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THE LINUX FOUNDATION
OPEN SOURCE SUMMIT
EUROPE

Laying the Foundation on OSS Environmental Sustainability

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#OSSummit @mkoerbi





My work is all about
Kubernetes Consultancy & Cloud Native Advisory

CNCF TAG Environmental Sustainability Co-Chair,
CNCF Ambassador, LF Europe Advisory Board,
Contributed 3y to the Kubernetes release team



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Computers are almost like cows



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FOSS is widely used

AND

ICT is a global GHG driver

WHAT IF

We can just make every FOSS project a little bit more efficient, greener, “better”?

Mission & Scope

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.



Mission & Scope

- Identify, define, and develop tooling to assess environmental sustainability approaches, including
 - Quantify the energy consumption of cloud environments individually as well as in common integration patterns
 - Recommendations and strategies to contribute, deploy, and operate cloud native implementations to reduce energy and carbon as well as the various environments they operate in and their carbon footprint
 - Capabilities, benchmarks, and processes to monitor the technological and architectural health of projects
- Community outreach and engagement on the topic
- Collaboration with other environmental or sustainability organizations, initiatives, activities, and efforts that may fall outside of the CNCF (Cloud Native Computing Foundation)



What we don't do!

Forming an umbrella org
beyond CNCF

Establish compliance or
standards beyond CNCF

Evaluate
commercial/enterprise
infrastructure

Focus outside of Cloud
Native technology



Find out more

Website: sustainability.cncf.io/

CNCF Slack: [#tag-environmental-sustainability](#)

Twitter/X: [@CNCFEnvTAG](#)

LinkedIn: [CNCF TAG Environmental Sustainability](#)





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The thought process

What and how we can provide best possible support for the community?

How we can help the projects raising awareness and become more efficient?

Should we make trainings?

Can we review all projects and give recommendations?

How we will support hundreds of projects and most likely hundreds of other, non CNCF projects?

Can we scale? How we can maintain it?

Where to start with?

What do we need? How do we get one?

The field and topic is so fast moving how do we ensure to stay up to date?



The thought process

What and how we can provide

How we can help the project

Should we make trainings?

Can we review all projects and

How we will support hundreds

Can we scale? How we can

Where to start with?

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The thought process - funnel the thoughts

We want to achieve:

- Optimize the software
- Show the Carbon impact of the OSS project
- Reduce the required energy consumption
- Bringing sustainability into the mind of OSS maintainer



The thought process - focus



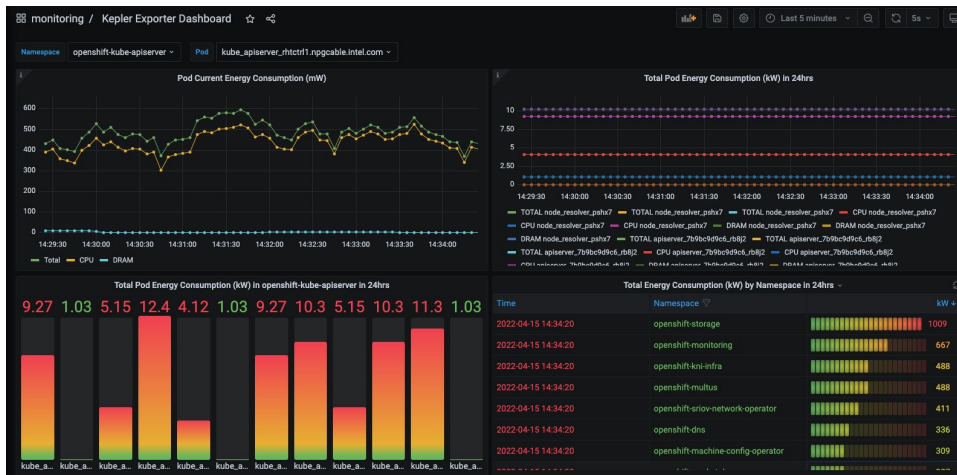
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Raise awareness

**Show the
impact/change**

Our idea

Measure the power consumption and visualizing it



Source: [github/kepler](https://github.com/kepler)

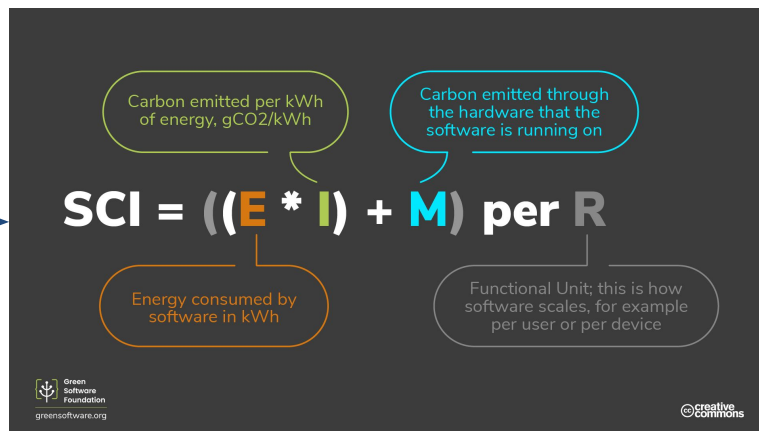
Software Carbon Intensity (SCI)

(thank you GSF)



Don't re-invent the wheel!

We need to set a standard to measure and describe the Carbon impact of a software.



Measure and provide 2 metrics

A value/KPI for the OSS software

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A value/KPI for the OSS project

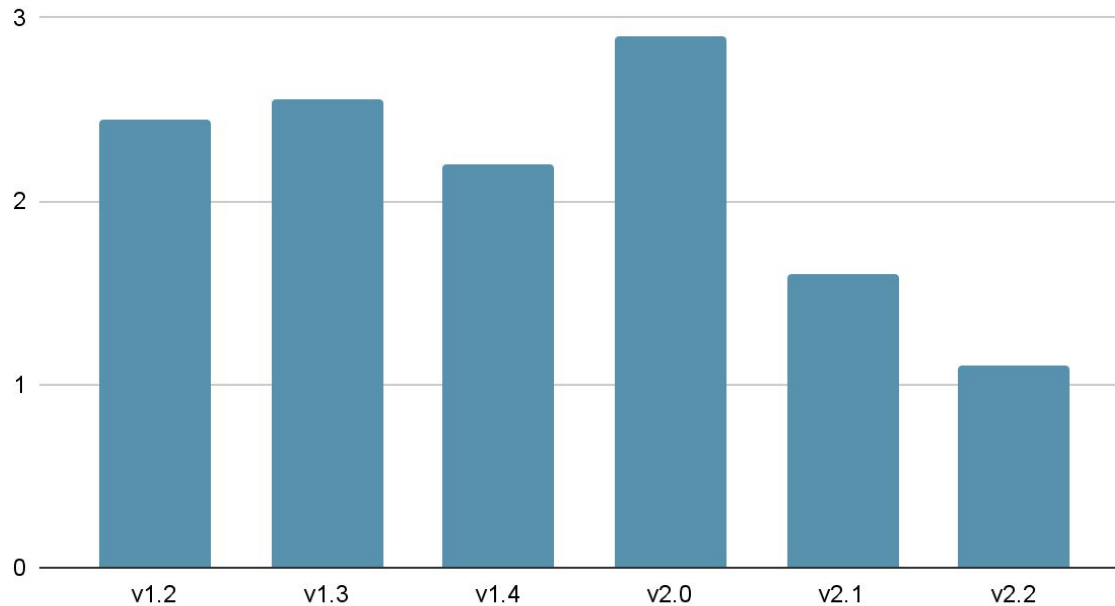
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KPI for OSS Software

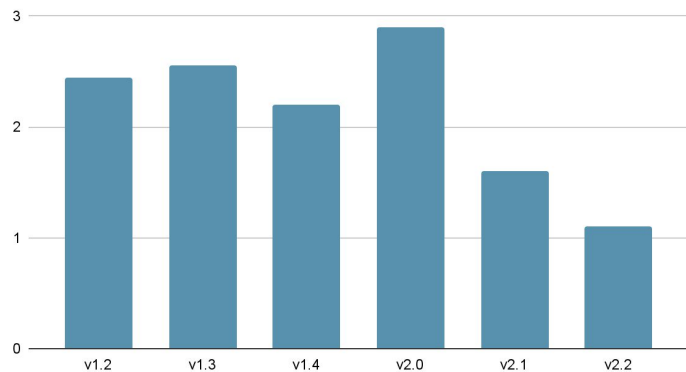
SCI Score



KPI for OSS Software

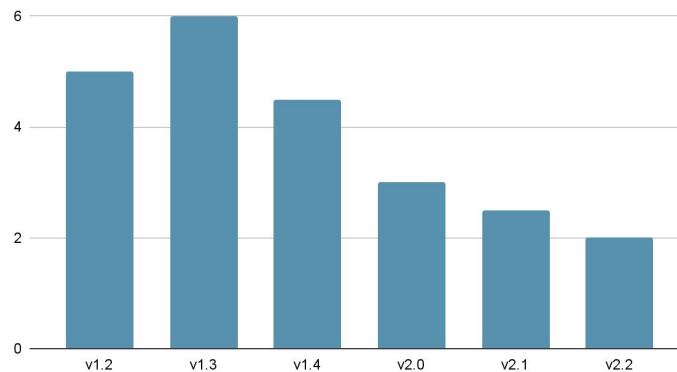
AVRG

SCI Score



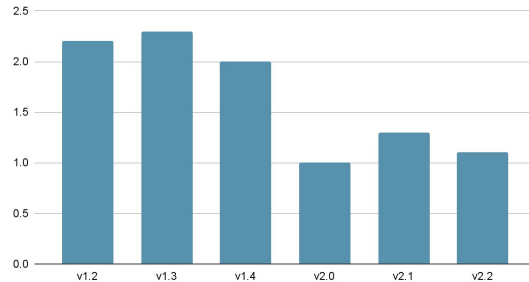
BUSSY

SCI Score



IDLE

SCI score



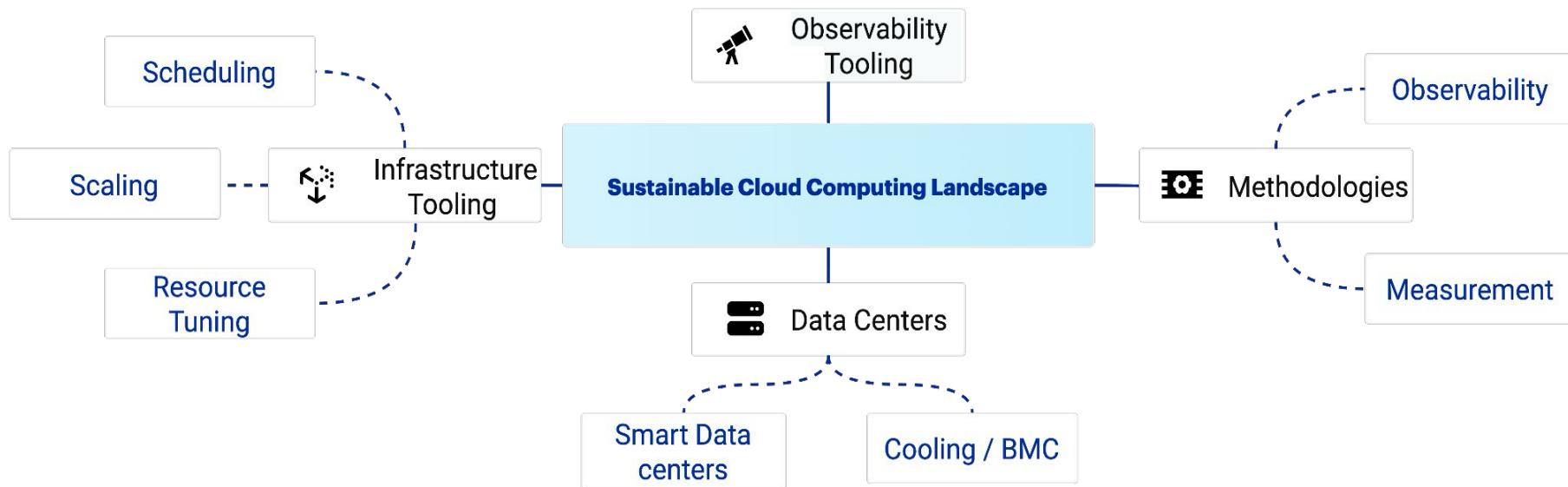
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The complexity issue



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Demo?



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