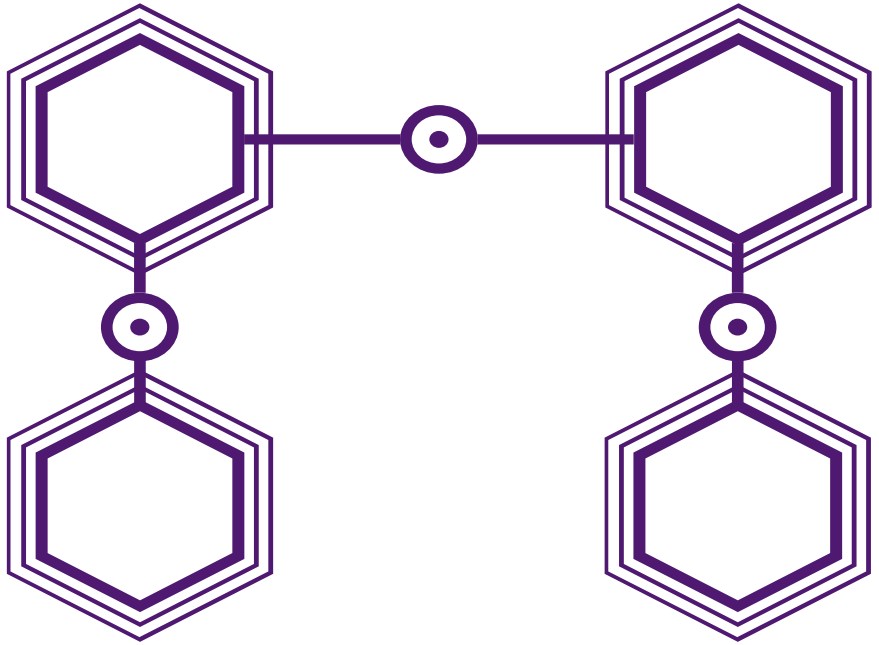
- **TAG Group Home: https://github.com/cncf/tag-env-sustainability**
- GitHub Issues: Open Items
- Calendar: TAG Environmental Sustainability Calendar
- Mailing list: https://lists.cncf.io/g/cncf-tag-env-sustainability/topics
- Slack channels: #tag-environmental-sustainability & #wg-green-reviews

# TAG ENV Projects



Landscape

CNCF Projects
Green Reviews



Community
Advocacy and
Outreach

Blog & Demos

**All projects are open and we would love to collaborate with you!**

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# Landscape

# Landscape



## Motivation

- Create a comprehensive sense of projects, organizations, and research targeting sustainability in Cloud Native Systems
- PLEASE COME CONTRIBUTE
- https://github.com/cncf/tag-env-sustainability/blob/main/website/content/landscape/_index.md

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# Working Group Communications

# Working Group Communications: Motivation



## Motivation

- Promote open-source sustainability projects.
- While remaining:
  - Authentic and true to open-source openness and transparent.
- Organize communications and market efforts throughout the ecosystem

# Working Group Communications: Objectives



## Objectives

- Monitor Sustainability events
- Collaborate with other open-source projects.
- Out of Scope
  - Marketing products or solutions for vendors
  - Marketing for other community groups

# Working Group Communications: Deliverables



## Deliverables

- Templates for contributions for blogs and white papers.
- Publishes social media events, posts and calendars.
- Plans in-person and virtual events

# Working Group Communications: How to get involved



## What's involved + get involved

- WG Comms meet for half an hour once a week.
- WG Comms meeting is included in the TAG ENV calendar.
- New members always welcome!

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# Working Group Green Reviews

# Green Reviews Working Group: Goals



## Goals

- Help CNCF projects to review their cloud native sustainability footprint
- Create a pipeline for gathering green metrics
- Provide resources, reviews & guidelines

Charter:
https://github.com/cncf/tag-env-sustainability/blob/main/working-groups/green-reviews/charter.md

# Green Reviews Working Group: What are we building?



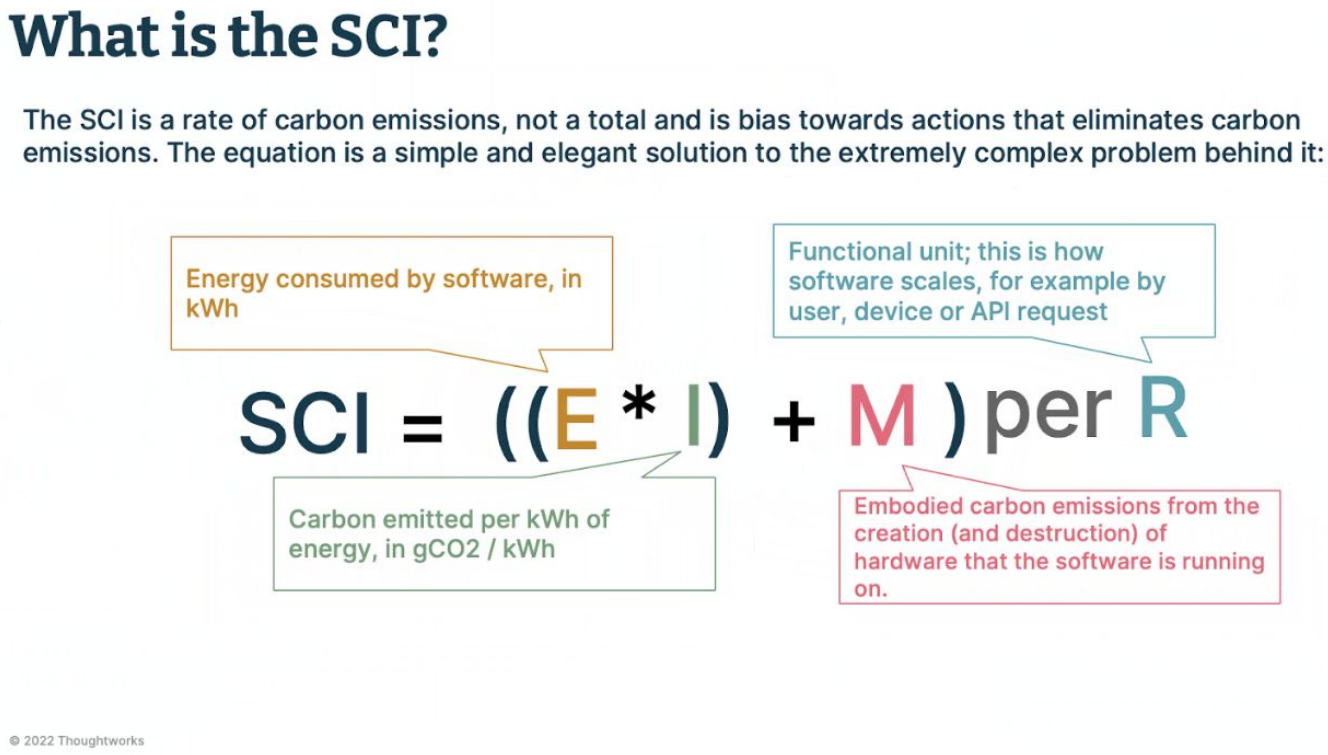
## [WG Green Reviews] Design Document

1. Processes to collaborate with CNCF Projects
   a. Similar to TAG Security Assessment
2. Infrastructure + test pipeline
3. Metrics gathering + assessment

# Green Reviews Working Group: Metrics



- **Software Carbon Intensity specification**
  - Green Software Foundation - ISO standard (soon)
  - https://sci-guide.greensoftware.foundation/
  - https://www.thoughtworks.com/insights/blog/ethical-tech/calculating-software-carbon-intensity



# Green Reviews Working Group: Pipeline



- **Infrastructure & Community Cluster Provisioning**
  - Cluster provisioning
    - Flux + OpenTofu vs KubeAdm + Ansible vs CAPI/CAPEM
  - Cluster configuration
    - Flux
  - Access control
    - Equinix → API key
- **Sustainability Assessment Pipeline**
  - Manual tests
  - Automation: GitHub Action Workflow

# Green Reviews Working Group: Next Steps



- **Focus on process similar to TAG Security Assessment**
- **Scale team sustainably**
  - upcoming Tech Lead role
- **Test cadence**
  - Per release? Part of maturity model?
- **Load tests**
  - idle, average load, scaled load
  - k6?
- **Export data to https://devstats.cncf.io/**
- **Next CNCF Project?**
- **Demo tools/patterns for cloud-native sustainability**
  - Static analysis tool e.g. Carbon CI https://github.com/Green-Software-Foundation/carbon-ci
  - Power consumption of networking components

# Working Group Green Reviews

**Get involved! Volunteers needed!**

- Meeting **2nd** & **4th** Wednesday (5pm CET / 8am PT / 11am ET)
- Join #wg-green-reviews
- Async collab is encouraged
- Contribute to the design discussions in the issues of the WG board
- Contribute to the design doc
- Contribute code!

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# Blogs and Demos

# Blogs and Demos

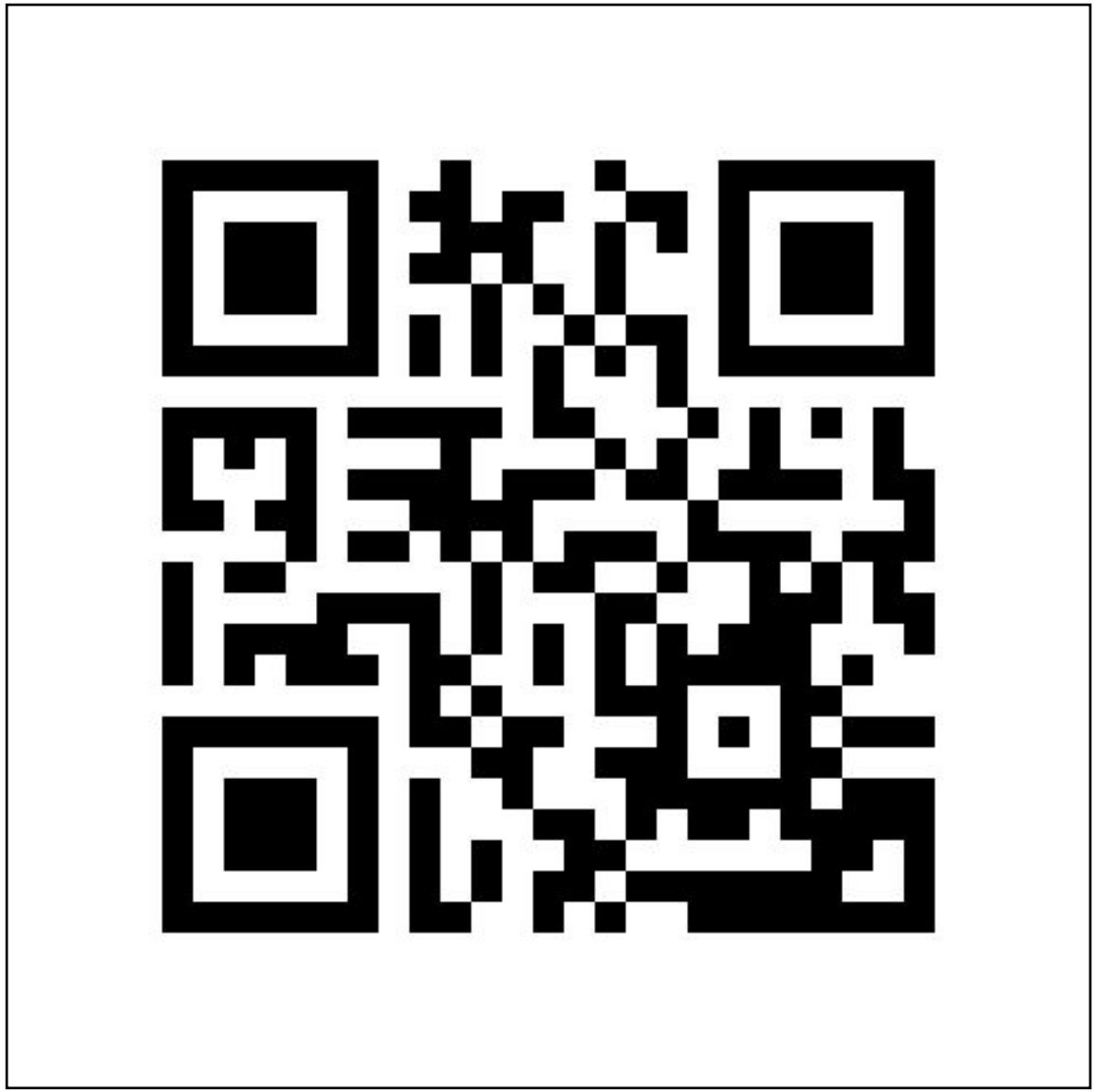


## Demos:

- We try to have  demos of projects minimally monthly at standard meeting.
- Please just contact one of the chairs or leads to get added to the agenda!

## Blogs:

- Open an issue, here:  https://github.com/cncf/tag-env-sustainability/issues/
- Make a PR in this folder: https://github.com/cncf/tag-env-sustainability/tree/main/website/content/blog
- Publish!



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