



RIPE NCC
RIPE NETWORK COORDINATION CENTER

Announcing Green Tech Hackathon

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Vesna Manojlović | RIPE NCC | October 2024

Green Tech Hackathon



- **10 - 11. December 2024**
- **Amsterdam & Online & in Local Hubs**
- **Announcement on RIPE Labs**
 - <https://labs.ripe.net/author/becha/announcing-the-green-tech-hackathon/>
- **Looking for more Local Hubs**
 - <https://labs.ripe.net/author/becha/local-hubs-for-events-diversity-sustainability-and-decentralisation/>



Many Hands, Shared Work



Organising / Programme Committee

- **Vesna Manojlović**, Community Builder, RIPE NCC (NOGs and academia liaison)
- **Michael Oghia**, ICT sustainability advocate (Digital infrastructure liaison)
- **Mallory Knodel**, CTO, Center for Democracy and Technology (Digital Rights and standardisation bodies liaison)
- **Shane Kerr**, Software Developer, IBM (FLOSS and DNS liaison)
- **Claudia Borges**, Green Computing Advocate (Artists, Hackers and Activists liaison)
- **Chris Buckridge**, Consultant (Internet Governance communities liaison)
- **Catalina Mueller**, Visiting Lecturer Esslingen University (Online Facilitator)
- **Noelle Starliper**, Events Coordinator, RIPE NCC

Previously



- e-impact IAB Workshop 2022
- Continuing from 2023:
 - DNS Hackathon: Greenish DNS project
 - Quantum Internet Hackathon
 - Research paper recommendation : making Quantum Hardware & Quantum Software more energy efficient & Cooperate with existing standardization bodies
- Green Tech Open House: October 2024
 - <https://www.ripe.net/meetings/open-house/green-tech-and-sustainability-in-internet-technologies-2-oct-2024/>

Qubits For The Kids

Realizing a sustainable quantum internet for the smallest/future researchers

Ed Kuijpers, Swantje Kastrup, Jasper van de Kraats, Robert de Keijzer, Zhichao Guo, María Gragera Garcés, and Vesna Manojlovic

Results of the Quantum Internet Hackathon 2022
Amsterdam, The Netherlands

2nd December, 2022

1 INTRODUCTION

1 What is sustainability?

With the progress of a quantum internet also sustainability should be considered. The sustainability of a system is influenced by different factors: the ecological footprint and social impacts like social and environmental justice or human and labour rights [1]. But also software maintainability and portability is a factor. With this project we would like to focus on the ecological impact of the quantum internet and how it could be measured. The ecological sustainability of a system is influenced by the following factors that have to be considered when comparing systems [2, 3]:

3 Challenges in Quantum vs Classical comparison

A side by side comparison of Quantum and Classical systems is incredibly difficult to perform, for the following reasons:

- Firstly, the nature of quantum and classical information is different in essence. We cannot directly compare a qubit and a bit as they follow different probabilist laws, respond to different effects and maintain differences physically. Therefore computational costs and outputs can only be benchmarked in a case by case manner, and even within specific contexts these comparisons can be questionable as the inputs given to both systems are not equivalent.

How much chips is too much chips?

- * The hardware is responsible for about 50% of the emissions from ICT.
- * Most of that is the chips (CPU, RAM, SSD, GPU, NPU ...)
- * OpenAI CEO Sam Altman wants 7 trillions dollars investment in the semiconductor industry.
- * For reference, the new 2 nm TSMC gigafab will cost \$34 billion.
- * Seven trillion would allow to build 200 such fabs.
- * currently, 16 fabs such are being built.
- * So Altman's plan could increase this by more than 10x, even if some of the money is used for other
- * Two hundred such fabs would emit 2.7 GtCO2e/y

Project Ideas



- develop best-practice documentation around tuning a Linux system for low power usage
- code and documentation to run BIND with "ecofloc" for energy measurements
- investigating permacomputing and degrowth approaches to internet infrastructure
- algorithm for real-time traffic flow adjustments to reduce energy consumption
- solar powered e-paper sign post Display
- Wikimedia based documentation in form of Wikidata, media pages, knowledge graph
- contribute to "beyond carbon" IETF draft
- decrease e-waste by building solar batteryless devices which rely on ambient energy for their operation and use hybrid supercapacitors for electricity storage



Register Now!

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